

UNIVERSITY OF TWENTE.

Drienerlolaan 5, 7522 NB Enschede

MASTER THESIS

Budget-driven procurement

Author:
Demi Möllemann

Supervisors:
Prof.Dr. Jan Telgen
Dr.Ir. Fredo Schotanus

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Abstract

The contract award method ‘budget-driven procurement’ (BDP) was investigated, which utilizes a fixed price and aims to award the bid with the highest quality that lies within the suppliers’ capacities for the given price. It has been argued that BDP can be a useful method to purchase “maximum quality” within a fixed budget [van Bommel, 2017], however, arguments were made that the more common price-quality ratios outperform BDP [Bergman and Lundberg, 2013], and there are disadvantages that appear with this method, for example, that the price can never be lower, even if that might be a possibility in the given market.

Tenderers need to know the different dimensions of BDP, in order to utilize it successfully. This thesis provides theoretical insight to BDP by investigating its potential advantages and disadvantages, as well as its requirements and applicability in different purchasing situations.

The research was conducted by means of a literature review and 16 interviews with field experts. First, the legal status, (dis-)advantages and requirements of BDP were found in literature, then the interviewees responded to similar questions about the award method and eventually, the outcomes of literature and expert opinions were compared and discussed.

The findings show a range of advantages, including a) more value for the given budget, b) no risk of rising costs for the buyer, c) avoidance of unnecessary bids, d) no more financial losses, e) a simplified scoring method, f) the avoidance of a race-to-the-bottom on price, g) a higher budget efficiency, and h) more freedom for the suppliers.

Some of the potential disadvantages that were found are a) the often difficult price establishment, b) the restriction of competition, c) an increase in discussion in public debates, d) lower chances to win tenders for cost leaders, e) the possibility of receiving less quality due to dishonest suppliers, as well as f) less flexibility for the purchasing organization and the suppliers, and g) the risk of setting the price either too high or too low (resulting in too many, or too few bids, respectively). The requirements for BDP were seen as another disadvantage of BDP. The requirements were found to be a necessity to utilize BDP efficiently, especially a) the ability to establish a suitable price (including the need for a transparent market that makes that possible), b) the right goal of a purchase (in particular to gain max. quality), and c) the type of purchase should be suitable (for instance, stable market circumstances). A decision tree was created to support the question, as to whether BDP is a suitable method for a tender.

It has been concluded that BDP can be successfully applied, if a number of requirements are met, that can, if not met, lead to severe drawbacks. A decision tree was created to provide a support tool in deciding as to whether BDP can be utilized successfully in a specific tender by asking a few general questions. Future research could focus on comparing other award methods with BDP by means of case studies and in relation to the buyer’s utility, preferably even in different purchasing situations (for instance, works versus supplies versus services). Bigger and more diverse samples of interviewees would provide better validity of the findings, and could include suppliers that frequently participate in public tenders, in order to see the award method from another viewpoint.

Keywords— budget-driven procurement, contract award, fixed-price award, quality-based bid evaluation

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1 Introduction

1.1 Research context

BUDGET-DRIVEN PROCUREMENT (BDP) is a contract award method¹ that utilizes a fixed price in a tender and thereby excludes price as an award criterion. The contract is thus awarded on qualitative criteria only. BDP works in a way that, after identifying a purchase need, the budget is fixed to a certain price, which the buying organization is willing to pay. The contract is then awarded to the offer with the highest value – for instance, quality or volume [Telgen, 2016].

While some argue that a “quality-only” scoring approach in tenders is a potential way of maximizing the product quality of bids with a fixed price [van Bommel, 2017], others argue that the more common “price-quality”-scoring methods outperform the “quality-only” method, especially when quality is contractible [Bergman and Lundberg, 2013].

Although the shift towards value maximization is being observed, BDP as an award method seems to be utilized rather infrequent [Telgen, 2016] and raises the question, if indeed, and for which reasons that might be the case.

In the European Union, a contract has to be awarded to the Most Economically Advantageous Tender (MEAT). This can be evaluated based on one of three methods: the lowest price method – which awards the bid with the lowest price, without further award criteria – the best price-quality ratio method – in which the price-quality ratio determines the winner – and the lowest cost method – which takes into account the total life cycle costs of a product and awards the bid with the lowest costs.

The best price-quality ratio method can take on different forms of price-quality weighing. For instance, weighing the price score against the quality score, then divide the points respectively, and award the bid with the highest amount of points, would be one option. The quality-only method, in which the purchase price is set in advance and the suppliers bid for quality alone, would be another option [Bergman and Lundberg, 2013] and is called budget-driven procurement in this paper.

Generally, public procurement has experienced a paradigm shift in purchasing from buying for the lowest price, towards a fixed price method that focuses on maximizing the value of the budget – for example, in the form of higher quality [van Bommel, 2017, Rafati and Poels, 2016, Telgen, 2016]. As the goal of BDP is to maximize quality, this paper will investigate the award method by means of a literature review and interviews with a number of field experts.

1.2 Problem definition, research objective and relevance

There are various different contract award methods that are being used in tendering. However, there are not only legislative restrictions, but also greatly varying opinions as to what is the most optimal method for each individual purchase.

Tenderers face legal, as well as economical, societal, or environmental issues and have to decide, which method they use, in order to award the MEAT. BDP aims to maximize quality within the given budget, which makes it sound very efficient at first. However, there are disadvantages that appear with this method, for example, that the price can never be

¹Throughout this paper, the term “supplier selection method” has been used as an interchangeable term for “contract award method”. While in practice “supplier selection” can also refer to a pre-selection of qualified suppliers that afterwards are invited to bid, in this paper the supplier selection refers to the contract award phase.

lower, even if that might be a possibility in the given market. Therefore, tenderers need to know the different dimensions of BDP, in order to utilize it successfully.

It also has been argued that in some sectors a competition that utilizes prices as selection criterion might cause quality levels to go down and that suppliers should be selected based on qualifications and competences [Cheung et al., 2002]. In academic literature BDP is rarely discussed as such, which makes a review of its (dis-)advantages and applicability valuable. Also for organizations that want to focus on quality-only selection an investigation of this method can provide valuable information.

This thesis will provide theoretical insight to budget-driven procurement by investigating its potential advantages and disadvantages, as well as its requirements and applicability in different purchasing situations. Therefore, this research can provide support in choosing an optimal award method for tendering organizations and inform about the dimensions of BDP as one of those methods.

1.3 Thesis outline

After the topic introduction and problem definition, the next section will first describe the research questions and methodology that were utilized in this research. Hence, the approach, as well as the process of the literature review and the interview samples will be outlined. A literature review was conducted and summarized, providing a definition and illustration of BDP itself, as well as any findings in literature on its advantages, disadvantages, requirements, applicability and occurrence in theory and practice.

Chapter 4 then focuses on the results of the interviews, which covered the sub-questions that were established before. The discussion section in chapter 5 then brings literature findings and interview results together and answers the sub-questions.

The conclusion summarizes and concludes the research and section 7 ends the paper with a paragraph about the limitations and future recommendations.

In the next section, the research questions and methodology are described.

2 Methodology

2.1 Research questions

To gain insights in the method and its (dis-)advantages and applicability for different purchases, the following research question appears:

Under what circumstances can BDP be applied most successfully, or even maximize the quality of purchases?

The successful application of BDP is explained by achieving its main goal: to maximize the quality within the given budget. The term successfully is sometimes interchanged with the term efficiently – with the same meaning – throughout the paper. The research question is divided into the following sub-questions:

i *What are the advantages of BDP?*

The advantages of using budget-driven procurement are investigated, first by means of a literature review and then by means of 16 expert interviews.

ii *What are the disadvantages of BDP?*

The disadvantages of using budget-driven procurement are investigated, again, first by means of a literature review and then by means of 16 expert interviews. Here, also the reasons as to why the utilization of BDP seems to be rather uncommon are summarized from the interviews and the respective reasons as to why they did or did not use this method so far.

iii *What are requirements for BDP in order to be efficiently utilized?*

Literature and expert interviews focus on the applicability of BDP, so under which circumstances it is best suitable as an award method and what requirements need to be fulfilled in order to lead to a successful result.

iv *How and where has BDP been utilized in theory and practice?*

Literature in which BDP has been utilized as an award method is summarized and field experts give examples of (own) BDP tenders, or tenders, in which they have been involved (consultants).

To gain insights in the method and its (dis-)advantages and applicability for different purchases, the following research question appears:

2.2 Methods

2.2.1 Approach

The initial idea of this thesis was to analyze the BDP method, its (dis-)advantages and applicability in procurement in public organizations. Approaching this idea started with a search for academic literature within those areas.

As there are a number of factors to be considered when choosing BDP for a tender, the third Chapter (literature review) focuses on defining the method and finding information about it in literature and legislative documents, namely the EU Directives, as well as the World Bank and UN guidelines.

There are several factors that can influence the selection of an award method, so the applicability of BDP throughout different purchasing situations was analyzed.

In order to back up the findings from law and literature, interviews with experienced purchasing experts from the Netherlands were conducted. The questions focused on the relevance of BDP and issues that arise (or do not arise) with it.

Lastly, as an example, one practical case is presented, in which BDP has been successfully applied in the tendering process.

In Figure 1 an overview of the used methodology is shown.

2.2.2 Literature Review

Using a literature review to find first ideas to the research questions required three main steps to be undertaken.

Step 1: Search for topic-relevant literature

At first, the EU Directives on public procurement were scanned for rules regarding BDP. For this purpose, the rules before and after the 2014 change were analyzed, in order to identify potential barriers or enablers for the usage of BDP within the law (that might also be subject to the change). While national member state laws can always add further rules (in addition

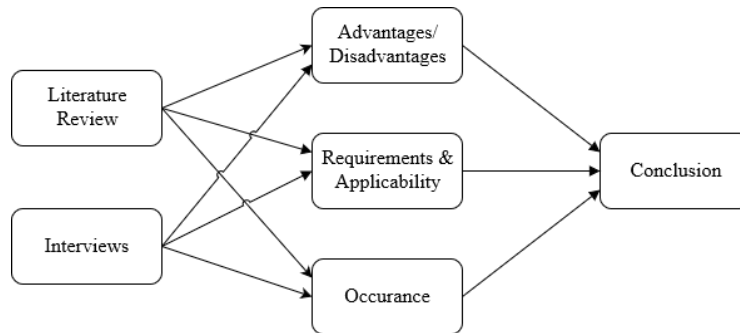


Figure 1: Overview of Methodology

to the EU rules), this paper took into account the European Directives specifically. Herein the conditions and relevant parts regarding contract awarding in public tenders were looked at. The same was then done with the United Nations procurement manual and the World Bank procurement guidelines to get a broader, more international view on BDP.

