RSP MANUSCRIPT SUBMISSION

GUIDELINES FOR PUBLICATION
REVISTA DE ŞTIINŢE POLITICE. REVUE DES SCIENCES POLITIQUES (RSP)

Email: Manuscripts should be submitted online at cepos2023@gmail.com with the following settings:
Page setup: B5 JIS
Paper title: For the title use Times New Roman 16 Bold, Center.

Author(s): For the Name and Surname of the author(s) use Times New Roman 14 Bold, Center.
About the author(s): After each name insert a footnote (preceded by the symbol *) containing the author's professional title, didactic position, institutional affiliation, contact information, and email address.

E.g.: Anca Parmena Olimid*, Cătălina Maria Georgescu**, Cosmin Lucian Gherghe***

* Associate Professor, PhD, University of Craiova, Faculty of Social Sciences, Phone: 00407******, Email: parmena2002@yahoo.com. (Use Times New Roman 9, Justified)
** Lecturer, PhD, University of Craiova, Faculty of Social Sciences, Phone: 00407******, Email: cata.georgescu@yahoo.com. (Use Times New Roman 9, Justified)
*** Lecturer, PhD, University of Craiova, Faculty of Social Sciences, Phone: 00407******, Email: avcosmingherghe@yahoo.com. (Use Times New Roman 9, Justified)

Author(s) are fully responsible for the copyright, authenticity and contents of their papers. Author(s) assume full responsibility that their paper is not under review for any refereed journal or conference proceedings.

Abstract
The abstract must provide the aims, objectives, methodology, results and main conclusions of the paper (please submit the papers by providing all these information in the abstract). It must be submitted in English and the length must not exceed 300 words. Use Times New Roman 10,5, Justify.

Keywords
Submit 5-6 keywords representative to the thematic approached in the paper. Use Times New Roman 10,5, Italic. After the keywords introduce three blank lines, before passing to the Article text.

Text Font: Times New Roman: 10,5

Reference citations within the text
Please cite within the text. Use authors' last names, with the year of publication.

NATIONAL SYMPOSIUM-http://www.nationalsymposium.com/communism.php
SCIENCE DZ-http://www.sciencedz.net/conference/6443-fifth-international-conference-after-communism-east-and-west-under-scrutiny

ARCHIVE COM-http://archive-com.com/com/c/conferencealerts.com/2014-12-01_5014609_70/Rome_15th_International_Academic_Conference_The_IISES/

CONFERENCE WORLD-http://conferencesworld.com/higher-education/
KNOW A CONFERENCE KNOW A CONFERENCE-http://knowaconference.com/social-work/

International Journal on New Trends in Education and Their Implications (IJONTE) Turkey http://www.ijonte.org/?pnum=15&

Journal of Research in Education and Teaching Turkey-http://www.jret.org/?pnum=13&pt=Kongre+ve+Sempozyum
CEPOS CONFERENCE 2015 is part of a "consolidated list of all international and Canadian conferences taking place pertaining to international relations, politics, trade, energy and sustainable development". For more details see http://natocouncil.ca/events/international-conferences/

CEPOS Conference 2014

The Fourth International Conference After Communism. East and West under Scrutiny, Craiova, 4-5 April 2014 was very well received by the national media and successfully indexed in more than 9 international databases, catalogues and NGO's databases such as: American Political Science Association, USA-http://www.apsanet.org/conferences.cfm

Journal of Church and State, Oxford-http://jcs.oxfordjournals.org/content/early/2014/01/23/jcs.cst141.full.pdf+html;
NATO Council of Canada (section events/ international conferences), Canada, http://atlantic-council.ca/events/international-conferences/

International Society of Political Psychology, Columbus, USA-http://www.ispp.org/uploads/attachments/April_2014.pdf

Academic Biographical Sketch, http://academicprofile.org/SeminarConference.aspx;
Conference alerts, http://www.conferencealerts.com/show-event?id=121380
Gesis Sowiport, Koln, Germany, http://sowiport.gesis.org/; Osteuropa-Netzwerk, Universität Kassel, Germany, http://its-vm508.its.uni-kassel.de/mediawiki/index.php/After_communism_:_East_and_West_under_scrutiny_:_Fourth_International_Conference

Ilustre Colegio Nacional de Doctores y Licenciados en Ciencias Politicas y Sociologia, futuro Consejo Nacional de Colegios Profesionales, Madrid, http://colpolsocmadrid.org/agenda/.

African Journal of Political Sciences-
http://www.maspolitiques.com/mas/index.php?option=com_content&view=article&id=450:-securiteee-&catid=2:2010-12-09-22-47-00&Itemid=4#.VjUI5PnhCUk

Researchgate-
https://www.researchgate.net/publication/283151988_Call_for_Papers_6TH_International_Conference_After_Communism._East_and_West_under_Scrutiny_8-9_April_2016_Craiova_Romania

World Conference Alerts-
http://www.worldconferencealerts.com/ConferenceDetail.php?EVENT=WLD1442
Edu events-http://eduevents.eu/listings/6th-international-conference-after-communism-east-and-west-under-scrutiny/

Esocsci.org-http://www.esocsci.org.nz/events/list/

Sciencedz.net-http://www.sciencedz.net/index.php?topic=events&page=53
Science-community.org-http://www.science-community.org/ru/node/164404/?did=070216

CEPOS Conference 2015

The Fifth International Conference After Communism. East and West under Scrutiny (Craiova, House of the University, 24-25 April 2015) was evaluated and accepted for indexing in 15 international databases, catalogues and NGO's databases:

THE ATLANTIC COUNCIL OF CANADA, CANADA-
http://natocouncil.ca/events/international-conferences/

ELSEVIER GLOBAL EVENTS LIST-
http://www.globaleventslist.elsevier.com/events/2015/04/fifth-international-conf

GCONFERENCE.NET-
http://www.gconference.net/eng/conference_view.html?no=47485&catalog=1&cata=018&co_kind=&co_type=&pageno=1&conf_cata=01

CONFERENCE BIOXBIO-http://conference.bioxbio.com/location/Romania

10 TIMES-http://10times.com/Romania

CONFERENCE ALERTS-http://www.conferencealerts.com/country-listing?country=Romania

http://www.iem.ro/orizont2020/wp-content/uploads/2014/12/lista-3-conferinte-internationale.pdf
http://sdil.ac.ir/index.aspx?pid=99&articleid=62893

CEPOS Conference 2017

The Seventh International Conference After Communism. East and West under Scrutiny (Craiova, House of the University, 24-25March 2017) was evaluated and accepted for indexing in 10 international databases, catalogues and NGO's databases:

Ethic & International Affairs (Carnegie Council), Cambridge University Press-https://www.ethicsandinternationalaffairs.org/2016/upcoming-conferences-interest-2016-2017/

ELSEVIER GLOBAL EVENTS
LIST http://www.globaleventslist.elsevier.com/events/2017/03/7th-international-conference-after-communism-east-and-west-under-scrutiny

CONFERENCE ALERTS-http://www.conferencealerts.com/show-event?id=171792

10TIMES.COM-http://10times.com/after-communism-east-and-west-under-scrutiny

Hiway Conference Discovery System-http://www.hicds.cn/meeting/detail/45826124
Geopolitika (Hungary)-http://www.geopolitika.hu/event/7th-international-conference-after-communism-east-and-west-under-scrutiny/

Academic.net-http://www.academic.net/show-24-4103-1.html

World University Directory-
http://www.worlduniversitydirectory.com/conferencedetail.php?AgentID=2001769

Science Research Association-
http://www.scirea.org/conferenceinfo?conferenceId=35290

Science Social Community-https://www.science-community.org/ru/node/174892

CEPOS Conference 2016

The Sixth International Conference After Communism. East and West under Scrutiny (Craiova, House of the University, 8-9 April 2016) was evaluated and accepted for indexing in the following international databases, catalogues and NGO's databases:

ELSEVIER GLOBAL EVENTS-
http://www.globaleventslist.elsevier.com/events/2016/04/6th-international-conference-after-communism-east-and-west-under-scrutiny/
Oxford Journals – Oxford Journal of Church & State-
http://jcs.oxfordjournals.org/content/early/2016/02/06/jcs.csv121.extract

Conference Alerts-http://www.conferencealerts.com/country-listing?country=Romania
Conferences-In - http://conferences-in.com/conference/romania/2016/economics/6th-international-conference-after-communism-east-and-west-under-scrutiny/

Socmag.net - http://www.socmag.net/?p=1562

https://www.sciencedz.net/conference/42812-9th-international-conference-after-communism-east-and-west-under-scrutiny

CEPOS Conference 2018

The Eighth International Conference After Communism. East and West under Scrutiny (Craiova, House of the University, 23-24 March 2018) was evaluated and accepted for indexing in 15 international databases, catalogues and NGO's databases:

Conference Alerts, https://conferencealerts.com/show-event?id=186626
Sciencesdz, http://www.sciencedz.net/conference/29484-8th-international-conference-after-communism-east-and-west-under-scrutiny

ManuscriptLink, https://manuscriptlink.com/cfp/detail?cfpId=AYAXKVAR46277063&type=event

Maspolitiques,http://www.maspolitiques.com/ar/index.php/en/1154-8th-international-conference-after-communism-east-and-west-under-scrutiny

Aconf, https://www.aconf.org/conf_112399.html

Call4paper,https://call4paper.com/listByCity?type=event&city=3025&count=count
Eventegg, https://eventegg.com/cepos/

10 times, https://10times.com/after-communism-east-and-west-under-scrutiny
Biblioteca de Sociologie, http://bibliotecadesociologie.ro/cfp-cepos-after-communism-east-and-west-under-scrutiny-craiova-2018/

Science Research Association http://www.scirea.org/topiclisting?conferenceTopicId=5
ResearcherBook http://researcherbook.com/country/Romania

Conference Search Net, http://conferencesearch.net/en/29484-8th-international-conference-after-communism-east-and-west-under-scrutiny

SchoolandCollegeListings, https://www.schoolandcollegelistings.com/RO/Craiova/485957361454074/Center-of-Post-Communist-Political-Studies-CEPOS

Vepub conference, http://www.vepub.com/conferences-view/8th-International-Conference-After-Communism.-East-and-West-under-Scrutiny/bC9aUE5rcHN0ZmpkYU9nTHJzUkRmdz09/

Geopolitika Hungary, http://www.geopolitika.hu/event/8th-international-conference-after-communism-east-and-west-under-scrutiny/

Intraders
https://www-intradersorg.
cdn.ampproject.org/v/s/www.intraders.org/news/romania/10
th-international-conference-after-communism-east-and-westunderscrutiny/
amp/?amp_js_v=a2&_gsa=1&usqp=mq331AQCKAE%3D#a
oh=15737604302246&referrer=https%3A%2F%2Fwww.google.co
m&_tf=De%20pe%20%251%24s&share=https%3A%2F%2Fwww.i
ntraders.org%2Fnews%2Fromania%2F10th-internationalconference-
after-communism-east-and-west-under-scrutiny%2F

10 times
https://10times.com/after-communism-east-and-west-underscrutiny

The conference alerts
https://theconferencealerts.com/event/46428/10th-internationalconference-
after-communism-east-and-west-under-scrutiny

Scirea
https://www.scirea.org/ConferenceInfosByConferenceCountryId?c
onferenceCountryId=75

CEPOS Conference 2019
The Ninth International Conference After Communism. East and West under Scrutiny (Craiova, House of the University, 29-30 March 2019) was evaluated and accepted for indexing in 6 international databases, catalogues and NGO's databases:

Oxford Academic Journal of Church & State https://academic.oup.com/jcs/article-abstract/60/4/784/5106417?redirectedFrom=PDF

10 Times
https://10times.com/after-communism-east-and-west-under-scrutiny

Conference Alerts
https://conferencealerts.com/show-event?id=205682

Researchgate
https://www.researchgate.net/publication/327905733_CEPOS_9TH_INTERNATIONA
L_CONFERENCE_AFTER_COMMUNISM_EAST_AND_WEST_UNDER_SCRUTI
NY_2019?_iepl%5BviewId%5D=sjcOJrVCO8PTLapcfVciZQsb&_iepl%5Bcontexts%5
D%5B0%5D=publicationCreationEOT&_iepl%5BtargetEntityId%5D=PB%3A3279057
33&_iepl%5BinteractionType%5D=publicationCTA

The Free Library
https://www.thefreelibrary.com/9th+INTERNATIONAL+CONFERENCE+AFTER+C
OMMUNISM.+EAST+AND+WEST+UNDER...-a0542803701
Science Dz.net

https://www.schoolandcollegelistings.com/RO/Craiova/485957361454074/Center-of-Post-Communist-Political-Studies-CEPOS

https://10times.com/company/cepos
https://10times.com/after-communism-east-and-west-under-scrutiny

https://conferencealerts.com/show-event?id=238529

https://www.sciencedz.net/conference/82995-cepos-international-conference-2022-after-communism-east-and-west-under-scrutiny

CEPOS Conference 2021

The Eleventh International Conference After Communism. East and West under Scrutiny (Craiova, House of the University, 19-20 March 2021) was evaluated and accepted for indexing in 5 international databases, catalogues and NGO's databases:

https://academic.oup.com/jcs/advance-articleabstract/doi/10.1093/jcs/csaa064/5941887?redirectedFrom=fulltext

https://conferencealerts.com/show-event?id=229654

https://www.sciencedz.net/en/conference/72628-1thinternational-conference-after-communism-east-and-west-underscrutiny

https://10times.com/after-communism-east-and-west-underscrutiny

https://worlduniversitydirectory.com/edu/event/?slib=1thinternational-conference-after-communism-east-and-west-underscrutiny-2

CEPOS Conference 2020

The Tenth International Conference After Communism. East and West under Scrutiny (27-28 March 2020) was evaluated and accepted for indexing in 7 international databases, catalogues and NGO's databases:

Scichemistry
http://scichemistry.org/ConferenceInfosByConferenceTopicId?conferenceTopicId=57

Oxford Journals
https://academic.oup.com/jcs/advance-articlepdf/doi/10.1093/jcs/csz078/30096829/csz078.pdf

Conference alerts
https://conferencealerts.com/show-event?id=215370
https://www.sciencedz.net/en/conference/57625-10thinternational-conference-after-communism-east-and-west-underscrutiny

https://doi.org/10.1093/jcs/csad066
Oxford Journal of Church and State-Oxford Academic (Oxford University Press) (Vol. 65, nr 4/2023) în secțiunea Calendar of Events JCS (publicare 28 Noiembrie 2023)
Conference Alerts
https://conferencealerts.com/show-event?id=254313
Science DZ
https://www.sciencedz.net/.../100575-14th-international...
10 Times
https://10times.com/after-communism-east-and-west-under...
The Free Library
https://www.thefreelibrary.com/CEPOS+NEW+CALL+FOR+PAPERS...
Conference 365
https://conferences365.com/.../14th-international...
World University Directory
https://worlduniversitydirectory.com/edu/event/...
Conferences daily
https://conferencesdaily.com/eventdetails.php?id=1625192
Gale Cengage Learning USA https://go.gale.com/ps/i.do?id=GALE%7CA766112846...

CEPOS Conference 2023

The **Thirteenth International Conference** After Communism. East and West under Scrutiny (Craiova, 17-18 March 2023) was evaluated and accepted for indexing in 5 international databases, catalogues and NGO's databases:
Oxford Church & State Journal:
https://academic.oup.com/jcs/articleabstract/65/1/168/7044222?redirectedFrom=fulltext

10 Times: https://10times.com/after-communism-east-andwest-under-scrutiny

Conferencesite.eu:
https://index.conferencesites.eu/conference/57510/13th-international-conference-after-communism-eastand-west-under-scrutiny;

Schoolandcollegelistings
:https://www.schoolandcollegelistings.com/RO/Craiova/485957361454074/Center-of-Post-Communist-Political-Studies-CEPOS

Conferencealerts : https://conferencealerts.com/showevent?id=247851

CEPOS Conference 2022

The **Twelfth International Conference** After Communism. East and West under Scrutiny (Craiova, 18-19 March 2022) was evaluated and accepted for indexing in 6 international databases, catalogues and NGO's databases:
https://www.conferenceflare.com/events/category/social-sciences-and-humanities/art-history/

Vinculation International Diciembre 2021 newsletter n 99
https://issuu.com/fundacionargeninta5/docs/diciembre_2021_fundaci_n_argeninta-ai_ok?fr=sZjg2NjE5NTg3OTY

CONFERENCE INTERNATIONAL INDEXING OF THE PAST EDITIONS (2014-2025)

CEPOS Conference 2025

The **Fifteenth International Conference** After Communism. East and West under Scrutiny (Craiova, House of the University, 14-15 March 2025) was evaluated and accepted for indexing in 14 international databases, catalogues and NGO's databases:
Indexation links:
https://academic.oup.com/jcs/article-abstract/67/1/csaf001/7997508?redirectedFrom=PDF
https://scholarlymeet.com/events/ca73318d-42a7-4b5e-bcca-635e0aa1c46b
https://conferences365.com/conferences-in-romania
https://conferencewiki.com/conference-listing/MzA4
https://www.conferencelists.org/event/cepos-15th-international-conference-after-communism-east-and-west-under-scrutiny/
https://www.sciencedz.net/en/conference/110381-cepos-15th-international-conference-after-communism-east-and-west-under-scrutiny
https://conferencealerts.com/show-event?id=262202
https://conferencesdaily.com/cities/craiova
https://cepos.org/upcoming/
https://10times.com/after-communism-east-and-west-under-scrutiny
https://www.researchgate.net/publication/379144286_CENTER_OF_POST-COMMUNIST_POLITICAL_STUDIES_CEPOS_Book_of_abstracts_of_the_14th_International_Conference_After_Communism_East_and_West_under_Scrutiny_Craiova_Romania_15-16_March_2024
https://conferencewiki.com/conference-detail/Cepos-15th-International-Conference-After-communism-East-and-West-under-scrutiny
https://www.conferencelists.org/romania/
https://www.conferencesked.com/conference_details/10148/cepos-15th-international-conference-after-communism-east-and-west-under-scrutiny
https://conffinder.com/pagesconference/ConferencesListing?country=Romania

CEPOS Conference 2024

The **Fourteenth International Conference** After Communism. East and West under Scrutiny (Craiova, House of the University, 15-16 March 2024) was evaluated and accepted for indexing in 11 international databases, catalogues and NGO's databases:
Indexation links:
CEEOL https://www.ceeol.com/search/article-detail?id=1195305
ProQuest, Part of Clarivate
https://www.proquest.com/docview/2863220849/CC02F21AE4DB44F1PQ/1?accountid=50247&sourcetype=Scholarly%20Journals
Oxford Academic (Oxford University Press)

Hochschule Weihenstephan-Triesdorf, Zentralbibliothek
Freising, Germany
https://ffwtp20.bib-bvb.de/TouchPoint/start.do?Query=1035%3d%22BV035261002%22IN%5b2%5d&View=ffw&Language=de

OTH- Ostbayerische Technische Hochschule Regensburg, Hochschulbibliothek
OTHBR, Regensburg, Germany
https://www.regensburger-katalog.de/TouchPoint/start.do?Query=1035%3d%22BV035261002%22IN%5b2%5d&View=ubr&Language=de

Staatliche Bibliothek Neuburg/Donau , SBND,
Neuburg/Donau, Germany
https://opac.sbnd.de/InfoGuideClient.sndsis/start.do?Query=10%3d%22BV035261002%22

Universitätsbibliothek Eichstätt-Ingolstadt, Eichstätt, Germany
https://opac.ku.de/TouchPoint/start.do?Branch=0&Language=de&View=uei&Query=35=%22502495838%22+IN+[2]

Bibliothek der Humboldt-Universität Berlin, Universitätsbibliothek der Humboldt-Universität zu Berlin
Berlin, Germany
https://hu-berlin.hosted.exlibrisgroup.com/primo-explore/search?institution=HUB_UB&vid=hub_ub&search_scope=default_scope&tab=default_tab&query=issn,exact,1584-224X

Hochschulbibliothek Ansbach, Ansbach, Germany
https://fanoz3.bib-bvb.de/InfoGuideClient.fansis/start.do?Query=10%3d%22BV035261002%22

Bibliothek der Europa-Universität Viadrina, Frankfurt (Oder)
Frankfurt/Oder, Germany
https://opac.europa-uni.de/InfoGuideClient.euvsis/start.do?Query=10%3d%22BV035261002%22

University of California Library Catalog
https://catalog.library.ucla.edu/vwebv/search?searchCode1=GKEY&searchType=2&searchArg1=ucoclc469823489

For more details about the past issues and international abstracting and indexing, please visit the journal website at the following address:
http://cis01.central.ucv.ro/revistadestiintepolitice/acces.php.

