Bachelor Thesis

Alternative Award Methods to Lowest Price in Public Procurement and Their Susceptibility to Corruption

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ABSTRACT
This paper evaluates and compares the two award methods Weighted Factor Score (WFS) and Awarding on Value (AoV) regarding their susceptibility to corruption. When financial aid is issued to a developing country, the donor defines the award method to be used by the purchasing function of the receiving country. Due to its objectivity, lowest price is currently the most popular method, but often results in bids offering inappropriate performance. Award methods, such as the WFS method and AoV, which consider both the price and the performance, are demanded. However, once price is not the only criterion for supplier assessment, susceptibility to corruption of the award method is enhanced. This paper identifies all relevant stakeholders and investigates ways for them to take advantage of steps in AoV and the WFS method. An evaluation on basis of examples finds that AoV is less susceptible to corruption. Therefore, donors of financial aid are recommended to specify the use of AoV in their purchasing guidelines. Moreover, this paper raises awareness on the issue of corruption in public procurement and popularizes the relatively new method AoV in international purchasing literature.

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Award methods, corruption, public procurement, financial aid, awarding on value, weighted factor score

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1. INTRODUCTION

Large sums of financial aid are raised for global economic wellbeing. In 2012, the World Bank Group granted loans valuing 32 billion US$ to developing and transition countries with the mission to reduce poverty (World Bank, 2014). Its two institutions IBRD[1] and IDA[2] target projects and procurement activities for the expansion of infrastructure, education and health systems, development of agriculture and the establishment of reliable government institutions (World Bank, 2012; World Bank, 2013a). The European Commission[3] gives about 17 billion € of multilateral aid annually to regions in Asia, South America, Middle East and South Africa aiming at human development (European Commission Budget, 2011).

These large amounts of money constitute economically valuable opportunities for suppliers to deliver the public sector. Projects financed by the World Bank alone result in the award of about 20,000 to 30,000 procurement contracts every year (World Bank, 2013b).

Selected government departments of the receiving countries, also referred to as executing agencies or contracting authorities (European Commission, 2014), are in charge of purchasing goods and services by using these funds. The donor, therefore, establishes guidelines on duly purchasing behaviour, which relate to the selection and award mechanisms for suppliers' bids to a tender. These guidelines are geared towards finding the "best" supplier. This involves reducing the issue of corruption. Consciously letting a supplier win who does not offer the most suitable price-performance ratio is illegal in public purchasing. (Shahadat, 2003)

Corruption is defined as "the abuse of one's function for the benefit of oneself or a third party." (Arnold, Neubauer and Schoenherr, 2012, p. 138) In public procurement, it relates to favouring a certain supplier and occurs either as capture or extortion. The first describes a firm actively bribing a public purchaser to gain a trading advantage. The latter is referred to as "facilitation payments". In this case, a purchaser threatens a supplier to use a certain selection or award method, which would exclude the supplier from trade. Only if the supplier complies to do the purchaser a favour or pays him a certain amount of his expected profit, the purchaser will change the method and by doing so increase the chances for the supplier to win. (Auriol, 2006)

This paper bases on the assumption that there are situations in which a purchaser wants to let a supplier win who does not offer the best value for money. The purchaser is expected to act in his personal interest, thereby taking advantage of his decision power. He is likely to misuse the award method for that, as the award process is the step in supplier relationship management, which refers to the actual supplier decision for a procurement activity. Thus, it can be expected especially susceptible to corruption and will be subject of this paper.

Awarding is preceded by a selection process, which rejects all suppliers beyond defined price or capacity thresholds. The large number of available suppliers is hence reduced to a short list. In public purchasing, National or International Competitive Bidding are common selection methods (World Bank, 2013c). A Request for Quotation asks those suppliers who are considered for an order to place a detailed bid. In order to receive appropriate bids, the award procedure is published with it. On basis of these bids, awarding is implemented to choose a winner (Schoenherr & Mabert, 2008).

For a long time, suppliers' bids have mostly been assessed on basis of the price, whereby the supplier offering the lowest price is chosen. One major reason is that this is the most objective method and leaves very little room for fraudulent behaviour. However, a significant drawback is that it does not result in best bids. Rather, suppliers knowing that price is the only criterion possibly reduce their performance efforts to the minimum threshold and emphasize on submitting a low-priced bid. (Bergman and Lundberg, 2013)

Therefore, most public procurement guidelines also allow for awarding which takes both costs and benefits into account. The EU Procurement Directives established a method known as the Economically Most Advantageous Tender (EMAT), in which performance-related criteria are observed as well (European Parliament & Council of the European Union, 2014).

In addition, the World Bank enables awarding based on estimated total costs of ownership: "Subject to paragraph 2.57, the bid with the lowest evaluated cost, but not necessarily the lowest submitted price, shall be selected for award" (World Bank, 2013d, paragraph 2.48).

Thus, alternative award methods to lowest price can be considered. These might result in more sophisticated bids, but must be investigated with regard to corruption.

A common alternative is the Weighted Factor Score (in the following referred to as WFS method). Thereby, different criteria in addition to the price are decided on initially and weighted according to their importance. Further, a scoring scale (such as 1 to 5 or 1 to 100) must be set. All bids are then scored along each criterion and finally recalculated with the given percentage weightings. The supplier with the highest score wins (Telgen and Schotanus, 2010).

Another option is rather new to purchasing literature and practice. It was firstly published by the Dutch infrastructure organization CROW under the name "gunnen op waarde", which translates into Awarding on Value (AoV). This award method transfers all criteria other than price into monetary terms. This enables the purchaser to subtract the expected performance values from the actual price. Hereby, the supplier with the lowest remaining money value will be awarded. (Jansen et al., 2007)

This paper aims at finding an answer to the following research question: *Which of the award methods "Weighted Factor Score" and "Awarding on Value" is less susceptible to corruption and therefore constitutes a reasonable alternative to lowest price?*

In order to come to a comprehensive conclusion, firstly, a stakeholder analysis shall give the reader an understanding of those involved in financial aid procurement and their motivation to influence the award decision. It will be investigated what kind of fraudulent actions within the supplier-buyer relationship can take place.

After a subsequent explanation of the award methods WFS and AoV, these will further be compared. The steps that differ between the methods will be evaluated with regard to subjectivity and room for corrupt influences on the decision.

[1] International Bank for Reconstruction and Development
[2] International Development Association
[3] The Development Cooperation Instrument (DCI) of the European Commission

A comprehensive literature search[4] has revealed that corruption in public procurement is subject under discussion. However, award methods have received little attention concerning their susceptibility to fraud. This holds true for AoV, as it is very new to purchasing sciences.