After looking at the legislative matters, an online search for keywords directly related to the topic for example, *fixed-price awards*², as well as closely-related keywords that cover price-quality award methods was conducted. To get an overview of the topic spread in literature, articles that covered price-quality ratios were scanned for the inclusion of the fixed-price method.

This was done by using the search engine *Google Scholar*, which provides a wide range of published literature in all research areas. This way, the focus did not only lie on a few journals, but instead screened all online journals to gain the best search results. Keywords that yielded very few or no relevant results, were also searched for on *Science Direct*, *Web of Science* and the *University of Twente Online Library* to uncover any possible literature gaps on Google Scholar. *The Journal of Public Procurement* was also checked for the most relevant keywords.

The search engines filtered out all articles that contained (some of) the chosen keywords and sorted them by relevance. Which keywords were used, was decided on a few criteria combined with trial-and-error. The keywords had to be topic-relevant and contain either the whole topic name, a part of the topic name, or a similarly-related topic that might be relatable to the target-topic. For example, the keyword *budget-driven procurement* yielded little success in the online-search. Instead, similar keywords were used, which were either indirectly related, or mentioned BDP, or approached a topic that could have otherwise given information on BDP. To find other (non-academic) online information, like articles or other relevant data, tender-related reliable websites were used, as well as *Google* for a broader search on the terms. Moreover, during this process, the keywords were adjusted based on their individual success. Success in this regard meant that papers were found that provide relevant information on the topic and could be used for the further proceedings of the literature review.

Therefore, papers that showed an appealing title – meaning a title that shows potential relevance to the targeted topic – were then downloaded and scanned by their abstracts to see, if the study was indeed topic-relevant. Based on this scan, the papers were then searched for the relevant keywords in order to see, if the information could be used for reviewing. Also

²see Appendix A: List of keywords for literature search* for a full list of the keywords

papers that only provided little information about the topic qualified, when the respective information was relevant enough.

Papers that showed highly relevant content were additionally analyzed for the references that had been cited and therefore could provide a link to other useful sources of information.

Step 2: Review of the articles

The resulting papers went through a further analysis about the targeted information and were used to find answers to the individual sub-questions.

Step 3: Synthesizing and discussing

Summarizing and synthesizing the reviewed articles then led to an overview of literature findings in the sub-question areas on BDP.

In total, 7 academic papers and 16 reliable online sources, including legislative regulations and directives, were found.

2.2.3 Interviews

A number of 16 interviews was conducted with the purpose of answering the research questions. The interviewees were asked 13 questions about fixed-price tendering, about its advantages and disadvantages, as well as reasons why it might not be utilized frequently. See Appendix B: Interview Questions for the whole questionnaire.

The sample consisted of a purchasing expert group from the Netherlands, which is part of the Netherlands-wide expertise center for tendering, and part of the Ministry of Economic Affairs and Climate. This team of specialists was specifically appropriate to be interviewed, as it contains academics, as well as tenderers and senior purchasing counselors, all specialized in tendering. Additionally, the group had already published a factsheet on BDP after having evaluated the method from different perspectives.

Four interviewees were not part of this expert group, however, all three were as well specialized in tendering and considered to bring valuable and objective opinions towards the topic. One of them being a member of the Ministry of Internal Affairs in the Netherlands, one being a private purchasing counselor and researcher from Belgium, and one being a senior purchasing counselor from the Netherlands, who was forwarded the request for an interview by one member of the afore mentioned expertise group. Lastly, one interviewee was a senior purchasing consultant of a Dutch municipality.

Of the expertise group, 14 out of 16 members responded to the interview invitation, one of which stated not to have the required knowledge about the topic, one, who proposed another senior purchasing counselor (external to the group) to be interviewed instead, and 2, who did not respond. All of the other (external) invited interviewees responded and agreed to take part in an interview, resulting in a total of 16 interviewees.

3 Literature review

In the following, the concept of BDP, as well as the subjects of the sub-research questions are covered by means of a literature review.

3.1 Concept

The concept of budget-driven procurement (BDP) is not to be confused with the sole explanation that a budget is set for an organization's purchases – that is of course the case for most firms, public and private. BDP is a contract award method for tenders using a fixed price and aims to award the bid with the highest quality (in terms of specific desired values) that lies within the suppliers' capacities for the given price Telgen [2016]. In literature it has been referred to as "quality-only" or "beauty contest" award method [Bergman and Lundberg, 2013], in the construction industry as "design-contest" [Dreschler, 2009] and in the social services sector a comparable approach (utilizing a fixed-price tender) is present in the Dutch "Zeeuws model" [Hellendoorn et al., 2007]. See Chapter 3.6 for a further description of those methods.

This paper utilizes the term budget-driven procurement, as it is called by PIANOo Expertisecentrum Aanbesteden [2017], which has created a factsheet about the process characteristics of this award method. Figure 2 illustrates the different approaches of lowest

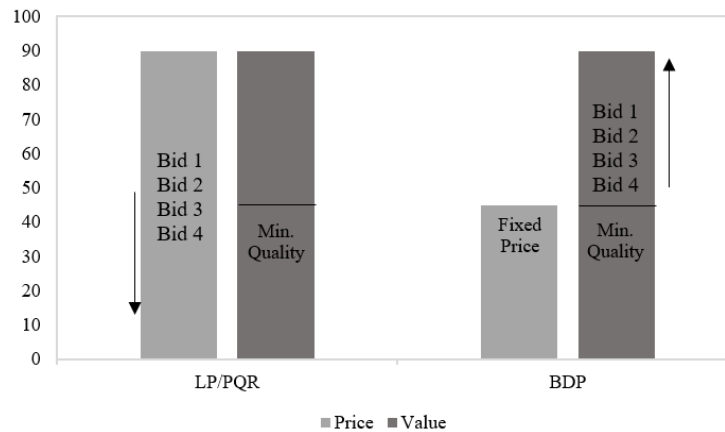


Figure 2: Different approaches of BPQR versus BDP (based on PIANOo Expertisecentrum Aanbesteden [2017])

price or any price-quality ratio (PQR) methods and BDP. Both have the aim to gain the maximum value for a budget based on minimum quality values. However, the PQR method still utilizes price as an award criterion, and can therefore still include bids that fall below the minimum quality levels, as a low price can balance out bad scores in quality. In BDP the price is fixed and the competition focuses on quality only, ideally leading to higher quality bids.

Bergman and Lundberg [2013] conducted research on some of the most common methods of price-quality tender evaluation methods, including BDP ³. BDP has, the goal to reach the best quality for a pre-fixed budget. The difference to other methods is, that the costs are estimated in advance by the buying organization and based on this estimation the purchase price in the tender is fixed (and the competition shall be on quality criteria alone). In practice, however, the production cost curves differ per supplier and generally a range of different cost-quality options could be produced [Bergman and Lundberg, 2013]. The

³In their paper it is called "quality-only" scoring.

authors argue that the scoring method should be based on the utility curves⁴ of the buyer, thus, considering the different price-quality relations that are most optimal for the buyer. As the phenomenon of diminishing returns suggests, increasing quality units are less valued as they go up, unlike the costs that arise with it. Thus, at some point higher quality is likely to be outranked by the increase of production cost. Thus, Bergman and Lundberg [2013]

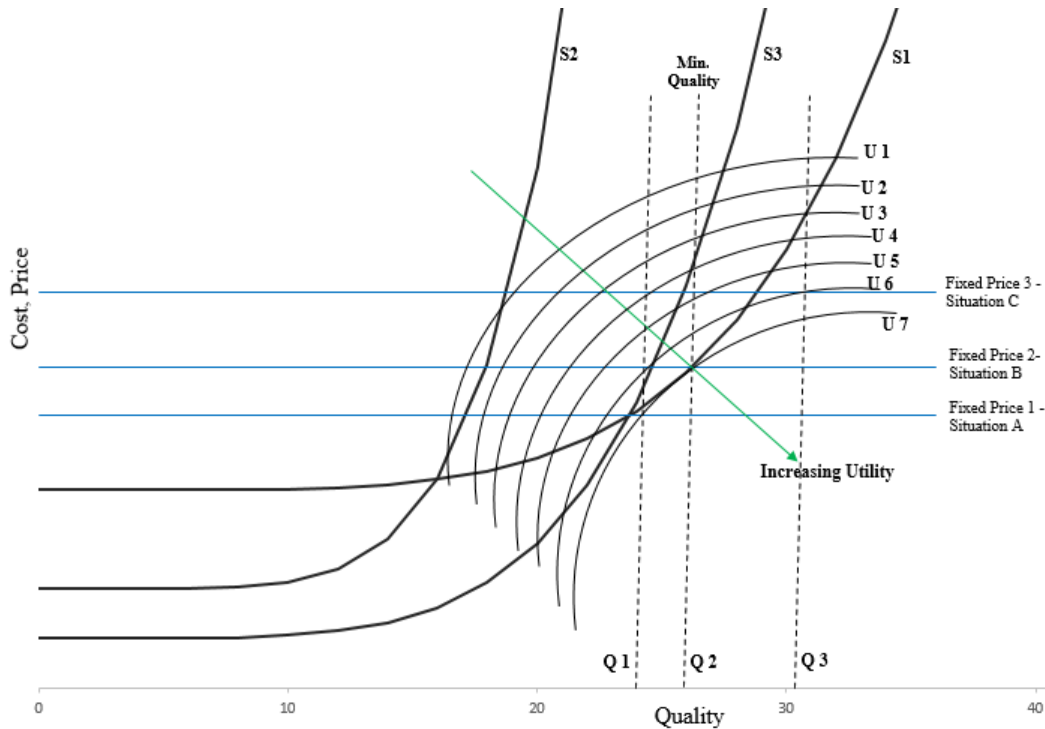


Figure 3: Cost and Utility curves with different fixed-price situations (based on Bergman and Lundberg [2013])

argue that the buyer's utility curves are important to consider when awarding a contract. Figure 3 illustrates different possible situations showing some examples of a buyer's utility curves (U1 – U7), three different possible supplier cost curves (S1, S2, S3), three different minimum quality levels for a tender desired by the buyer, and three different fixed prices that could be set by the buyer. Below the figure, a few possible outcomes in the different situations are described.

