## **ALPHANUMERIC JOURNAL**

Volume 10, Issue 1, 2022

The Journal of Operations Research, Statistics, Econometrics and Management Information Systems

### **Editors**

### Bahadır Fatih YILDIRIM

bahadirfyildirim@alphanumericjournal.com

### Sultan Kuzu

sultankuzu@alphanumericjournal.com

### **Area Editors**

### Özlem Yorulmaz

vorulmaz@istanbul edu tı

### Çağlar Karamaşa

ckaramasa@anadolu edu ti

### **Language Editor**

### Hüseyin BURGAZOĞLU

h.burgazoglu@alphanumericjournal.com

### ISSN 2148-2225

https://www.alphanumericjournal.com/ https://dergipark.org.tr/en/pub/alphanumeric



Alphanumeric Journal is a "Peer-Reviewed International Journal".

The journal is semiannually published

in June and December.

### Index



### TR Dizin

TÜBİTAK ULAKBİM TR Directory



### EconLit

Economics Literature



### Index Copernicus

International



### **SOBIAD**

Social Science Citation Index



### CiteFactor

Academic Scientific Journals



### ResearchBib

Academic Resource Index



### Akademik Dizin

Turkish Academic Journals Index



### Erih Plus

The European Reference Index for the Humanities and the Social Sciences



### Arastirmax

Scientific Publication Index



### **ASOS Index**

Academia Social Science Index



### AcarIndex

Academic Researches Index



### DRII

Directory of Research Journals Indexing

### Database



### **EBSCOhost**

Research Databases



### **EKUAL**

National Academic License for Electronic Sources



### DOAL

Directory of Open Access Journals



### RePEc

Research Papers in Economics



### **EconPapers**



### SciLit

Scientific Literature



### **IDEAS**

Internet Documents in Economics Access Service

### Repository



### OpenAIRE



Turkey Academic Archive



### JournalPark

### Search Engine





### **ALPHANUMERIC JOURNAL**

Volume 10, Issue 1, 2022

**EDITORIAL BOARD** 

### **Advisory Editors**

- David McAllister, Ph.D. | Prof., North Carolina State University, Raleigh, NC, USA
- Myron Hlynka, Ph.D. | Prof., University of Windsor, Ontario, Canada
- Qinan Wang, Ph.D. | Prof., Nanyang Technological University, Singapore, Singapore
- Zeshui Xu, Ph.D. | Prof., Sichuan University, Chengdu, China
- Lyn Thomas, Ph.D. | Prof., University of Southampton, Southampton, UK
- Edmundas Kazimieras Zavadskas, Ph.D. | Prof., Vilnius Gediminas Technical University, Vilnius, Lithuania
- Ignacio Castillo, Ph.D. | Prof., Wilfrid Laurier University, Ontario, Canada
- Florentin Smarandache, Ph.D. | Prof., University of New Mexico, New Mexico, USA
- José Luis Alfaro Navarro, Ph.D. | Prof., University of Castilla-La Mancha, Albacete, Spain
- Tadashi Dohi, Ph.D. | Prof., Hiroshima University, Hirosima, Japan
- Miguel A. Goberna Torrent, Ph.D. | Prof., University of Alicante, Alicante, Spain
- Lazim Abdullah, Ph.D. | Prof., Universiti Malaysia Terengganu, Kuala Terengganu, Malaysia
- Rocco Furferi, Ph.D. | Prof., University of Florence, Firenze, Italy
- Jaya Bishwal, Ph.D. | Assoc. Prof., University of North Carolina at Charlotte, Charlotte, USA
- S. Senthil, Ph.D. | Assoc. Prof., Kamaraj College of Engineering and Technology, Virudhunagar, India
- Rajmund Mirdala, Ph.D. | Assoc. Prof., Technical University of Košice, Košice, Slovak Republic
- Lapo Governi, Ph.D. | Assoc. Prof., University of Florence, Firenze, Italy
- Darjan Karabasevic, Ph.D. | Assoc. Prof., University Business Academy in Novi Sad, Belgrade, Serbia
- Dragan Pamučar | Assoc. Prof., University of Defence in Belgrade, Belgrade, Serbia
- Prasenjit Chatterjee, Ph.D. | Assoc. Prof., MCKV Institute of Engineering, Howrah, India
- Željko Stević, Ph.D. | Assist. Prof., University of East Sarajevo, East Sarajevo, Republic of Srpska, Bosnia and Herzegovina
- Konrad Kułakowski, Ph.D. | Assist. Prof., AGH University of Science and Technology, Krakow, Poland