For this reason, the approach used for the evaluation will be built upon several examples. Every methodological step will be looked at closely and potential ways for manipulation by the different stakeholders will be taken into account.

Finally, a recommendation shall help providers of finance for developing countries to specify a suitable award method in their guidelines. This shall on the one hand result in bids offering a higher performance than from using lowest price awarding and on the other hand not leave much freedom for corrupt actions. Moreover, as risks will be unveiled, donors will be enabled to monitor purchasing activities more effectively.

2. STAKEHOLDERS AND THEIR MOTIVATION TO ENGAGE IN CORRUPTION

In order to gain an understanding of the issue of corruption, a stakeholder analysis will investigate the various actors' motivations to engage in corrupt behaviour. Mendelow has established a framework, which maps power against level of interest (Olander & Landin, 2005). This will be used as a basis and slightly adapted. In this context, level of interest shall be interpreted as the interest in a specific supplier to win. A high interest indicates a possibly higher motivation for corrupt intervention.

The stakeholders can be divided into three groups of involvement. Those who have highest influence and interest in the outcome of the award scoring are the executing agency and the supplier. The donor, user and government of the developing country are expected to have certain interests, but their power to influence the decision is thought to be lower. Moreover, trade unions and the general public might favour particular groups of suppliers or promote fair competition. However, they are expected to be neither directly involved in the decision, nor interested in one particular supplier to win.

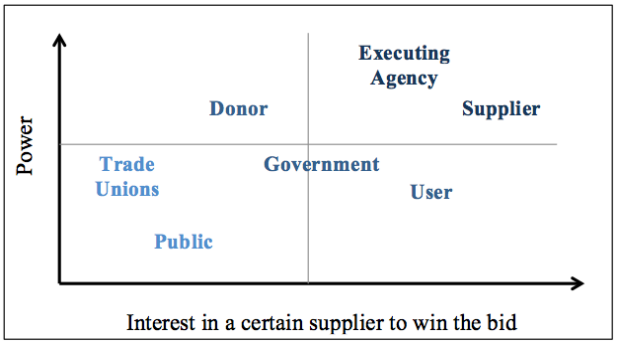

Fig. 1: Stakeholder Analysis

According to Deloitte (2012), fraud is the result of three factors:

- Pressure or motivation to commit fraud
- An opportunity (e.g. ineffective controls)
- Rationalization of fraud ("once won't do any harm", "it's only a small amount of money for them", etc.)

Motives for all stakeholders to engage in corrupt behaviour will be investigated in the following. Ways in which they can manipulate the award process will be examined, and risks associated with a corrupt intervention mentioned. Finally, a conclusion will be drawn showing that strong guidelines by the donor can most effectively tackle corruption.

Focus will thus be on the awarding. This is only one of several steps towards placing an offer, in which corruption must be prevented. The establishment of specifications and the selection step are critical to corruption as well, but are not topic of this paper.

2.1 Suppliers

D'Souza and Kaufmann (2013) reveal that 50% of managers in low-income countries admit that firms such as theirs make illegal payments to win government contracts. This number is much higher than in industrial nations.

According to them, firms choose bribery if: "(i) the expected profit with bribery is larger than the expected profit without bribery, and (ii) the expected profit with bribery is positive. If only (i) holds, then the firm does not tender the bid. If only (ii) holds, then the firm tenders the bid without bribing." (D'Souza and Kaufmann, 2013, p. 336) Thus, one can derive that profit is suppliers' main motivator for corruption.

Profit is determined by revenue minus costs. Bribery might increase the chances for high revenue, but at the same time increase costs both directly by paying a purchaser and indirectly through penalties, a loss of reputation or foregone sales. (D'Souza and Kaufmann, 2013)

Some circumstances might increase the pressure on suppliers to bribe. For example, if a supplier believes that competitors bribe, he will feel forced to do the same in order to stay competitive. In the case of extortion, a supplier might be constrained by a purchaser to win a tender, who forces him to bribe in order to be taken into account for awarding. Moreover, if a supplier heavily depends on continuing orders by the government and future deals are at stake, a supplier might be more likely to bribe with the aim to secure economic survival. Also, bribery in exchange for information on competitors' bids or specifications of the tender is a common means to winning. (OECD, 2007)

The OECD (2007) mentions the following forms of common bribes: "gifts, travel, entertainment, payment of domestic expenses, works in private homes, computers, jewels or expensive watches, free shares in companies and sexual services […]. However, money is always of interest because it is rapid, simple and practical." (OECD, 2007, p. 47)

As such activities are illegal, there are different ways how firms try to hide it. Making use of an intermediary, such as a sub-contractor is one strategy difficult to trace. In addition, money is commonly paid out in cash, booked as consulting fees or even given out as a loan, which will never get reimbursed. (OECD, 2007)

Conversely, a supplier might also decide to threaten a purchaser's physical health or that of close family members or friends. In a situation like this, a purchaser might decide to let the supplier win, in order to guarantee for his and others' wellbeing.

Hence, suppliers have multiple tools at hand when wanting to win a contract. In most cases though, corruption only works for them if the purchaser relents.

[4] The following search terms were used: public procurement, public purchasing, purchasing, corruption, bribery, fraud, awarding, award process, financial aid, weighted factor score, weighted scoring, multi-criteria decision making, gunnen op waarde, awarding on value, and more.

2.2 The Executing Agency

The executing agency consists of purchasers and experts from the buying government. In this paper, the terms purchaser, executing agency and contracting authority are used interchangeably.

The executing agency implements the awarding and issues an order to the winning supplier. Therefore, it has highest power on the process. Purchasers might favour certain suppliers over others, which they can try to reflect in the award decision.

Reasons for such preferences are diverse. Personal relationships can play a role, as well as biases, for example towards a particular religion, skin colour or political orientation. Further, if positive work experiences have been made with a supplier, the purchaser might want to stick to the well-proven deal.

Beyond that, corruption can have an influence on purchasers' preferences. If the purchaser is offered a bribe, he will be referred to as the bribee (OECD, 2007). Not only the supplier, but also the user (the purchaser's customer), the government or someone else with a strong interest can be imagined to bribe the purchaser.

The purchaser himself can also be the source of corruption. In the case of extortion, he threatens a supplier to keep him from winning a contract. (Auriol, 2006)

The purchaser carries a high personal risk when engaging in corruption. He might lose his job, be punished or lose personal credibility. Also for him, the expected benefits must outweigh potential disadvantages.