Situation A (with a minimum quality set at Q1): For the given fixed price and minimum quality, none of the three suppliers can produce the product/service within their costs.

- Possible Outcome 1: No supplier offers a bid.
- Possible Outcome 2: Supplier 1 and/or 3 offer a bid for the minimum quality and manufacture uneconomically in order to win the tender (for instance, to gain a valuable

⁴The utility curves shape downward and to the bottom right of the chart, as increasing quality units are less valued as they go up, unlike the costs that arise with it. Therefore, generally, with each additional quality unit, it adds less beneficial value, while the costs for each additional unit stay (more or less) constant.

reference).

Situation B (with a minimum quality set at Q2):

- Possible Outcome: Supplier 1's production costs fall precisely on the fixed price, thus he might submit a bid, however, at this quality level, won't be able to make a profit. Supplier 3's production costs are much higher at this quality level, making it unlikely for him to submit a bid.

Situation B (with a minimum quality set at Q1):

- Possible Outcome: Supplier 3 is able to produce the minimum quality slightly above his costs and is likely to submit a bid. Supplier 1 has lower production costs than Supplier 3 at this quality level. He has the option to a) fill the gap with higher quality (according to his cost curve, he could deliver a quality level of Q2 for this price), or b) make a bid at quality level Q1 and gain a higher profit. Situation C (with a minimum quality set at Q1):
- Possible Outcome: The price is set much higher than the production costs of Supplier 1 and 3. Both suppliers have the option to deliver somewhat higher quality levels and still make a profit. While, theoretically, this would provide an ideal situation for BDP, as the competition focuses on quality, the Suppliers would also have the option to actually produce Q1 at a much lower price. Moreover, they have the option to gain a very high profit and deliver no, or only little, extra quality. From this situation, it could be argued that more competition is necessary to provide an incentive to indeed deliver higher quality, as a lone bidder does not have to worry about other higher-quality bids.

Situation C (with a minimum quality set at Q2):

- Possible Outcome 1: Supplier 1 has again the possibility to balance out a somewhat higher quality above Q2 and the own profit. Supplier 3 might submit a bid in order to win the tender, however, at this quality level, he would make a financial loss.

Situation C (with a minimum quality set at Q3):

- Possible Outcome 1: The minimum quality levels can only be delivered by Supplier 1. However, the price for this level of quality falls far below the production costs of this supplier. Thus, in this situation, it would be most likely that no bids are being submitted.

In all cases, supplier 2 will most likely not submit a bid, as the minimum quality levels and related fixed prices come nowhere near his production cost curve. This supplier could, for example, represent a firm that is a cost leader in low-quality products.

The different outcomes illustrate the impact of a fixed price and the minimum quality requirements that are set by the buyer. In other award methods (which include price as a criterion), suppliers can still influence their profit by setting the price in a bid somewhat higher than the production cost, in order to make a profit. This option is not available in BDP. For example, in situation B (with minimum quality set at Q2), the supplier would be able to set higher prices for the desired amount of quality, which would still fall on several utility curves of the buyer Bergman and Lundberg [2013] Especially in situations where supplier cost curves are unknown, it can be argued that the estimation of a suitable

fixed price is difficult. In situations where the fixed price and the minimum quality allow a supplier to produce cost-efficient, it is still up to the supplier to either deliver the maximum quality within his capacity, or to make a higher profit.

Ideally for BDP, the suppliers would not know each other's production costs, such that they are incentivized to deliver the highest quality possible for the given price. Risks that can be extracted from the given examples:

- The suppliers work uneconomically (for no profit, or even for a financial loss). This risk is heightened, if the price is fixed too low (below the suppliers' costs).
- Suppliers are pressured by too high minimum quality levels and might try to deliver "fake quality", especially, if the quality cannot easily be validated [Bergman and Lundberg, 2013].
- Cost leaders might have less chances to submit a bid.

In the graph, there are 3 different supplier cost curves given. It is to mention that in market situations with even less suppliers, the outlined issues might become even more sensitive, and on the other side, when there are much more suppliers, they might become less sensitive. The cost curves can differ to a higher or lower extent as well. These illustrations suggest that there are certain requirements, as well as (dis-)advantages that come with BDP as an award method. Those will be covered in Chapter 3.3 to 3.6. The following Chapter first summarizes the legal status of BDP.

3.2 Discussion in legislative regulations

The discussion in legal documents about public procurement differs around the world. To get an overview of the state of BDP in legislation, the European Public Procurement Directives and the public procurement regulations provided by the World Bank [2014] and the United Nations [2013] were reviewed. Those documents have an important influence on the public procurement practices and could be helpful in understanding the dimensions of BDP utilization.

3.2.1 European Union

There was a recent change in the European procurement rules, as the Directive 2014/24/EU was published in 2014 and replaced the rules that were in tact since 2004 [European Parliament, 2014].

Tendering in the EU is connected to a range of conditions and regulations. The fixed price option was not part of the European procurement rules before the current directives were introduced in 2014.

According to Dreschler [2009] and the Ministerie van Financiën [2004], using a fixed price was already a viable award method for "design contests"⁵ in the 2004 Directive, which were mainly used in "the fields of town and country planning, architecture and engineering or data processing" [European Parliament, 2004]. Since the 2014 Directive, design-contests can be used more flexible, for instance, for acquiring financial engineering plans for SME

⁵"design contests" means those procedures which enable the contracting authority to acquire, mainly in the fields of town and country planning, architecture and engineering or data processing, a plan or design selected by a jury after being put out to competition with or without the award of prizes" [European Parliament, 2014]

support programmes. However, it was not literally formulated in the 2004 Directive that a fixed price could be used. While some have seen it already as a viable award method [Bergman and Lundberg, 2013], some argued that it could not be used.

Furthermore, the 2014 EU procurement directives shifted towards social value, rather than greater savings. While the older regulations focused on the realization of the internal market through more competition in procurement and therefore leading to more savings (generally an economical market view), the newer regulations focus on delivering quality to the society by realizing social goals through substantive adjustments in procurement and therefore providing social value [Koenen and Telgen, 2014].

This change also affected the regulations on award criteria. The use of price or cost as a sole criterion is not permitted anymore – qualitative, environmental and/or social aspects have to be part of the award criteria⁶.

In the general considerations that are listed in the beginning of the document (Condition No. 92), it is stated as follows:

“To identify the most economically advantageous tender, the contract award decision should not be based on non-cost criteria only. Qualitative criteria should therefore be accompanied by a cost criterion that could, at the choice of the contracting authority, be either the price or a cost-effectiveness approach such as life-cycle costing.” [European Parliament, 2014, p. L 94/83].

In other words, these lines dictate that the award criteria should contain at least one cost criterion, which seems to contradict a line from Article 67 (see below). Strictly seen, using BDP (thus, a fixed price) would eliminate the cost or price as an award criterion and would therefore violate this condition. However, as the paragraph continues: *“However, the award criteria should not affect the application of national provisions determining the remuneration of certain services or setting out fixed prices for certain supplies.”* [European Parliament, 2014], seems to undermine the validity of utilizing BDP, but at the same time might lead to some tenderers thinking that its utilization is restricted to only certain supplies.

However, as it states in the regulations (Article 67) about awarding the MEAT *“The cost element may also take the form of a fixed price or cost on the basis of which economic operators will compete on quality criteria only”* [European Parliament, 2014]. Thus, BDP has officially become a valid award method with this Directive, which clears up any potential misunderstandings that might have come up through the afore-mentioned conditions.

3.2.2 United Nations

The most recent procurement manual of the United Nations [2013] follows a comparable, but yet different line than the EU Directives, utilizing the so called ‘Best Value for Money Principle’. This principle aims to “achieve the maximum benefit for the organization” and is defined as the “Optimization of whole-life costs and quality needed to meet the user’s requirements, while taking into consideration potential risk factors and resources available” [United Nations, 2013].

The evaluation of bids is oriented at the lowest total cost and therefore the lowest bid that fulfils the requirements, will win the contract award. In the formal Rules for Solicitation (Chapter “C. Procurement - General Principles, Rule 105.15”) it states the following:

⁶“Member States may provide that contracting authorities may not use price only or cost only as the sole award criterion or restrict their use to certain categories of contracting authorities or certain types of contracts” [European Parliament, 2014].

“(a) When a formal invitation to bid has been issued, the procurement contract shall be awarded to the qualified bidder whose bid substantially conforms to the requirements set forth in the solicitation documents and is evaluated to be the one with the lowest cost to the United Nations.”

In the Chapter “Determination of Vendors as Qualified for Award of a Contract” it is again clarified that *“(...) in the context of Best Value for Money principle which applies to the entire acquisition cycle, the methodology used for the determination of a contract recommendation will require that ITBs are evaluated on a lowest price, technically acceptable basis, (...)”.*

BDP or similar award methods are not mentioned within the UN regulations. Instead there is generally a range of qualitative and quantitative requirements that need to be fulfilled by the supplier and the bid (‘evaluation criteria’), but the award itself is based on the lowest-cost outcome with a *“pass/fail determination of whether the Bid substantially conforms to the requirements set forth in the ITB”*.

3.2.3 World Bank Guidelines

The World Bank guidelines split up into a) goods, works and non-consulting services, and b) selection and employment of consultants.

In the guidelines for goods, works and non-consulting services, the evaluation of bids is based on the lowest cost method, as is formulated, for instance, in the “Award of the contract” section:

“2.59 The Borrower shall award the contract, within the period of the validity of bids, to the bidder who meets the appropriate standards of capability and resources and whose bid has been determined (i) to be substantially responsive to the bidding documents and (ii) to offer the lowest evaluated cost. A bidder shall neither be required nor permitted, as a condition of award, to undertake responsibilities for work not stipulated in the bidding documents or otherwise to modify the bid as originally submitted” [World Bank, 2014].

While there are some exceptions like the “Performance-based procurement” that are allowed to use as well, there is no mentioning of award methods using a fixed price as in BDP, nor something similar to that.