SB:Simple&LOCATION=USB&SID=IPS3:2d1c5acebc65a3cdc057a9d6c64ce76e&SETCOOKIE=TRUE&COUNT=15&GWTIMEOUT=30&HIGHLIGHTING=on&HISTORY=SESSION&START=1&STREAMING=on&URLENCODING=TRUE&QUERY alAL=1584-224x&SERVICEGROUP1.SERVICE.SEARCH_EDS=on&SERVICEGROUP1.SERVICE.SEARCH_KUGJSON=on&SERVICEGROUP1.SERVICE.SEARCH_KUGUSBWEB=on&SERVICEGROUP1.SERVICEGROUP.USB:Default=on

EKP Pulications
https://ekp-invenio.physik.uni-karlsruhe.de/search?ln=en&sc=1&p=1584-224X&f=&action_search=Search&c=Experiments&c=Authorities

Valley City State University
https://odin-primo.hosted.exlibrisgroup.com/primo-explore/search?query=any,contains,1584-224X&tab=tab1&search_scope=ndv_everything&sortby=rank&vid=ndv&lang=en_US&mode=advanced&offset=0displayMode%3Dfull&displayField=all&pcAvailabiltyMode=true

Impact Factor Poland
http://impactfactor.pl/czasopisma/21722-revista-de-stiinte-politice-revue-des-sciences-politiques

Universite Laval
http://sfx.bibl.ulaval.ca:9003/sfx_local?url_ver=Z39.88-2004&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx&ctx_enc=info:ofi/enc:UTF-8&ctx_ver=Z39.88-2004&rfr_id=info:sid/sfxit.com:azlist&sfx.ignore_date_threshold=1&rft.object_id=1000000000726583&rft.object portfolio id=&svc.fulltext=yes

Universität Passau
https://infoguide.ub.uni-passau.de/InfoGuideClient.upasis/start.do?Query=10%3d%22BV035261002%22

BSB Bayerische StaatBibliothek
https://opacplus.bsb-muenchen.de/metaopac/search?View=default&oclcno=502495838

Deutsches Museum
https://opac.deutsches-museum.de/TouchPoint/start.do?Query=1035%3d%22BV035261002%22IN%5b2%5d&View=dmm&Language=de
Technische Hochschule Ingolstadt
https://opac.ku.de/TouchPoint/start.do?Branch=3&Language=de&View=thi&Query=35=%22502495838%22+IN+[2]

Hochschule Augsburg, Bibliothek
https://infoguide.hs-augsburg.de/InfoGuideClient.fhasis/start.do?Query=10%3d%22BV035261002%22

https://col-westernsem.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma991001225541104770&context=L&vid=01COL_WTS:WTS&lang=en&search_scope=MyInst_and_CI&adaptor=Local%20Search%20Engine&tab=Everything&query=any,contains,1584-224X&facet=rtype,include,journals&mode=Basic&offset=0

Swansea University Prifysgol Abertawe
http://whel-primo.hosted.exlibrisgroup.com/primo_library/libweb/action/search.do?vid=44WHELF_SWA_VU1&reset_config=true#.VSU9SPmsVSk

Vanderbilt Library
https://catalog.library.vanderbilt.edu/discovery/fulldisplay?docid=alma991043322926803276&context=L&vid=01VAN_INST:vanui&lang=en&search_scope=MyInst_and_CI&adaptor=Local%20Search%20Engine&tab=Everything&query=any,contains,1584-224X&offset=0

Wissenschftszentrum Berlin fur Sozial
https://www.wzb.eu/en/literature-data/search-find/e-journals?page=searchres.phtml&bibid=WZB&lang=en&jq_type1=IS&jq_term1=1584-224X&jq_bool2=AND&jq_type2=KS&jq_term2=&jq_bool3=AND&jq_type3=PU&jq_term3=&offset=-1&hits_per_page=50&Notations%5B%5D=all&selected_colors%5B%5D=1&selected_colors%5B%5D=2

Radboud University Nijmegen
https://zaandam.hosting.ru.nl/oamarket-acc/score?OpenAccess=&InstitutionalDiscounts=&Title=&Issn=1584-224&Publisher=
Elektronische Zeitschriftenbibliothek EZB (Electronic Journals Library)
http://rzblx1.uni-regensburg.de/ezeit/detail.phtml?bibid=AAAAA&colors=7&lang=de&jour_id=111736

The University of Hong Kong Libraries
https://julac.hosted.exlibrisgroup.com/primo-explore/search?query=any,contains,1584-224x&search_scope=My%20Institution&vid=HKU&facet=rtype,include,journals&mode=Basic&offset=0

Metropolitan University Prague, Czech Republic
https://s-knihovna.mup.cz/katalog/eng/l.dll?h~=&DD=1&H1=&V1=o&P1=2&H2=&V2=o&P2=3&H3=&V3=z&P3=4&H4=1584-224x&V4=o&P4=33&H5=&V5=z&P5=25
University of the West Library
https://uwest.on.worldcat.org/search?queryString=1584-224x&clusterResults=off&stickyFacetsChecked=on#/oclc/875039367

Elektron ische Zeitschriften der Universität zu Köln
https://www.ub.uni-koeln.de/IPS?SERVICE=METASEARCH&SUBSERVICE=INITSEARCH&VIEW=U

2004&rfr_id=info:sid/sfxit.com:azlist&sfx.ignore_date_threshold=1&rft.object_id=1000000000726583&rft.object_portfolio_id=&svc.holdings=yes&svc.fulltext=yes

Catalogue of Hamburg Libraries
https://beluga.sub.uni-hamburg.de/vufind/Search/Results?submit=Suchen&library=GBV_ILN_22&lookfor=1584-224x

Edith Cowan Australia
https://ecu.on.worldcat.org/search?databaseList=&queryString=1584-224X

University College Cork, Ireland
https://ucc.summon.serialssolutions.com/?q=1584-224X#!/search?ho=t&jt=Revista%20de%20Stiinte%20Politice&l=en-UK&q=

York University Library, Toronto, Ontario, Canada
https://www.library.yorku.ca/find/Record/muler82857

The University of Chicago, USA
https://catalog.lib.uchicago.edu/vufind/Record/sfx_1000000000726583

The University of Kansas KUMC Libraries Catalogue
http://voyagercatalog.kumc.edu/Search/Results?lookfor=1584-224X&type=AllFields

Journal Seek
http://journalseek.net/cgi-bin/journalseek/journalsearch.cgi?field=issn&query=1584-224X

State Library New South Wales, Sidney, Australia,
http://library.sl.nsw.gov.au/search~S1/?searchtype=i&searcharg=1584-224X&searchscope=1&SORT=D&extended=0&SUBMIT=Search&searchlimits=&searchorigarg=i1583-9583

Electronic Journal Library
https://opac.giga-hamburg.de/ezb/detail.phtml?bibid=GIGA&colors=7&lang=en&flavour=classic&jour_id=111736

Open University Malaysia
http://library.oum.edu.my/oumlib/content/catalog/778733

Wayne State University Libraries
http://elibrary.wayne.edu/record=4203588

Kun Shan University Library
http://muse.lib.ksu.edu.tw:8080/1cate/?rft_val_fmt=publisher&pubid=ucvpress

Western Theological Seminar

Staatsbibliothek zu Berlin
http://kvk.bibliothek.kit.edu/view-title/index.php?katalog=STABI_BERLIN&url=http%3A%2F%2Fstabikat.de%2FDB%3D1%2FCHARSET%3DISO-8859-1%2FIMPLAND%3DY%2FLNG%3DDU%2FSRT%3DYOP%2FTTL%3D1%2FSID%3D8dda05f3-1%2FSET%3D1%2FSHW%3FFRST%3D1&signature=eBtSKEx2BuW-HASpUsCT39FB3vQpIm6cGAajCH-kz44&showCoverImg=1

Union Catalogue of Belgian Libraries
http://kvk.bibliothek.kit.edu/view-title/index.php?katalog=VERBUND_BELGIEN&url=http%3A%2F%2Fwww.unicat.be%2FuniCat%3Ffunc%3Dsearch%26query%3Dsysid%3A7330250&signature=Dxe-cVFWjMO1W4HpEAWW_ERyKR4oiGWXLGFinWk8fNU&showCoverImg=1

The National Library of Israel
http://merhav.nli.org.il/primo-explore/fulldisplay?vid=ULI&docid=NNL-Journals003477656&context=L&lang=en_US

Verbundkatalog GBV
http://kvk.bibliothek.kit.edu/view-title/index.php?katalog=GBV&url=http%3A%2F%2Fgso.gbv.de%2FDB%3D2.1%2FCHARSET%3DUTF-8%2FIMPLAND%3DY%2FLNG%3DDU%2FSRT%3DYOP%2FTTL%3D1%2FCOOKIE%3DD2.1%2CE900d94f2-d%2CI0%2CB9000%2B%2B%2B%2B%2B%2B%2CSY%2CA%2CH6-11%2C%2C16-17%2C%2C21%2C%2C30%2C%2C50%2C%2C60-61%2C%2C73-75%2C%2C77%2C%2C88-90%2CNKVK%2BWEBZUGANG%2CR129.13.130.211%2CFN%2FSET%3D1%2FPPNSET%3FPPN%3D590280090&signature=OmwA_NLtwvdaOmmyeo7SUOCEYuDRGtoZqGXIK-vTY1o&showCoverImg=1

COPAC, registered trademark of The University of Manchester
https://copac.jisc.ac.uk/search?&isn=1584-224x
ACPN Catalogo Italiano dei Periodici, Universita di Bologna
https://acnpsearch.unibo.it/journal/2601620

Bibliothèque Nationale de Luxembourg
https://a-z.lu/primo-explore/fulldisplay?vid=BIBNET&docid=SFX_LOCAL1000000000726583&context=L

National Library of Sweden
http://libris.kb.se/bib/11702473

Harold B. Lee Library, Brigham Young University
http://sfx.lib.byu.edu/sfxlcl3?url_ver=Z39.88-2004&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx&ctx_enc=info:ofi/enc:UTF-8&ctx_ver=Z39.88-

https://librarysearch.bond.edu.au/discovery/fulldisplay?vid=61BOND_INST%3ABOND&docid=alma9930197890502381&lang=en&context=SP

Ghent university library
https://lib.ugent.be/catalog/ejn01:1000000000726583

The Royal Library and Copenhagen University Library Service
https://e-tidsskrifter.kb.dk/resolve?umlaut.locale=da&url_ver=Z39.88-2004&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Actx&ctx_ver=Z39.88-2004&ctx_tim=2020-04-11T21%3A23%3A41%2B02%3A00&ctx_id=&ctx_enc=info%3Aofi%2Fenc%3AUTF-8&rft.issn=1584-224X&rft.search_val=1584-224X&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&rfr_id=info%3Asid%2Fsfxit.com%3Acitation

Glasgow Caledonian University
https://discover.gcu.ac.uk/discovery/openurl?institution=44GLCU_INST&vid=44GLCU_INST:44GLCU_VU2&?u.ignore_date_coverage=true&rft.mms_id=991002471123103836

Open University Library Malaysia
http://library.oum.edu.my/oumlib/content/catalog/778733

Stanford University Libraries, Stanford, United States
https://searchworks.stanford.edu/?q=469823489

Cornell University Library, Ithaca, United States
https://newcatalog.library.cornell.edu/catalog?search_field=publisher+number%2Fother+identifier&q=469823489

University of Michigan Library,
https://search.lib.umich.edu/catalog?&library=All+libraries&query=isn%3A469823489

Pepperdine Libraries, Malibu, United States
https://pepperdine.worldcat.org/search?qt=wc_org_pepperdine&q=no:469823489

University of Victoria Libraries , Victoria, Canada
http://uvic.summon.serialssolutions.com/#!/search?ho=t&fvf=ContentType,Journal%20Article,f&l=en&q=1584-224X
Academic Journals database
http://journaldatabase.info/journal/issn1584-224X

University of Zurich Database
https://www.jdb.uzh.ch/id/eprint/21535/

California Institute of Techonology - Caltech Library
https://www.library.caltech.edu/eds/detail?db=poh&an=98646324&isbn=1584224X

Rebiun Catálogo de la Red de Bibliotecas Universitarias y Científicas, Spain
https://rebiun.baratz.es/.../b2FpOmNlbGVicmF0aW9uOmVzLmJh...

KOBV Kooperativer Bibliotheksverbund Berlin Brandenburg, Germany
https://portal.kobv.de/simpleSearch.do?index=internal&plv=2&sortCrit=score&sortOrder=desc&hitsPerPage=&query=1584-224x&formsearch=%E2%9C%93#resultlistForm

Katalog der Teilbibliothek Diakonie, Gesundheit und Soziales der Hochschule Hannover, Germany
https://opac.tib.eu/DB=4.5/LNG=DU/SID=f438f44d-1/CMD...

EP Library Catalogue – European Parliament Library Catalogue
https://europarl.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma991001117790704886&context=L&vid=32EPA_INST:32EPA_V1&lang=en&adaptor=Local%20Search%20Engine&tab=Everything&query=sub,exact,Europe%20de%20l%27Est%20--%20Politique%20et%20gouvernement,AND&mode=advanced&offset=0

Ghent Unversity Library
https://lib.ugent.be/en/catalog/ejn01:1000000000726583

Universidad Carlos III de Madrid Research Portal
https://researchportal.uc3m.es/display/rev184334

J-Gate Social Science & Humanities Indexed Journal List
https://www.kitsw.ac.in/Library/2022/JSSH%20Journal%20List.pdf

https://europub.co.uk/journals/revista-de-stiinte-politice-revue-des-sciences-politiques-J-11661

Universiteits Bibliotheek Gent
https://lib.ugent.be/catalog/ejn01:1000000000726583

Publons
https://publons.com/journal/540040/revista-de-stiinte-politice/

Universidad Carlos III de Madrid
https://researchportal.uc3m.es/display/rev184334

Weill Cornell Medicine Qatar
https://primo.qatar-weill.cornell.edu/discovery/fulldisplay?vid=974WCMCIQ_INST:VU1&docid=alma991000575074006691&lang=en&context=L&adaptor=Local%20Search%20Engine

Reseau Mirabel
https://reseau-mirabel.info/revue/3046/Revista-de-Stiinte-Politice

Bond Library University

* Publication of the Conference Papers in the International Indexed Journal Revista de Stiinte Politice. Revue des Sciences Politiques.
Previous publication of the 2012-2025 Conference papers is available at:
http://cis01.central.ucv.ro/revistadestiintepolitice/acces.php

CERTIFICATES OF ATTENDANCE
Certificates of attendance will be offered at the end of the conference.
INTERNATIONAL INDEXING OF REVISTA DE STIINTE POLITICE. REVUE DES SCIENCES POLITIQUES. Revista de Stiinte Politice. Revue des Sciences Politiques is an International Indexed Journal by:
ERIH PLUS
ProQuest
EBSCO
CEEOL
KVK
Gale Cengage Learning
Index Copernicus
Georgetown University Library
Elektronische Zeitschriftenbibliothek EZB
Journal Seek

Latest international indexing updates 2025 (March 2025) of the *Revista de Științe Politice. Revue des Sciences Politiques* (selective list 2019-2025)

Universität Zürich Journal Database, Switzerland
Zurich Open Repository and Archive
https://www.jdb.uzh.ch/id/eprint/21535/

Royal Danish Library, Denmark
https://soeg.kb.dk/discovery/fulldisplay?docid=alma991230264924057 63&context=L&vid=45KBDK_KGL:KGL&lang=en&search_scope=MyInst_and_CI&adaptor=Local%20Search%20Engine&tab=Everything&query=any,contains,1584-224x&offset=0

SwissCovery, Swiss Library Service Platform (SLSP) Switzerland
https://swisscovery.slsp.ch/discovery/fulldisplay?docid=alma991170234587405501&context=L&vid=41SLSP_NETWORK:VU1_UNION&lang=de&search_scope=DN_and_CI&adaptor=Local%20Search%20Engine&tab=41SLSP NETWORK&query=any,contains,1584-224x&offset=0

Science On University Achievement Information System by University of Lodz, Poland
https://son.uni.lodz.pl/.../ULbfee0e874c6a41c4a00d516e09.../

Le réseau vaudois Renouvaud Sciences et Patrimoines, Switzerland
https://renouvaud1.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma991021158885602852&context=L&vid=41BCULAUSA_LIB:VU2&lang=fr&search_scope=SP_libraries_and_CDI&adaptor=Local%20Search%20Engine&tab=Everything&query=any,contains,1584-224x&offset=0

ABSTRACT SUBMITTING (SEE CEPOS CONFERENCE 2026 REGISTRATION FORM-on http://cepos.eu/):
The proposals must be sent in English and must contain the title of the paper, the abstract (no more than 300 words) and a short presentation of the author(s) (statute, institutional affiliation, short list of relevant scientific contributions).

DEAD-LINE FOR SUBMITTING REGISTRATION FORM: 01 MARCH 2026
Proposals must be submitted until 06 MARCH 2026 at the following address: cepos2023@gmail.com

CEPOS CONFERENCE PAST EDITIONS
More information, photos and other details about the previous editions of the Conference and CEPOS Workshops, Internships, and other official events organized in 2012-2025 are available on CEPOS official website sections **CEPOS Previous Events. Photo gallery CEPOS Events**
http://cepos.eu/gallery
https://www.facebook.com/pages/Center-of-Post-Communist-Political-Studies-CEPOS/485957361454074

REGISTRATION FEES CEPOS CONFERENCE 2026
Registration fees will be paid exclusively ONLINE. All details at: http://cepos.eu/upcoming

Organizing details (Conference location/ organizing details e.g. meals, coffee breaks/ mode of presentation of the papers to be announced in due time)
The registration fee covers:
* Conference attendance to all common sessions, individual and special panels
* Conference materials (including the Book of Abstracts of the Conference)
* Conference program 2026 for all registered participants
* Certificate of attendance for CEPOS Conference 2026 (offered at the end of the CEPOS Conference 2026)
* Certificate of attendance for CEPOS International Associated Research Workshop 2026 (free for registered participants attending the workshop). Main topics of the panel:

- *Policy indexation* of international journals in international databases and services;
- *Open access* policy of the international journals;
- *Data and statistics* within an international indexed conference;
- Use of *online applications* for social sciences research;
- Methods and *themes of research* provided by CEPOS (2021-2025);
- *Publication* in an international indexed journal;
- *Indexing and statistics* for social sciences journals in international databases;
- *Academic profile* in international databases;
- RSP Manuscript Submission Guidelines;
- Publication, editing support and *citation metrics* for social sciences journals.

* 15 minutes Oral presentation / Poster Presentation for every author and presenter

-EU policy cooperation and resilience facilities in (post)pandemic context
-Global environment and cultural heritage
-Historical narratives and political history (XIX-XX centuries)
-Historiography, history studies and policy mechanisms
-Human development and social action
- Human development, security, communication and social action
-Integration, identity, and human rights in European systems
-Judicial encounters and public policies
-Knowledge transfer and competitiveness in regional economies
-Law panel on legal, economic and social patterns of the democratization process
-Law, administration and transitional justice
-Law, legal studies and justice reform
-Law, transitional justice, democratization
-Legal and constitutional patterns of the democratization process
-Legal and social patterns of the democratization process
-Media analysis and transition
-Media analysis, public discourse and democracy
-Media, online communication and politics
-Political culture and citizen participation
-Political culture and language skills
-Political culture, civil society and citizen participation
-Political culture, rights and civil society
-Political culture, values and language skills
-Political events, resilience and social action
-Political history, collective memory and cultural heritage
-Political history studies and policy mechanisms
-Political leadership, democratization and regional security
-Political parties, electoral systems and electoral campaigns
-Political sciences panel on politics, governance and social culture
-Politics, governance and social change
-Politics, governance and social culture
- Politics, governance & societal security
-Post-communism and collective memory
-Public policies, social behavior and education
-Religion, cultural history and education
-Rights, identities, policies & participation
-Security and diplomacy in national and Euro-Atlantic environment
-Security encounters in the pandemic context
-Security, foreign policy, social movements and citizenship
-Security, social movements and citizenship
-Social economy, climate change and sustainable development
-Social economy, knowledge transfer and sustainable development

CEPOS NEW CALL FOR PAPERS 2026

CEPOS 16TH INTERNATIONAL CONFERENCE AFTER COMMUNISM. EAST AND WEST UNDER SCRUTINY,

House of the University, Craiova, Romania
20-21 March 2026 (Hybrid Conference)

Dear Colleagues,
We are delighted to invite you to participate in the 16th International Conference AFTER COMMUNISM. EAST AND WEST UNDER SCRUTINY in Craiova, Romania, 20-21 March 2026. More than three decades after, an event is both history and present. The annual conference organized by CEPOS involves both the perspectives of the researchers: research experiences and scientific knowledge. The conference will be hosted for two intense and exciting days, participants all over the world (professors, professionals, doctoral and post-doctoral researchers and students) are invited to raise the issue of the study of the recent history of the former Eastern space in connection with the Western world. We are confident that all of us will focus during these two days on what is important to move the research in the field forward. We dear to state that we even bear the moral obligation to do that.
Best regards,
The Board of Directors of CEPOS 2026 Conferences and Events Series

PROPOSED PANELS for CEPOS CONFERENCE 2026

-Administration, legal issues and social justice
-Administration, social inclusion and urban planning
-Administrative history and governance within South-Eastern Europe
-AI, Finances & digital developments
- AI, Finances, banking & digital market
-Bioethics and transition challenges
-History, politics and ideologies in modern and contemporary Europe
-Comparative policies, financial reforms and competitiveness
-Comparative policies, sustainable growth and urban planning
-Constitution(s), legality & political reforms
-Discourse, language and social encounters
-Economics, financial law and policy mechanisms
-Education, media & social communication;
-Education, political culture and language skills
-Education, social inclusion and regional policies
-E-government and social development
-E-government, comparative policies and strategic approaches
-Elections, social innovation and public policies
-Environment, biodiversity and climate change

19, Investment Management and Financial Innovations, 19(1), 262-273. doi:10.21511/imfi.19(1).2022.20.