The benefits for the purchaser lie in the perks the briber offers (for a list, see the citation from the OECD in 2.1). Besides, job dissatisfaction will rationalize illegal payments if a purchaser feels disproportionately recompensed for his work (OECD, 2007).

2.3 The Donor

The donor, such as the World Bank or European Union, gives money to a developing country for a clearly defined purpose. She imposes guidelines for prudent purchasing behaviour on the executing agency. This goes as far as defining the award method used (e.g. lowest price, WFS, AoV or any other).

As the donor can be expected to strive for fair market competition; its interest in a certain supplier to win the bid is low. Therefore, the decision for the award method imposed on the executing agency will not be made with the purpose of favouring a specific supplier over others.

The donor has no direct influence on the scoring and assessment criteria, as this is the responsibility of the contracting authority. Nevertheless, the donor can influence the susceptibility of the award process to corruption by defining the method.

Thus, the donor is able to limit the possibilities for purchasers to make subjective decisions, as she can impose stricter guidelines on the supplier-buyer relationship using the award method.

2.4 The Government of the Developing (Buying) Country

The government of a developing country receives financial aid by a donor, because it does not have the required liquidity to tackle its citizens' needs or problems. It then assigns the executing agency to find an appropriate supplier.

There are three main incentives for a government to influence the award decision. First, a motive can be political goals. Examples for that are targets on the support of entrepreneurship to fight monopolistic market structures, as well as the promotion of environmentally friendly or innovative companies. Second, discrimination against minorities or religious groups can be an incentive for a government to intervene, especially in dictatorships. Third, potential suppliers might sponsor political parties, hoping for trading advantages with the government in exchange.

Even though the donor decides on the award method, governments could establish their own rules in addition to these. They can exercise power on the contracting authority by promising promotions, threatening to fire a purchaser or offering bribes such as those mentioned in 2.1.

According to D'Souza and Kaufmann (2013), a transparent and efficient government, freedom of press and a profound rule of law contribute to a lower tendency of firms to make illegal payments to win government contracts. However, it is difficult and time consuming to tackle corruption resulting from broad issues of political instability.

2.5 The User

In this context, one can distinguish between end users and customers of the executing agency. The first refers to citizens (relates to the general public), as well as employees of public institutions, who directly benefit from the product or service purchased. The latter refers to employed project managers who implement a financial aid project and are more concerned with the price, rather than with the quality, in order to stay in budget. The term "user" shall refer to both in the following.

A user might have a strong opinion on which supplier delivers the best performance, especially if past experiences were made. If the product does not fulfil the required functional or technical specifications to meet the user's need, the executing agency has not made a successful purchasing decision in the user's interest. This can be either due to bad communication on the required product or an unsuitable method for supplier selection and awarding. Additionally, users can have the same personal reasons than purchasers (see part 2.2) to favour certain suppliers over others.

Thus, the user might want to take influence on the criteria and scoring methods used. If the responsible purchasers are inexperienced with the end product, they might welcome any advice on necessary award criteria and their relative importance. This way, the user can take influence on the award process. As a user has some power in the decision process, he is vulnerable to suppliers' bribery attempts as an intermediary.

2.6 Trade Unions and the General Public

Trade unions connect workers with the aim to promote fair wages and working conditions (Trade Union, n.d.). They criticize certain companies for their behaviour towards employees. In order to exert pressure on these companies, trade unions can campaign against doing business with them or encourage workers to go on strike.

Furthermore, the government depends on the public for re-election and therefore tries to satisfy their needs well. Working together with a supplier who is either criticized for doing harm to society or for a product of bad quality, can result in citizen's dissatisfaction.

Both trade unions and the general public can influence the awarding: Purchasers become more aware of grievances and might fear bad press for the government if they decide for a

controversial supplier. In addition, supply risk of such companies is high. This can lead to changes in the criteria and their relative importance.

2.7 Interim Conclusion: Stakeholders' Motivation and Power to Influence the Awarding

To refer back to Mendelow's framework, the executing agency and the suppliers are key players (Olander & Landin, 2005). While the supplier has highest interest in the outcome of the award process, the purchaser has highest power on the decision. This is why the purchaser is victim to various stakeholders' bribery attempts.

The supplier is inclined to be corrupt, as he has a lot to gain from it. Therefore, hindering a supplier from misconduct can be difficult. Punishments are rather retroactively effective, but do not prevent hidden corruption from happening completely.

Limiting the purchaser's freedom to make subjective decisions is expected to result in more effective fraud prevention. The donor has the power to do this by issuing guidelines on the award method. Different award methods are to varying degrees susceptible to fraud.

Therefore, this paper will provide a recommendation to donors of financial aid on which award method to impose on a purchasing function of a developing country.

3. THE ALTERNATIVE AWARD METHODS

Bergman and Lundberg (2013) propose that lowest price awarding results in bids offering low performance. Furthermore, window-dressing and corruption during the contract period are negative byeffects. A supplier will not emphasize efficiency and functionality knowing that he can only distinguish himself from others if he offers the lowest price. Even though this method is straightforward and most objective, it is only recommendable if one knows in advance that many suppliers offer an appropriate level of performance.

In order to increase the performance offered in bids, Bergman and Lundberg (2013) mention three alternatives: A quality-only assessment, price-to-quality and quality-to-price scoring. The first is difficult to verify and expected to be less feasible in the context of developing countries, where price matters. Therefore, the latter two will be investigated as appropriate mixed alternatives.

Price-to-quality relates to the WFS method, whereby prices are transferred into a score and added up to performance scores. On the contrary, quality-to-price, which refers to AoV, expresses performance in monetary values.

In the following, the two methods WFS and AoV will be explained in order to move on to an evaluation on their suitability in terms of corruption avoidance.

3.1 Weighted Factor Score

Weighted scoring is one of the most popular award methods in private and public purchasing. It is also applicable to other multi-criteria decision-making contexts. (Ho, Xu and Dey, 2010)

The following explanation bases on an article by Telgen and Schotanus (2010) who label the method Weighted Factor Score (WFS).

WFS enables the purchaser to take other criteria besides the price into account. All criteria will be weighted according to their importance. Then, selected bids will be scored on their performance for each criterion. These scores will eventually be multiplied with the weighting, summed up and compared. The supplier with the highest weighted score wins.