The guidelines for the selection and employment of consultants utilizes ‘Quality- and Cost-based selection’ (QCBS), in which *“The relative weight to be given to the quality and cost shall be determined for each case depending on the nature of the assignment” [Bank, 2014].*

It is advised to prepare a total cost estimate for the budget, which could also be used in the RFP to give the suppliers an idea of the (approximate) budget that is available for the purchase. The proposals are evaluated on two different scales (technical and financial), of which first the technical evaluation (quality) is done, without any consideration of the financial proposal. Only those who qualify with their technical proposal will be evaluated further on the financial scale. It is proposed to give the highest score to the lowest total price, however, other scoring methodologies are allowed as well, as long as it is already described in the RFP.

The final evaluation should then combine the quality and cost scores, while *“the weight for the “cost” shall be chosen, taking into account the complexity of the assignment and the relative importance of quality”*.

“Other methods of selection” include the “Quality-based Selection” (QBS), which works in the same way as QCBS, except that the suppliers can be asked to submit a technical

proposal only, or that a two-enveloped-system is used in case the financial proposal is desired as well. Any estimations on budget or time frame that are published in the RFP shall be marked as an indication, and that suppliers are free to propose their own estimation.

Another method is the “Selection under a fixed budget”, which works similar to the Quality-based selection, however the maximum budget of the buying organization is published during the RFP. The bids, however, still vary in price, and the evaluation works just like in QCBS and QBS.

Thus, for consultancy services, there are no guidelines that propose BDP as an award method either.

Summing up, BDP does not seem to be a valid award method in the UN and World Bank guidelines, and only since 2014 it received this status (officially) in the European Union. However, even in the EU Directives it is only mentioned rather unobtrusively and its validity could potentially be wrongly interpreted by some readers, especially because of the formulations in the general conditions.

3.3 Advantages of BDP

BDP aims to maximize the quality of purchases by focusing all award criteria on quality (which could also be in terms of volume, innovation, etc.). Academic literature and online sources reveal some advantages that can arise when using BDP as an award method.

Higher quality purchases

Landale, Rendon, and Hawkins [2017] argue that quality levels are likely to suffer, if a lowest price, or a low-price, technically acceptable (LPTA) method are used in tenders. Thus, by focusing the competition on quality only and eliminating price as an award criterion, quality levels could be expected to raise within the given budget. Price cannot act on the expense of quality anymore, as it does not play a role in the competition. The offer is market-based and a contract is always awarded to the bidder that offers the highest quality [PIANOO Expertisecentrum Aanbesteden, 2017].

Also Hellendoorn et al. [2007] explain that – because the suppliers can only differentiate themselves in quality and not in prices – the suppliers are continuously stimulated to deliver good quality, which is, for instance, especially important in the case of purchases in social services in order for the suppliers to keep the clients. When there is no distinction on price, the clients will choose the suppliers from which they get the best service.

Clarity of deliverables

Hellendoorn et al. [2007] also highlight the advantage that suppliers know in advance, if they have a chance to win the contract and what (minimum) quality they have to deliver for what price.

No more financial losses

As the PIANOO Expertisecentrum Aanbesteden [2017] explains, that for managers, BDP means that the determined budgets are issued as a whole to the identified purchasing need, and that way, financial losses are no longer present. Because there are no direct purchasing savings anymore – as they are identified before a tender is launched –, such savings also cannot be wasted on other purchases anymore without administrative involvement.

Simplified scoring method

For budget holders, BDP carries the benefit that the contract award is being simplified, as the price and quality elements do not have to be combined anymore, as, for example, from different scales. Other stakeholders gain the advantage that they can participate more easily in assessment committees and that the assessment process and its result are generally simpler, as price is not part of the contract award [PIANOO Expertisecentrum Aanbesteden, 2017].

No more race-to-the-bottom on price

Potential tenderers can benefit from the change of the competition, as there is no “race-to-the-bottom” on price anymore, but instead a “race-to-the-top” on quality. The subscribers receive a maximum amount of space to distinguish themselves in quality [PIANOO Expertisecentrum Aanbesteden, 2017].

This avoidance of a “race-to-the-bottom” was also mentioned as a motivation for using BDP in a recent Dutch tender for the salary of a court bailiff service. In this regard BDP has this advantage over any price-quality ratio or lowest price methods. Races to the bottom had been an issue in earlier tenders for the same service [Rechtbank Den Haag, 2017].

Less risk of bringing down market prices through low bids

Moreover, the elimination of any price competition can in turn avoid a decrease in market price averages, which can be undesirable in certain industries (here: the salary for a court bailiff service); and any possible negative influence on innovation possibilities and quality levels would thereby be avoided as well [Rechtbank Den Haag, 2017].

Budget-efficiency

To establish an appropriate fixed price, the buyer needs to know exactly what he wants to buy, how to specify it and how much it will cost at the minimum desired quality level. Thus, optimally, stakeholders will get the highest value for a well-determined and well-thought-through budget [PIANOO Expertisecentrum Aanbesteden, 2017].

No risk of rising costs for the buyer

United Nations [2013] explain in the procurement manual that fixed-price contracts⁷ place the risk of increased costs on the suppliers, and thus also create an incentive to “control costs and develop innovative solution for the UN” (Ch. 9.23). Thus, the fixed price presents the buyer from any increase in cost, even in case of rising production (or delivery) cost.

3.4 Disadvantages of BDP

This section summarizes the potential disadvantages found in literature that can arise when utilizing BDP.

⁷As BDP sets the contract form to be a „(Firm) Fixed Price Contract“, a few of the aspects concerning this contract form can be applied to BDP as well.

Establishing a suitable price can be difficult

When the price is fixed, the calculation has to be reasonable and set high enough to allow a sufficient amount of competition, which can be difficult [Hellendoorn et al., 2007]. When the price is set too low, the amount of competition can be negatively affected, and when it is set too high, the buying organization might end up paying too much for unnecessary extra quality [PIANOO Expertisecentrum Aanbesteden, 2017, Rijksoverheid, 2014]. Bergman and Lundberg [2013] underline that quality-only evaluation can be also more difficult than the evaluation of lowest price, as different (multiple) qualitative criteria cannot be simply added together when combined into a single overall score. This issue is also present in the more common price-quality ratio methods, however, the optimization of cost and quality (which is actually incentivized by price-quality-methods) will be hindered by the fixed price, as the suppliers' cost curves are not taken into account [Bergman and Lundberg, 2013].

Restriction of competition

Too many quality requirements might also unnecessarily – meaning, the extra quality won't bring any actual additional value to the buyer – heighten the costs and combined with a price that was set too low, this could lead to a decrease of competition and result in less bids, or none at all [Bergman and Lundberg, 2013, PIANOO Expertisecentrum Aanbesteden, 2017].

Possibly more discussion in public debates

As BDP requires the contracting authorities to determine the minimum purchasing requirement, to estimate costs reliably and to designate additional requirements, defining the purchasing needs can lead to much discussion within the public debate. Therefore, it is important to realize that not all quality wishes can be realized and compromises have to be made [PIANOO Expertisecentrum Aanbesteden, 2017].

Less chances for cost leaders

Market cost leaders might find themselves with less opportunities to win a BDP tender, as they “are strong in providing reliable standardized solutions and can do this at competitive prices” [PIANOO Expertisecentrum Aanbesteden, 2017, p.7]. In such situations – when standardized solutions can cover the need of the buyer – BDP might unnecessarily heighten the costs for quality that does not lead to any additional value for the buying firm. The same issue was illustrated in Figure 3, where one supplier was able to deliver a cheap version of the product/service, however the minimum quality levels at the fixed prices were not near his cost curve.

Risk of receiving less quality

Because of the cost and quality pressure on the supplier, there remains a risk of receiving qualitatively less valuable products. As mentioned in the procurement manual of the United Nations [2013], “(. . .) for these reasons, the procurement staff must remain vigilant as there is greater risk that the Vendor may “cut corners” in order to maximize its profit” (Ch. 9.23). As it was also illustrated in Chapter 3.1, suppliers might be pressured by too high minimum quality levels and might try to deliver “fake quality”, especially, if the quality cannot easily be validated [Bergman and Lundberg, 2013].

Risk of strong financial pressure on suppliers

As described in Chapter 3.1, in situations where the fixed price lays below the cost of a supplier, the supplier might still decide to submit a bid, in order to receive a good reference from the contractor. Thus, some suppliers might work uneconomically (for no profit, or even for a financial loss), especially when the price is set too low compared to the buyer's minimum quality demands.

3.5 Requirements & Applicability

There is little to find about BDP's applicability or requirements in particular, however literature about purchasing strategies, fixed-price contract forms or similar, can be compared to BDP in this context. The findings are presented below.

The right goal of a purchase

Academic literature has frequently shown that the goal of the purchase is an important factor in choosing a suitable buying strategy (see, for instance, Kraljic [1983], Landale et al. [2017], Lohmann and Telgen [2015]) and should be linked to the business strategy and objectives, in order to maximize the value that can be gained from the purchase. Public organizations in particular have, besides economical goals, also political and societal goals, which have to be considered in all purchases [European Parliament, 2014, Telgen et al., 2007]. Therefore, as already stated in Chapter 3.2, in the European Union, award methods like Lowest Price are only allowed under specific circumstances – for instance, when the product or service cannot otherwise diversify – and must be motivated respectively.

According to an information brochure of the Dutch government, municipalities should consider a range of points when choosing a purchasing method in the social services sector, mainly a) the distance between municipality and market (do they want to work together or does the municipality want to decide on requirements and specifications alone?), b) the number of suppliers that can receive a contract, c) the amount of control it wants to keep over price and quality levels, and d) the possibility of having competition between suppliers (Rijksoverheid, 2014b). Especially in c) and d) the decision of an award method becomes important. BDP would in this case influence the control over price and quality levels, as well as the (type of) competition between suppliers. The Rijksoverheid (2014b) highlights the importance of a well-chosen purchasing method in the social domain that fits to the goal of the municipality. BDP sets maximum quality as the main goal of a purchase, however, frequently the goal of an organization is to “get the best product for the lowest price”, which can for certain situations also be the lowest price, or the lowest price for minimum requirements, or another relation between cost and quality [PIANOo Expertisecentrum Aanbesteden, n.d., United Nations, 2013, Schotanus, 2015].