Trivedi, J., Afjal, M., Spulbar, C., Birau, R., Inumula, K.M., & Pradhan, S. (2021) Modeling emerging stock market volatility using asymmetric GARCH family models: An empirical case study for BSE Ltd. (formerly known as Bombay Stock Exchange) of India, Revista de Științe Politice. Revue des Sciences Politiques, No. 70, 167 – 176.

Trivedi, J., Birau, R. (2013a) Co-movements between emerging and developed stock markets in terms of global financial crisis, Proceedings of the 1st WSEAS International Conference on Mathematics, Statistics & Computer Engineering, Dubrovnik, Croatia, 25-27 June, ISBN: 978-960-474-305-6, pg.146-151.

Trivedi, J., Birau, R., (2013b) Analysis of international contagion in emerging stock markets in terms of global financial crisis, Proceedings of the 2nd WSEAS International Conference on Finance, Accounting and Auditing, Brasov, Romania, ISBN: 978-1-61804-192-0, pg.120-125.

Article Info

Received: May 21 2025
Accepted: June 01 2025

How to cite this article:
Raza, S., Shreevastava, A., Meher, B. K., Birau, R., Margaritescu, S., Lupu (Filip), G. A. M., Simion, M. L. (2025). Exploring Japanese stock market volatility using symmetric and asymmetric GARCH models: A case study. *Revista de Științe Politice. Revue des Sciences Politiques,* no. 86, pp. 341 – 353.

Greenwood, R. (2008). Excess comovement of stock returns: Evidence from cross-sectional variation in Nikkei 225 weights. *Review of Financial Studies*, *21*(3), 1153–1186. https://doi.org/10. 1093/rfs/hhm052

Hanaeda, H., Serita, T. (2017). *Effects of Nikkei 225 ETFs on stock markets: Impacts of purchases by Bank of Japan 1 1 1 1*. https://ssrn.com/abstract=3019769

Ishijima, H., Kazumi, T., & Maeda, A. (2015). Sentiment analysis for the Japanese stock market. *Global Business and Economics Review*, *17*(3), 237. https://doi.org/10.1504/GBER. 2015.070303

Kato, K., Schallheim, J. S. (1985). Seasonal and Size Anomalies in the Japanese Stock Market. *The Journal of Financial and Quantitative Analysis*, *20*(2), 243. https://doi.org/10.2307 /2330958

Kumar, S., Abhishek, A., Birau, R., Meher, B.K., Kumar, S., & Florescu, I. (2023a) Temporal Analysis of Mexico Stock Market Index Volatility using GJR-GARCH model, Revista de Științe Politice. Revue des Sciences Politiques, No. 79(2023), 46-56.

Kumar, S., Meher, B.K., Birau, R., Simion, M.L., Florescu, I., Abhishek, A., Kumar, S. (2023b) Long-term volatility forecasting of Brazilian stock index behavior using suitable GARCH family models, Revista de Științe Politice. Revue des Sciences Politiques, No. 79(2023), 9-24, https://cis01.ucv.ro/revistadestiintepolitice/files/numarul 79_2023/1.pdf.

Marumo, K., Li, S. (2024). Downside Risk in Australian and Japanese Stock Markets: Evidence Based on the Expectile Regression. Journal of Risk and Financial Management, 17(5), 189. https://doi.org/10.3390/jrfm17050189.

Meher, B.K., Kumari, P., Birau, R., Spulbar, C., Anand, A., & Florescu, I. (2024) Forecasting Volatility Spillovers Using Advanced GARCH Models: Empirical Evidence for Developed Stock Markets from Austria and USA, Annals of "Dunarea de Jos" University of Galati, Fascicle I. Economics and Applied Informatics, pg.16-29, Years XXX – no1/2024, ISSN-L 1584-0409, ISSN-Online 2344-441X, DOI https://doi.org/10.35219 /eai15840409383.

Nakayama, J., Yokouchi, D. (2025). Relationship Between Japanese Stock Market Behavior and Category-Based News. Risks, 13(3), 50. https://doi.org/10.3390/risks13030050.

Qiu, M., Song, Y., & Akagi, F. (2016). Application of artificial neural network for the prediction of stock market returns: The case of the Japanese stock market. *Chaos, Solitons & Fractals*, *85*, 1–7, https://doi.org/10.1016/j.chaos.2016.01.004 .

Siminica, M., Birau, R. (2014) Investigating International Causal Linkages Between Latin European Stock Markets In Terms Of Global Financial Crisis : A Case Study For Romania, Spain And Italy, International Journal of Business Quantitative Economics and Applied Management Research (IJBEMR), 1(1), pp.12-36, ISSN : 2349-5677.

Spulbar, C., Birau, R., Trivedi, J., Iacob (Troto), A.I., Florescu, I., & Baid, R. (2023) Investigating volatility patterns for a cluster of developed stock markets including Austria, France, Germany and Spain by using GARCH models, Revista de Științe Politice. Revue des Sciences Politiques, No. 77, 41 – 48.

Spulbar, C., Birau, R., Trivedi, J., Hawaldar, I.T., & Minea, E.L. (2022) Testing volatility spillovers using GARCH models in the Japanese stock market during COVID-

The above graph shows the gradients of the objective functions from the coefficients C1-C8 in the model. Gradients help to assess how sensitive the objective functions. The gradients are fairly stable and fluctuate around zero, indicating that the model parameters were estimated efficiently and the optimization process was smooth. Parameters C3 and C6 show occasional spikes, which indicate that there are temporary effects due to market volatility. C3 is associated with the variance constant, which shows higher volatility. C8 remains close to zero, implying it was estimated with greater precision and had less impact on instability.

Conclusions and recommendations

A study comparing GARCH, TGARCH, IGARCH, EGARCH, PARCH, and APARCH models across six different distributions founds that the APARCH model with generalised error is the fittest model for the analysis of NIKKEI 225 index, and it was concluded that there was asymmetric, volatile clustering, leverage effect and volatility. Although APARCH model is a fine model, it fails to incorporate other finer details caused by the other variables, resulting in the generalisation of calculated results. For the academic community, it is essential to do an in-depth analysis of other finer details to avoid the generalisation of results. For this, various models are used, such as ML, AI, VAR, COPULA, etc., which are multivariate and show the larger picture that benefits society, investors and government for better policy formulation.

References:

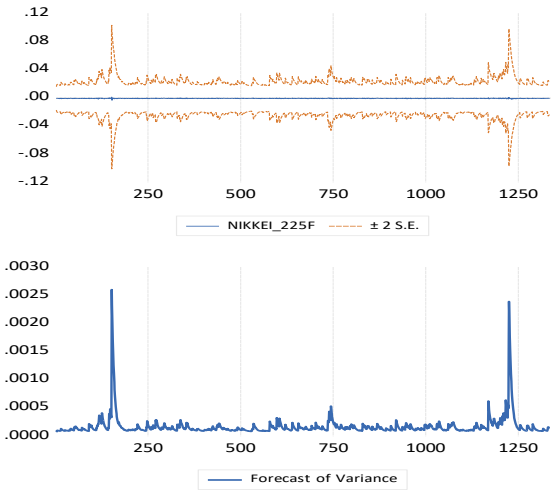
Amihud, Y., & Mendelson, H. (1991). Volatility, Efficiency, and Trading: Evidence from the Japanese Stock Market. *The Journal of Finance*, *46*(5), 1765–1789. https://doi.org/10.1111/ j.1540-6261.1991.tb04643.x .

Birau, R., Trivedi, J., (2013) Estimating Emerging Stock Market Volatility Using Garch Family Models, Indian Journal of Applied Research (IJAR), 3(9), pg.331-333, ISSN - 2249-555X.

Birau, R., Spulbar, C., Trivedi, J., & Florescu, I. (2021) Modeling volatility in the stock markets of Spain and Hong Kong using GARCH family models in the context of COVID - 19 pandemic, Revista de Științe Politice. Revue des Sciences Politiques, 72, 3 – 21.

Birau, R., Spulbar, C., Kumar Kepulaje, A., Simion, M.L., & Florescu, I. (2023) Investigating long-term causal linkages and volatility patterns: A comparative empirical study between the developed stock markets from USA and Netherland, Revista de Științe Politice. Revue des Sciences Politiques, No. 77, 80 – 87.

Birau, R., Trivedi, J., Antonescu, M. (2014) Modeling S&P Bombay Stock Exchange BANKEX Index Volatility Patterns Using GARCH Model, International Conference Emerging Markets Queries in Finance and Business EMQFB, Third Edition, 29 - 31 October 2014, Bucharest, Romania, published in Procedia - Economics and Finance, Elsevier, Volume 32, pp. 520-525, https://doi.org/10.1016/S2212-5671(15)01427-6.



Forecast: NIKKEI_225F	
Actual: NIKKEI_225_INDEX_LOG_RETURNS	
Forecast sample: 1 1334	
Adjusted sample: 2 1334	
Included observations: 1333	
Root Mean Squared Error	0.013412
Mean Absolute Error	0.009425
Mean Abs. Percent Error	NA
Theil Inequality Coef.	0.928309
Bias Proportion	0.001883
Variance Proportion	0.960821
Covariance Proportion	0.037297
Theil U2 Coefficient	NA
Symmetric MAPE	165.1441

Figure 5: Graphical representation of Forecast of Prices, Returns, and Volatility
Source: author's Computation using EViews 12

From the above pictures, it can be stated that the residuals are centred around zero, indicating there is no significant bias, and fitted values closely track actual returns. The difference between the actual value and the predicted value is small, and errors are close to zero. Spikes in the forecast variance graph match the period of high market movement, which means the model successfully captures uncertainty and or increased risk. The model demonstrates strong forecasting capacity and appropriate for analysing and predicting market volatility of returns.

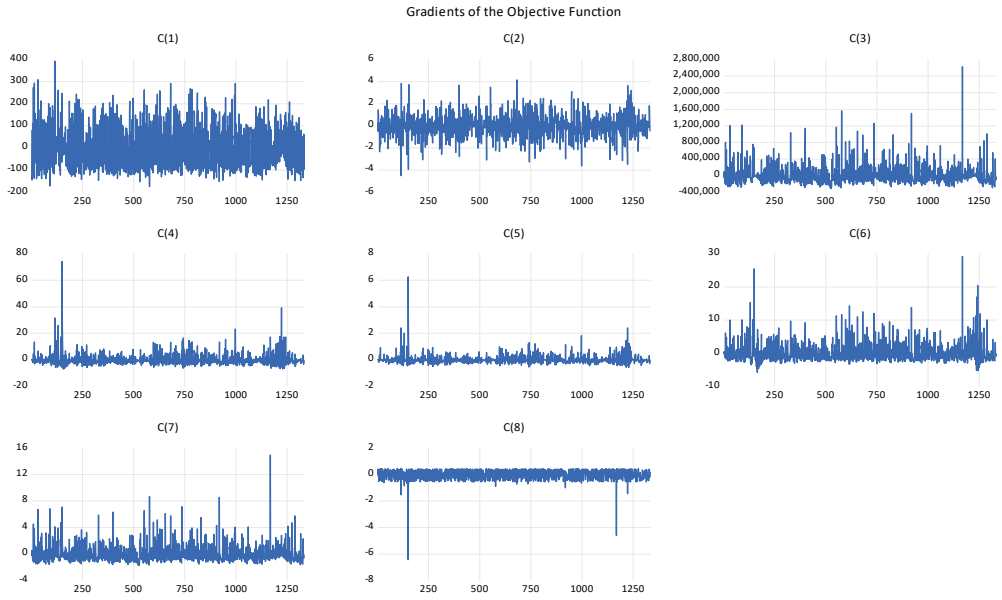


Figure 6: Gradients of the objective function
Source: author's Computation using EViews 12

Sum squared resid	0.239608	Schwarz criterion	-6.007118
Log likelihood	4029.519	Hannan-Quinn criter.	-6.026625
Durbin-Watson stat	1.984487		

Table 4 APARCH(1,1) generalised error distribution
Source: Author's computation using EViews 12

From the above APARCH(1,1) model, it can be concluded that C6 has strong volatility clustering, which also states that past volatility influences future volatility. C4 and C5 are not statistically significant, the overall model effectively captures the volatility clustering. The GED Parameter is also highly significant. Durbin-Waston stat (1.984487), which indicates there is no major autocorrelation in residuals. Model diagnostics also include Akaike info criterion(-6.038316), Schwarz criterion (-6.007118) and Log likelihood(4029.519), suggesting a well-fitting model.There is a chance of volatility clustering and the leverage effect. The result also emphasises market risks, which is important for investors and risk managers.

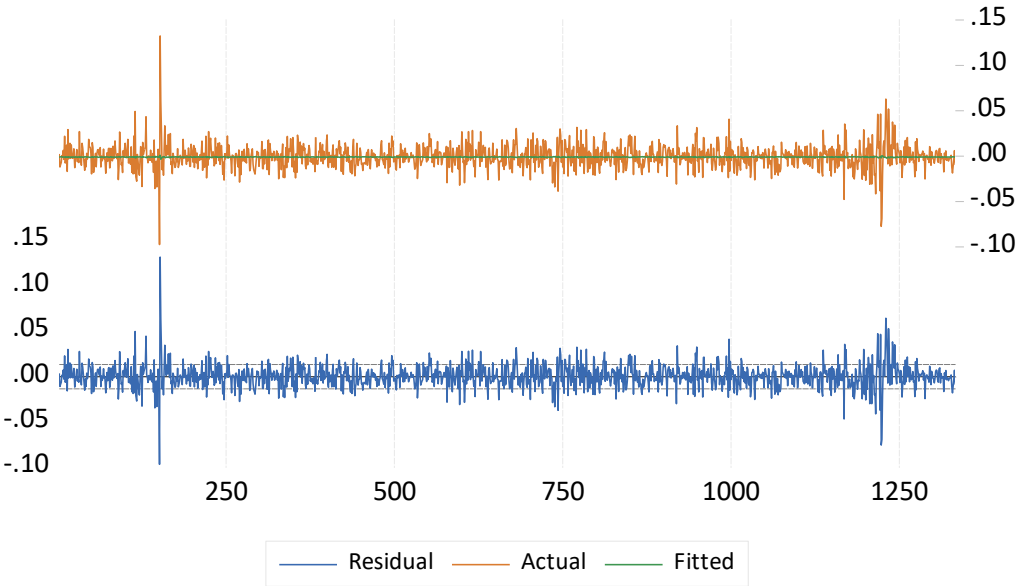


Figure 4. Graphical representation of estimated volatility
Source: author's Computation using EViews 12

Generalised Error (Parameter)	***Schwarz criterion***	-6.004543	-5.981084	-6.01664	-6.00896	-6.01192	-6.01192
	Log Likelihood	4017.012	3994.194	4028.667	4023.554	4029.117	4029.117
	ARCH significant	Yes	Yes	Yes	Yes	Yes	Yes
	Autocorrelation	No	No	No	No	No	No
	ARCH LM-Test	No	No	No	No	No	No
	GARCH significant	Yes	Yes	Yes	Yes	Yes	Yes
	significant coefficient	Yes	Yes	Yes	Yes	Yes	Yes

Table 3: Decision Table
Source: Author's tabulation using MS Office

Implementing GARCH, IGARCH, TARCH, EGARCH, APARCH, and PARCH among Gaussian Normal Distribution, Student's t distribution, Generalised Error distribution(GED), t distribution, and GED with fixed parameter, from the above table, it can be concluded that APARCH model generalised error distribution is the most suitable model due lowest Akaike info criterion (-6.038316), the lowest Schwarz criterion (-6.007118) and the highest Log likelihood (4029.519).

Dependent Variable: NIKKEI_225_INDEX_LOG_RETURNS
Method: ML ARCH - Generalised error distribution (GED) (Marquardt / EViews legacy)
Date: 05/22/25 Time: 23:01
Sample (adjusted): 2 1333
Included observations: 1332 after adjustments
Convergence achieved after 26 iterations
Presample variance: backcast (parameter = 0.7)
@SQRT(GARCH)^C(7) = C(3) + C(4)*(ABS(RESID(-1)) - C(5)*RESID(-1))^C(7) + C(6)*@SQRT(GARCH(-1))^C(7)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.001017	0.000297	-3.427512	0.0006
NIKKEI_225_INDEX_LOG_RETURNS(-1)	-0.018951	0.027380	-0.692147	0.4888
Variance Equation				
C(3)	1.18E-06	3.27E-06	0.361834	0.7175
C(4)	0.054931	0.046643	1.177695	0.2389
C(5)	0.620136	0.451933	1.372185	0.1700
C(6)	0.813824	0.047169	17.25336	0.0000
C(7)	2.530963	0.648632	3.902002	0.0001
GED PARAMETER	1.426157	0.073738	19.34081	0.0000

R-squared	-0.001710	Mean dependent var	-0.000427
Adjusted R-squared	-0.002463	S.D. dependent var	0.013406
S.E. of regression	0.013422	Akaike info criterion	-6.038316

the data exhibits volatility clustering.

		GARCH	IGARCH	TARCH	EGARCH	PARCH	APARCH
Normal Distribution	***Akaike info criterion***	-5.987515	-5.94637	-6.01175	-5.99922	-5.98728	-6.01263
	Schwarz criterion	-5.968017	-5.934671	-5.98835	-5.97582	-5.96388	-5.98533
	Log Likelihood	3992.685	3963.283	4009.826	4001.48100	3993.52600	4011.409
	ARCH significant	Yes	Yes	Yes	Yes	Yes	Yes
	Autocorrelation	No	No	No	No	No	No
	ARCH LM-Test	No	No	No	No	No	No
	GARCH significant	Yes	Yes	Yes	Yes	Yes	Yes
	significant coefficient	Yes	Yes	Yes	Yes	Yes	Yes
Student's T	***Akaike info criterion***	-6.022177	-5.95762	-6.03515	-6.02919	-6.02067	-6.03387
	Schwarz criterion	-5.998779	-5.94794	-6.00785	-6.00189	-5.99337	-6.00268
	Log Likelihood	4016.77	3967.835	4026.41	4022.44	4016.764	4026.56000
	ARCH significant	Yes	Yes	Yes	Yes	Yes	Yes
	Autocorrelation	No	No	No	No	No	No
	ARCH LM-Test	No	No	No	No	No	No
	GARCH significant	Yes	Yes	Yes	Yes	Yes	Yes
	significant coefficient	Yes	Yes	Yes	Yes	Yes	Yes
Generalized Error	***Akaike info criterion***	-6.024738	-5.97943	-6.03931	-6.03251	-6.02335	-6.038316
	Schwarz criterion	-6.001339	-5.96137	-6.01201	-6.00521	-5.99605	-6.007118
	Log Likelihood	4018.475	3987.32	4029.179	4024.653	4018.548	4029.519
	ARCH significant	Yes	Yes	Yes	Yes	Yes	Yes
	Autocorrelation	No	No	No	No	No	No
	ARCH LM-Test	No	No	No	No	No	No
	GARCH significant	Yes	Yes	Yes	Yes	Yes	Yes
	significant coefficient	Yes	Yes	Yes	Yes	Yes	Yes
T distribution (Parameter)	***Akaike info criterion***	-6.022152	-5.988011	-6.03610	-6.02915	-6.02070	-6.03496
	Schwarz criterion	-6.002654	-5.97631	-6.01270	-6.00575	-5.99730	-6.00766
	Log likelihood	4015.754	3991.015	4026.044	4021.413	4015.788	4026.28300
	ARCH significant	Yes	Yes	Yes	Yes	Yes	Yes
	Autocorrelation	No	No	No	No	No	No
	ARCH LM-Test	No	No	No	No	No	No
	GARCH significant	Yes	Yes	Yes	Yes	Yes	Yes
	significant coefficient	Yes	Yes	Yes	Yes	Yes	Yes
	Akaike info criterion	-6.024042	-5.992784	-6.04004	-6.03236	-6.03922	-6.03922

*MacKinnon (1996) one-sided p-values.

Table 1 Augmented Dickey-Fuller (ADF) test
Source: Author's computation using EViews 12

The above test is an Augmented Dickey-Fuller test, and it can be observed that the probability value is less than 0.05. Consequently, we reject the Null hypothesis test, and the given data has no unit root and is stationary.

Descriptive Statistics

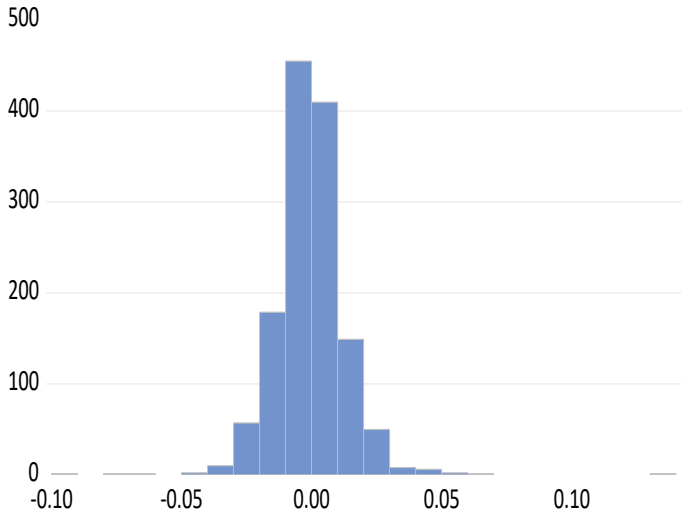


Figure 3: Test Distribution Analysis
Source: Author's computation using EViews 12

The above statistics show that the average log return is scarcely negative. The central value is approximately close to zero, suggesting a nearly symmetric distribution. The standard deviation is very low, which signifies that most of the datasets are close to the mean value and less deviated.A high kurtosis value shows a leptokurtic distribution and slight positive skewness, which indicates extreme values as compared to a normal distribution. To analyse further, we need to check the ARCH effect on the given dataset through the ARCH LM Test.