The typical sequence of steps can be summarized as follows:

1. Choose award criteria
2. Decide for weighting
3. Decide for scoring scale
4. Gather suppliers' bids for evaluation
5. Score suppliers' bids
6. Calculate weighted scores
7. Award supplier with highest weighted score

Each step will now be explained in greater detail. Accordingly, relevant stakeholders on the decision will be mentioned.

3.1.1 Choose Award Criteria

In the WFS method, price is taken into account as one criterion in addition to relevant performance criteria. These are chosen in accordance with the product or service demanded.

The EU Procurement Directives suggest the following possible criteria: "delivery or completion date, running costs, cost-effectiveness, quality, aesthetic and functional characteristics, environmental characteristics, technical merit, after-sales service and technical assistance, commitments with regard to parts, security of supply [...]" (European Parliament & Council of the European Union, 2004, section 2, article 55).

The government engages the executing agency to implement the awarding and thus to decide on the criteria. The agency might call on the user in the governmental institution for consultation.

For reasons of simplicity, this explanation will deal with three criteria: Price, delivery time (in weeks) and product usability.

3.1.2 Decide for Weighting

All criteria will be given a percentage weighting and are therefore compensatory. If a supplier will not perform well on one criterion, this can be compensated by good performance on other criteria. The executing agency decides on these weightings based on the importance of the criteria in relation to each other. All weightings shall add up to 100 per cent. The user might give expert advice on this and outline his budgeting plans.

A possible weighting could look like this:

Price 40%	Performance 60%	
	Delivery Time 10%	Usability 50%

3.1.3 Decide for Scoring Scale

A scoring scale needs to be decided on, in order to evaluate the different bids. These scores will later be multiplied with the weights and added up to a total score for each supplier.

Different scoring scales can be used. A large scale, such as from one or zero to 100 offers a more detailed distinction than for example one to five. Also possible is a scale from one to the absolute value of the percentage weighting (e.g. Delivery time as defined in 3.1.2 gets a score of 30.). This circumvents the need to calculate weighted scores (step six).

3.1.4 Gather Suppliers' Bids for Evaluation

All incoming bids from a Request for Quotation are gathered by the executing agency.

3.1.5 Score Suppliers' Bids

Two aspects need to be taken into account when scoring: A relative vs. an absolute approach and the scoring allocations on a graph.

Telgen and Schotanus (2010) distinguish between relative and absolute scoring methods. In the relative method, the best supplier will get the highest score, while the lowest will get the lowest possible score. All bids in between are scored in relation to these.

The absolute scoring method assesses each bid independent of the others. For example, if the best-priced bid offers a price of 10 Euros, but in the eyes of the purchaser, only a price of 5 Euros would be worth the highest score, no supplier will be given the highest score on the price criterion. Analogically, a lowest score on delivery time will not be given if all suppliers offer a quick delivery.

Furthermore, linear and curved score allocations are possible. A graph needs to be set before the scoring takes place. Linear functions can vary with regard to their steepness. Curved ones can be either convex or concave. Examples for possible scoring functions are given below:

Absolute, linear: $AL(d) = 30 - 0.01 \times d$
Absolute, curved: $AC(d) = 30 - d^3$
Relative, linear: $RL(d) = 70 - \frac{40}{\min(d_1, d_2, \ldots, d_n)} \times d$
Relative, curved:

$$RC(d) = 30 - \min(d_1, d_2, \ldots, d_n) \times \ln(d)$$

3.1.6 Calculate Weighted Scores

Eventually, for each bid and criterion, weighted factor scores are calculated as score (S_{C_n}) times weight (W_{C_n}). These will be added together for each supplier. The sum is the final WFS, which is comparable across the suppliers' bids.

$$Final\ WFS\ for\ a\ supplier = S_P \times W_P + S_{C_1} \times W_{C_1} + S_{C_2} \times W_{C_2} + \cdots + S_{C_n} + W_{C_n}$$

An example summarizes all steps on a scoring scale of one to five:

	Price	Delivery Time	Usability	
	40%	10%	50%	Sum
Supplier 1	**2**	**5**	**3**	0.8 + 0.5 + 1.5 = **2.8**
	(2 x 0.4 = 0.8)	(5 x 0.1 = 0.5)	(3 x 0.5 = 1.5)	
Supplier 2	**1**	**3**	**5**	0.4 + 0.3 + 2.5 **= 3.2**
	(1 x 0.4 = 0.4)	(3 x 0.1 = 0.3)	(5 x 0.5 = 2.5)	

3.1.7 Award Supplier with Best Weighted Score

The sum of the weighted factor scores will be compared. The supplier with the largest total value wins. In this example, supplier no. 2 wins (3.2 > 2.8). These weighted scores will also be referred to as "points" in the following.

3.2 Awarding on Value

Awarding on Value (AoV) is relatively new to purchasing literature and according to Bergman and Lundberg (2013) a promising alternative to WFS. The following explanation of AoV is based on the method "gunnen op waarde" developed by the Dutch organization CROW (Jansen et al., 2007). Sciancalepore and Telgen (2012) adopted the method with the aim to establish it outside the Netherlands. Due to a translation to money values, AoV enables clear communication with relevant stakeholders.

Conducting AoV requires the following sequence of steps, which will be investigated more closely in the following:

1. Choose award criteria
2. Set delta values
3. Choose scoring scale
4. Gather suppliers' bids for evaluation
5. Score suppliers' bids
6. Calculate performance fraction
7. Translate scores into money and correct the price
8. Award supplier with lowest corrected price

3.2.1 Choose Award Criteria

The executing agency decides on a number of award criteria, upon which suppliers will be evaluated. Important to mention is, that price is not a criterion. Again, delivery time and usability are chosen for a subsequent example.

3.2.2 Set Delta Values

A delta value V_{C_n} for each criterion is determined by the agency. This is the sum a purchaser is willing to pay for a performance, which brings the largest added value possible. In this example, a purchaser decides that a perfectly quick delivery time is worth 20,000 €, whereas a very usable product is worth 80,000 €.

Delivery Time (D)	Usability (U)
$V_{C_1} = V_D = 20{,}000$ €	$V_{C_1} = V_U = 80{,}000$ €

If a supplier offers both extremely good delivery times and usability, the overall delta value $V = 100{,}000$ € will be subtracted from his actual price offer. Consequently, AoV does not require a weighting.

3.2.3 Choose Scoring Scale

An ordinary scoring scale must be determined. One to five can be appropriate due to reasons of simplicity. The following example will work with the integer scores $S_{SC} = 1, 2, 3, 4, 5$, with subscript S referring to the supplier and subscript C to the criterion.