The buyer's own price and quality demands

Despite the overall goal of a purchase, factors like market transparency and own price and quality demands are found to be important as well when choosing an award method. [Schotanus, 2015], for instance, explained that thinking about some general questions can help in choosing a suitable award method. For instance, the buyer can ask himself, if *is it easy to create a score graph for price, if quality scores can be compensated by price scores, how much competition will be expected, if a lower price with acceptable quality is still*

desired, and, if it is determinable how much an offer with maximum quality is allowed to cost, compared to an offer with minimum quality. These and a few other questions can help choose between different award methods [Schotanus, 2015].

Ability to establish a suitable price

The ability to establish a suitable and fair fixed price was as well underlined by the Rijksoverheid [2014], and can be taken as an important requirement for utilizing BDP successfully. PIANOo Expertisecentrum Aanbesteden [2017] as well underlines this issue – without the necessary product and market knowledge, as well as insight in earnings models, cost structures, size and ownership of the risks, as well as the way in which the market fulfills (functional) requirements, setting an accurate fixed price can become difficult and could end up too high or too low compared to the market. Especially in cases of rapid technological developments, “cost structures may be limited, and there may be major fluctuations in market prices. In these markets, making a good estimate is almost impossible and the application of budget-driven purchasing is discouraged” [PIANOo Expertisecentrum Aanbesteden, 2017, p.8].

Ability to combine specifications and reasonable prices

Moreover, BDP can be compared to the (firm) fixed price as a contract form, as it sets the contract to be exactly that. The United Nations [2013] specify that a firm fixed price “*is most suitable for procurement of goods and services on the basis of reasonably definite functional or detailed specification when fair and reasonable prices can be determined at the outset*” (Ch. 9.23). Furthermore, as was also illustrated in Chapter 3.1, Bergman and Lundberg [2013] highlighted that the fixed price and the minimum desired quality levels should be based on the buyer’s utility curves, therefore representing an optimal combination of both.

3.6 Occurrence

The following Chapter summarizes the few examples of BDP that were found in literature. In the Netherlands, the *Zeeuws Model* is a contract award method that is used for social service purchases – household support in particular – and makes use of a fixed price [Hellendoorn et al., 2007]. The *Zeeuws Model* awards a contract to all suppliers that fulfil a certain range of minimum quality requirements for a fixed tariff. Afterwards, the clients can choose from the contracted suppliers with a fixed tariff. Through the constant presence of competition, the suppliers are at the same time incentivised to deliver a high quality service to their clients [Hellendoorn et al., 2007].

Also in court bailiff services BDP has been used, as found in Dutch case law [Rechtbank Den Haag, 2017]. The fixed price was used in order to avoid decreasing salaries that can result from low-bidders (race-to-the-bottom). A market consultation had shown that certain suppliers were willing to work for a minimum tariff, which could have been leading to a lower quality service and therefore was not desired by the buyer.

Also in the construction industry BDP has been apparent under the term “design contest”, or, as named by Dreschler [2009] “Value maximisation system”. Here, architectural services are awarded based on a fixed price, with the best design being awarded.

As a last finding, [Landale et al., 2017] have examined the two supplier selection methods “low-price, technically acceptable (LPTA)” and the “full trade-off (TO)” method, from which the TO method can be compared to BDP in a way that the price becomes an almost

unimportant factor. In the TO method the price can be “traded off” for higher quality and performance levels.

Summing up, literature shows few results on the utilization of BDP, though it has been observed in healthcare purchasing, court bailiff services and in design-contests.

4 Expert opinions

In the following chapter, the results of the interviews are summarised, covering the sub-questions of this research. Starting with a short overview of the overall frequency of utilization and satisfaction of tender results, the disadvantages and advantages of BDP and eventually its requirements and applicability in different purchasing situations are covered.

Frequency of utilization and overall satisfaction of tender results Of the 16 interviewees, 10 stated to have already used BDP before and all of them were satisfied with the results. 4 of them frequently utilize it, while 3 utilize it in around 10% of the tenders, and the other 3 rather rarely.

To the question, if the interviewees were planning to use the method in the future, 11 stated to do so, of which one said to use it for something with a focus on innovation and one said to probably use it, but not that frequently. 4 interviewees said ‘maybe’, and one of those said that it will be dependent on the purchase circumstances. Another one said to take it into account for things like a new office canteen, coffee, or specific office equipment. Only one interviewee specifically stated not to use BDP in the future.

4.1 Advantages

More value for the budget

The advantage of BDP that was mentioned the most by the interviewees – 7 times in total out of 16 – was, that you can get best quality, or generally a high value, for the budget that you have fixed. The explanations for this advantage differed in some ways. First, it was mentioned that in most cases the price criterion always prevails, even when there are other award criteria, and through the elimination of price as an award criterion the focus will fall on the highest value or best quality for the budget.

However, 2 of the interviewees who mentioned this advantage, also mentioned the importance of a well-calculated price and a well-fitting market in the same instance, therefore highlighting those as a requirement. One interviewee also mentioned in this instance that, in the example of a municipality, the purchasing organization gets a limited budget anyways and therefore it makes sense to steer it towards higher quality, instead of trying to keep the purchases lower in price.

Ease

The second most stated advantage – by 5 interviewees – was, that BDP can potentially make the tendering process easier in the way that there is one criterion less to consider in the score graphs and evaluation. There is no need to discuss the price anymore and therefore might lead to easier administrative issues as well.

"Avoidance of a “race to the bottom”

4 people mentioned the positive effect of avoiding a harsh price competition, also called a “race to the bottom” of prices. This “race” often leads to very low prices, which could in turn make it either uneconomically for the supplier, or – if the price criterion dominates over the other criteria – end up in low-quality purchases. Additionally, an overall decrease in market prices can be avoided by setting a fair and steady price – assuming the price was not calculated below the market averages – and through the elimination of low-price bid winners.

Budget efficiency

As you have to fix the price beforehand, you are forced to accurately think about what you need and how the market circumstances are, which can lead to a more efficient use of the budget. Thus, it makes you overthink the necessity of each purchase, might lower the chance to pay too much for what you want to get and makes you evaluate more accurate on the content of the purchase. Another argument was given that, through the importance of setting an appropriate price and focus on other criteria, the parties involved in the tender are forced to stay sharp during the process, which in turn could be linked to an efficient use of the budget. The budget efficiency advantage was mentioned by 3 of the interviewees.

Other

The following advantages were stated by 2 interviewees each and are explained in short.

You know exactly what you will pay – Because you pre-fix the purchase price in the tender, you know exactly what you will pay and therefore won’t pay too much – or at least not more than expected.

More freedom for the suppliers – By taking out the price competition, suppliers get the chance to be creative and innovative within the given budget, therefore leaving them more freedom.

Transparency of quality requirements and prices – By setting the focus on other factors than price (quality), the market gets an overview of the buying organization’s quality expectations. Furthermore, as the supplier knows what he will get for his product or service, he can concentrate on other details.

Handiness for quality-focused purchases – If purchases are tendered with a specific desire for design or quality, BDP can be a “handy” tool to achieve this outcome, as it can steer the competition directly towards this objective. However, on this point, the requirement for an accurate price calculation was highlighted again.

Avoidance of unnecessary bids – The suppliers know in advance for what price they have to deliver their product or service and therefore “unnecessary” registrations are avoided, which in turn can lead to less administrative effort and/or costs, especially when the market contains a wide range of suppliers.

Another point was mentioned by one interviewee. *Suppliers can earn more profit* – Those suppliers who are able to deliver more value for relatively low cost, might be able to earn a higher profit margin for their product or service.

Summarizing, the greater advantages of BDP were named to be the added value for the given budget, an easier administration, the avoidance of “races to the bottom” in the price biddings and a higher efficiency of the budget. Some other advantages were mentioned as well by 2 or less interviewees.

4.2 Disadvantages

The following chapter summarizes the disadvantages that were described by the interviewees. One disadvantage that all interviewees agreed on, are the general requirements that have to be fulfilled in order for BDP to be an efficient award method. Those requirements are fully laid out in Chapter 4.3.

Less flexibility for the suppliers

Also mentioned by 3 interviewees was that the suppliers result in less flexibility with their offers as well. They have to focus on keeping the costs in the frame, while trying to increase quality levels within the budget, so they don't have the option to make flexible offers. As production costs also usually rise with higher quality levels, BDP might also put the suppliers under price pressure and might even cause the suppliers to find solutions that might end up in "pointless quality", meaning something extra that actually does not add any value to the buying organization.

Moreover, because suppliers cannot diversify based on price, some suppliers (for instance, cost leaders) will have less chances of winning a tender, as the cheaper price is their main advantage against competitors.

"Suppliers are different. Some are standardly more expensive than others and deliver higher quality. Others have the advantage to produce cheaper, but might find it difficult to deliver high quality. By fixing the price, the option to stand out with that advantage, is taken away. Those suppliers might still try to deliver a higher quality product, but actually fail to do so. If they do submit a bid and fulfil the minimum requirements, you might end up purchasing "senseless" quality." – Purchasing consultant, who is regularly involved in BDP.

Less (or no) bids, if price was too low

5 interviewees saw a reduction in competition and bids as a disadvantage. If the price is set too low, this can result in less or no competition, as some suppliers already know they cannot deliver within the budget. Moreover, there is to some extent the risk that bids are submitted, which still have lower quality levels, when the minimum desired quality level cannot be reached with a too low fixed price (as already mentioned in the paragraph before).

Too many bids, if price was too high

If the price was fixed too high, this might unnecessarily increase the number of bids, as the suppliers can offer different quality levels for the budget, which in turn leads to more administrative effort in the award phase. Additionally, there is also the risk that you pay too much, in case the supplier does not actually deliver the highest quality possible within the budget, or that the quality level you bought, actually could have been bought for a cheaper price. Another issue with a too high fixed price was stated to be "pointless" extra quality here as well. Because the suppliers have more options within their cost ranges, the prices could either become "dishonest" by offering less quality than it could be actually possible, or the buying organization simply buys something that it actually does not need. 5 interviewees agreed on these points.

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Unfamiliarity with the method

Another disadvantage, one time mentioned, might be that buyer, as well as supplier could be used to other award methods, which sets a certain amount of resistance towards BDP and extra effort to investigate it.

Risk of receiving (almost) no extra quality, if competition is low

Another person underlined that you cannot be sure, if you will get the highest quality - for instance, if there is only one or very few suppliers, they might go for the minimum requested quality and for a higher profit instead. Therefore, for a realistic budget you would get a realistic level of quality, but not necessarily the highest possible.

