REVIEW

by

Prof. Dr. Stela Atanasova Todorova

Professional fields 3.8 "Economics" and 3.7 "Administration and Management"

Member of the Scientific Jury for the award of the educational and scientific degree "Doctor"

This review has been prepared pursuant to **Order No. 526 of 29 September 2026, issued by the Rector of Varna Free University "Chernorizets Hrabar" – Varna**, in connection with the open procedure for the defence of a doctoral dissertation for the award of the educational and scientific degree "Doctor" in professional field **3.8 "Economics"**, under which I have been appointed as a member of the Scientific Jury.

Author of the dissertation: LIOR YAKOV AGAY

Title of the dissertation: "APPLICATION OF GAME THEORY AND BEHAVIORAL ECONOMICS IN PUBLIC SECTOR PROCUREMENT PROCESSES"

Professional field: 3.8 "Economics"

Brief Presentation of the Candidate

Lior Agay is an established expert in financial management, corporate finance, and the strategic management of public procurement. He has over 20 years of professional experience in senior management and expert positions, including serving as a partner at BDO Israel, Chief Financial Officer of the Hebrew University of Jerusalem, and head of departments within the Israeli Ministry of Finance.

His professional activities encompass financial planning and control, public resource management, the development and implementation of public procurement procedures, and the introduction of electronic procurement systems.

The candidate has an educational background in economics, management, and law, as well as a master's degree in law and an MBA specializing in financial management. He also has teaching experience at higher education institutions in the fields of game theory, accounting, and economics.

Volume, Structure and Compliance with Formal Requirements of the Dissertation

The dissertation comprises 243 pages and includes an introduction, three chapters, a conclusion, a statement of scientific and applied scientific contributions, a list of references, and a declaration of originality. The bibliography contains 122 scientific, legislative, and institutional sources. The abstract includes 7 tables and 3 figures.

Chapter One examines the theoretical foundations and literature review of public procurement, game theory, and behavioural economics. Chapter Two presents the methodological framework and research design, while Chapter Three analyses the empirical results, tests the research hypotheses, introduces the proposed integrated ADPVM model, and formulates practical recommendations.

The structure of the dissertation follows the logical progression of the research, from the theoretical justification of the research problem through the methodological approach to the analysis of the results and the formulation of conclusions. The dissertation contains the principal structural elements required under the applicable regulatory and university-level requirements.

Relevance of the Research Topic

The relevance of the dissertation stems from the need to clarify how different types of price anchors in public procurement are associated with the continuity of bidders' participation and perceived price thresholds. The research problem lies in the insufficient consideration of the long-term dimensions of bidder participation when evaluating pricing information.

In this context, the aim of the research is to develop and empirically substantiate an integrated decision-support framework for public procurement. The scientific novelty lies in the joint examination of three conditions—the presence of an initial price, the presence of an estimated value, and the absence of a price anchor—through the adaptation of the Bidder Lifetime Value (BLV) and Price Sensitivity Meter (PSM) concepts to the specific context of public procurement.

The findings are integrated into the original ADPVM model, designed to support the analysis and preparation of public procurement procedures.

The Main Objective of the Dissertation

The main objective of the dissertation is to develop and empirically substantiate an integrated decision-support framework for public procurement that examines the relationship between the type of price anchor, the continuity of bidders' participation, and perceived price thresholds. To this end, the dissertation combines approaches from game theory and behavioural economics with the concept of Bidder Lifetime Value (BLV) and the Van Westendorp Price Sensitivity Meter (PSM).

The Main Research Tasks

The main research tasks are to examine the theoretical foundations of price anchoring in public procurement; develop a methodology for analysing the continued participation of bidders and their lifetime value; and investigate the price thresholds perceived by public procurement professionals under different price-information conditions. On this basis, an integrated model, ADPVM (Anchor-Driven Procurement Value Model), is developed to support analysis and managerial decision-making in the preparation and conduct of public procurement procedures.

Object and Subject of the Research

The **object of the research** is public procurement processes, considered in the context of interactions between contracting authorities and bidders.

The **subject of the research** is the relationships between the price-information environment, bidders' behaviour and continued participation, their lifetime value, and professional judgements regarding price acceptability.

Research Hypotheses

Two research hypotheses are formulated to achieve the objective. The first examines whether different types of price anchors are associated with different bidder-retention profiles and BLV values. The second investigates differences in perceived price thresholds when an initial price, an estimated value, or no price anchor is provided. The empirical findings serve as a basis for substantiating the proposed model, while their interpretation takes into account the limitations involved in establishing causal relationships.

Research Methodology

The dissertation methodology is based on a quantitative approach implemented through two independent but complementary empirical studies. The theoretical framework combines game theory and behavioural economics.

The first study comprises 211 bidder-level observations across three price-framing conditions, divided into three groups according to the presence and type of price anchor: no price anchor, an estimated value, and an initial price. The analysis focuses on bidder participation and withdrawal, the duration of participation, and bidder lifetime value (BLV).

The second study includes 65 valid responses from public procurement professionals. The findings of the two studies are analysed separately and subsequently integrated in the development of the ADPVM model. The methodology acknowledges the limitations of the samples and the observational nature of the first study, which precludes definitive causal conclusions.

Research Methods

The research methods employed include theoretical analysis, descriptive and non-parametric statistical methods, the Kruskal–Wallis test, effect size estimation, and principal component analysis (PCA). The concept of Bidder Lifetime Value (BLV) is applied to examine the continued participation of bidders, while an adapted version of the Van Westendorp Price Sensitivity Meter (PSM) is used to analyse perceived price thresholds.