S_{min_C} is the minimum acceptable performance score on a criterion. It can be set higher than one, but this is not preferable as it limits the score range of suppliers. S_{max} is the maximum awarded score.

Hence, AoV offers the possibility to introduce a minimum performance threshold. If the purchaser is interested in making use of that, he will declare a score $S_{min_C} > 1$. A supplier with $S_{SC} < S_{min_C}$ can thus be rejected.

In the subsequent example, $S_{min_D} = 2$ will be valid for delivery time, while $S_{min_U} = 3$ will be the lowest acceptable performance on usability.

3.2.4 Gather Suppliers' Bids

After the executing agency has decided on the criteria, as well as the delta values and a simple scoring scale, a Request for Quotation will be issued. This should mention the criteria and how much they are worth. This results in a range of bids with different price-performance ratios.

In this example three suppliers give bids for a tender and their fictional prices are given below:

Supplier 1	140,000 €
Supplier 2	180,000 €
Supplier 3	170,000 €

3.2.5 Score Suppliers' Bids

The suppliers' bids will now be assessed with respect to the performance they offer, based on the scoring scale chosen earlier. A stakeholder can hereby decide for linear (steeper or flatter) or curved (convex vs. concave) scoring allocations.

Only an absolute approach is possible, though. This comes from the delta value definition, which prescribes scoring from the minimum acceptable level to maximum added value possible. This means, the best supplier does not necessarily get the highest score, as he might not offer the maximum added value.

The following explanation will use these scores for an example:

	Delivery Time	Usability
Supplier 1	$S_{1D} = 4$	$S_{1U} = 3$
Supplier 2	$S_{2D} = 5$	$S_{2U} = 4$
Supplier 3	$S_{3D} = 3$	$S_{3U} = 2$

3.2.6 Calculate Performance Fraction

In order to be able to calculate a suitable money value for subtraction from the actual price, the performance fraction small s_{SC} is calculated with this formula:

$$s_{SC} = \frac{S_{SC} - S_{min_C}}{S_{max_C} - S_{min_C}}, \text{ with } S_{max_C} \neq S_{min_C}$$

$S_{max} = 5$

Delivery Time:

Supplier 1: $s_{1D} = \frac{4-2}{5-2} = 0.66 \rightarrow 66\%$

Supplier 2: $s_{1D} = \frac{5-2}{5-2} = 1 \rightarrow 100\%$

Supplier 3: $s_{1D} = \frac{3-2}{5-2} = 0.33 \rightarrow 33\%$

Usability:

Supplier 1: $s_{1U} = \frac{3-3}{5-3} = 0 \rightarrow 0\%$

Supplier 2: $s_{2U} = \frac{4-3}{5-3} = 0.5 \rightarrow 50\%$

Supplier 3: $s_{3U} = \frac{2-3}{5-3} \rightarrow S_{3U} < S_{min_U}$

Supplier 3 will therefore not be considered further.

3.2.7 Translate Scores into Money and Correct the Price

These fractions can now be used to calculate the money values to be subtracted from the actual prices. The following formula will be applied to every bid with C_S standing for the correction amount for a certain supplier:

Generic formula:

$$C_S = B_{C_1} \times s_{SC_1} + B_{C_2} \times s_{SC_2} + \cdots + B_{C_n} \times s_{SC_n}$$

Example formula:

$$C_S = B_D \times s_{SD} + B_U \times s_{SU}$$

Supplier 1: $C_1 = 20{,}000\ € \times 0.66 + 80{,}000 \times 0 = 13{,}200\ €$

Supplier 2: $C_2 = 20{,}000\ € \times 1 + 80{,}000 \times 0.5 = 60{,}000\ €$

The money values above will now be subtracted from the actual price (P_S), resulting in a corrected price (CP_S).

$CP_S = P_S - C_S$

Supplier 1: $CP_1 = 140{,}000\ € - 13{,}200\ € = 126{,}800\ €$

Supplier 2: $CP_2 = 180{,}000\ € - 60{,}000\ € = 120{,}000\ €$

3.2.8 Award Supplier

The corrected prices will be compared. The supplier with the lowest corrected price will be awarded. In the example above, supplier 1 wins the tender: $120{,}000\ € < 126{,}800\ €$.

3.3 Comparison of the Award Methods

3.3.1 Similarities

There are a number of similarities between the two award methods. Fundamentally, both can be used for the purpose of finding a suitable supplier for an order.

Both award methods are compensatory, meaning that a good score can outweigh a low score. But, if a bid offers a performance lower than acceptable, this supplier might no longer be taken into account in both methods. The use of thresholds might be slightly more common in AoV due to the necessity to determine S_{min_C}.

Continuing, WFS and AoV enable an assessment on basis of the price and the performance. Price is integrated in both methods and performance criteria are determined in advance. Further, the two methods give the performance criteria different values or weightings.

WFS and AoV are similar concerning their scoring method. A scoring scale is set, which equals for all criteria. Both methods allow for linear and curved scoring allocations. The purchaser can decide on these after bids have been gathered from an RfQ. For AoV, however, this does not apply to the price (see chapter 3.3.2 on differences).

The scores (WFS) or respectively the money values (AoV) of the criteria are summed up and once added to or subtracted from the price, a final score or value is determined. This serves for comparison between the different bids.

Sciancalepore and Telgen (2012) have proven, that a certain application of AoV and the WFS method makes them equivalent. They are mathematically the same once the output is the same, irrespective of the bids involved.

Since this paper aims at drawing a conclusion on which of these award methods is less susceptible to corruption, similarities will no longer be considered in the following evaluation.

3.3.2 Differences

The WFS method and AoV offer different ways on how to distinguish between more or less important criteria. WFS uses a percentage weighting. This means, all criteria (including the price) are looked at in relation to each other, as the percentages must add up to 100 per cent. For example a weight of 40 per cent on one criterion only gains a meaning once weights for other criteria are defined. It makes a difference, if another criterion weights 10 or 50 per cent.

Contrary, a purchaser using AoV investigates the maximum delta value for each criterion independent from that of the other criteria. A delta value of 50,000 € is significant for itself and needs no comparative value.

Further, the two methods deal differently with the price. In the WFS method, price is one criterion besides other performance criteria. All criteria are weighted and receive a score. This is different in AoV. All performance criteria are scored and

translated to money values, while price is unaltered until the corrected prices are subtracted from it.

In AoV, price is always linear, whereas in WFS it can be scored either linear or curved. Sciancalepore and Telgen (2012) used this as a requirement for establishing mathematical equivalence in the application of the two methods. To reach this, the WFS method must be applied with a linear scoring allocation for the price.