### **Associate Editors**

- Burak Güriş, Ph.D. | Prof., Istanbul University, *Istanbul, Turkey*
- <u>Cengiz Kahraman, Ph.D.</u> | Prof., Istanbul Techinal University, Istanbul, Turkey
- <u>Coşkun Hamzaçebi, Ph.D.</u> | Prof., Karadeniz Technical University, *Trabzon, Turkey*
- <u>Çiğdem Arıcıqil Çilan, Ph.D.</u> | Prof., Istanbul University, *Istanbul, Turkey*
- <u>Dilek Altaş, Ph.D.</u> | Prof., Marmara University, *Istanbul, Turkey*
- Ergün Eroğlu, Ph.D. | Prof., Istanbul University, Istanbul, Turkey
- Halim Kazan, Ph.D. | Prof., Istanbul University, Istanbul, Turkey

- M. Erdal Balaban, Ph.D. | Prof., Istanbul Gelisim University, Istanbul, Turkey
- <u>İrfan Ertuğrul, Ph.D.</u> | Prof., Pamukkale University, *Denizli, Turkey*
- Mahmut Zortuk, Ph.D. | Prof., Dumlupinar University, Kütahya, Turkey
- Mehpare Timor, Ph.D. | Prof., Istanbul University, Istanbul, Turkey
- N. Rauf Nişel, Ph.D. | Prof., Marmara University, Istanbul, Turkey
- Necmi Gürsakal, Ph.D. | Prof., Uludag University, Bursa, Turkey
- Nilgün Çil, Ph.D. | Prof., Istanbul University, Istanbul, Turkey
- Selahattin Güriş, Ph.D. | Prof., Marmara University, Istanbul, Turkey
- <u>Selim Başar, Ph.D.</u> | Prof., Anadolu University, *Eskişehir, Turkey*
- Seyhan Nişel, Ph.D. | Prof., Istanbul University, Istanbul, Turkey
- Sona Mardikyan, Ph.D. | Prof., Bogazici University, Istanbul, Turkey
- <u>Sakir Esnaf, Ph.D.</u> | Prof., Istanbul University, *Istanbul, Turkey*
- <u>Umman Tuğba Şimşek Gürsoy, Ph.D.</u> | Prof., Istanbul University, *Istanbul, Turkey*
- Tunçhan Cura, Ph.D. | Prof., Istanbul University, Istanbul, Turkey
- Bilge Acar Bolat, Ph.D. | Assoc. Prof., Istanbul University, Istanbul, Turkey
- Burcu Kıran Baygın, Ph.D. | Assoc. Prof., Istanbul University, Istanbul, Turkey
- <u>Cavit Yeşilyurt, Ph.D.</u> | Prof., Atatürk University, *Erzurum, Turkey*
- Emine Ebru Aksoy, Ph.D. | Assoc. Prof., Ankara Hacı Bayram Veli University, Ankara, Turkey\_
- Emrah Önder, Ph.D. | Prof., Istanbul University, Istanbul, Turkey\_
- Erdoğan Öztürk, Ph.D. | Assoc. Prof., Karabük University, Karabük, Turkey
- Esma Nur Çinicioğlu, Ph.D. | Assoc. Prof., Istanbul University, Istanbul, Turkey
- Fatih Çemrek, Ph.D. | Assoc. Prof., Eskisehir Osmangazi University, Eskişehir, Turkey
- Fatih Ecer, Ph.D. | Prof., Afyon Kocatepe University, *Afyonkarahisar, Turkey*
- Hakan Demirgil, Ph.D. | Prof., Suleyman Demirel University, Isparta, Turkey
- İlker Murat Ar, Ph.D. | Prof., Ankara Yıldırım Beyazıt University, Ankara, Turkey
- Nazif Çalış, Ph.D. | Assoc. Prof., Adıyaman University, Adıyaman, Turkey\_
- Nihat Taş, Ph.D. | Assoc. Prof., Istanbul University, Istanbul, Turkey
- <u>Ötüken Senger, Ph.D.</u> | Prof., Kafkas University, *Kars, Turkey*