4.2.1 Reasons for low utilization

Other than the overall disadvantages that were named by the interviewees, there were a few more reasons as to why the utilization of BDP in tenders seems to be low: legal vagueness, unfamiliarity and the desire for price competition.

Legal vagueness

Three interviewees mentioned that it was unclear to many procurers, if BDP was a valid method by law. Before the 2014 change of the EU Directives, it was not mentioned in the regulations that BDP is allowed for contract awarding, therefore making it unclear, if it was actually allowed or not. While some argued that methods that are not mentioned in the regulations were allowed, others thought the exact opposite, causing them to be careful and not make use of BDP.

Since the 2014 Directives were implemented, BDP is officially allowed and mentioned as a valid award method. While 12 of the interviewees knew about this, the other 4 did not. However, 2 of those who did not know it, have still used the method at least one time.

Moreover, because of the formulation of the 92th condition in the Directives⁸, some tenderers might think that the allowance of BDP is limited to only certain supplies. Generally, one interviewee stated that since the 2014 change some people might still not know that BDP is a valid award method.

⁸“However, the award criteria should not affect the application of national provisions determining the remuneration of certain services or setting out fixed prices for certain supplies” [European Parliament, 2014].

Unfamiliarity

Another 4 interviewees mentioned unfamiliarity as a possible cause for the low utilization of BDP. Hence, people might either not know about it, or at least not enough, or they are not used to it, meaning they rather keep using the methods they have always been using.

Price competition desired

Another potential reason is the desire to continue having certain price competition in the tenders and was mentioned by 5 of the interviewees. Firstly, it was stated that the focus of purchases is often still to buy as cheap as possible to achieve higher saving for the organization. For instance, in the case of municipalities, the left-over budget could be used for other things and only, if quality is of major importance for a purchase, BDP will be the better option – coffee was given as an example.

However, since that is mostly not the case, the cheaper purchase is often preferred and BDP was also called a “luxurious method” in this sense by one interviewee.

Another interviewee also highlighted that municipalities tend to desire lower cost, in order to not spend too much tax money, especially when the quality levels are already at an acceptable level.

Summarizing, the reasons for low utilization of BDP were stated to be its overall disadvantages, partly confusing formulation of legal regulations, unfamiliarity of the method, as well as a common desire for price competition.

4.3 Requirements & Applicability

All of the interviewees agreed that, in order for BDP to be an efficient award method, there are specific requirements that need to be met (which was also seen as one of the method’s major disadvantages).

The type of purchase has to be suitable & the goal has to be to maximize quality

The interviewees responded to the question, if they agree with the statement, that BDP is appropriate for each purchase and explained their answer. All in all, 13 people were disagreeing with the statement, while 3 agreed. From the 3 who agreed, only one was very confident that the method was appropriate for all purchases, while the other 2 limited this answer and said that, while it is indeed a possible method for all purchases, it would be more appropriate for purchases where the buyer actually needs the extra quality (or quantity) of the product.

If the buying organization won’t receive any extra value from the higher quality, BDP would create unnecessary much effort to calculate the fixed price and in that case, going for the lower price would be more appropriate and easier. It was also stated that BDP in this sense is only worth the effort, *if the targeted extra quality indeed brings additional value* to the buying organization. However, a higher quality is often not of major importance.

12 interviewees stated that BDP is only an appropriate (efficient) award method, if the market circumstances are fitting, however, the opinions varied, as to what type of purchases are actually best-fitting. 5 people agreed that BDP is a better method for complex purchases than for simple commodities.

This was reasoned by the fact that for simple commodities (e.g. pencils or sand) it is hard to award on other criteria than price, as price is often the only major differing factor

for a buying organization. In comparison, innovation-focused purchases were mentioned especially suitable by one interviewee, as you could ask for innovative ideas within the given budget, therefore making sure to gain more value from the purchase. Hence, if it is not clear what kind of extra value the buying organization exactly wants to get, BDP might be less appropriate. Some of the interviewees also mentioned the Kraljic Matrix [Kraljic, 1983] in this regard, which categorizes purchases based on the amount of supply risk and profit impact they have on the organization. The resulted categories are non-critical, leverage, bottleneck and strategic items, which all require a different buying strategy

Hence, BDP was seen as *less suitable for the non-critical category (i.e. purchases with low supply risk and low profit impact)*.

Moreover, *purchases with highly fluctuating prices were seen unsuitable* for BDP as an award method, because of the constant need to stay up-to-date on the market situation.

2 interviewees had another opinion and stated that BDP is more suitable for simple purchases, because the price calculation is easier when there is much information on cost structures.

Office equipment, a new office canteen and coffee were given as suitable examples for BDP, as the extra quality competition would likely add more value to the purchase and the price calculation would be relatively easily done.

It was underlined that the price calculation for more complex purchases, especially with longer product life cycles, would be too difficult, or contain too much effort in comparison to the desired extra quality.

Services (including maintenance) were seen to be more suitable than supplies for BDP, which was specifically mentioned by 3 interviewees. In services the suppliers have more chance to diversify themselves in terms of quality, as they perform the services themselves. Products, in comparison, have a restricted amount of this chance for diversification, especially, if no clear targets are given by the buying organization. Suitable examples like healthcare or catering were given, while energy was highlighted to be especially unsuitable.

An accurate price calculation requires appropriate market circumstances

The requirement that was mentioned by all of them, is an accurate price-calculation, which requires appropriate market circumstances. For instance, the market should be to some extent differentiating, meaning that the product or service must be able to be compared based on other criteria than price. If simple non-differentiating commodities are purchased, it was stated to be difficult to award the winner of the tender on other criteria than price.

Especially when the market situation changes quickly, for instance in industries with constantly fluctuation prices, like energy, or in industries with quickly-developing technologies, it costs more effort to stay up to date and calculate an appropriate price for the purchase.

The prices can therefore become unrealistic for the current market situation at the moment of the contract awarding. In such cases, it was stated that the price might be better given by the suppliers than by the buying organization, which also leaves them the option to offer different bids.

Moreover, the price calculation has to be grounded on extensive market research, so that the price can be calculated according to market averages and stay up to date. For this purpose, the purchaser has to have good knowledge about the costs for the product or service, but while specific cost calculators do exist, it is often still difficult to get a real market-appropriate estimate.

Furthermore, in order to be able to establish an accurate fixed price, the market has to

be transparent enough to get this information. In other cases, though, a market consultancy was a common method when utilizing BDP, as it helped in getting accurate estimates of production costs and the capacities of suppliers.

Another point mentioned was the need to have very clear descriptions of ambitions and functional specifications, in order to create a realistic budget and in order to avoid lawsuits after the contract award phase. Therefore, the buying organization needs to know what they need beforehand, and if it is too difficult to specify what the buyer exactly wants, the price is likely to end up too high, or too low.

Trust between buyer and supplies

2 interviewees also mentioned trust between supplier and purchaser as a requirement. Therefore, if the supplier is not familiar with BDP, both parties might be disappointed, if not everything goes well the first time. The trust should be a basis to use any potential disappointment as a learning opportunity for the next time. Additionally, the buying organization needs the trust in the supplier to indeed deliver the best quality possible for the given price, and not try to go for a higher profit margin instead.

Transparency of the tender

Another factor was mentioned by one person, that BDP should be used with a certain amount of transparency, for instance through publicly open tenders, in order to stimulate the suppliers' motivation to gain a big contract. That way, suppliers do their best in receiving the award and might want to use it as a reference for themselves in the future. Therefore, BDP might be more suitable for public tenders than for closed (private) ones.

A (too) small budget

Lastly, 2 interviewees stated that an efficient use of BDP depends on the budget. When the budget is limited, BDP would be useful to focus the competition on getting a higher quality, as the budget is limited anyways. Moreover, the price calculation in smaller tenders was stated to be easier and any negative effects in the case of a bad result from the tender will have less influence on the buying organization when using smaller budget purchases. BDP was stated to be more suitable when smaller budgets are involved.

4.4 Occurrence

At last, some of the examples by the interviewees, in which they had used BDP, are shown in Table 1. As already described in Chapter 4.3 all interviewees agreed that specific requirements had to be fulfilled, in order for these tenders to be efficient. For instance, before tendering the construction of a sustainable new street, the buying municipality had conducted a market consultancy to see what the suppliers can do within which cost ranges.

In the following, one of the “successful” BDP tenders is described.

The presented case example is a tender for the design and execution of a high-tech scenographic platform as well as software systems and applications, including the supply and installation of all necessary hardware. The tender included highly-complex technical and functional requirements that were described in a detailed report, as well as a high budget (around €2 Million in total).

Table 1: Examples of BDP cases, sorted by the categories services, supplies and works

| Services | Supplies | Works |
|-----------------------------|--------------------------------|----------------------------|
| research projects (4x) | design of VR applications (1x) | design of an |
| accountancy services (1x) | software tool (1x) | exhibition center (1x) |
| catering (1x) | subsidy tenders(1x) | sustainable transportation |
| other services (1x) | coffee (3x) | (street) (1x) |
| landscape visions (1x) | christmas package (1x) | architectural services |
| project leading (1x) | swimming pool (1x) | and construction (1x) |
| market research (1x) | cantine (3x) | |
| conference supervision (1x) | office design (1x) | |
| tender strategy | | |
| consultancy (1x) | | |
| bailiff services (1x) | | |
| public transport (1x) | | |

Extensive market research was conducted, which provided detailed project estimates, based on which the prices were split-up according to the available budget and subject of the contract. Afterwards, coming up with a suitable fixed price was not an issue.

While the tender process was very time consuming, it was necessary to understand what they were doing and what later plans would be.

The award criteria were categorized in sub-criteria and clearly described in the report, as were the technical and functional specifications.

The reason to use BDP was that “Competition on price was completely superfluous and would even possibly hamper the evaluation on what was really important”. The suppliers were eager to win the contract, as it was a very interesting, high volume contract for them.

BDP was stated to be a good method to use, if the situation is suitable. In this case, the involved parties had to be “well aware of the minimal requirements and their value, knowing what was possible for the amount available and a good strategy that allows the competitors to compete”. Tenderers would have to be careful, when their demands rise above the capacities of the market, especially, in BDP, where the price is fixed by the buyer and BDP is likely to be less suitable for “ordinary supplies and contracts where the market strategy of the companies is a ‘price strategy’”.