Besides, both methods work with different units. The WFS method compares points (weighted scores), while AoV uses money values for the comparison of bids.

Summarizing, three major differences are apparent and can be summarized in a table like this. As differences between the award methods are apparent, this lets assume that one award method must be less susceptible to corruption than the other.

	WFS	**AoV**
Criteria Importance	Weighting	Delta values
Price	Weighted and scored	Unaltered and linear
Unit	Points	Currency

4. EVALUATION

The differences investigated in the previous chapter will now be evaluated separately for each method. This will provide a basis for discussion on which method is more or less recommendable with regard to corruption.

4.1 Weighted Factor Score

4.1.1 Criteria Importance: Weighting

The WFS method requires the establishment of weights for both the performance and price criteria. These must add up to 100 per cent. This makes it a relative assessment: If one criterion gets a higher weight, others are weighted lower. Consequently, criteria are compared according to their importance.

Generally, if someone is interested in a particular supplier to be awarded, he will aim for high percentages on those criteria, which the supplier accomplishes better than his competitors. Equally, those criteria a favoured supplier performs less successfully should be weighted low.

This can turn it into a war of opinions of those involved. The executing agency, consisting of purchasers and experts, as well as users and perhaps the government can try to influence the awarding by arguing for or against high percentages of certain criteria.

It can be very difficult to decide and later retrace reasons for a weighting. When comparing for example price, delivery time and usability, this is a bit like comparing apples to oranges. A trade off between incomparable criteria is drawn. Because of that, many different weighting arrangements can find support.

This makes it susceptible to corruption. If a purchaser cannot clearly argue how he obtained such percentages, monitoring is difficult. He might call on other stakeholders, such as the user to deny guiltiness for inappropriate weights.

Furthermore, weights alone are not meaningful. Depending on the chosen scoring allocation (linear or curved) scores can undo the effect of the weighting. This happens if different scoring allocations are chosen for the criteria.

The situation might be that users and experts are involved in a weighting decision, but only the purchaser scores the bids afterwards. The purchaser is then in the position to diminish the weighting effect by establishing varying scoring graphs for the criteria depending on what will benefit his favoured supplier.

To conclude, there are two problems inherent in the weighting step of the WFS method. First, a trade off between criteria is required due to a comparative judgement of their importance, and second, scoring allocations can turn it ineffective.

4.1.2 Price: Weighted and Scored

The WFS method apprehends the price as a criterion, which gets weighted and scored. This implies that it is traded off against other criteria and that its scoring allocation is subject of discussion.

The importance of the price gets weighted in relation to other criteria determined. This causes problems in regard to finding a valid and appropriate weight as explained in chapter 4.1.1 and makes the WFS method susceptible to corruption.

Additionally and more importantly, prices get scored. The WFS method allows for both curved and linear scoring allocations. The large spectrum of graphs to choose from, as well as the fact that the scoring allocation for the price can differ from other criteria, enhances subjectivity.

The more subjective decisions can be made using an award method, the more susceptible the method. Thus, the price provides another opportunity for stakeholders' fraudulent behaviour in the WFS method.

4.1.3 Unit: Points

The WFS method uses points (weighted scores) for the comparison of bids. People are expected to be rather emotionless about points. This is why chances for corrupt behaviour can be expected.

Points are not meaningful enough to be intuitive. If stakeholders are told which supplier wins, they might not be able to form an intuitive opinion on basis of the points. It can be difficult to fully perceive the difference in performance and price between suppliers who were attributed slightly different points. As an example, it is not meaningful and informative enough to be told that one supplier received 78 points, while another won the bid with 82 points (scale from one to 100). A point gap of four does not imply what distinguishes the bids.

This makes it easy for purchasers and other stakeholders to adapt scores and weights the way their favoured supplier will win. Others may have difficulties retracing the line of thought and information content behind these points.

4.2 Awarding on Value

4.2.1 Criteria Importance: Delta Values

When using AoV, the executing agency determines an absolute money value for each criterion. This is what a purchaser believes the highest added value to be worth, which a criterion can offer in a particular buying situation.

Delta values are determined with subjective decision-making. A stakeholder interested in a specific supplier to win can execute his power to increase the money values for those criteria, which his favourite supplier fulfils best. In addition, he would want to reduce the values for the criteria with lower supplier performance. Thereby, he could argue that these criteria are more or less beneficial in serving the need.

It is important to mention that no trade off between the different criteria is required for finding appropriate money values. These are absolute and can be determined independent from the values of other criteria. This enables reflection and monitoring on each criterion immediately and separately.

Delta values can be established with reference values in mind. Stakeholders trying to find the maximum added value in monetary terms can consider possible savings, as well as the worth of the fulfilled need by the product. This can serve as a basis for the value discussion and increases its tangibility. Nevertheless, concrete values, such as production costs and profit margin must not be included, as only the added value, but not the actual costs are considered. This in turn increases susceptibility to corruption of the decision.

Concluding, stakeholders can introduce inappropriately high or low delta values, as these can be established independent of each other. However, this can easily be revealed, as reference values bring some evidence to adequate values.

4.2.2 Price: Unaltered and Linear

AoV does not give the price any fictive value. The price stays the same and will neither be translated to another value nor scored. As the price is unaltered, it is always linear in AoV, just as in lowest price awarding. This leaves little room for the purchaser or any other stakeholder to act upon it and misuse it for illegal purposes. Only, if a purchaser alone is in the position to calculate the final money values, he might consider taking advantage of the situation and other stakeholders' ignorance.

Nevertheless, subtracting everything from the actual currency price also has a disadvantage. The corrected price (CP_S) consists of the actual price minus the correction (consisting of performance criteria being scored and offset against the delta values). Both these values can be very different for the bids. If a stakeholder only gets to know the final corrected prices, he or she will be unable to understand how this was compounded.

A high overall value, could be to a greater degree the result from (i) a very high price, (ii) very low performance, (iii) or a combination both. The relationship of price and performance is not indicated. This problem occurs because the price as a minuend can be any rather high or low value. It is not restricted to a specific scale and therefore provides an indistinct basis for calculation.

It seems difficult for an overseeing stakeholder to comprehend why a supplier was not chosen, if he only knows the corrected prices. This increases susceptibility to corruption of AoV. At the same time though, stakeholders cannot easily exert their decision power on the price itself.

4.2.3 Unit: Currency

AoV compares money values in order to find the best bid. People usually have an opinion on what is expensive or reasonably priced. This lets assume that money values enable judgement on basis of references, which validate and justify certain value decisions.