- Özgür Cakır, Ph.D. | Assoc. Prof., Marmara University, *Istanbul, Turkey*
- <u>Seda Tolun, Ph.D.</u> | Prof., Istanbul University, *Istanbul, Turkey*
- Özgür M. Esen, Ph.D. | Assoc. Prof., Istanbul University, *Istanbul, Turkey*
- <u>Şadi Evren Şeker, Ph.D.</u> | Assoc. Prof., Istanbul Sehir University, Istanbul, Turkey\_
- Yeliz Yalçın, Ph.D. | Assoc. Prof., Gazi University, Ankara, Turkey
- <u>Burcu Adıgüzel Mercangöz, Ph.D.</u> | Assoc. Prof., Istanbul University, *Istanbul, Turkey*
- H. Zafer Yüksel, Ph.D. | Assist. Prof., University of Massachusetts Boston, Massachusetts, Boston, USA\_
- L. Sinem Sarul, Ph.D. | Assist. Prof., Istanbul University, Istanbul, Turkey
- <u>Cağlar Karamaşa, Ph.D.</u> | Assist. Prof., Anadolu University, *Eskişehir, Turkey*
- Mahmut Erdoğan, Ph.D. | Assist. Prof., Gumushane University, Gumushane, Turkey
- Mustafa Can, Ph.D. | Assist. Prof., Istanbul University, Istanbul, Turkey
- Neslihan Fidan Keçeci, Ph.D. | Assist. Prof., Istanbul University, Istanbul, Turkey
- Oğuz Akbilgiç, Ph.D. | Assoc. Prof., University of Tennessee, Knoxville, Tennessee, USA
- Özlem Kuvat, Ph.D. | Assist. Prof., Balıkesir University, Balıkesir, Turkey
- <u>Şebnem Akal İlkhan, Ph.D.</u> | Assoc. Prof., Marmara University, Istanbul, Turkey
- <u>Sebnem Er, Ph.D.</u> | Assist. Prof., University of Cape Town, Cape Town, Republic of South Africa\_
- Yonca Erdem Demirtas, Ph.D. | Res. Assist., Istanbul University, Istanbul, Turkey
- Ahmet Aytekin, Ph.D. | Res. Assist., Artvin Coruh University, Artvin, Turkey

# Publication Ethics and Publication Malpractice Statement

Alphanumeric Journal follows the COPE *Code of Conduct and Best Practice Guidelines for Journal Editors* and the *Code of Conduct for Journal Publishers*.

In addition, as a journal that follows the procedure suggested in Elsevier Publishing Ethics Resource Kit (PERK) in order to reach a decision or conclusion, in case of any suspicions of unethical behavior appear

It is expected of authors, reviewers and editors that they follow the best-practice guidelines on ethical behavior contained therein

### Author's responsibility

Consent to participate in peer review process

When submitting an article for publishing in this journal, the authors are obliged to participate in peer review process.

### Reporting standards

Authors' manuscripts of original research should present an accurate account of the work performed as well as an objective discussion of its significance. Underlying data should be represented accurately in the paper. A paper should contain sufficient detail and references to permit others to replicate the work. Fraudulent or knowingly inaccurate statements constitute unethical behavior are unacceptable.