The technical and functional specifications were explained in much detail, including the aim of the project, important aspects about the specific concepts, security, functionalities (lightning, audio, maintenance, durability) and many more.

The award criteria were

- Technical capacity of the team (25 points)
- Qualitative added value of the free software layer options, included in the reimbursement (20 points)
- Functional value, user-friendliness included, of the proposed software systems at the demo (20 points)
- Functional value, user friendliness included, of the proposed software systems at provisional acceptance (10 points)

- Quality and credibility of the plan of approach (25 points) The tender was successful and achieved a creative and innovative solution that was delivered by an eager supplier.

5 Discussion

After investigating literature and gaining opinions from 16 field experts, the following chapter focuses on relating those findings together and answer the research question: *Under what circumstances can BDP be applied most successfully, or even maximize the quality of purchases?*

Table 2 gives an overview of the findings from literature and interviews and shows overlaps between them.

Sub-question 1 – What are the advantages of BDP?

As can be seen in Table 2, some of the advantages that were named by the interviewees, overlapped with the findings from literature, and some more were added by the interviewees. The main advantage of BDP, although not mentioned by all of the interviewees, can be argued to be that BDP is likely to increase the quality of the purchases within the given budget.

However, it could be observed that some of the advantages were viewed rather suspicious by the interviewees. While literature, and most interviewees found legit advantages to BDP – for instance, the avoidance of a race-to-the-bottom on price –, the risky disadvantages were seeming to weigh heavier.

Moreover, it was always directly clarified by the interviewees that the advantages would only appear, if the requirements for BDP had been met. Thus, for instance, the price calculation had to be very accurate, as it otherwise would block the method's advantages and rather lead to the disadvantages (discussed below).

A few of the interviewees were, however, convinced of the success of the method, especially by the additional value that can be achieved for a fair-established price and by the creativity that it can raise in the suppliers to find a high-quality solution. Also those interviewees, though, highlighted the importance of the method's requirements. However, there were no remarkable differences found between literature and interview findings.

Thus, to answer the first sub-question: under fulfilled requirements, BDP can lead to higher quality purchases that deliver additional value to the buyer. Moreover, through the fixed price, the buyer has no more risk of rising costs and thus, also makes no financial losses (the fixed budget is to be spent entirely).

Through clear specifications and a fixed price, only relevant bids will be submitted, as the suppliers know in advance, if they have a chance to win the tender, or not.

A fixed price also avoids a race-to-the-bottom on price, which can happen in other methods when price scores can outperform quality scores and make low-bidders win a bid.

An (undesired) decrease in market prices – for instance, in salaries – is avoided, when low-bidders tend to win the contract award otherwise. Furthermore, BDP can simplify the scoring method by eliminating price from the formula, leaves more freedom for suppliers to be creative or innovative, and makes the buyer thoroughly think over his budget and purchase need. Thus, the efficiency of the budget is increased as well.

Table 2: Literature and Interview Findings combined

| | Advantages | Also mentioned by X interviewees |
|---|---|--|
| Literature | Higher quality purchases / more value for the budget | 7 |
| | No risk of rising costs for the buyer | - |
| | Clarity of deliverables / Avoidance of unnecessary bids | 4 |
| | No more financial losses | - |
| | Simplified scoring method / Ease | 5 |
| | No more race-to-the-bottom on price | 4 |
| | No more risk of bringing down market prices through low bids | - |
| | Well thought-through budget (budget-efficiency) | 3 |
| Additional (interviews) | More freedom for the suppliers | 2 |
| | Transparency of quality requirements and prices | 2 |
| | Handiness for quality-focused purchases | 2 |
| | Suppliers can earn more profit | 1 |
| | Disadvantages | |
| Literature | Establishing a suitable price can be difficult | 15 |
| | Risk of receiving (almost) no extra quality, if competition is low/risk of purchasing “pointless quality” | 9 |
| | Restriction of competition | 5 |
| | Possibly more discussion in public debates | - |
| | Less chances for cost leaders | 3 |
| | Risk of too strong financial pressure on suppliers | 4 |
| Additional (interviews) | Less flexibility for the purchasing organization | 3 |
| | Less flexibility for the suppliers | 3 |
| | Too many bids, if price was too high (more admin. effort) | 5 |
| | People are used to other methods | 1 |
| | Requirements | |
| Literature | The right goal of a purchase | 15 |
| | The type of purchase must be suitable | 15 |
| | The buyer’s own price and quality demands | 2 |
| | Ability to establish a suitable price and thus, appropriate market circumstances | 16 |
| | Ability to combine specifications and reasonable prices (utility) | 1 |
| | Additional (interviews) | Clear and specific idea of what you want to purchase |
| Trust between buyer and supplier | | 2 |
| Transparency (public tender as a requirement) | | 1 |
| Smaller budgets are better for BDP | | 2 |

Sub-question 2 – What are the disadvantages of BDP?

One issue was found in literature and confirmed by 15 of the 16 interviewees as well: the difficulty to establish a suitable fixed price for a tender. Thus, there are situations when the market research does not deliver enough information on quality and cost structures, which makes it impossible to fix a suitable price. The risk is therefore high, to either establish

a price that will make the buyer “overpay”, or purchase “pointless” quality, or the price is fixed too low and eliminates most of the competition, as no suppliers matches the quality and price demands of the buyer.

Generally, in cases of low competition, the suppliers might not actually deliver a higher, or even maximum, quality that lies within their capacity, but could decide to produce at the buyer’s demanded minimum quality and use the gap to gain a higher profit from the tender. This can occur due to a lack of pressure that incentivizes the suppliers to compete on quality only.

The risk of too strong financial pressure on suppliers was found in literature and interviews as well. The pressure could appear, if the price was set too low, with respect to minimum quality demands and could potentially lead to suppliers that offer un-profitable bids. This can happen, if suppliers want to gain a good reference from the contractor and therefore decide to deliver the product/service for no profit, or even a financial loss.

Other disadvantages were less flexibility for the buyer, and the suppliers, the general unfamiliarity with BDP in some industries, and a heightened administrative effort, if a price was fixed too high and in turn has led to an unusually high amount of bids.

Figure 4 illustrates the impact of requirements on the potential appearance of some of the advantages and disadvantages.

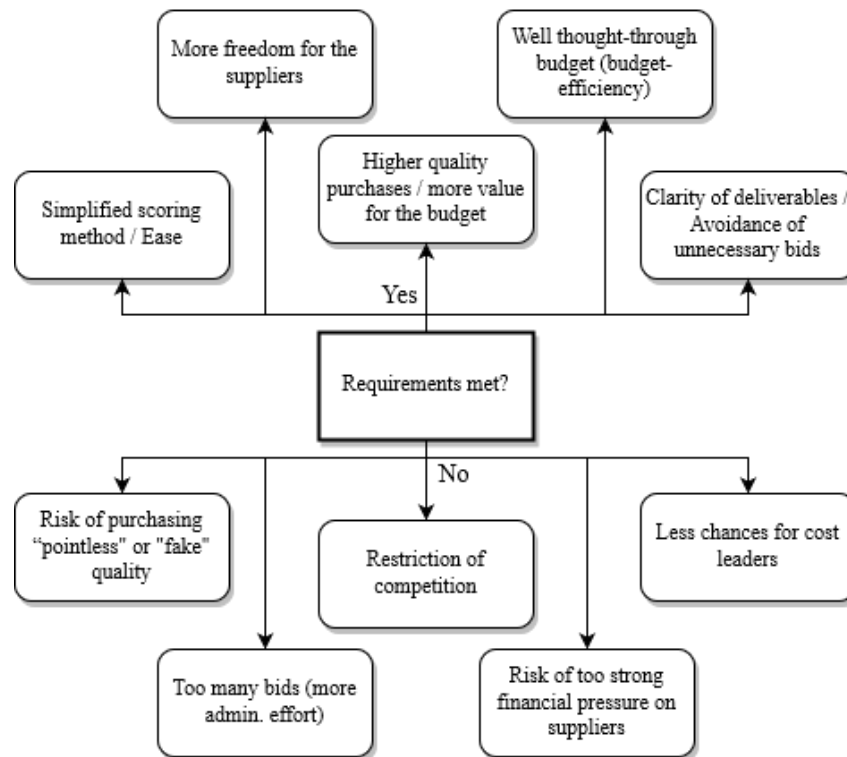


Figure 4: Impact of requirements

Sub-question 3 - What are requirements for BDP in order to be efficiently utilized?

What was striking, is that both advantages and disadvantages are very closely linked to the requirements that should be fulfilled. Thus, if the requirements were indeed fulfilled, some of the advantages are “enabled”, and, vice versa, if the requirements are not fulfilled, some of the potential disadvantages are encouraged. Of course, if the buyer is in a situation where he has either no knowledge about the product or its cost, it is impossible to fix a price that will match the buyer’s (and supplier’s) expectations.

Directly linked to this issue is the need to relate this price to the product/service specifications and minimum quality requirements. Thus, if the buyer either i) cannot clearly specify what he wants to purchase, nor ii) has a transparent market that allows him to gain insights in cost structures and prices, nor iii) cannot combine the quality demands with the respective costs, then the buyer is likely to establish a fixed price that is not suitable for his demands. In that case, the disadvantages come into place.

Despite the price calculation, the goal of the purchase has to be to maximize quality. If the purchaser does not aim to make a high-quality purchase, he is not able to gain any additional value from the extra quality. It would be pointless and probably overpaid.

Another point that 15 interviewees and the literature agreed upon, is that the type of purchase itself must be suitable. Thus, a product or service that has unstable market circumstances, like fluctuating prices and/or quickly-changing technological developments, makes it harder, if not impossible, to create reasonable quality and price demands. Furthermore, the product or service should be able to be distinguished on quality only, however, for some products this is not the case. For instance, raw materials are unlikely to be distinguishable on quality, and in that case it would not make sense to ask suppliers for quality-related criteria only. In such cases, price can be the only determining factor for the buyer.

Thus, the purchase goal and the ability to establish a suitable fixed price that matches the minimum quality demands, are major requirements for successful BDP. Furthermore, markets with a higher amount of competition could positively influence the success of BDP by making sure that the suppliers are incentivized to deliver indeed the maximum quality in their capacity, instead of going for a higher profit.