Content and Structure of the Dissertation

The dissertation is structured in accordance with the logic of the research problem and the sequence of its theoretical, methodological, and empirical investigation. It consists of an introduction, three chapters, a conclusion, a statement of scientific and applied scientific contributions, a list of references, and a declaration of originality.

Chapter One is devoted to the theoretical foundations and literature review concerning public procurement, game theory, and behavioural economics. It examines the main theoretical concepts and identifies the research gap.

Chapter Two presents the methodological framework, research design, and methods employed. It discusses the organisation of the empirical research, sample selection, respondent profiles, and the measurement of the indicators under investigation.

Chapter Three presents the results of the empirical studies, the analysis of the data obtained, and the testing of the research hypotheses. It also introduces the integrated ADPVM model and practical recommendations for its application in the public sector.

The conclusion summarises the main research results and findings. The bibliography comprises **122 scientific, legal, and institutional sources**.

Assessment of the Scientific and Applied Scientific Contributions

1. Scientific Contributions

Four scientific contributions are identified in the dissertation:

1. An integrated theoretical framework has been developed in which public procurement is viewed as a regulated, repeated market and different price-framing conditions are treated as distinct information environments. The contribution lies in conceptualising the price anchor as a strategic signal and a potential behavioural reference point.
2. A methodological basis has been developed for analysing the continued participation of bidders by adapting the concept of Customer Lifetime Value to Bidder Lifetime Value (BLV). The contribution consists in extending the analysis to bidder retention, withdrawal, and repeat participation.
3. The Van Westendorp Price Sensitivity Meter (PSM) has been adapted to professional judgement in public procurement. This expands the possibilities for investigating perceived price thresholds within the specific context of public contracting.
4. Empirical findings have been obtained concerning the relationship between price-information conditions, the continued participation of bidders, and perceived price thresholds. Their value lies in extending existing knowledge, while the findings should be interpreted in light of the limitations of the research design.

Assessment: The scientific contributions are logically connected and progressively build upon the theoretical framework, methodology, and empirical analysis. Their principal strength lies in adapting existing concepts to the field of public procurement. It should be noted, however, that some of the contributions involve methodological development and the integration of established approaches; consequently, their originality rests on the specific nature of their adaptation and application.

2. Applied Scientific Contributions

Three applied scientific contributions are identified in the dissertation:

1. A reproducible methodology has been developed and applied, based on two empirical studies examining the continued participation of bidders and perceived price thresholds. Its practical value lies in enabling a systematic analysis of different price-information conditions.
2. The ADPVM (Anchor-Driven Procurement Value Model) has been developed, integrating the classification of the price-information environment, the analysis of bidder participation, and the assessment of perceived price thresholds. The model provides a decision-support framework without replacing statutory selection and contract-award criteria.
3. A set of practical tools for implementing ADPVM has been developed, including procedures for documenting price anchors, monitoring mechanisms, application scenarios, training, and safeguards for transparency, equal treatment, and auditability.

The applied scientific contributions are practice-oriented and represent a logical extension of the scientific findings. The most significant is the ADPVM model and its accompanying implementation tools. At the same time, the practical effectiveness of the proposed framework requires further confirmation through testing under real-world conditions.

In conclusion, the contributions reflect a systematic effort to combine theoretical concepts, adapted methods, and empirical findings into an applicable framework for analysing public procurement. They have scientific and applied scientific value, although the extent to which their practical effects have been demonstrated should be assessed in light of the limitations of the studies conducted.

Directions for Future Research

Future research could expand the empirical evidence base and examine the applicability of the proposed ADPVM model under real-world public procurement

conditions, including across different categories of contracting authorities and economic sectors.

Assessment of Publications Related to the Dissertation

Four scientific publications related to the dissertation topic have been submitted, one of which is indexed in Scopus. Two publications directly address the research problem of price anchoring in public procurement: one examines price sensitivity using the Van Westendorp PSM, while the other analyses the value of bidder participation using the Bidder Lifetime Value (BLV) indicator. The remaining two publications are thematically related to pricing challenges, sustainability, and customer retention strategies.

Overall, the publication record reflects the main research directions of the dissertation. The inclusion of a Scopus-indexed publication is a positive feature of the submitted scientific output.

Based on the indicators presented, the candidate meets the minimum national requirements for the award of the educational and scientific degree of **Doctor**. Under Group G, the candidate has accumulated 33.33 points against the required minimum of 30 points.

Assessment of the Dissertation Abstract

The dissertation abstract has been prepared in accordance with the requirements regarding structure, content, and presentation. It provides a concise account of the main results of the research, clearly presenting its objective, tasks, methodology, and findings. The stated scientific and applied scientific contributions reflect the principal achievements of the dissertation. As a member of the scientific jury, I accept the contributions presented and consider them to be substantiated by the research conducted.

Question to the Doctoral Candidate

What are the main limitations affecting the practical implementation of the ADPVM model, and what additional research and testing are required for its independent validation and broader adoption in public procurement practice?

Conclusion

Based on my analysis of the dissertation submitted, the abstract, the scientific publications, and the results achieved, as well as their compliance with the regulatory requirements and academic standards for the award of the educational and scientific degree of Doctor, I consider that the dissertation possesses the necessary qualities for the award of this degree.

The research addresses a relevant and timely topic and demonstrates methodological substantiation and practically oriented findings. The stated scientific and applied scientific contributions reflect the achievements of the research while also identifying opportunities for further development and independent validation of the proposed ADPVM model.

On the basis of my overall positive assessment of the dissertation submitted, **I recommend that the esteemed members of the Scientific Jury award LIOR YAKOV AGAY the educational and scientific degree of Doctor in professional field 3.8, Economics.**