Deploying this to the context of financial aid, money values can be used for rather clear communication. A supplier for example can be told how much more his product or service was worth if he would deliver quicker or process materials of higher quality.

AoV thus enables monitoring to a certain extent, as reference values can be called on and money values carry an intuitive meaning. This can lower its susceptibility to corruption.

5. DISCUSSION

Following the evaluation of the WFS method and AoV in chapter four, the discussion will compare both methods in regard to their susceptibility to corruption. For each of the differences, it will be weighted up which method is more, and respectively which is less susceptible to corruption.

Chapter two explained stakeholders' motivations to engage in fraudulent behaviour. Ways for these stakeholders to influence the award decision will further be proposed.

5.1 Criteria Importance: Weighting vs. Delta values

The WFS method requires the determination of weights and thus a trade off between criteria according to their importance. AoV to the contrary, appoints an absolute delta value for each criterion individually. In both cases, a stakeholder who wants to see a certain supplier win can take an influence, as weights and delta values are determined with a subjective decision.

Using the WFS method, one can expect most stakeholders to try influence the decision. The government may prescribe minimum weights for certain criteria, which a purchaser must comply to. Trade unions and the general public may also pressure the government to establish such weighting rules. A user might heavily enter into debate about product characteristics, when consulted on his requirements. He might argue for very high weights on some criteria, exploiting his power coming from expert knowledge on what is supposedly needed.

Scoring allocations can decrease weighting effects, which a purchaser might utilize for his advantage, particularly as these are usually not published in the RfQ. First, he could maintain a pretence of democracy by facilitating the integration of various stakeholders into the weighting decision. Afterwards though, he might appoint scoring allocations (graphs) himself. Other stakeholders might not be aware of the consequences and believe they have had large influence on the outcome, as they joined the weighting decision. Instead though, different scoring for the criteria eluded the weights.

Suppliers can bribe stakeholders with power on the award process to increase or decrease weights or change scoring graphs, in order to increase their chances for winning.

Independent of illegal intentions, stakeholders may have very different perceptions on which criterion is more important than another. Moreover, they might be unaware of the fact, that the scoring can undo the weighting effect. This makes the WFS method very susceptible to corruption.

One can expect the user to have a large impact on the delta value decision in AoV. He might be the only one to judge the added value of a product characteristic and be trusted in giving valuable input on what features are a real "must have" and how much they are worth. This consulting power increases his opportunities to propose values higher or lower than appropriate.

The government may ask for high delta values on criteria by arguing in pretence either with savings to be made elsewhere or progress in reaching political goals. Moreover, a purchaser may have the final say on the delta values and make changes to it after they have been discussed. Nevertheless, a purchaser cannot largely adapt the delta values, as these get published in the RfQ and others may recognize.

Even if stakeholders can exert their power by proposing inappropriate delta values, their reasoning must be rather

logically premised on reference values. Picking an inappropriately high or low money value will quite possibly strike an observing stakeholder's attention.

One can argue that in AoV, weights are hidden in the delta values. Comparing delta values reveals, that a delta value can only be regarded high and a criterion important, if other delta values are rather lower. This does not mean a trade off is required. Stakeholders with fraudulent biases may, however, aim for comparatively high or low values, thereby counteracting the idea of delta values reflecting added value.

Summarizing, AoV seems to be less susceptible to corruption regarding the criteria importance assessment. In contrast to the WFS method, no trade off between the criteria is required and reference figures can be taken into account.

5.2 Price: Weighted and Scored vs. Unaltered and Linear

The WFS method weights and scores the price, whereas AoV keeps the price unaltered. All stakeholders with power on the decision can influence a WFS outcome with the aim to pervade their interests. This can be done as explained in chapter 5.1. Conversely, stakeholders will have no chance to use the price for malpractice in the AoV process, if monitoring is done well.

However, corruption will be an issue in AoV, if it is the case that no stakeholder apart from the purchaser is involved in the last step of the AoV process. This is where correction values are subtracted from the actual price. No other stakeholder may have a closer look at the prices. This gives the purchaser freedom to take advantage of it, by secretly changing the prices in the calculation. Slight changes may change the outcome of the awarding and benefit his favoured supplier.

Moreover, a purchaser might keep others from seeing the actual bids, which enables him to be corrupt in AoV. If he keeps all the bids locked in his office and notices that after calculation of the correction values, his favoured supplier will not win, he might ask the supplier to submit a lower priced bid. The purchaser can then secretly exchange the bids and continue the calculation for the corrected prices.

Another remark on AoV must be made with reference to a situation in which a purchaser only publishes the final corrected prices and no additional value information. This evokes a problem of obviousness. The WFS method assesses the price on the same scale as the other criteria. This puts it on the same unit level. Unlike, the price in AoV can be any value and is not restricted to the maximum of a scale. Subtracting the correction then results in a fictive price, from which no guesses can be made on how large the impact of the price was on the final value. This increases difficulties in monitoring and judgment of uninvolved stakeholders on the accuracy of the corrected prices.

To conclude, there are benefits and drawbacks to both award methods with regard to the price. Still though, AoV can be expected to be less susceptible to corruption if at least one of two circumstances is given: Either more stakeholders must be involved in the last step of the award process, or monitoring of the purchaser must be done well. This eliminates (intended) mistakes.

5.3 Unit: Points vs. Currency

The WFS method compares bids on the basis of points. AoV, on the contrary, uses currency as a unit for determining a winner. Points and money values differ according to their meaningfulness and people's intuitive understanding.

Points have little information content. Stakeholders who are confronted with points, but do not know how these were derived, may struggle forming an opinion. This is also because points are expected to be too abstract to enable uniform judgments for all individuals involved on what exactly can be understood a high or low point score.

In the special case where the purchaser is the one doing the final weight calculation in the WFS method and only publishes the final weighted points, he can engage in fraudulent behavior. He then may undertake small corrections in the scoring, in order to let a favored supplier win. Other stakeholders may not fully remember what weights and scores were decided on earlier and take integrity for granted. Hence, it is likely they do not notice modifications when given the calculated points.

Besides, a purchaser could miscalculate points on purpose, defending himself from corrupt intentions by referring to the computation error.

If the government acts as an overseer, but pursues own interests, it may suggest point corrections to the executing agency. The purchasers might fear loosing their jobs and hence implement what government officials suggested.

The WFS method is susceptible to corruption, because stakeholders are expected to not question points extensive enough, as these do not provide meaningful hints on malpractice.