### Data Access and Retention

When submitting their article for publication in this journal, the authors confirm the statement that all data in article are real and authentic. Authors should be prepared to provide the raw data in connection with a paper for editorial review, and should be prepared to provide public access to such data, if practicable, and should in any event be prepared to retain such data for a reasonable time after publication. In addition, all authors are obliged to provide retractions or corrections of mistakes if any.

### Originality and Plagiarism

The authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others that this has been appropriately cited or quoted. Alphanumeric Journal uses iThenticate software to detect plagiarism. If the plagiarism problem is detected, the editorial board will notify the corresponding author and prevent the work from being published in this journal.

For more details please visit Plagiarism Policy page.

### Multiple, Redundant or Concurrent Publication

An author should not in general publish manuscripts describing essentially the same research in more than one journal or primary publication. Submitting the same manuscript to more than one journal concurrently constitutes unethical publishing behavior and is unacceptable.

### Acknowledgement of Sources

Proper acknowledgment of the work of others must always be given. Authors should cite

publications that have been influential in determining the nature of the reported work.

### Authorship of the Paper

Authorship should be limited to those who have made a significant contribution to the conception, design, execution, or interpretation of the reported study. All those who have made significant contributions should be listed as co-authors. Where there are others who have participated in certain substantive aspects of the research project, they should be acknowledged or listed as contributors. The corresponding author should ensure that all appropriate co-authors and no inappropriate co-authors are included on the paper, and that all co-authors have seen and approved the final version of the paper and have agreed to its submission for publication.

### Disclosure and Conflicts of Interest

All authors should disclose in their manuscript any financial or other substantive conflict of interest that might be construed to influence the results or interpretation of their manuscript. All sources of financial support for the project should be disclosed. Fundamental errors in published works When an author discovers a significant error or inaccuracy in his/her own published work, it is the author's obligation to promptly notify the journal editor or publisher and cooperate with the editor to retract or correct the paper.

### For papers that require Ethics Committee Approval

Ethics committee approval must be obtained for studies conducted in all disciplines if the studies requiring an ethical committee decision.

The researches requiring the permission of the Ethics Committee are as follows:

- · Any research carried out with qualitative or quantitative approaches that require data collection from participants using survey, interview, focus group work, observation, experiment, interview techniques.
- Use of humans and animals (including material / data) for experimental or other scientific purposes,
- · Clinical researches on humans,
- · Researches on animals,
- · Retrospective studies in accordance with the law of protection of personal data,

### Reviewer's responsibility

### Contribution to Editorial Decisions

Peer review assists the editor in making editorial decisions and through the editorial communications with the author may also assist the author in improving the paper.

### Expertize and promptness

On being approached to review, the peer reviewers should only agree to review manuscripts for which they have the subject expertise required to carry out a proper assessment and which they can assess in a timely manner. Any selected referee who feels unqualified to review the research reported in a manuscript or knows that its prompt review will be

impossible should notify the editor and excuse himself from the review process.

### Confidentiality

Any manuscripts received for review must be treated as confidential documents. They must not be shown to or discussed with others except as authorized by the editor.

### Standards of Objectivity

Reviews should be conducted objectively, and their judgments should be objective. Personal criticism of the author is inappropriate. Referees should express their views clearly with supporting arguments.

### Acknowledgement of Sources

Reviewers should identify relevant published work that has not been cited by the authors. Any statement that an observation, derivation, or argument had been previously reported should be accompanied by the relevant citation. A reviewer should also call to the editor's attention any substantial similarity or overlap between the manuscript under consideration and any other published paper of which they have personal knowledge.

#### Disclosure and Conflict of Interest

Privileged information or ideas obtained through peer review must be kept confidential and not used for personal advantage.