Heteroscedasticity Test

Heteroskedasticity Test: ARCH			
F-statistic	474.9144	Prob. F(1,1329)	0.0000
Obs*R-squared	350.4108	Prob. Chi-Square(1)	0.0000

Table 2. ARCH effect test
Source: Author's computation using EViews 12

From the above table, it can be observed that the ARCH test result shows the p-value (0.0000) is strong substantiation of the ARCH effect in the given dataset, suggesting that

The above graphical representation is of the NIKKEI 225 index price over a given time period, showing a clear overall downward trajectory. Index begins at a high level, above 36000 and rises briefly above 40000 and then drops sharply. The early phase of the graph reflects significant market volatility, with fluctuation indicating the period of instability. After the initial fall, the index continues to decline slowly, with small ups and downs, interspersed with minor recoveries. This phase suggests market stabilisation, but fails as the overall market movement remains downward. Around the midpoint of the graph, the index fluctuates between 26000 and 28000, which shows a sign of unification. In the later stages, the declines become steeper once again, and the index falls below 20000 before a slight recovery at the end. The pattern shows how the Japanese stock market dropped a lot after a big rise and took a long time to recover.

To make returns stationary, the log return has been calculated, and the below is the graphical representation of the log return. As discussed earlier that there are fluctuations over the period of time.

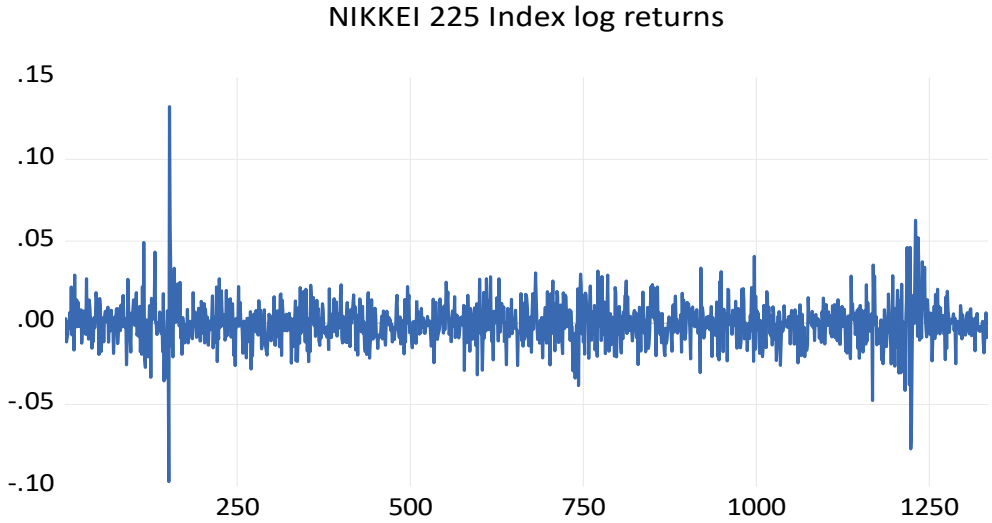


Figure 2: Log Returns Graph
Source: author's Computation using EViews 12

The visual pattern hints at possible heteroscedasticity. It is crucial to first verify the stationarity of the data.

Test of stationarity

Null Hypothesis: NIKKEI_225_INDEX_LOG_RETURNS has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=22)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-36.98114	0.0000
Test critical values:	1% level	-3.435049	
	5% level	-2.863502	
	10% level	-2.567864	

influenced by both internal factors and external environmental conditions.

Limitations of the study

The study offers a detailed volatility analysis using daily data and focuses on conditional return variance, simplifying real-world complexities and creating a generalised framework that's more **theoretical** than practical, and it might not fully answer all relevant questions.

- Limited availability of data: Data was extracted from the Tokyo stock exchange database, which is freely available. Lack of **financial backing**meant this study had to take a general approach, unable to delve into the details of micro-level variations.
- Generalisation of result: Despite its flexibility and ability to cover several GARCH models, APARCH model struggles to capture the **subjective nature in complex real-world scenarios.**
- Model sensitivity to varied situations: APARCH model is great for understanding volatility on a theoretical level, accounting for various factors like **leverage and decay effects, and volatility clustering**. However, it might struggle to uncover the **subtler, unique drivers** of a particular situation.

Acknowledging the unique strengths and weaknesses of both the APARCH and GARCH models, we'll now move forward with the analysis and estimation in the research.

Empirical analysis, estimation, and results

For a better understanding of price movement, we look at the price movement visually. Below is the graphical representation of actual prices.

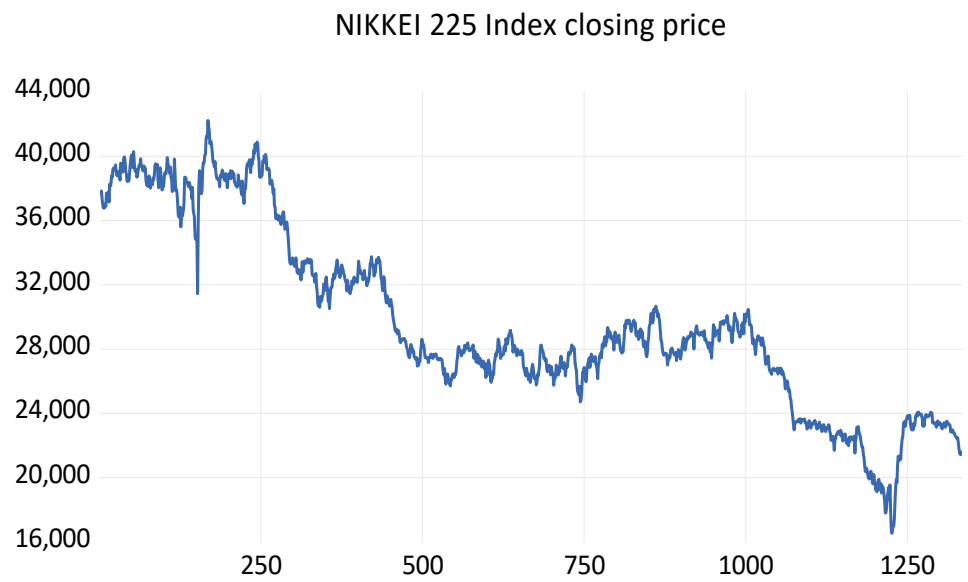


Figure 1. Daily Closing Price of Index
Source: author's Computation using EViews 12

Nakayama and Yokouchi (2025) investigated the complex behavior of the developed stock market in Japan considering the impact of the news. Marumo and Li (2024) conducted an empirical study on the behavioral dynamics of stock markets in Japan and Australia under the influence of risk, based on ASX 200 and Nikkei 225 stock indices, using expectile regression model. Moreover, in the literature there is a wide variety of empirical studies that comparatively analyze the behavior of certain stock markets, such as: Trivedi and Birau (2013a), Birau et al. (2023), Trivedi and Birau (2013b), Siminica and Birau (2014).

In this context, not only the price movement but also the deviance from the mean value becomes important for a greater understanding of investment, economy, and policy-level purposes. Noting the volatility of an index or any financial time series is not exclusive to statistical areas but has wider implications holistically. Due to this very reason, anyone interested in Japan in terms of an economic point of view, NIKKEI 225 stock index should be their first source of enquiry. Understanding the volatility of this index thus becomes very imperative. There are several approaches to calculating the volatility and one of the most advanced and precise tools available in econometric terms is understanding Autoregressive Conditional Heteroskedasticity in Autoregressive (AR) and Moving Average (MA) terms. One of the latest models in that certain context is the GARCH family models, each model having the capability to calculate conditional volatility along with slight modifications based on distribution and Asymmetric configurations. One of the recent improvements in financial time series analysis is being used in terms of Machine Learning models using Neural Networks, however, its utility is more towards forecasting and not volatility analysis. In one of the studies 71 parameters were utilised and using 18 variables ANN architecture was effective in predicting the NIKKEI 225 prices (Qiu et al., 2016).

Research Methodology

The application of data is based on secondary data, and the data are quantitative in nature. This work analyses various methods to evaluate the quantitative impact of NIKKEI 225, the Tokyo Exchange stock. The volatility analysis is observed for 1334 days from 07/10/2019 to 21/03/2025. Log return had been calculated to make the data stationary. Volatility clustering had been spotted in data that leads to applying the ARCH LM test for heteroscedasticity in the return series residuals. Volatility has been proved by using different GARCH family models employing different distributions, such as the Normal (Gaussian), Student's t, and Generalised Error Distribution (GED)**, both with and without pre-specified parameters. The selection of the most suitable GARCH model for analysis is based on the values of AIC, SC, and Log Likelihood. The software package used for financial econometric analysis is EViews 12.**

Significance of the study

The research delivers societal value through a more comprehensive insight into the dynamics of financial markets. GARCH models are applied to observe the volatility of the NIKKEI 225 index. A thorough understanding of market volatility is essential for investors, financial institutions, and government bodies, as it helps them to mitigate risks, improve their decisions **and create better, more effective strategies. Existing literature is scarce on the subject, and no study so far has explored the individual analysis of NIKKEI 225. The study has high significance not only for the investors but also equally important for corporations to** understand index dynamics, as they are

Keywords: *asymmetry, GARCH models, conditional variance, Nikkei 225 index, volatility, Tokyo Stock Exchange, leverage effect, stock market*

JEL Classification: C22, C58, G1, G12, G15

Introduction

Volatility is one of the most important factors that is considered while reviewing any time series for any purpose. In the context of financial time series, volatility holds various connotations not only related to plain statistics, but every movement has deep impacts both intrinsically and extrinsically, and holds the attention of not only investors but also academicians and policymakers at large. In this context, stock exchange indices are the indicator of the overall market and are sensitive to even small changes in the macroeconomic context.

One of the major stock exchanges in the world is the Tokyo Stock Exchange (TSE) and which is among the top 5 stock exchanges based on market capitalization. Very little attention has been paid by the academic community to the Japanese stock market and its other possibilities (Kato & Schallheim, 1985). The clearing facilities at Tokyo stock exchange is noisy and inefficient (Amihud & Mendelson, 1991). A sentiment analysis done using positive and negative affirmations in the Wall Street Journal and the NIKKEI index helped in predicting prices 3 days in advance.(Ishijima et al., 2015). The Exchange operates in 2 sessions, 9:00 AM to 11:30 AM and 12:30 PM to 3:30 PM.

NIKKEI 225 is a price-weighted average index of 225 highly capitalised and liquid, publicly-owned companies across various industries, operating in Japanese Yen. An excellent and curious investigation has been made, where it has been noted that some stocks in the index is overweighed by a factor of 10 or more, and co-movement with stocks within the index has positive correlation and has a negative correlated co-movement with stocks outside the index. (Greenwood, 2008). NIKKEI 225 ETFs occupy almost 2% of NIKKEI 225 stocks, and due to macroeconomic trends, the deviations are observed (Hanaeda & Serita, 2017). This selected stock market index seems to be an effective indicator for the market sentiment and macroeconomic variables in Japanese stock market.

Literature review

Over time, a variety of empirical studies focused on the stock markets behavior have been consolidated in the specialized literature using GARCH family models, such as the following: Kumar et al. (2023a), Spulbar et al. (2023), Meher et al. (2024), Birau et al. (2021), Trivedi et al. (2021), Kumar et al. (2023b), Birau and Trivedi (2013) and many others.

Birau et al. (2014) have investigated the dynamics of the emerging stock market in India for the sample period from January 2002 to June 2014 based on GARCH (1,1) model. Moreover, Spulbar et al. (2022) have conducted an empirical research study in order to examine the behavior of the developed stock market in Japan, considering the daily prices of NIKKEI 225 stock index. The econometric framework was based on GARCH models, such as GARCH (1,1), EGARCH (1,1) and GJR (1,1) models and the sampled period was very long, from July 1998 to January 2022, but consisting of daily observations.

Revista de Științe Politice. Revue des Sciences Politiques • No. 86 • 2025: 341 – 353

ORIGINAL PAPER

Exploring Japanese stock market volatility using symmetric and asymmetric GARCH models: A case study

Shahil Raza[1)], Aman Shreevastava[2)], Bharat Kumar Meher[3)], Ramona Birau[4)], Stefan Margaritescu[5)], Gabriela Ana Maria Lupu (Filip)[6)], Mircea Laurentiu Simion[7)]

Abstract:
The main aim of this research paper is to investigate Japanese stock market volatility using symmetric and asymmetric GARCH models. The Nikkei 225 index is the Tokyo Stock Exchange index of 225 publicly owned liquid companies across industries, and the index is calculated using price-weighted-average method. It has been very effective in representing the market sentiment and macroeconomic condition of Japanese Stock market, in this context due to lack of related studies it becomes imperative to study the volatility of the Index. For this purpose, the following models, such as: GARCH, I-GARCH, T-GARCH, E-GARCH, P-GARCH, AP-GARCH (APARCH) were tested across Normal Distribution, Student's T Distribution, Generalized Error Distribution, Parametric T distribution and Parametric Generalized Error Distribution. Based on AIC, SIC and Log Likelihood APARCH at Generalized Error Distribution was chosen. The model displayed strong forecasting capability and from the analysis volatility clustering and asymmetry was evident. It was also identified that the index is sensitive to the leverage effect.

[1)][30]Department of Commerce, Aligarh Muslim University, Aligarh, Uttar Pradesh, India, Postal Code-202002, Email: gi1793@myamu.ac.in
[2)] PG Department of Commerce& Management, Purnea University, Purnia, Bihar, India, Postal Code-854301, Email: amanshreevastava1998@gmail.com
[3)] PG Department of Commerce& Management, Purnea University, Purnia, Bihar, India, Postal Code-854301, Email: bharatraja008@gmail.com
[4)] University of Craiova, "Eugeniu Carada" Doctoral School of Economic Sciences, Craiova, Romania, Email: ramona.f.birau@gmail.com
[5)] University of Craiova, "Eugeniu Carada" Doctoral School of Economic Sciences, Craiova, Romania, Email: stefanitamargaritescu@gmail.com
[6)] University of Craiova, "Eugeniu Carada" Doctoral School of Economic Sciences, Craiova, Romania, Email: Lupuanamariagabriela@yahoo.com
[7)] University of Craiova, "Eugeniu Carada" Doctoral School of Economic Sciences, Romania, Email: simionmircealaurentiu@gmail.com

https://www.enisa.europa.eu/sites/default/files/2025-02/Finance%20TL%202024_Final.pdf

Article Info

Received: May 18 2025
Accepted: May 30 2025

How to cite this article:
Nioață (Chireac), R.-M., Filip, R. D., Lupu (Filip), G. A.-M., Mărgăritescu, S. (2025). The evolution of e-banking, its security, and its impact on the modern financial system. *Revista de Științe Politice. Revue des Sciences Politiques,* no. 86, pp. 332 – 340.

Falk, T., Hammerschmidt, M., & Schepers, J. J. (2010). *The Service Quality Satisfaction Link Revisited: Exploring Asymmetries and Dynamics*. Journal of Interactive Marketing, 24(1), 23-37, https://doi.org/10.1007/s11747-009-0152-2

Gup, Benton E., (2003), The Future of Banking. THE FUTURE OF BANKING, Benton E. Gup, ed., Greenwood Press, Available at SSRN: https://ssrn.com/abstract=333420

Heffernan, S. (2005). *Modern Banking*. Wiley.

International Monetary Fund (IMF). (2020). *Cyber Risk and the Financial System: A Global Perspective*.

Kumar, P., & Singh, R. (2020). *Cybersecurity in Financial Services: Threats, Vulnerabilities, and Countermeasures*. Journal of Internet Banking and Commerce, 25(1).

Mishkin, F. S. (2018). *The Economics of Money, Banking and Financial Markets* (12th ed.), Global Edition, Pearson.

Niemi, J., Virtanen, V., & Raijas, A. (2006). *Customer Satisfaction and Electronic Banking: The Importance of Usability Factors in Online Banking Services*. Journal of Financial Services Marketing, 11(1), 11-20.

Ozili, P. K. (2018). *Impact of digital finance on financial inclusion and stability*. Borsa Istanbul Review, 18(4), 329-340.

Pourmansouri, R., Fallah, M. feiz, Birau, R., Dekamini, F., & Nioata, R. M. (2024). Exploring governance, ownership and auditor impact on company risk: A comparative analysis before and after COVID-19. *Multidisciplinary Science Journal*, *7*(7), 2025320.

https://doi.org/10.31893/multiscience.2025320 https://malque.pub/ojs/index.php/msj/article/view/4688

Pousttchi, K., & Dehnert, M. (2018). *Exploring the Digitalization Impact on Consumer Decision-Making in Retail Banking*. Electronic Markets, 28(3), 265-286.

Saunders, A., & Cornett, M. M. (2020). *Financial Institutions Management: A Risk Management Approach* (10th ed.). McGraw-Hill, ISBN-13: 978-1260013825

Spulbăr, C., Birău, R., (2019*). Emerging Research on Monetary Policy, Banking, and Financial Markets*, Hershey, PA: IGI Global Scientific Publishing, DOI: 10.4018/978-1-5225-9269-3.

Trufaşu, C. (2004). *The Impact of Delivering E-Banking Services on the Traditional Banking Risks*, Informatics Economic, no.4(32), pag. 40-44.

Stiglitz, J. E., & Greenwald, B. (2014). *Creating a Learning Society: A New Approach to Growth, Development, and Social Progress*. Columbia University Press.

Tapscott, D., & Tapscott, A. (2016). *Blockchain revolution: How the technology behind bitcoin is changing money, business, and the world*, New York: Portfolio/Penguin.

Turban, E., Pollard, C., & Wood, G. (2018). *Information Technology for Management: On-Demand Strategies for Performance, Growth and Sustainability*. John Wiley & Sons.

Vives, X**.** (2017). *Competition and Stability in Banking: The Role of Regulation and Competition Policy*. Princeton University Press.

World Bank (2021). *Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19.*

https://www.eca.europa.eu/lists/ecadocuments/brp_cybersecurity/brp_cybersecurity_ro.pdf

system by developing flexible legislative frameworks capable of responding quickly to changes in the digital sector. At the same time, economic policies must support investment in digital infrastructure and facilitate access to technology for the less banked segments of the population. Strengthening international cooperation in financial regulation is essential to prevent systemic risks and ensure a safe and sustainable framework for the development of e-banking globally.

Consequently, the future of e-banking depends on the ability of banks and regulators to manage the complexity of a digitized financial environment, ensuring the security, accessibility, and stability of the system. Adopting an integrated strategy that combines technological innovation with effective regulatory measures and financial education will be essential to maximising the benefits of digitisation and creating a more resilient and inclusive financial system.

Authors' Contributions:

The authors contributed equally to this work.

References:

Akhisar, İ., Tunay, K. B., & Tunay, N. (2015). *The Effects of Innovations on Bank Performance: The Case of Electronic Banking Services*. Procedia - Social and Behavioral Sciences, 195, 369-375, https://doi.org/10.1016/j.sbspro.2015.06.336.

Allen, F., & Santomero, A. M. (2001). *What Do Financial Intermediaries Do?*. Journal of Banking & Finance, 25(2), 271-294.

Basel Committee on Banking Supervision (2018). *Sound Practices: Implications of fintech developments for banks and bank supervisors*. Bank for International Settlements.

Birau, R., Filip, R.D., Nioata (Chireac), R.M. Lupu (Filip), G.A.M., (2024) Takaful Islamic Insurance for Life: A Review on the Relevance of Takaful Models of Financial Markets Models on Financial Markets Behavior, Fourteenth International Conference After Communism. East and West Under Scrutiny (CEPOS), 15-16 March 2024, Craiova, Romania, ISSN 2286 – 4792 ISSN-L 2286 – 4792.

Birau, R., Pourmansouri, R. (2024), Financial econometrics, Cambridge Scholars Publishing

ISBN: 978-1-0364-1034-6

Casu, B., Girardone, C., & Molyneux, P. (2021). *Introduction to Banking* (3rd ed.). Oxford: Oxford University Press.

Chishti, S., & Barberis, J. (2016). *The FinTech Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries*. Wiley.

Daniel, E. (1999*) Provision of Electronic Banking in the UK and the Republic of Ireland.* International Journal of Bank Marketing, 17, 72-82. https://doi.org/10.1108/02652329910258934

Demirguc-Kunt,Asli & Klapper,Leora & Singer,Dorothe, (2017). "*Financial inclusion and inclusive growth : a review of recent empirical evidence*," Policy Research Working Paper Series 8040, The World Bank.

ENISA (2021). *Threat Landscape for Financial Sector*. European Union Agency for Cybersecurity.

operating costs. In addition, banks have had to collaborate with fintechs and other financial technology companies to improve their services and remain competitive in the market. Strategic partnerships between banks and fintechs have led to increased innovation in financial products, such as instant payments, digital loans, and automated investment solutions. This ongoing adaptation is essential to maintaining competitiveness in an increasingly dynamic financial environment.

Despite its many benefits, banking digitization also generates systemic risks and significant economic challenges. Increased dependence on technology exposes financial institutions to cyber risks, which can affect both data security and the stability of the entire banking system. Cyberattacks, security breaches, and digital fraud can have major economic consequences, affecting consumer confidence and compromising the functioning of financial institutions. Banking digitization can also contribute to the exclusion of social groups that do not have access to the internet or modern technologies, which can exacerbate economic inequalities. Another challenge is adapting to ever-changing regulations, which impose strict compliance and security measures on banks.