Based on the requirements, a decision tree can be established as a support tool in deciding whether BDP is a suitable method for a tender, see Figure 5.

Sub-question 4 – How and where has BDP been utilized in theory and practice?

The literature has shown BDP in healthcare service purchases, construction works, and court bailiff services, and the interviews have shown that, BDP is utilized in all types of purchases, with regards to works, supplies and services. While there seems to be a majority of BDP in service purchases, the other sub-questions have highlighted that its applicability greatly depends on the goal and market circumstances of a purchase, thus, it appears in works and supply purchases as well.

However, what could be argued, is that buyers tend to put more importance, or weight on quality when it comes to services. This was seen in Bank [2014] and in situations where the service provider has the incentive to be employed again, and/or keep his clients (for instance, in the Dutch Zeeuws model). Services can be seen as more quality-focused and are frequently employed with tariffs. This incentive might be lower when the purchase is a “one-time” event.

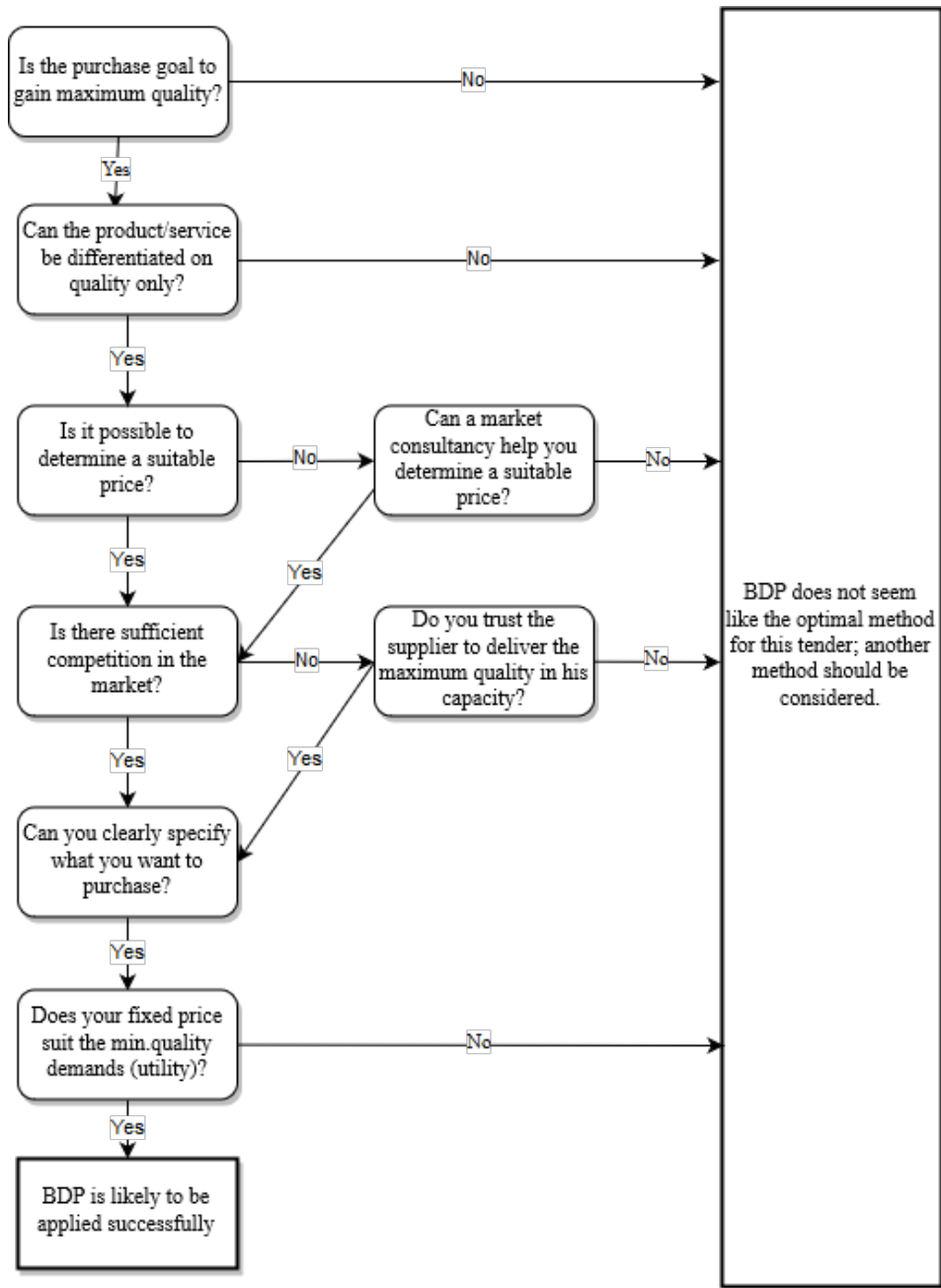


Figure 5: Decision Tree "Applicability of BDP"

6 Conclusion

The research question of this paper was “Under what circumstances can BDP be applied most successfully, or even maximise the quality of purchases?”, which can be answered based on

the findings to the different sub-questions.

Thus, BDP can be successfully applied, if a number of requirements are met, of which i) the “maximum” or “extra” quality brings additional value to the buyer, ii) the buyer must be able to establish an accurate fixed price that matches his clearly specified quality demands, iii) a suitable market situation; seem to be the most important ones, that can, if not met, lead to severe drawbacks.

However, there are several more factors that fall within those requirements and should be considered when considering BDP as an award method. A decision tree was created to provide a support tool in deciding as to whether BDP can be utilized successfully in a specific tender by asking a few general questions.

When successfully applied, BDP can bring advantages like additional value to the buyer and an increased budget efficiency.

7 Limitations & Future Recommendations

It has to be noted that the small sample size, as well as local interview restrictions are a limitation to the results of this study. Also a direct comparison to other common award methods was not made, which could have given a better understanding of the fixed price impact on tender results. Especially the “maximum price” method, in which only lower price bids can still be submitted, could have been investigated. Furthermore, the reliability of the interviews is limited, considering that the interviewees might have forgotten to explain or tell about some points on the topic, which they might actually have knowledge about.

As for future research recommendations, comparing a maximum price award method, and/or a best price-quality-ratio award method against BDP by means of case studies would provide a better support tool in choosing a suitable method. Moreover, interviews with suppliers that frequently take part in public tenders, would give valuable insight from the opposite viewpoint, especially when the sample includes different firm sizes and industries.

A deeper approach with respect to buyers’ and suppliers’ utility curves (as was also involved in Bergman and Lundberg [2013], in order to support the main advantage of BDP that was found in this thesis would be interesting as well.

A closer investigation of tenders from different purchasing situations (for instance, services versus works or supplies), or a comparison between different types of public organizations (for instance, municipalities versus hospitals, versus schools) would be interesting to conduct. Moreover, a bigger sample size of interviewees, and the inclusion of experts from different countries would provide a broader view on BDP, especially considering the World Bank and UN regulations.

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Appendix A List of keywords for literature search

English - Budget-driven procurement/purchasing, Benefits-driven procurement/purchasing, Contract awards with a fixed price, Fixed price tendering, Fixed price award method, Fixed-price procurement/purchasing, Fixed-budget procurement/purchasing, Fixed-price tender, Quality-only award method, Quality-only tender/tendering, Tender award methods, Tendering with a fixed price, Value-driven procurement/purchasing/tendering, buying on a fixed price, pre-defining purchase prices, fixed-price bid evaluation, quality-based bid evaluation, quality-based procurement/purchasing, quality-based award/awarding, quality-based selecting/selection, awarding based on quality, award criteria, best price-quality award, award method comparison, supplier selection method, design contest, beauty contest tender, value maximisation system, quality maximisation in tenders, best quality tendering, quality-driven procurement, results-driven procurement/purchasing/tendering, vendor selection method, vendor award method, source selection method

Dutch - Aanbesteden met een vaste prijs, Vaste prijs aanbesteding, Beste prijs kwaliteit verhouding, Gunningscriteria, Gunningsmethodieken, Gunnen op waarde, Resultaatgericht aanbesteden, Plafondprijs, Zeeuwse model, EMVI kiezen, Inkopen met een vaste prijs

Appendix B Interview Questions

Dutch

1. Heb je al gebruik gemaakt van vaste prijzen in je aanbestedingen?
2. Zo ja, hoe vaak maak je er gebruik van (% van het aantal van aanbestedingen)?
3. Zo ja, was je tevreden met de resultaten?
4. Zo niet, welke gunningsmethodiek gebruik je meestal?
5. Waarom of in welke situaties prefereer je om met deze methodiek te werken (in vergelijking met een vaste prijs)?
6. Vaste prijzen lijken nog niet vaak gebruikt. Wat zouden volgens jij de redenen daarvoor zijn?
7. Zie je voordelen in het werken met vaste prijzen? En zo ja, welke?
8. Zie je nadelen of knelpunten in het werken met vaste prijzen? En zo ja, welke?
9. Vaste prijzen zijn geschikt voor alle aankopen (bijv. kantoor artikelen of een nieuwe IT systeem). Ben je het er mee eens of oneens?
10. Was je zich ervan bewust dat de mogelijkheid om de prijs vast te stellen voor een aanbesteding al opgenomen is in de wettelijke bepalingen van de EU-richtlijn inzake overheidsopdrachten?
11. Ben je van plan om in de toekomst van vaste prijzen gebruik te maken?
12. Denk je dat BDP nuttig kan zijn voor “greener procurement”?
13. Zo ja, hoe?

English

1. Have you used fixed-prices in tenders?
2. If yes, how often do you use it (% of the number of tenders)?
3. If yes, were you satisfied with the results?
4. If no, which award method do you usually apply?
5. Why or in which situations do you prefer to use this method (in comparison to BDP)?
6. Fixed prices don't seem to be utilized frequently. What could be the reasons for that according to you?
7. Do you see advantages in using a fixed price? If yes, which?
8. Do you see disadvantages or problems in using a fixed price? If yes, which?
9. Fixed prices are suitable for all purchases (e.g. office supplies vs. a new IT system). Would you agree or disagree?

10. The option to fix the price for a tender is since 2014 included within the MEAT method of the EU Directives. Did you know that?
11. Do you plan to use fixed prices in your tenders in the future?
12. Do you think that BDP can be helpful for greener procurement?
13. If yes, how?