Currency as a unit for comparison in AoV probably eliminates this problem to a certain extent. A purchaser could of course make changes to scores or miscalculate final values deliberately. However, one can expect other stakeholders to recognize such illegal interventions more easily than with points.

Furthermore, suppliers' promised delivery targets could more easily undergo a feasibility check, if reference can be made to money values rather than points. As an example, a supplier might propose a very high performance for a small payment, because a purchaser let him know that this increases his chances to be awarded. Competitors or experts, however, may know that this performance under such budgeting constraints is not realistic. This reveals problems coming from possibly corrupt actions in advance, which may otherwise result in higher total costs of ownership.

People have a closer connection to money values and intuitively judge something as expensive or appropriately priced. This makes AoV less susceptible to corruption than the WFS method.

6. CONCLUSION AND RECOMMENDATION

The two award methods Weighted Factor Score and Awarding on Value were evaluated according to their susceptibility to corruption. These points are now taken up to serve providers of financial aid with a recommendation, helping them to define the most suitable award method in their purchasing guidelines to be imposed on the executing agency.

Lowest price seems to be the most successful solution to the issue of corruption. It leaves almost no freedom to stakeholders to misuse the method with the aim to let a certain supplier win. However, it has proven to result in bids of inappropriate quality.

Therefore, award methods are asked for which also take the performance into account. The methods WFS and AoV judge suppliers' bids based on both price and performance criteria and

thus provide a reasonable alternative to lowest price from the quality perspective.

However, corruption can result in large losses of money to purposes other than those intended by a donor. This makes it an important issue, which requires consideration when choosing an award method. Hence, throughout this paper corruption was used as a matter for evaluation.

Three crucial differences between the two methods WFS and AoV were identified and later evaluated. First, these regard the establishment of weights and respectively money values, to distinguish between criteria of different importance. Second, the award methods deal differently with the price. And lastly, while AoV translates everything to money values, the WFS method makes a comparison of weighted scores (points).

The discussion made a connection to stakeholders and introduced ways on how stakeholders can misuse these steps in the award processes. It was found that the weighting makes the WFS method vulnerable to malpractices. Criteria must be traded off against each other according to their importance and scoring allocations can diminish the weighting effect. By contrast, AoV enables an establishment of absolute figures based on reference values. This makes AoV less susceptible to corruption than the WFS method.

Moreover, AoV offers fewer possibilities to act upon the price. No changes are made to it; instead performance values are translated into money values. The WFS method weights and scores the price. This means an additional subjective decision is made in the WFS method.

Further, points are less intuitive than money values. People tend to have an opinion on what is an appropriate price for something. They can justify their decision with intuition and references. Hence, the WFS method is probably more susceptible to corruption, because stakeholders may have stronger difficulties judging the adequacy of points than of money values.

To conclude, AoV is likely to be less susceptible to corruption than the WFS method. This can be stated, because AoV seems to offer less freedom for subjective decisions and illegal malpractices for all three topics evaluated and discussed.

It is recommendable for a provider of financial aid to favour Awarding on Value over the Weighted Factor Score method, if corruption is likely to happen. A donor should impose the use of AoV on the executing agency of a developing country by defining it in the purchasing guidelines.

Apart from this insight, this paper has added more value to existing literature. So far, AoV is an award method mainly known in the Netherlands. However, as it proves to be a reasonable alternative to other methods and is relatively easy to use, it is worth increasing its prominence in purchasing literature. Further, donors are made aware that no award method seems perfect for the public sector. Either performance is not taken into account, or problems with corruption may become apparent.

7. LIMITATIONS

The discussion and recommendation revealed that AoV outcompetes the WFS method regarding a lower susceptibility to corruption. However, this result must be treated with caution, as a number of limitations exist.

A major problem faced during the elaboration was the little amount of literature available. Many authors revealed that corruption is a subject under discussion in public procurement. Further, various award methods are described in purchasing literature. What science is lacking, however, is the embedding of award methods in the context of financial aid for developing countries. Moreover, a framework or acknowledged way to evaluate these award methods with regard to their susceptibility to corruption is non-existent to the author's knowledge.

The stakeholders identified in chapter two were expected to be able to take an influence on the awarding by the author with contribution by Shahadat (2003). This list might not be mutually exclusive and collectively exhaustive. Also other motivators to act corrupt can possibly be added.

No model or framework for evaluation and discussion could be identified in established literature after which the argumentation in this article could have been structured. Therefore, the evaluation approach used in the article results from the research question and situation, but has not been verified by other scientists before.

For those authors who aim at evaluating other award methods with regard to subjectivity, it could have been helpful to also evaluate those steps, which equal in both methods. These steps might differ to other award methods. As this article lacks such information, other scientists are required to evaluate these steps as well.

Finally, a limitation on only two award methods out of a great number of methods, as well as an evaluation only regarding susceptibility to corruption is not holistic. Other award methods and more parameters for evaluation would complete the picture.

To conclude, there are some limitations to the validity and completeness of this article. These can be investigated in further research.

8. FURTHER RESEARCH RECOMMENDATIONS

The preliminary literature search and the evaluation in this article revealed that there are a number of topics worth considering for further research. These relate to the financial aid context, the evaluation approach and additional evaluation parameters to make a recommendation on the overall best award method.

First, research on award methods in the context of financial aid for developing countries is very limited. New empirical studies could identify other stakeholders, who can influence or are influenced by the outcome of an award process. Further, it could be of value to investigate, which steps stakeholders actively misuse to influence the outcome, and whether they are aware of all the decision gaps available to them. Besides, it could be interesting to find out which method results in largest satisfaction for the involved parties and why.

Second, these reasons for satisfaction with an award method could give input on what other parameters need to be evaluated with regard to the methods. This article gave a recommendation which of two methods leaves less freedom for fraudulent behaviour. Other articles could investigate the reliability (Do the methods really award the "best" supplier?) or validity (Do the methods take into account the most relevant measures?) of award methods.

Furthermore, practicability is a matter worth considering. Especially in developing countries, it might be difficult for purchasers to gather relevant information. Also, taking into account the purchasers' levels of education, a very sophisticated method might create problems regarding its right application.

Third, a framework for evaluation of award methods could be of help. This might result in more comparable results among different award methods. The approach used in this paper can be used as a basis and adjusted to allow evaluation on different parameters.

Only after all relevant parameters will have been identified and a consistent approach for evaluation will have been found, a comprehensive and exhaustive recommendation on the overall best award method can be given to providers of financial aid.

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