In this context, the impact of e-banking on the modern financial system is complex, balancing the advantages of digitization with the associated risks. As technologies evolve and regulations adapt to new economic realities, financial institutions must find solutions to maximize benefits, minimize risks, and maintain economic stability. Thus, the future of e-banking depends on the banking sector's ability to adopt technological innovations, ensure data security, and provide accessible and sustainable financial services for the entire population.

Conclusions and recommendations

The evolution of e-banking has had a profound impact on the modern financial system, redefining the operating models of banking institutions, changing consumer behavior, and influencing the structure of financial markets. The digitization of banking services has led to increased operational efficiency, reduced costs, and expanded access to financial products, contributing to the strengthening of financial inclusion globally. Banks have adopted innovative tech solutions based on artificial intelligence, blockchain, and predictive analytics to offer personalized services and improve transaction security. However, the expansion of e-banking has also generated significant challenges, including cyber risks, data protection issues, and increased dependence of the financial system on digital infrastructure.

The future development of e-banking will depend on the banking sector's ability to innovate and respond to emerging challenges. One of the main areas of development is the integration of advanced technologies to enhance security and reduce vulnerabilities to cyber attacks. The implementation of biometric authentication solutions, the use of artificial intelligence for fraud detection, and the development of blockchain-based infrastructures can help strengthen user confidence in the digital banking system. Another challenge is adapting to new data protection and transaction security regulations, which impose strict compliance and operational transparency measures on banks. In addition, the transition to a fully digital banking model requires substantial investments in IT infrastructure and consumer education to ensure the effective adoption of new financial solutions.

From an economic and financial perspective, the expansion of e-banking has major implications for public policies and sectoral regulations. Financial authorities must maintain a balance between promoting innovation and ensuring the stability of the banking

solution for protecting transactions and reducing the risk of data manipulation. The implementation of smart contracts within digital banking platforms can help automate and secure financial processes, eliminating the need for intermediaries and reducing system vulnerabilities.

As e-banking services continue to evolve, cybersecurity is essential for maintaining consumer confidence and protecting global financial stability. Banks need to invest in innovative solutions, adapt to new regulations, and collaborate with cybersecurity experts to counter emerging threats. In an increasingly complex digital ecosystem, the success of e-banking depends on the financial sector's ability to strike a balance between innovation and protection, thereby ensuring a safe and efficient environment for users.

The impact of e-banking on the modern financial system

The digital transformation of the banking sector has led to a revolution in financial services, fundamentally changing the operational models of banking institutions, consumer behavior, and the structure of the financial market. E-banking, through the digitization of banking services, has generated significant benefits for financial institutions, consumers, and the economy, but it has also brought new risks that require careful management.

Financial institutions have benefited considerably from e-banking, achieving operational efficiency and reducing administrative costs. The automation of banking processes, the use of artificial intelligence, and the adoption of digital platforms have enabled banks to optimize resources and offer personalized services with a high degree of accessibility. At the same time, digitization has improved risk management capabilities through advanced data analysis and fraud detection systems. Another major advantage is market expansion by reducing dependence on physical branches, which allows banks to grow their customer base globally. In addition, the integration of new financial technologies has increased the competitiveness and adaptability of banking institutions to market demands.

From the consumers' perspective, e-banking has revolutionized the way they access and use financial services, offering them greater flexibility, speed, and transparency. Other relevant studies and various financial approaches have also been published (Birău et al. 2024), to show the rapid evolution of financial services.

Online transactions, mobile payments, and access to personalized financial services have simplified the interaction between customers and banks. A key aspect is the increase in financial inclusion, as digitization has enabled access to banking services for segments of the population that previously had no opportunity to interact with traditional financial institutions. E-banking platforms reduce geographical and economic barriers, facilitating access to essential financial products such as savings accounts, loans, or insurance. In addition, transparency and instant access to financial information give consumers greater control over their own resources and expenses.

Studies conducted by (Niemi et al. 2006) also indicate that customer satisfaction with e-banking is strongly correlated with ease of use, which implies investments in the intuitive design of digital platforms and in the financial education of users.

The digitization of banking services has led to fundamental changes in banks' business models, forcing them to adopt innovative solutions and redefine their operational strategies. The classic model, based on physical branches and face-to-face interactions, has been gradually replaced by digital platforms, leading to a significant reduction in

the need to adapt to new regulations, and maintaining a balance between innovation and security. In this context, banks and financial institutions need to adopt sustainable strategies to fully leverage the benefits of digitalization while maintaining customer confidence and the stability of the global financial system (ENISA, 2021).

E-banking security, challenges and solutions in the digital age.

The digitization of the banking sector has brought significant benefits in terms of accessibility and efficiency of financial services, but it has also created new challenges related to cybersecurity. In an environment characterized by interconnectivity and automation, digital banking systems are exposed to a wide range of threats, including phishing attacks, financial malware, social engineering fraud, and ransomware attacks. Technological innovations in the financial sector have been accompanied by an increase in the complexity and frequency of cyber attacks, requiring proactive measures to protect transactions and sensitive data (Kumar & Singh, 2020; Ozili, 2018).

In addition, the increased use of mobile banking services and digital payments exposes users to additional risks, such as interception of communications or compromise of devices through malicious applications. To combat these threats, financial institutions are implementing advanced security measures designed to reduce the vulnerabilities of digital systems and protect customer data. Multi-factor authentication has become standard practice, combining traditional passwords with biometric methods such as facial recognition or fingerprinting, and with unique codes generated by tokens. Advanced data encryption also plays a key role in protecting information transmitted between customers and banking institutions, preventing unauthorized access to transactions. In addition, real-time monitoring of banking activities through advanced fraud detection algorithms allows suspicious behavior to be identified and attacks to be prevented before they cause significant damage (ENISA, 2021; IMF, 2020).

Internationally, e-banking security is regulated by a series of standards and directives designed to ensure consumer protection and financial sector stability. The General Data Protection Regulation (GDPR) imposes strict requirements on the management and security of personal information, while the Payment Services Directive (PSD2) promotes the use of strong customer authentication and facilitates collaboration between traditional banks and new financial service providers. The standards set by the Payment Card Industry Data Security Standard (PCI DSS) define best practices for protecting card transactions, reducing the risk of fraud and data theft. Financial institutions must also comply with the requirements imposed by national and international regulatory bodies, which require the implementation of robust mechanisms to protect against cyber attacks and report security incidents.

With regard to security, (Trufaşu, 2004) emphasizes the need for proactive policies and continuous investment in cyber protection technologies, given the increasing sophistication of cyber attacks. In the same vein, the PCI DSS standards and PSD2 requirements are highlighted by Turban et al. (2018) as essential elements in defining a framework of trust for users of digital banking services.

In this context, emerging technologies play a crucial role in strengthening e-banking security. Artificial intelligence allows large volumes of data to be analyzed to detect anomalies and prevent financial fraud by identifying unusual trading patterns. Machine learning algorithms are capable of identifying cyber attacks in their early stages, enabling financial institutions to respond quickly and effectively. Blockchain, with its decentralized architecture and advanced cryptography mechanisms, offers an innovative

efficiency, accessibility, and security of banking transactions. By definition, e-banking refers to the use of digital technologies to provide banking services, allowing customers to perform financial operations via the internet, mobile applications, and other electronic platforms. The essential features of e-banking include continuous availability, global accessibility, reduced operational costs, and the integration of advanced security measures for user data protection (Kumar & Singh, 2020).

The development of e-banking has been analyzed in several stages, each marked by technological advances and changes in consumer behavior. Initially, in the 1960s and 1970s, banks began to implement electronic systems for accounting data management and transaction processing. Later, in the 1980s and 1990s, the emergence of ATMs and the introduction of the first remote banking services by telephone represented important steps towards the digitization of the banking sector. A major milestone was the early 2000s, when the internet enabled the development of online banking services, allowing customers to make transfers, payments, and balance checks independently. With the advent of smartphones and mobile apps in the last decade, e-banking has become ubiquitous, and emerging technologies such as blockchain and artificial intelligence continue to redefine financial services (Ozili, 2018; IMF, 2020).

Over time, the adoption of digital banking services has been driven by several economic and technological factors. A key element was the increase in access to the internet and smart devices, which facilitated digital interaction with financial institutions. Changes in consumer preferences also influenced the demand for fast, secure, and convenient banking solutions, reducing the need for physical interaction with bank branches. From the perspective of financial institutions, digitization has been driven by the need for operational efficiency, cost reduction, and compliance with cybersecurity and data protection regulations (Basel Committee on Banking Supervision, 2018). Competition from FinTech companies and the evolution of the global financial market have forced traditional banks to adapt their business models, accelerating the digitization process.

Current trends in e-banking reflect a shift towards automation, personalization, and advanced security. Artificial intelligence and data analytics are used to improve the customer experience by providing personalized solutions based on their financial behavior. Other relevant studies and various financial approaches have also been published (Pourmansouri, R., et al. 2024), to show the rapid evolution of financial services.

Biometric authentication technologies, such as facial recognition and fingerprint scanning, also contribute to increased transaction security. Blockchain promises to revolutionize the banking industry by eliminating intermediaries and increasing transparency in financial processes (Tapscott & Tapscott, 2016). In the future, e-banking services will become even more integrated into the global digital ecosystem, offering cloud-based financial solutions, instant payments, and increasingly fluid interaction between different financial platforms. The ongoing digitization of banking services is not only redefining the relationship between customers and financial institutions, but also contributing to greater financial inclusion by facilitating access to banking services for segments of the population that were previously excluded from the formal financial system (World Bank, 2021).

Thus, we can say that the evolution of e-banking reflects not only technological progress but also a structural change in the way the financial system works. With all the advantages it offers, this transformation also comes with challenges, including cyber risks,

Introduction

The digital transformation of the banking sector is an essential element of the modern economy, having a significant impact on operational efficiency, accessibility of financial services, and transaction security. E-banking, defined as the use of digital technologies to provide banking services, has become a fundamental component of the global financial system, facilitating rapid and efficient interaction between banking institutions and consumers. In a dynamic economic context marked by globalization and technological innovation, digital banking services contribute to increasing financial inclusion, reducing operational costs, and optimizing banking processes.

The development of e-banking is driven by factors such as technological advances, increased demand for fast and convenient services, and the need to adapt to cybersecurity and data protection regulations (Casu et al., 2021, Heffernan, 2005). In this context, analyzing the impact of e-banking on the modern financial system becomes essential for understanding the challenges and opportunities associated with banking digitization.

This study aims to analyze the evolution of e-banking, its security, and its impact on the modern financial system. To this end, the study explores the stages of e-banking development, highlighting the factors that led to its widespread adoption and how it has influenced the transformation of the financial sector. It also assesses the main cyber risks associated with digital banking services, along with the security measures implemented to protect transactions and user data.

The analysis also looks at the impact of e-banking on financial institutions, examining changes in banks' business models and their relationship with customers, as well as the implications for economic stability. The study also aims to formulate recommendations on the sustainable and secure development of digital banking services, taking into account both future prospects and the challenges associated with the accelerated digitization of the banking sector.

Research methodology

The methodology used in this study is based on a descriptive and analytical approach, with academic studies, reports from international financial institutions, banking security regulations, and relevant statistical data as its main sources of information. The research includes a comparative analysis of global trends in e-banking, as well as case studies on the implementation of digital solutions in the banking sector.

We also used qualitative and quantitative methods to highlight the impact of digitization on the financial performance of banking institutions and consumer behavior. Through this approach, we sought to paint a complete picture of the role of e-banking in the digital economy and the challenges associated with its implementation globally.

The study adopts a qualitative and quantitative approach, based on a documentary analysis of the specialized literature, reports from financial institutions, and relevant regulations. The comparison of international trends is complemented by examples of best practices and the interpretation of available statistical data in the field of e-banking. This methodology allows us to outline a holistic view of the economic, operational, and regulatory impact of digital banking services.

The evolution of e-banking and the digital transformation of the financial system

In the context of the digital economy, e-banking is a fundamental pillar of the modernization of financial services, having a significant impact on the operational

Revista de Științe Politice. Revue des Sciences Politiques • No. 86 • 2025: 332 – 340

ORIGINAL PAPER

The evolution of e-banking, its security, and its impact on the modern financial system

Roxana-Mihaela Nioață (Chireac) [1)], Robert Dorin Filip[2)], Gabriela Ana-Maria Lupu (Filip)[3)], Ștefan Mărgăritescu[4)]

Abstract:
The digital transformation of the banking sector has led to the accelerated development of e-banking services, redefining the way consumers and financial institutions interact. The evolution of e-banking has been driven by technological advances, increased use of the internet and mobile devices, and growing demands for efficiency and accessibility in financial services. This study analyzes the main stages of e-banking development, highlighting emerging trends and factors that have influenced its adoption on a global scale. An essential aspect of e-banking is security, as increasing dependence on digital technologies exposes the financial system to significant cyber risks. In this context, the security measures implemented by financial institutions, such as multi-factor authentication, data encryption, and the use of artificial intelligence in fraud detection, are discussed. The legislative challenges and regulations imposed by authorities to ensure a secure and stable framework for the use of digital banking services are also analyzed. The objective is to examine the impact of e-banking on the modern financial system, highlighting the benefits for banks and customers, such as reduced operating costs, increased financial inclusion, and improved user experience. At the same time, the economic implications of banking digitization are discussed, including changes in the business model of banks and possible systemic risks. Through this analysis, the study provides a comprehensive overview of the evolution of e-banking, highlighting the challenges and opportunities that digitization brings to the financial sector.

Keywords: *E-banking, financial digitization, cybersecurity, online banking services, financial regulations, modern financial system.*

[1)] University of Craiova, Doctoral School of Economic Sciences "Eugeniu Carada", Craiova, Romania, Email: roxananioata06@gmail.com
2) University of Craiova, Doctoral School of Economic Sciences "Eugeniu Carada", Craiova, Romania, Email: filiprobertdorin@gmail.com
3) University of Craiova, Doctoral School of Economic Sciences "Eugeniu Carada", Craiova, Romania, Email: Lupuanamariagabriela@yahoo.com
4) University of Craiova, Doctoral School of Economic Sciences "Eugeniu Carada", Craiova, Romania, Email: stefanitamargaritescu@gmail.com

Article Info

Received: March 26 2025
Accepted: February 10 2025

How to cite this article:
Trasca, O. M., Spulbar, A. C. (2025). Fintech's Productivity Trap: How Digital Finance Fuels Workaholism. *Revista de Ştiinţe Politice. Revue des Sciences Politiques,* no. 86, pp. 320 – 331.

Koskinen, H., 2023. Outlining startup culture as a global form. *Journal of Cultural Economy*, 16, pp. 812 - 828. https://doi.org/10.1080/17530350.2023.2216215.

Lakshmi, M., Varalakshmi, T., & Tiwari, A., 2024. Impact of Organizational Culture on Employee Productivity and Behaviour. *International Research Journal on Advanced Engineering and Management (IRJAEM)*. https://doi.org/10.47392/irjaem.2024.0239.

Lazarova, T., 2020. BUILDING COMPANY CULTURE AND ENHANCING PRODUCTIVITY IN STARTUP ENVIRONMENT. *Economy & Business Journal*, 14, pp. 59-66.

Manner, J., Steffan, B., Jepson, R., & Baker, G., 2023. O.2.3-2 How to effectively develop and modify workplace health programs: case studies in UK contact centers. *The European Journal of Public Health*, 33. https://doi.org/10.1093/eurpub/ckad133.128.

Monteiro, E., & Joseph, J., 2023. A Review on the Impact of Workplace Culture on Employee Mental Health and Well-Being.

Newey, M., 2021. Mental health: working from home and the use of technology. *Strategic HR Review*. https://doi.org/10.1108/shr-01-2021-0001.

Pereira, H., Fehér, G., Tibold, A., Costa, V., Monteiro, S., & Esgalhado, G., 2021. Mediating Effect of Burnout on the Association between Work-Related Quality of Life and Mental Health Symptoms. *Brain Sciences*, 11. https://doi.org/10.3390/brainsci11060813.

Ramesh, S., 2022. From Burnout to Breakthrough: Transforming Employee Well-Being in the Corporate World. *Journal of Mental Health Issues and Behavior*. https://doi.org/10.55529/jmhib.21.38.42.

Rich, A., Aly, A., Cecchinato, M., Lascau, L., Baker, M., Viney, R., & Cox, A., 2020. Evaluation of a novel intervention to reduce burnout in doctors-in-training using self-care and digital wellbeing strategies: a mixed-methods pilot. *BMC Medical Education*, 20. https://doi.org/10.1186/s12909-020-02160-y.

Schena, C., Tanda, A., Arlotta, C., Potenza, G., Giuseppe, D., & Munafò, P., 2018. The Development of FinTech. Opportunities and Risks for the Financial Industry in the Digital Age - With Preface to the FinTech Series. *Banking&Insurance eJournal*. https://doi.org/10.2139/ssrn.3685262.

Shobana, D., & Siddiq, I., 2024. Navigating Work-Life Harmony: The Effects of Corporate Culture on Mental Health. *International Journal of Advanced Research in Science, Communication and Technology*. https://doi.org/10.48175/ijarsct-15258.

Singh, P., 2021. Study on Employee's Prosperity.

Tahir, S., & Aziz, S., 2019. Workaholism as predictor of work-family conflict and mental well-being of public and private sector employees. , 13, pp. 419-435.

Taris, T., & De Jonge, J., 2023. Workaholism: Taking Stock and Looking Forward. *Annual Review of Organizational Psychology and Organizational Behavior*. https://doi.org/10.1146/annurev-orgpsych-111821-035514.

Trasca, O., 2024. Workaholism: A Modern Epidemic in Professional Environments. *Ovidius University Annals. Economic Sciences Series*. https://doi.org/10.61801/ouaess.2023.2.72.

Broby, D., & Karkkainen, T., 2016. FINTECH in Scotland: Building a Digital Future for the Financial Sector. *Monetary Economics: Financial System&Institutions eJournal*. https://doi.org/10.2139/SSRN.2839696.

Carolan, S., & De Visser, R., 2018. Employees' Perspectives on the Facilitators and Barriers to Engaging With Digital Mental Health Interventions in the Workplace: Qualitative Study. *JMIR Mental Health*, 5. https://doi.org/10.2196/mental.9146.

De Almeida Tavares, A., & Xie, S., 2024. Impact of Organizational Culture on Workforce Productivity and Employee Satisfaction. *International Journal of Humanities and Social Science Invention*. https://doi.org/10.35629/7722-1312101108.

de Lourdes, P., & Guilherme, H., 2016. Burnout Syndrome and Worker Mental Health.

Dong, Y., & Li, Y., 2024. Leader workaholism and subordinates' psychological distress: The moderating role of justice climate.. *Acta psychologica*,246,pp.104288.https://doi.org/10.1016/j.actpsy.2024.104288.

Gabor, D., & Brooks, S., 2017. The digital revolution in financial inclusion: international development in the fintech era. *New Political Economy*, 22, pp. 423 - 436. https://doi.org/10.1080/13563467.2017.1259298.

Gajjar, H., & Amarnath, T., 2021. Prevalence of Organizational Stress, Burnout and Work-Related Musculoskeletal Discomfort (WMSD) among Civil Engineers - An Observational Study. *International Journal of Health Sciences and Research*. https://doi.org/10.52403/ijhsr.20210805.

Guo, X., 2024. The Role of Venture Capital in Fintech Startup Growth: A Comparative Study of China and the U.S. Markets and Cultures. *Frontiers in Business, Economics and Management*. https://doi.org/10.54097/5f3k1v63.

Hassell, J., Kuntz, J., & Wright, S., 2024. Revisiting workaholism: lived experiences and new insights. *International Journal of Organizational Analysis*. https://doi.org/10.1108/ijoa-10-2023-4035.

Hughes, L., Seddon, J., & Dwivedi, Y., 2023. Disruptive change within Financial Technology – a methodological analysis of the Digital Transformation challenges. *Journal of Information Technology*. https://doi.org/10.1177/02683962231219512.

Johnson, P., & Indvik, J., 2004. Digital Depression, Stress, and Burnout: Same Song, Different Verse. *Journal of Organizational Culture, Communications and Conflict*, 8, pp. 127.

K, A., & Deepa, S., 2024. A Study of the Impact of Always-on Culture on Employee Health and Well-being at Magna Automotive India Pvt Ltd. *International Journal For Multidisciplinary Research*. https://doi.org/10.36948/ijfmr.2024.v06i06.34504.

Kaltenegger, H., Becker, L., Rohleder, N., Nowak, D., Quartucci, C., & Weigl, M., 2023. Associations between digital work stressors, burnout, and hair cortisol concentration: A prospective study. *Psychoneuroendocrinology*,153. https://doi.org/10.1016/j.psyneuen.2023.106167.

Kasemy, Z., Abd-Ellatif, E., Latif, A., Bahgat, N., Shereda, H., Shattla, S., Aboalizm, S., Elhy, A., Allam, A., Ramadan, A., Amer, H., Ahmed, N., AlJifri, A., & Dalatony, M., 2020. Prevalence of Workaholism Among Egyptian Healthcare Workers With Assessment of Its Relation to Quality of Life, Mental Health and Burnout. *Frontiers in Public Health*, 8. https://doi.org/10.3389/fpubh.2020.581373.