Reviewers should not consider manuscripts in which they have conflicts of interest with respect to the research, the authors and/or the research funders resulting from competitive, collaborative, or other relationships or connections with any of the authors, companies, or institutions connected to the papers.

In addition, peer reviewers should be aware of all other detailed COPE Ethical Guidelines for Peer Reviewers and use them in the review process.

### **Editorial responsibility**

The editors of the journal have complete responsibility and authority to reject/accept an article. They are responsible for deciding which of the articles submitted to the journal should be published. The editors may be guided by the policies of the journal's editorial board and constrained by such legal requirements as shall then be in force regarding libel, copyright infringement and plagiarism. The can only accept a paper when reasonably certain. In case of any doubt, the editor may confer with other editors or the editorial board in making this decision. In case when errors are found in a published article, the editors should promote publication of correction or retraction.

### Fair play

An editor will at any time evaluate manuscripts for their intellectual content without regard to race, gender, sexual orientation, religious belief, ethnic origin, citizenship, or political philosophy of the authors.

### Confidentiality

The editor and any editorial staff must not disclose any information about a submitted manuscript to

anyone other than the corresponding author, reviewers, potential reviewers, other editorial advisers, and the publisher, as appropriate. The editors are also obliged to preserve anonymity of reviewers.

### Disclosure and conflicts of interest

Unpublished materials disclosed in a submitted manuscript must not be used in an editor's own research without the express written consent of the author. Editors should have no conflict of interest with respect to articles they reject/accept.

### **Publishing ethics issues**

The Editorial board is obliged to monitoring/safeguarding publishing ethics in the review process. In case of noticing any unethical behavior in the review process, errors, or omissions, anyone should report it to the editor or the publisher who are responsible on solving the issue. In case of any suspicions of unethical behavior appear, the procedure suggested in Elsevier Publishing Ethics Resource Kit (PERK) will be followed in order to reach a decision or conclusion. Main steps of the procedure are:

### Identification of unethical behavior

Misconduct and unethical behavior may be identified and brought to the attention of the editor or publisher at any time, by anyone.

Whoever informs the editor or publisher of such conduct should provide sufficient information and evidence in order for an investigation to be initiated. All allegations should be taken seriously and treated in the same way, until a decision or conclusion is reached.

### Investigation

An initial decision should be taken by the editor, who should consult with or seek advice from the Editorial board or the publisher, if appropriate.

Evidence should be gathered, while avoiding spreading any allegations beyond those who need to know.

### Minor breaches

Minor misconduct might be dealt with between the editor and the author, without the need to consult more widely. In any event, the author should be given the opportunity to respond to any allegations. If the author responds and is willing to correct the misconduct, the review process may continue.

### Serious breaches

In case of serious misconduct, the editor should notify the author, and withdraw the paper from the further procedure of the review process. If the paper is already published, the withdrawal notification should be published at the web page of the journal, sent to author, and in some serious cases the employers of the accused should be notified. The editor, in consultation with the Editorial board or the publisher, should make the decision whether or not to involve the employers, either by examining the available evidence themselves or by further consultation with a limited number of experts.

# **ALPHANUMERIC JOURNAL**

Volume 10, Issue 1, 2022

### CONTENTS

U1-14	The impact of Google Trends on the Tourist Arrivals: A Case of Antalya Tourism
Research Article	Hatice Öncel Çekim, Ahmet Koyuncu
15-24	Classification of Autism Spectrum Disorder for Adolescents Using Artificial Neural Networks
Research Article	Sümeyye Çelik, Melike Şişeci Çeşmeli, İhsan Pençe, Özlem Çetinkaya Bozkurt
25-40	Benchmarking healthcare systems of OECD countries: A DEA - based Malmquist Productivity  Index Approach
Research Article	Ayhan Aydın
41-50	Teaching the Median with Terms of Absolute Value, Differentiability, and Optimization
Research Article	Mehmet Hakan Satman
51-68	Financial Stability and Creating Financial Stability Index for Turkey
Research Article	Ahmet Zelka