This culture of infinite productivity is reinforced by the founding mythologies of the startup ecosystem—especially within fintech—where the narrative of success is constructed around personal sacrifice, relentless work, and near-heroic individual performance. Overwork is not only tolerated but often glorified, while burnout and other forms of psychological exhaustion are normalized as "inevitable costs" of innovation. The meritocratic ideology and the rhetoric of disruption help legitimize this model, turning workaholism into an aspirational ideal rather than an organizational dysfunction.

Against this backdrop, the effects on mental health are profound and well-documented: increased psychological stress, decreased quality of life, insomnia, anxiety, depression, and ultimately, emotional disengagement from work. These symptoms not only affect individuals but have direct consequences for organizational functioning—ranging from staff turnover and declining engagement to the long-term erosion of innovative capacity.

It is therefore imperative for the fintech industry to adopt a more nuanced view of the relationship between technology, work, and well-being. Public policies on the right to disconnect, the implementation of sustainable leadership models, the reformulation of performance indicators, and the co-creation of organizational wellbeing programs are fundamental directions for achieving the necessary rebalancing. Only by acknowledging these imbalances and establishing fair and proactive intervention mechanisms can fintech become not only a symbol of technological progress but also a model of social responsibility and organizational humanism.

Thus, addressing workaholism is not merely a matter of professional ethics—it is an essential condition for the long-term sustainability of a sector at the forefront of global transformations.

Authors' Contributions:

The authors contributed equally to this work.

References:

Ahmed, A., & Hasan, M., 2021. Bangladesh toward Digital Financial Inclusion: FinTech Experience. *Journal of Entrepreneurship and Business Innovation*. https://doi.org/10.5296/jebi.v8i2.19115.

Aloulou, W., 2021. Instilling FinTech Culture in a Digitalized World., pp. 74-101. https://doi.org/10.4018/978-1-7998-7110-1.ch004.

Balducci, C., Alessandri, G., Zaniboni, S., Avanzi, L., Borgogni, L., & Fraccaroli, F., 2020. The impact of workaholism on day-level workload and emotional exhaustion, and on longer-term job performance. *Work&Stress*,35,pp.6-26. https://doi.org/10.1080/02678373.2020.1735569.

Bandelj, A., 2023. Burnout, workaholism and their consequences. *Human Resources Management and Services*. https://doi.org/10.18282/hrms.v5i2.3379.

Barbosa, N., Lira, J., De Alencar Ribeiro, A., Da Rocha, E., Galdino, M., & Fernandes, M., 2024. Factors associated with workaholism in nurses' mental health: integrative review. *Revista Latino-Americana de Enfermagem*, 32. https://doi.org/10.1590/1518-8345.7046.4218.

Beaudemoulin, N., Bienvenu, P., Lawniczak, A., & Warzee, D., 2017. FinTechs and the digital revolution: the challenges of regulation and supervision. *Quarterly selection of articles - Bulletin de la Banque de France*, pp. 35-42.

Moreover, this type of culture inhibits collective mechanisms of resistance. While in other industries, unions or HR policies might mediate organizational imbalances, in fintech, entrepreneurial culture and the meritocratic narrative weaken such balancing mechanisms. As a result, systemic pressures become internalized and perpetuated at an individual level.

In conclusion, fintech operates not only as a technological system but as an ideological framework that normalizes and reproduces overwork as a central organizational value.

Intervention Strategies and Possible Solutions

A critical strategy for combating workaholism in digitized industries like fintech is the introduction of clear regulations regarding the right to disconnect. Legislative models from some European countries have shown that setting legal limits on digital connectivity hours reduces occupational stress and supports mental health. Regulations may include banning professional contact outside of working hours or requiring employers to ensure disconnected breaks (Beaudemoulin et al., 2017).

Fintech organizations can implement digital wellbeing programs that include stress management workshops, strategies for controlling work–life boundaries, and digitally assisted self-care routines. Studies show that personalized and multisensory interventions, such as those based on mindfulness or digital coaching, significantly reduce burnout levels and increase the sense of control over one's professional life (Rich et al., 2020).

To counteract the performative ideology, companies need to rethink their reward and evaluation systems. Instead of relying solely on productivity-based metrics, organizations can introduce indicators of "work quality," collaboration, work–life balance, and social contribution. Organizational success should also encompass talent retention, employee satisfaction, and collective psychological wellbeing (Ramesh, 2022).

Effective interventions are those developed through participatory processes, involving employees to account for organizational specificities and existing cultural barriers. Engaging employees in identifying problems and designing solutions leads to more sustainable wellbeing programs with higher levels of engagement and effectiveness (Manner et al., 2023).

Conclusions

This paper has explored the hidden dimensions of digitalization in the fintech sector, focusing on a frequently overlooked issue: workaholism fueled by the technological infrastructure and organizational culture specific to this field. While fintech serves as a major catalyst for innovation and financial inclusion, it has also generated a professional paradigm marked by hyperconnectivity, intensified workloads, and blurred boundaries between professional and personal life.

Workaholism in fintech cannot be interpreted merely as an individual expression of professional dedication. On the contrary, it emerges as a logical consequence of a system built on the values of constant performance, speed of execution, and continuous competition. The "always-on" culture—sustained by mobile technology, artificial intelligence, and real-time digital metrics—has transformed the pace of work into a continuous flow, in which personal time becomes an extension of professional responsibilities. In this context, constant availability is no longer a choice but a tacit expectation, while rest and disconnection are seen as obstacles to progress.

merely tolerated but frequently valorized as an essential entrepreneurial trait (Koskinen, 2023).

This mythology is reinforced by the logic of venture capital investment, which favors rapid scaling, the launch of minimum viable products (MVPs), and aggressive responses to market shifts. Startup funding is, in essence, contingent on the founders' ability to perform at maximum intensity, turning the organizational culture into a highly performative and stressful environment (Guo, 2024).

This dynamic creates a simplified identity equation: work = personal value = success. Within this framework, employees are encouraged to exceed their personal limits, and burnout is often perceived as a rite of passage rather than a symptom of a flawed system. Fintech startups are described in the literature as spaces with a "hyperactive entrepreneurial culture," where creativity, pressure, and the absence of clear regulations coexist in precarious ways (Aloulou, 2021).

Moreover, this founding myth is transmitted to the entire team through recruitment based on "cultural fit"—employees are selected not only for their skills, but also for their willingness to sustain this pace. Studies show that startup firms invest in building an organizational culture that promotes informality, apparent autonomy, and risk-taking—elements that often mask the absence of psychological safety or work–life balance (Lazarova, 2020).

This heroic discourse must be critically reevaluated in light of its long-term adverse effects. Far from being merely a stylistic choice, the myth of the heroic startup can function as an institutional mechanism that normalizes self-exploitation, reduces employees' ability to set healthy boundaries, and perpetuates the risk of systemic burnout.

Fintech as Ideological Infrastructure

Beyond technological innovation and emerging business models, fintech also functions as an ideological infrastructure – a set of norms, values, and beliefs that shape employees' perceptions of work, time, and success. This ideology is fueled by discourses around speed, efficiency, disruption, and performance, creating an organizational culture in which productivity becomes the ultimate criterion for validation.

Studies show that a performance-centered organizational culture exerts significant pressure on employees to conform to dominant norms, even when these norms come at the expense of well-being. This "normative" culture of efficiency is not merely perceived as a set of expectations, but as an ideology that gives meaning and value to professional behavior (Tavares & Xie, 2024).

In fintech environments, algorithms, performance metrics, and digital management tools contribute to the institutionalization of this ideology. In practice, technology becomes not just an operational tool, but a mechanism of symbolic control that defines what counts as "added value" and what is labeled "inefficiency." This dynamic turns organizational culture into an ideological space, where deviation from hyperproductivity is perceived as a form of failure or lack of commitment (Lakshmi et al., 2024).

A revealing example is the way digital culture encourages the internalization of organizational norms. Employees not only respond to external expectations, but begin to impose increasingly ambitious goals on themselves, leading to a form of legitimate self-exploitation. In this context, workaholism is not an anomaly but a logical outcome of an ideology in which excessive work is synonymous with merit and success (Trasca, 2024).

workaholics reveal that work is perceived not only as the primary source of existential meaning, but also as a form of "socially acceptable addiction" (Hassell et al., 2024).

Fintech amplifies performance pressure through technology—performance tracking apps, transparent dashboards, and algorithmic evaluations. While theoretically intended to promote objectivity, these tools can become sources of constant anxiety and social comparison. The phenomenon is further exacerbated by workaholic leadership styles, where managers set unrealistic expectations through their own behavior. Research shows that a workaholic leader can induce psychological distress in subordinates and normalize overwork as a standard practice (Dong & Li, 2024).

This dynamic is particularly visible in contexts where companies promote hyper-competitive organizational cultures with low tolerance for personal boundaries. Rather than enhancing performance, these environments foster compensatory behaviors, loss of intrinsic motivation, and a decline in overall well-being (Balducci et al., 2020).

Mental and Social Health Effects

Workaholism, fueled by the digital dynamics of fintech environments, has significant consequences for employees' mental health and quality of life. Although often perceived as a sign of professional dedication, this compulsive behavior is associated with a wide range of negative psychosocial outcomes, including emotional exhaustion, insomnia, depression, anxiety, and social isolation.

A comprehensive study on healthcare workers showed that individuals identified as workaholics reported significantly lower quality of life, high levels of psychological stress, and physiological symptoms linked to burnout, such as elevated inflammatory markers (IL6, TNFα) (Kasemy et al., 2020). Additionally, somatization and sleep disorders were significantly more frequent among these employees.

A recent meta-analysis on medical personnel found direct links between workaholism, burnout, and impaired mental health: workaholic participants reported symptoms of anxiety, depression, difficulty concentrating, and decreased professional efficiency (Barbosa et al., 2024). Sleep quality was also reduced, further intensifying the vicious cycle of chronic fatigue and occupational stress.

Another study focused on active workers demonstrated that burnout mediates the relationship between workplace quality of life and mental health symptoms, confirming the hypothesis that prolonged exposure to excessive demands inevitably leads to a decline in well-being (Pereira et al., 2021).

From an organizational perspective, this deterioration in mental health affects not only the individual, but also team performance and business sustainability. In the long term, companies that tolerate or promote workaholism face higher staff turnover, increased absenteeism, and a loss of professional engagement (Bandelj, 2023).

Thus, rather than serving as a source of competitive advantage, technology-driven workaholism becomes a structural risk factor that undermines mental health and social cohesion within fintech organizations.

The Myth of the Heroic Startup

The startup culture in fintech is often enveloped in a heroic narrative of innovation and perseverance, where overwork becomes a symbol of commitment and entrepreneurial vision. This narrative—heavily inspired by the Silicon Valley model—promotes the idea that rapid success and market disruption can only be achieved through intense labor, personal sacrifice, and risk tolerance. In this context, workaholism is not

with work and personal time, with direct consequences for mental health, personal balance, and the sustainability of work in the fintech sector.

The Interface Between Technological Progress and Occupational Stress

The intense digitalization of work in the fintech sector, while promoted as a driver of efficiency and competitiveness, generates significant side effects on employees' psychological health. Technological progress—particularly through the integration of artificial intelligence, automation, and real-time monitoring—brings with it ongoing organizational pressure for adaptation, performance, and availability. This dynamic is directly linked to rising levels of occupational stress and burnout in digitized industries.

A recent study highlights that digital stressors, such as excessive multitasking and frequent interruptions caused by technological tools, are positively correlated with symptoms of burnout—particularly mental exhaustion and psychological detachment from work (Kaltenegger et al., 2023). This relationship is so strong that researchers have detected measurable physiological changes, such as increased cortisol levels in employees' hair, serving as a biological marker of chronic stress.

Furthermore, the phenomenon of *"digital depression"*—a term used to describe emotional exhaustion caused by technological overload—significantly affects employees' quality of life. They experience constant pressure to stay connected, respond quickly, and remain competitive in an environment where performance indicators are visible, quantifiable, and compared in real time (Johnson & Indvik, 2004).

In the fintech context, this type of occupational stress is rooted in an organizational culture that equates "digital presence" with professional engagement. Employees frequently face implicit expectations to remain active even outside official working hours, leading to chronic fatigue, insomnia, and reduced concentration capacity (de Lourdes & Guilherme, 2016).

Moreover, an observational study on the impact of organizational stress in fast-paced industries found that over 60% of respondents exhibited early signs of burnout, while 5% were already in advanced stages, with evident physiological symptoms and compromised mental health (Gajjar & Amarnath, 2021).

These findings support the notion that, although technology is designed to reduce human effort, in the absence of clear organizational mechanisms to safeguard mental health, technological progress can become a systemic risk factor.

The Dynamics of Workaholism in Fintech

One of the main factors contributing to workaholism in the fintech sector is the blurring of boundaries between professional and personal life. In an environment where digital technology enables work from anywhere at any time, spatial and temporal separation of work becomes nearly impossible. This boundary porosity results in a state of constant availability and internal pressure to remain engaged, even outside contractual hours. Studies show that workaholism frequently emerges in organizational environments where overwork is the implicit norm, driven by technology and the performative culture of startups (Taris & de Jonge, 2023).

In fintech, performance is not merely a measure of efficiency—it is a core component of professional identity. Employees are often evaluated and validated based on their ability to sustain an intense work pace, fueled by aggressive KPIs and real-time feedback. This association between personal value and continuous productivity can lead to compulsive involvement and burnout. Qualitative interviews with self-identified

This digitalization has profoundly altered the organizational culture within fintech companies, particularly through the introduction of a "digital mindset" that emphasizes continuous adaptability, rapid response, and constant engagement. Studies show that this culture is fueled by the pressure to keep pace with technological innovation and to meet the evolving demands of the global market (Hughes et al., 2023).

The widespread adoption of digital tools—such as mobile payment platforms, online lending services, and e-wallets—has influenced not only the client–provider relationship, but also the employee–work relationship. In this hyperconnected ecosystem, employees are often exposed to a "non-stop" culture, where availability and responsiveness become implicit performance criteria. This kind of digital organizational culture proves to be fertile ground for the development of workaholism and burnout (Broby & Karkkainen, 2016).

Moreover, recent research reveals that digitalization promotes decentralized decision-making and a reorganization of work around fragmented and continuously monitored task flows, which can create constant pressure on employees to "stay up-to-date" and "perform" beyond traditional time or space boundaries (Ahmed & Hasan, 2021).

Thus, the adoption of financial technology is not merely a technical evolution, but a complex social process with significant implications for mental health, work–life balance, and how "productivity" is defined in the digitized workplace.

"Always-On" Culture and Permanent Digital Availability

One of the most striking features of digitized work environments in fintech is the "always-on" culture—a continuous state of connectivity and professional availability, enabled by technology. In theory, such practices promote agility and efficiency, but in reality, they often lead to overexertion, burnout, and the erosion of boundaries between professional and personal life.

Recent research indicates that this culture is a direct cause of psychological stress, anxiety, and insomnia among employees. In a study conducted at Magna Automotive India, employees exposed to the pressure of being available outside normal working hours reported high levels of burnout, decreased job satisfaction, and significant work–life imbalance (Aarthi & Deepa, 2024).

This pressure is amplified in fintech environments through the extensive use of mobile apps, real-time communication channels, and AI systems that create "total transparency" of work activities. While these tools are useful for coordination and productivity, they can also generate a form of continuous surveillance that undermines autonomy and limits the employee's ability to disconnect (Newey, 2021).

Another study focused on tech organizations in India found that employees perceive the "always-connected" culture as a structural barrier to well-being and that, in the absence of clear organizational policies on digital boundaries, this culture becomes normative and self-replicating (Singh, 2021).

Moreover, the implementation of digital mental health intervention platforms in companies—such as mindfulness apps or online psychological support—has shown that permanent availability can reduce engagement with such solutions. Although perceived as flexible and convenient, these tools are often used superficially due to the difficulty in separating personal time from professional obligations (Carolan & de Visser, 2018).

In conclusion, the "always-on" culture is not merely a symptom of digital transformation, but an institutionalized practice that redefines employees' relationship

of workaholism: "work involvement," "compulsive drive," and "work enjoyment," suggesting that only the first two are linked to negative health outcomes.

An emerging concept tied to digital transformation is that of *digital hyperproductivity*—the idea that technology should enable individuals to work faster, more, and continuously. In highly digitized industries, this model of expectation fosters an always-on organizational culture, where 24/7 availability is implicit, and "disconnecting" becomes difficult without guilt or symbolic repercussions (Monteiro & Joseph, 2023). In this context, fintech technologies are not merely neutral tools, but actors that shape work culture by mediating constant interaction and the pressure for efficiency.

Relevant Theoretical Models

To understand how fintech contributes to the emergence and consolidation of workaholism, it is essential to anchor the phenomenon within a solid theoretical framework. Three conceptual models provide a relevant analytical foundation: the Job Demands–Resources (JD-R) model, boundary theory, and the model of compulsive work involvement.

The JD-R model posits that occupational stress and associated behaviors—including workaholism—arise from an imbalance between job demands (e.g., tight deadlines, performance pressure, constant connectivity) and available resources (e.g., autonomy, social support, rest time) (Monteiro & Joseph, 2023). In fintech environments, technology simultaneously amplifies both demands (by accelerating workflows) and resources (through automation and access to data), but often in favor of productivity rather than psychological well-being. As a result, employees may develop unhealthy coping strategies, such as compulsive work involvement.

Boundary theory examines how individuals establish and manage the boundaries between their professional and personal roles. In a digital context, these boundaries become porous, and the spatial-temporal separation of work is weakened. Due to its mobile and 24/7 nature, fintech erodes the barriers between "at work" and "at home," fostering implicit expectations of continuous availability (Shobana & Siddiq, 2024). This role confusion is a predictor of overwork, burnout, and work–life conflict.

This perspective conceptualizes workaholism as the result of dysfunctional internal motivation. Employees do not merely work long hours; they experience a psychological pressure to remain constantly engaged, even in the absence of explicit external demands (Tahir & Aziz, 2019). Digital work environments like those in fintech can fuel this type of behavior through instant feedback, real-time performance metrics, and a reward culture that values nonstop availability.

By integrating these models, it becomes clear that workaholism in fintech is not merely an individual issue, but the outcome of a complex interaction between technological, cultural, and psychological factors that must be analyzed within a systemic framework.

The Accelerated Adoption of Financial Technology

The digital transformation of the financial sector has accelerated significantly over the past two decades, redefining not only how financial services are accessed and delivered, but also internal organizational dynamics. Fintech has become synonymous with disruption: from eliminating traditional intermediaries to creating new business models based on artificial intelligence, automation, and real-time data (Schena et al., 2018).

Introduction

Over the past two decades, financial technology (fintech) has profoundly reshaped the infrastructure of global financial services, providing faster, cheaper, and more efficient access to financial products and solutions. This digital transformation has massively expanded financial inclusion, with a notable impact in emerging economies, where millions of previously excluded individuals have become part of the formal financial system (Gabor & Brooks, 2017). However, behind this technological progress lies a less discussed but deeply rooted issue: the intensification of workaholism among employees in fintech and related industries.

Fintech organizations operate in an extremely competitive environment that values continuous innovation, execution speed, and constant availability. These characteristics have fostered an "always-on" organizational culture, where high performance expectations and instant responsiveness are mediated by omnipresent digital technologies (Aloulou, 2021). Permanent connectivity and the blurred boundaries between professional and personal space fuel compulsive work behaviors and significantly reduce the capacity for psychological detachment (Monteiro & Joseph, 2023).

Specialized literature indicates a clear correlation between workaholism and mental health decline, including anxiety, insomnia, burnout, and depression (Tahir & Aziz, 2019). This risk is further exacerbated by the fact that in fintech ecosystems, overwork is often perceived not as a dysfunction, but as a sign of commitment to the company's mission or as a potential for rapid scaling (Shobana & Siddiq, 2024).

This paper aims to investigate how the core characteristics of the fintech environment—digital mobility, performance pressure, lack of temporal boundaries, and a hyper-competitive entrepreneurial culture—contribute to the proliferation of workaholism. The article will also explore the psychosocial impact of this phenomenon through the lens of organizational theories and propose remedial measures through organizational policies, public regulations, and a redefinition of success metrics in the fintech domain.

Defining Key Concepts

The term *fintech* is a shorthand for "financial technology" and refers to the integration of technological innovation into financial services and products, with the aim of improving access, efficiency, and user experience. Fintech encompasses a wide range of services, from mobile payments and peer-to-peer lending to robo-advisory, digital assets, and algorithm- and AI-based lending systems. The fintech ecosystem is characterized by a digital, agile, and customer-centered culture, oriented toward disruption and governed by scalable, data-driven business models (Aloulou, 2021). This culture encourages rapid innovation cycles and constant interconnectivity, which not only transforms how financial services operate, but also reshapes work behaviors within fintech companies.

Workaholism is defined as a compulsive and uncontrollable tendency to work excessively and remain preoccupied with work at the expense of other aspects of personal life. It should not be confused with simple professional engagement or passion for work; workaholism is marked by a psychological need to work, often associated with anxiety, detachment difficulties, dissatisfaction, and ultimately, mental and physical health problems (Tahir & Aziz, 2019). Spence and Robbins (1992) identified three dimensions

Revista de Științe Politice. Revue des Sciences Politiques • No. 86 • 2025: 320 – 331

ORIGINAL PAPER

Fintech's Productivity Trap: How Digital Finance Fuels Workaholism

Otilia Maria Trasca[1)], Andrei Cristian Spulbar[2)]

Abstract:
The rise of fintech has brought about significant innovations in the financial sector, transforming how financial services are delivered and consumed. However, alongside these advancements, a less-discussed phenomenon has emerged: the intensification of workaholism in the fintech industry. This paper explores how the fast-paced, always-on culture inherent in fintech organizations contributes to increased workaholism among employees. Fintech's emphasis on continuous innovation, high competition, and the blurring of work-life boundaries due to digital tools and remote work creates an environment where employees are expected to be constantly productive. The ubiquitous presence of mobile applications, real-time communication, and AI-driven systems perpetuates a culture of "always being available", leading to long working hours and burnout. The paper also examines the psychological and social impacts of this relentless work culture, including stress, mental health issues, and reduced quality of life. The paper highlights how these challenges are exacerbated by the startup mentality and the expectation of rapid growth and success. Finally, the paper discusses potential solutions, such as regulatory measures, corporate responsibility, and shifts in organizational culture, to mitigate workaholism and promote a healthier work-life balance within the fintech sector. As fintech continues to reshape global finance, addressing the issue of workaholism is crucial for ensuring sustainable growth and the well-being of those driving innovation in this dynamic field.
JEL: G21, J22, O33

Keywords: *Fintech, Workaholism, Productivity, Burnout, Digital Finance.*

[1)] Phd. Student, University of Craiova, , "Eugeniu Carada" Doctoral School of Economic Sciences, Romania, Email: trasca.otilia.q2v@student.ucv.ro
[2)] Research Assistant/Phd. Student, West University of Timisoara/University of Craiova, "Eugeniu Carada" Doctoral School of Economic Sciences, Romania, Email: andrei.spulbar.g7w@student.ucv.ro

workaholism. *Journal of Management*, 42(7), 1836–1873. https://doi.org/10.1177/0149206314522301

Erliana, Y. D., Arisanti, I., & Nugroho, S. (2023). Bibliometric analysis of the impact of work-life balance on mental health in the workplace. *West Science Social and Human Sciences*, 2(8), 123–135. https://doi.org/10.5555/wsshs.2023.2.8.123

Judijanto, L. (2024). Global trends in employee wellbeing research: A bibliometric study. *West Science Business and Management*, 2(3), 56–71. https://doi.org/10.5555/wsbm.2024.2.3.56

Leiter, M. P., Bakker, A. B., & Maslach, C. (2014). Workaholism: An overview and current status of the research. *Frontiers in Psychology*, 5, 1–10. https://doi.org/10.3389/fpsyg.2014.00914

Oates, W. E. (1971). Confessions of a workaholic: The facts about work addiction. World Publishing Company.

Schaufeli, W. B., Taris, T. W., & Bakker, A. B. (2008). It takes two to tango: Workaholism is working excessively and working compulsively. In R. J. Burke & C. L. Cooper (Eds.), *The long work hours culture: Causes, consequences and choices* (pp. 203–226). Emerald Group Publishing.

Taris, T. W., van Beek, I., & Schaufeli, W. B. (2010). Why do perfectionists have a higher burnout risk than others? The mediational effect of workaholism. *Romanian Journal of Applied Psychology*, 12(1), 1–7.

Van Wijhe, C. I., Peeters, M. C. W., & Schaufeli, W. B. (2011). To stop or not to stop, that's the question: About persistence and mood of workaholics and work engaged employees. *International Journal of Behavioral Medicine*, 18(4), 361–372.

www.bibliometrix.org

www.webofscience.com

Article Info

Received: March 26 2025
Accepted: May 14 2025

How to cite this article:
Trasca, O. M. (2025). Workaholism A Bibliometric Analysis of Trends and Research Impact. *Revista de Științe Politice. Revue des Sciences Politiques,* no. 86, pp. 305 – 319.

Conclusions

The results of this bibliometric analysis confirm that workaholism has evolved over recent decades from a marginal individual psychological trait to a widely recognized organizational and societal phenomenon with profound implications for employee health, institutional performance, and the balance of socio-economic systems. The exponential growth of academic production, particularly after 2010, reflects the scientific community's increasing concern with understanding and addressing this phenomenon in the context of radical transformations in contemporary work.

The analysis of keywords, co-citation networks, and publication dynamics reveals a thematic consolidation around the concepts of *burnout*, *work engagement*, *performance*, and *resources*, largely anchored in the Job Demands–Resources (JD-R) model. In parallel, the prominence of terms such as *stress*, *job satisfaction*, *antecedents*, and *impact* indicates a diversification of research directions, increasingly focused on the interplay between work characteristics, organizational climate, and psychological well-being. This trend supports the hypothesis put forward in the introduction: workaholism cannot be understood in isolation but only through a systemic approach that takes into account contextual, cultural, and technological factors.

The structure of the co-occurrence network confirms the existence of two major thematic clusters: one focused on organizational dynamics and established theoretical frameworks, and the other on social and relational dimensions. This thematic polarization suggests an opportunity for convergence between micro- and macro-level approaches, bridging work psychology and organizational studies to achieve a more comprehensive understanding of workaholism in the digital age.

Against the backdrop of technological advancement, the rise of remote work, and the expansion of the gig economy, workaholism is taking on new, often invisible forms, driven by hyperconnectivity and performance-obsessed organizational cultures. It thus becomes clear that responses to this phenomenon must go beyond the individual level and extend to organizational policies and systemic interventions designed to foster sustainable work behaviors. This study provides a clear mapping of the field's developments and highlights relevant future research directions, including the impact of artificial intelligence on work culture, emerging forms of digital addiction, the effectiveness of corporate interventions, and the role of organizational support systems.

In conclusion, the study highlights both the conceptual maturation of the literature on workaholism and the need to reframe the research agenda toward a transdisciplinary and applied understanding that aligns with the new realities of contemporary work.

References:

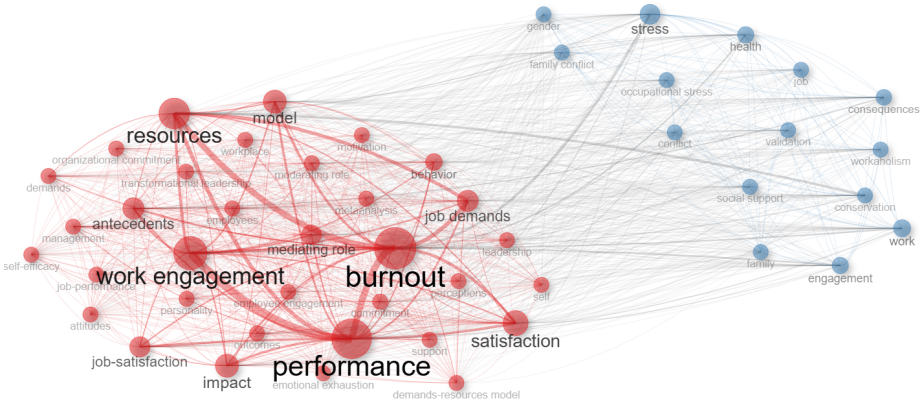
Aziz, S., & Covington, C. (2024). Workaholism, work engagement, and affective commitment: Relationships to self-concept levels and work outcomes. *Frontiers in Psychology*, 15, 1–14. https://doi.org/10.3389/fpsyg.2024.XXXXX

Bakker, A. B., Leiter, M. P., & Schaufeli, W. B. (2011). Workaholism, burnout, and work engagement: Three of a kind or three different kinds of employee well-being? *Applied Psychology: An International Review*, 60(4), 441–456. https://doi.org/10.1111/j.1464-0597.2011.00454.x

Clark, M. A., Michel, J. S., Zhdanova, L., Pui, S. Y., & Baltes, B. B. (2016). All work and no play? A meta-analytic examination of the correlates and outcomes of

a growing effort to conceptually distinguish between healthy and compulsive forms of work involvement.

Figure 12. Co-occurrence Network



Source: Authors` own processing using the Biblioshiny application

The keyword co-occurrence map highlights two major thematic clusters, clearly delineated both chromatically and conceptually. The red cluster, which is predominant, centers around the terms *burnout*, *performance*, *work engagement*, *resources*, and *antecedents*. This core cluster reflects a clear research orientation toward the organizational and psychological dimensions of work, with emphasis on *demands–resources* theoretical models, the role of contextual and individual antecedents, and the relationship between professional engagement and job performance. The dense interconnections among these terms suggest a mature network, where the concepts are frequently investigated together in an integrated manner.

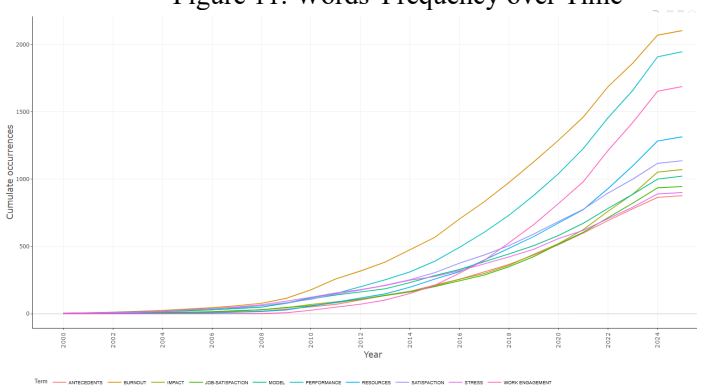
In contrast, the blue cluster, which is more dispersed, gravitates around terms such as *stress*, *work*, *health*, *conflict*, *workaholism*, and *social support*. This thematic group appears to represent a broader, interdisciplinary approach that includes social and contextual factors such as work–family conflict, social support, and gender differences. The term *workaholism* is included in this cluster but is positioned more peripherally, suggesting that—despite being a key concept—research on it is still often detached from the dominant core of investigations on burnout and engagement.

The layout of the network indicates that terms associated with *burnout*, *job demands*, and *performance* are centrally positioned and densely connected, reflecting the coherence and maturity of this subfield. In contrast, the blue area is more diffuse and fragmented, which may signal either a methodological and thematic diversification in studying workaholism within various social contexts, or a need for further conceptual consolidation in this segment of the literature.

This dual distribution of the network suggests a polarization of research between psychologically driven, individual-centered approaches and those focused on organizational and social dimensions. At the same time, the existing interconnections between the clusters reveal that these directions are not entirely disjointed but rather coexist within an evolving scientific landscape.

- Stress and antecedents indicate strong interest in the causal mechanisms of workaholism, often integrated into predictive or explanatory models.

Figure 11. Words' Frequency over Time



Source: Authors` own processing using the Biblioshiny application

The cumulative frequency analysis of key terms used in the specialized literature on workaholism between 2000 and 2025 reveals a complex thematic dynamic and a notable evolution marked by significant shifts in research focus. For a clearer understanding of the conceptual transformations, three distinct periods can be identified: 2000–2010, 2010–2020, and 2020–2024.

In the first period (2000–2010), research on workaholism was still in its early stages, with relatively low frequency of core terms. During this phase, the focus was primarily on fundamental concepts such as *satisfaction*, *stress*, and *job satisfaction*, reflecting an interest in the relationship between excessive work involvement and individual well-being. Terms like *burnout* and *performance* began to appear gradually but had not yet achieved thematic consolidation. The approach remained largely centered on the individual, with limited conceptualization of the organizational or societal implications of the phenomenon.

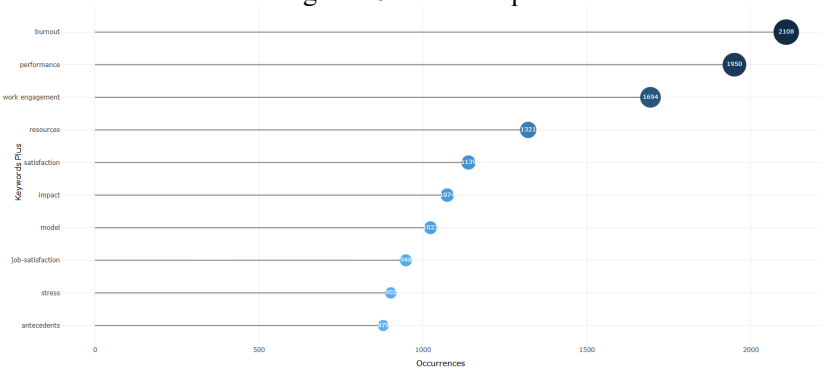
The period 2010–2020 marks a significant expansion of research, both quantitatively and qualitatively. The frequency of terms such as *burnout* and *stress* increased sharply, signaling a growing focus on the negative effects of workaholism on mental health. Notably, there is a marked rise in the use of terms such as *model*, *resources*, and *impact*, suggesting a maturing of the field and a diversification of theoretical and methodological perspectives. During this period, the focus began to shift from an individual-level understanding of the phenomenon to the integration of relevant organizational and contextual variables—such as work culture, work–life balance, and institutional support structures.

The most recent period (2020–2024) is characterized by an unprecedented intensification of research, against the backdrop of major shifts brought on by digitalization, remote work, and global crises such as the COVID-19 pandemic. The term *burnout* becomes dominant, reflecting increasing concern about the negative effects of constant connectivity and digital overload. Simultaneously, terms like *antecedents*, *impact*, *performance*, and *resources* reach record-high frequencies, indicating heightened interest in identifying the structural causes of workaholism and in designing effective organizational interventions. Additionally, increased usage of *work engagement* suggests

maintains a steady and stable trajectory, reflecting its strong academic tradition in organizational psychology and employee well-being studies.

India (green line) is the clearest example of an emerging country with a remarkable upward trajectory. After a relatively stable period, India has experienced a significant acceleration in scientific output starting in 2018, surpassing Australia in 2023. This trend reflects the country's growing academic capacity and its increased interest in the social and psychological consequences of digital transformation and rapid urbanization on the workforce.

Figure 10. Most Frequent Words



Source: Authors` own processing using the Biblioshiny application

The chart presents the most frequent *Keywords Plus* in the academic literature related to workaholism, offering a clear view of the key concepts and theoretical relationships that structure the field. These terms reflect not only their frequency in the texts but also their level of connectivity within thematic research networks.

The most frequent term is burnout (2,108 occurrences), confirming the complementary and often correlated nature of the two concepts. In a significant portion of the literature, workaholism is examined either as a predictor of burnout or in conceptual opposition to work engagement, especially within the Job Demands–Resources (JD-R) model. This is further supported by the frequent presence of the term work engagement (1,694 mentions), indicating an ongoing concern with distinguishing between healthy involvement in work and compulsive, maladaptive overcommitment.

The term performance (1,950 mentions) highlights a major research focus on the impact of workaholism on professional effectiveness. This reflects a common dilemma in the literature: is workaholism a driver of productivity, or a long-term threat to sustainable work?

Other central terms include resources, satisfaction, impact, job satisfaction, stress, and antecedents, which together create a coherent analytical framework:

- Resources suggests the application of the JD-R theory and emphasizes protective factors in occupational health.
- Satisfaction and job satisfaction point to concerns regarding the affective consequences of compulsive work behavior.
- Impact reflects the multidimensional scope of the research, from individual effects to organizational and societal implications.

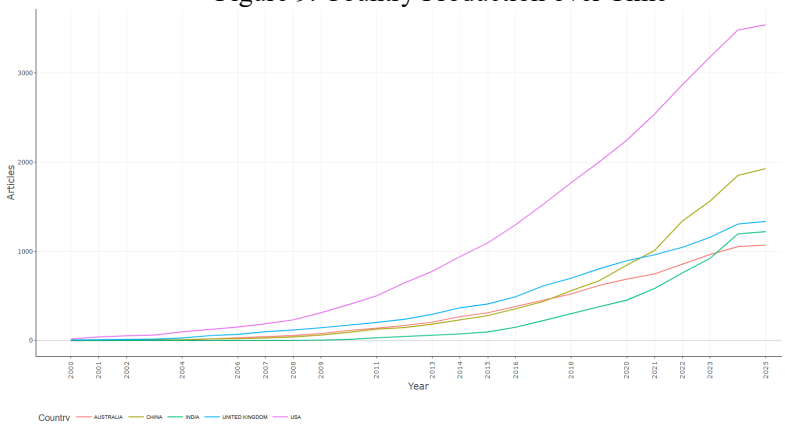
Schaufeli and *Bakker*, and with the influence of Dutch institutions highlighted in earlier charts.

In Asia, countries like China, South Korea, and Japan stand out through intensive scientific activity, consistent with the cultural specificity of the region, where collectivist values and a rigorous work ethic may foster tendencies toward workaholism. This engagement reflects growing concern with the psychological imbalances generated by performance pressures in the modern workplace.

Notable contributions also come from Australia, Canada, and several Latin American countries (e.g., Brazil, Mexico), indicating a global expansion of interest in workaholism, including in diverse economic and cultural contexts.

However, the map also reveals underrepresented geographic areas, particularly Sub-Saharan Africa, Central Asia, and parts of the Middle East, which may reflect limited access to academic infrastructure, a lower prioritization of the topic, or underreporting of the phenomenon due to cultural or institutional factors.

Figure 9. Country Production over Time



Source: Authors` own processing using the Biblioshiny application

The chart illustrates the evolution of scientific output from the most active countries in workaholism research during the period 2000–2025. Significant differences can be observed between nations, both in terms of the initial timing of academic engagement with the topic and in the pace and scale of growth in scientific article production.

The United States (purple line) stands out clearly from all other countries, reaching a cumulative volume of over 3,500 publications by 2025. The growth is steady and increasingly rapid, especially after 2012, reflecting the sustained academic interest in occupational health, professional stress, and performance under hyperproductive conditions. This trajectory confirms the U.S.'s role as a conceptual and methodological leader in the field, supported by a well-funded academic ecosystem and a competitive organizational culture.

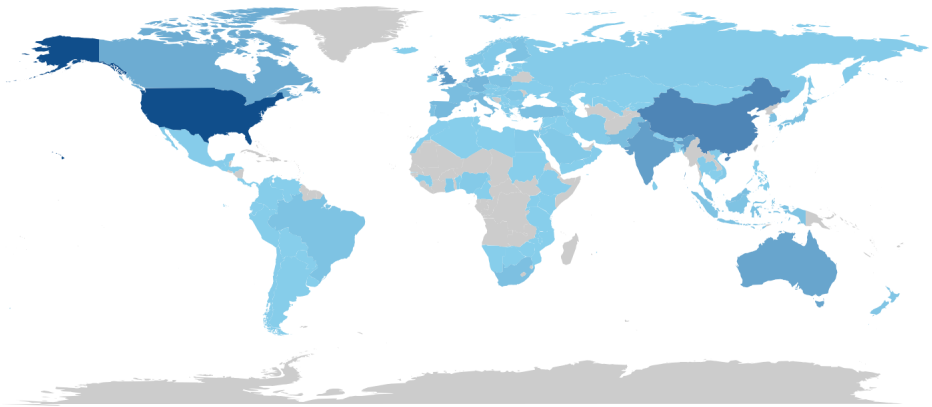
Following the U.S., China (yellow line), the United Kingdom (blue line), and Australia (red line) all show significant growth, particularly from 2015 onwards. China is notable for its accelerated rise over the past five years, surpassing the 2,000-publication threshold, suggesting an intensive mobilization of research efforts—likely in response to growing performance pressures and work culture demands. The United Kingdom

Utrecht University (purple line) stands out through a consistent and dominant presence throughout the analyzed period, reaching nearly 200 articles by 2025. This trajectory confirms the institution's role as a leading academic center in the study of *work engagement* and *workaholism*, closely associated with prominent scholars such as Wilmar Schaufeli and Arnold B. Bakker. Furthermore, the proximity of the lines representing Erasmus University Rotterdam (red and yellow—general and non-Erasmus MC versions) to Utrecht's trajectory indicates the formation of a Dutch nucleus of excellence in this area, maintaining long-term relevance and productivity.

In parallel, the State University System of Florida (blue line) shows steady growth, especially after 2014, reflecting increasing involvement in international research on occupational mental health and the psychosocial effects of intense work. The Indian Institute of Management (IIM System) (green line) has exhibited rapid, nearly exponential growth since 2018, with a notable surge after 2020, reaching over 140 publications by 2025. This dynamic suggests a recent and intensified mobilization of the South Asian academic sector in workaholism research, likely driven by the pandemic context, accelerated digitalization, and structural transformations of labor in emerging economies.

The parallel and converging trajectories of these five major institutions highlight not only the global rise in interest toward this phenomenon but also a gradually more balanced geographical distribution of expertise.

Figure 8. Country Scientific Production



Source: Authors` own processing using the Biblioshiny application

The map illustrates the scientific contributions by country in the field of workaholism research during the period 2000–2025. The intensity of color reflects the total volume of publications, and the results indicate broad geographical coverage, with a strong emphasis on academically and economically developed regions.

As expected, the United States clearly dominates scientific production, standing as the global leader in the number of publications. This position can be attributed to the large number of universities and research centers, as well as the growing interest in the psychosocial impact of excessive work within a hyper-productive and digitized economy.

Significant contributions also come from Western Europe—particularly the United Kingdom, the Netherlands, Germany, and the Nordic countries—confirming their roles as conceptual and methodological leaders in the study of work psychology and organizational behavior. This trend aligns with the prominent presence of authors such as

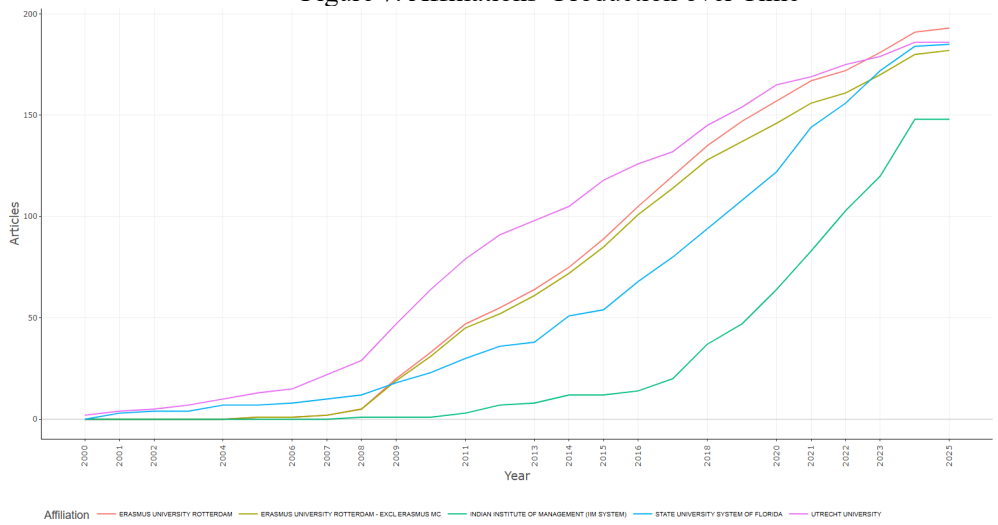
analyzed database. These scholars represent the epistemic core of the field, and their work has played a pivotal role in shaping theory, measurement tools, and research directions.

The most cited author is Arnold B. Bakker, with 5,714 local citations, followed by Wilmar B. Schaufeli, with 4,891 citations, along with alternate reference variants of the same authors (e.g., *Bakker, AB* – 3,264; *Schaufeli, WB* – 3,080). This redundancy reflects citation style variations but reinforces the idea that these two researchers are the leading figures in the field. Their work is frequently associated with the development of the Job Demands–Resources (JD-R) model and with foundational concepts such as *work engagement*, *burnout*, and *workaholism*, treated as interrelated phenomena.

Another prominent name is Evangelia Demerouti, with over 2,153 local citations, who collaborated closely with Bakker in the development of the JD-R model and in conceptualizing occupational stress as an imbalance between job demands and available resources. The consistent presence of these authors at the top of the citation rankings validates the dominant direction of research, which focuses on the interaction between organizational environments, employee traits, and the psychosocial consequences of intensive work.

Also appearing are scholars such as Toon Taris, involved in longitudinal research on workaholism, and Michael P. Leiter, known for his studies on burnout and dysfunctional workplace relationships. The presence of Japanese author Akihito Shimazu also suggests a broad international interest in the field, particularly in the context of norm-driven work cultures (e.g., Japan), where workaholism is perceived as a deeply rooted social reality.

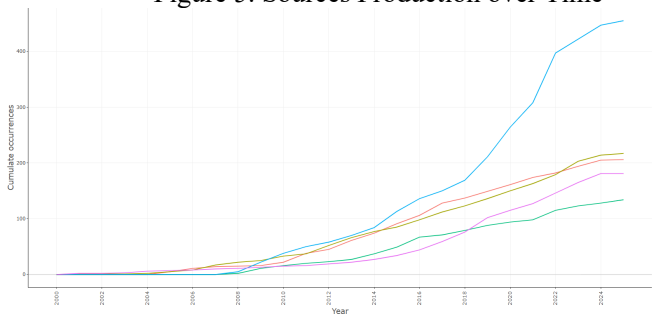
Figure 7. Affiliations` Production over Time



Source: Authors` own processing using the Biblioshiny application

The chart illustrates the evolution of cumulative scientific output from 2000 to 2025 for the most active academic institutions involved in research on workaholism and related topics. The data reflect a progressive consolidation of institutional contributions to this interdisciplinary field, with accelerated growth rates beginning in 2010, particularly among European and North American universities.

Figure 5. Sources Production over Time



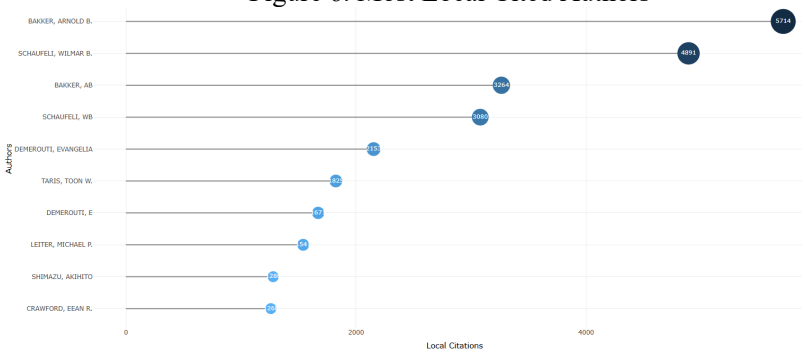
Source: Authors` own processing using the Biblioshiny application

The chart illustrates the cumulative contribution of the most active scientific journals to research on workaholism over the period 2000–2025. A gradual diversification of publications is observed, with an accelerated increase beginning around 2010, confirming and reinforcing earlier observations regarding the field's upward trajectory.

The most pronounced trend line belongs to one journal (likely the *Journal of Nursing Management* or *Journal of Applied Psychology*, based on previous charts), which shows steady yet significantly accelerated growth starting in 2016, culminating in over 450 cumulative publications by 2025. This trajectory suggests sustained engagement with the scholarly debate on the psychosocial implications of work and on occupational health—key domains for understanding workaholism in high-pressure, burnout-prone environments.

Other top-producing journals—particularly those in the fields of organizational behavior, HR management, and applied psychology—also display consistent upward trends, indicating a persistent interdisciplinary interest in the topic of workaholism. Their parallel and converging trajectories after 2014 suggest a maturing of the field, with a consolidated approach from psychological, managerial, and socio-organizational perspectives.

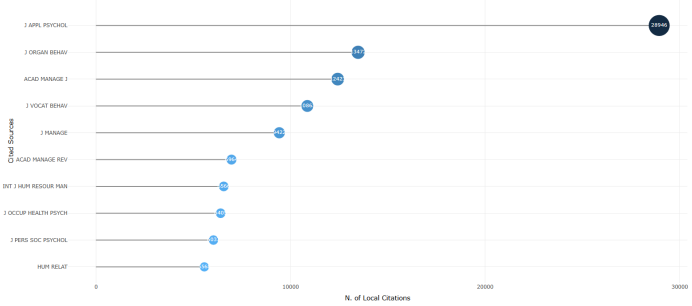
Figure 6. Most Local Cited Authors



Source: Authors` own processing using the Biblioshiny application

The chart highlights the authors with the greatest local impact in the literature dedicated to workaholism, based on the total number of citations received within the

Figure 4. Most Local Cited Sources



Source: Authors` own processing using the Biblioshiny application

The chart highlights the leading academic sources that have shaped and sustained the scientific discourse on workaholism during the period 2000–2025. At the top of the list is the *Journal of Applied Psychology*, with a total of 28,946 local citations, clearly confirming its central role in building the theoretical framework of workaholism-related studies. This journal is renowned for publishing foundational work in work psychology, motivation, occupational stress, and performance—dimensions closely related to the phenomenon of workaholism.

Following closely are the *Journal of Organizational Behavior* (13,472 citations) and the *Academy of Management Journal* (12,423 citations), signaling the firm integration of this topic into the literature on organizational management and employee behavior. The prominence of these journals underscores the interdisciplinary and contextual nature of workaholism, which is treated not only as an individual psychological phenomenon but also as an outcome of organizational structure, leadership, and institutional culture.

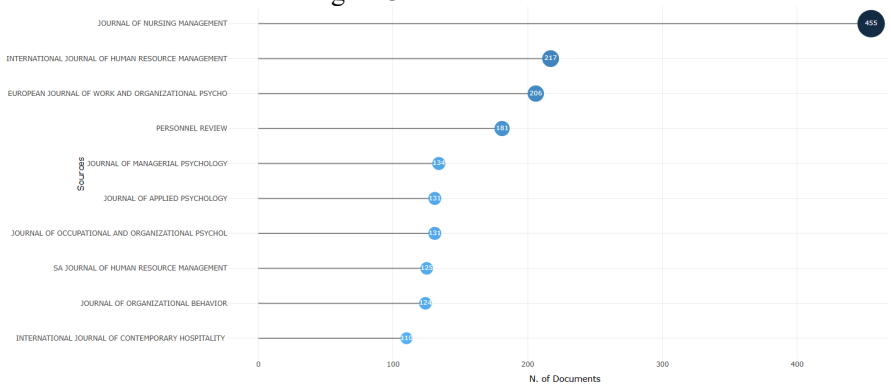
In addition, sources such as the *Journal of Vocational Behavior* and the *Journal of Management* suggest an approach focused on career development, professional commitment, and organizational strategy—indicating that workaholism is frequently analyzed in relation to career path decisions and organizational expectations.

The importance of journals like the *Academy of Management Review*, the *International Journal of Human Resource Management*, and *Human Relations* confirms that the literature on workaholism is strongly grounded in conceptual contributions from strategic management, HR practices, and interpersonal relations within professional environments.

The presence of journals such as the *Journal of Occupational Health Psychology* and the *Journal of Personality and Social Psychology* further underscores the growing emphasis on the psychosocial and health-related consequences of compulsive work behavior. This reinforces the idea that workaholism is a boundary-spanning construct between high performance and dysfunction.

The profile of the most frequently cited sources supports the thesis stated in the abstract: workaholism is a complex and multidimensional issue located at the intersection of applied psychology, organizational behavior, and human resource policy.

Figure 3. Most Relevant Sources



Source: Authors` own processing using the Biblioshiny application

The analysis of the most relevant sources reveals a significant concentration of research on workaholism and related phenomena within fields such as human resource management, organizational psychology, and professional behavior. According to the data obtained, the journal with the highest number of publications is the *Journal of Nursing Management*, with 455 articles. This suggests a particular interest in this topic within the healthcare sector, known for its high levels of occupational stress and professional overload. This positioning reflects the interdisciplinary nature of workaholism, which extends beyond the traditional corporate sphere into high-risk burnout domains.

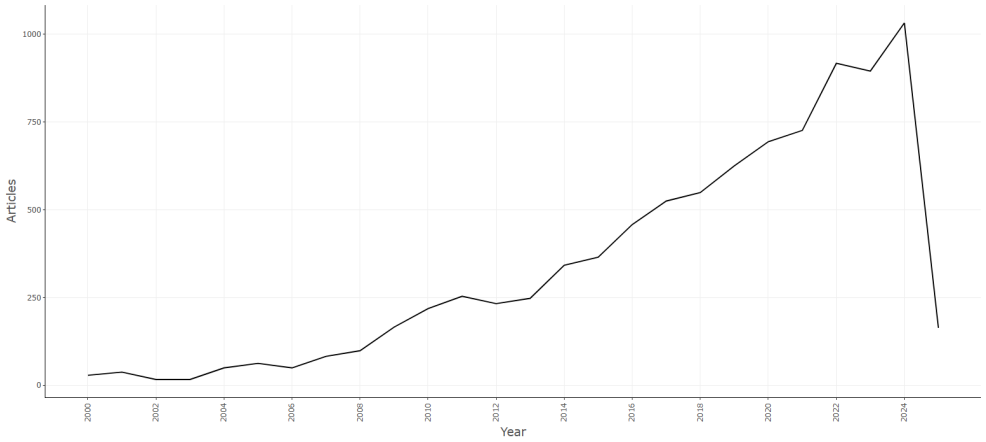
Following closely are the *International Journal of Human Resource Management* (217 articles) and the *European Journal of Work and Organizational Psychology* (206 articles), both journals being renowned for publishing cutting-edge research on employee attitudes, organizational behavior, and work–life balance. The presence of these journals at the top validates the notion that workaholism is addressed not only as an individual construct but also as an outcome of organizational policies and institutional culture.

Other journals with prolific activity in this field include *Personnel Review*, *Journal of Managerial Psychology*, *Journal of Applied Psychology*, and *Journal of Occupational and Organizational Psychology*—all of which reflect a psychological and behavioral approach to excessive work. This distribution confirms a dual orientation in the research: on one hand, toward the motivations and individual traits associated with workaholism; on the other hand, toward the working conditions, leadership styles, and professional environments that foster or inhibit such behaviors.

Additionally, the presence of the *International Journal of Contemporary Hospitality Management* and the *SA Journal of Human Resource Management* indicates a growing focus on industries characterized by high operational pressures and irregular working hours, such as tourism, hospitality, and the service sector.

Results

Figure 2. Annual Scientific Production



Source: Authors` own processing using the Biblioshiny application

The annual scientific production clearly reflects the dynamic evolution of academic interest in workaholism as an individual, organizational, and societal phenomenon. During the period 2000–2007, interest in the topic remained relatively marginal, with a low number of publications per year. This supports the notion that workaholism was predominantly perceived as an individual psychological trait, rather than a matter of collective or institutional concern.

Following 2008, a progressive increase in the volume of publications becomes evident, with a notable surge beginning in 2014. This coincides with the rise of global discourse surrounding mental health in the workplace, burnout syndrome, and hyper-productivity culture. Such a trend is consistent with the hypothesis outlined in the abstract concerning "accelerating concerns regarding burnout, mental health, work-life balance, and productivity."

The peak of academic production is reached in 2023, suggesting a culmination of scientific interest in a post-pandemic context. In this period, the reorganization of work (including remote work, gig economy models, and technology-assisted labor) generated new sources of stress and redefined relationships with working time, professional spaces, and the boundaries between work and personal life. These changes have brought to the forefront emerging themes such as digital work addiction, remote overworking, and tech-enabled burnout—topics identified in the abstract as current and future research directions.

The sharp decline observed in 2025 does not reflect an actual decrease, but is instead attributable to the fact that the year is still ongoing and many articles have yet to be indexed in the Web of Science database.

The upward trend and consolidation of publication volume in the past decade support the idea that workaholism has conceptually evolved from a mere individual trait to a systemic work-related issue, with profound psychological, organizational, and social implications—thus requiring interventions at the level of institutional policies and organizational culture.

Bibliometric Methodology and Data Processing

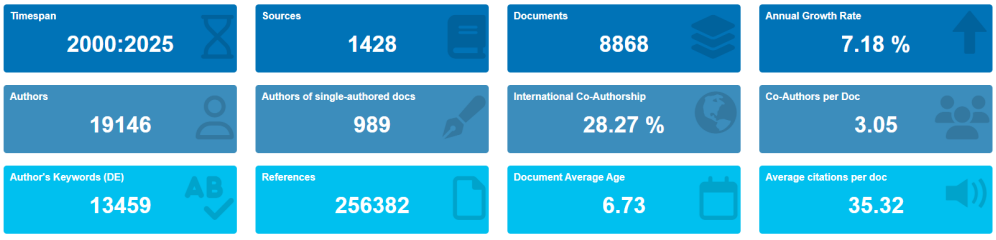
This research employs a bibliometric analysis to investigate the evolution of trends and research directions associated with workaholism and related concepts in the scientific literature within the fields of business, management, and economics. The primary objective of the analysis is to highlight publication dynamics, academic collaborations, thematic distribution, and the scholarly impact of relevant works that contribute to a deeper understanding of workaholism as an organizational and psychosocial phenomenon.

The data were extracted from the Web of Science Core Collection, regarded as one of the most prestigious and rigorous international bibliographic databases. The search was conducted using the following key terms: *workaholism*, *work addiction*, *compulsive working*, *work engagement*, *burnout*, *occupational stress*, *work-life balance*, and *psychological wellbeing*. These terms were searched within the title, abstract, and keyword fields of the articles. To ensure the relevance of the results, disciplinary filters were applied, including only publications indexed under the categories of Business, Management, and Economics.

The time frame considered spans from the year 2000 to 2025, yielding a total of 8,868 documents published across 1,428 scientific sources, with an average annual publication growth rate of 7.18%. The final dataset includes contributions from 19,146 authors, of whom 989 have published single-authored articles. The degree of international collaboration is substantial, with 28.27% of the articles co-authored internationally, and an average of 3.05 co-authors per document. Regarding scientific impact, the selected articles have an average of 35.32 citations per document, and the average document age is 6.73 years, indicating a balance between historical relevance and the currency of sources. In total, 13,459 author keywords and 256,382 bibliographic references were identified.

The bibliometric analysis was conducted using the R Bibliometrix package and its visual interface, Biblioshiny, which provides tools for exploring collaboration networks, co-citation patterns, keyword frequency, and other relevant bibliometric indicators. The results obtained allow for a detailed understanding of the scientific landscape concerning workaholism and related phenomena, facilitating the identification of key research trends, influential authors, high-impact journals, and emerging thematic areas.

Figure 1. Data base summary



Source: Authors` own processing using the Biblioshiny application

Introduction

The phenomenon of workaholism, despite its increasing recognition in the scholarly literature, remains insufficiently understood in terms of its multidimensional nature and its implications for individuals, organizations, and society at large. Initially conceptualized as a compulsive tendency to work excessively without clear extrinsic motivation (Oates, 1971), workaholism has since been reconceptualized in a more sophisticated manner, incorporating cognitive, behavioral, and affective dimensions of a dysfunctional relationship with work (Schaufeli, Taris & Bakker, 2008). Over time, research has evolved from a psychopathological understanding of the phenomenon to a broader approach that also includes the analysis of organizational, cultural, and technological factors contributing to its development and persistence (Leiter et al., 2014; Judijanto, 2024).

In recent literature, workaholism is frequently examined in relation to closely related but distinct concepts such as burnout, work engagement, and job involvement. This has led to both important conceptual advances and theoretical confusion (Bakker et al., 2011; Clark, Michel, Zhdanova, Pui & Baltes, 2016). Accordingly, a significant research stream focuses on differentiating between healthy engagement and compulsive work involvement, with an emphasis on the effects of these orientations on well-being and professional performance. Aziz and Covington (2024) highlight that the level of affective commitment and the structure of self-concept can mediate the relationships between workaholism and occupational outcomes, drawing attention to the identity dimension of work in the modern era.

Empirical data also indicate a strong correlation between workaholism and burnout, as well as other negative consequences such as emotional exhaustion, deterioration of personal relationships, occupational stress, and decreased job satisfaction (Leiter et al., 2014; Taris, van Beek & Schaufeli, 2010). At the same time, pressures generated by hyper-productivity culture, the expansion of the digital economy, and the flexibilization of work arrangements (remote work, gig economy) further exacerbate overwork tendencies, increasing risks to employees' mental health (Erliana et al., 2023; Judijanto, 2024).

In recent years, bibliometric analysis has become an essential tool for understanding the evolution of a scientific field, offering valuable insights into author networks, influential journals, dominant themes, and emerging trends. Existing bibliometric studies in the field of occupational health and employee well-being highlight a significant rise in research on workaholism beginning in the second decade of the 21st century, in parallel with crises triggered by the COVID-19 pandemic and the accelerated transformations of the work environment (Erliana et al., 2023; Judijanto, 2024; Van Wijhe, Peeters, & Schaufeli, 2011).

In this context, the present study aims to conduct a comprehensive bibliometric analysis of the scientific literature on workaholism, published between 2000 and 2025, with the goal of mapping the intellectual development of the field, identifying prolific authors, influential sources, and dominant thematic clusters, as well as highlighting emerging research directions. Using the Web of Science database and R Bibliometrix tools, this study systematically maps the knowledge structure on workaholism amid the growing redefinition of work and its boundaries.

Revista de Științe Politice. Revue des Sciences Politiques • No. 86 • 2025: 305 – 319

ORIGINAL PAPER

Workaholism A Bibliometric Analysis of Trends and Research Impact

Otilia Maria Trasca[1)]

Abstract:
Workaholism, a prevalent yet underappreciated phenomenon of modern working life, has become ever more exposed to academic attention owing to its far-reaching consequences for employee well-being, organizational performance, and general socio-economic systems. This paper performs an exhaustive bibliometric review of workaholism research, charting its intellectual development and uncovering the prominent thematic clusters, productive authors, and conspicuous publication patterns between 2000 and 2025. Using Web of Science data, we analyze citation networks, co-authorship, and keyword trends to chart the scholarly terrain of workaholism research.
The study demonstrates a significant body of productivity in the shape of research, particularly in the last ten years, reflecting accelerating concerns regarding burnout, mental health, work-life balance, and productivity in hyper-connected working conditions. Predominant research issues are the psychological foundation of workaholism, its relationships with job stress and satisfaction, and detrimental effects on physical and mental health outcomes. Technological change, remote work, and the gig economy have relocated the debate so that it has put even greater focus on the intersection of workaholism and digital connectivity, organizational culture, and socio-cultural forces.
We place workaholism in this research not only as an individual psychological inclination but as a complex work issue that demands organizational and policy-level systematic interventions. By mapping the developments in the area, we offer implications for future research, especially on AI-supported work cultures, digital work addiction, corporate interventions, and support systems for facilitating sustainable work habits.

JEL: J22, J28, M54

Keywords: *Workaholism, Organizational Behavior, Burnout, Mental Health, Employee Well-being.*

[26] Phd. Student, University of Craiova, "Eugeniu Carada" Doctoral School of Economic Sciences, Romania, Email: trasca.otilia.q2v@student.ucv.ro

Zuboff, S. (2023). The age of surveillance capitalism. In Social theory re-wired (pp. 203-213). Routledge.
*** - European Commission. (2021). Proposal for a regulation laying down harmonized rules on artificial intelligence (Artificial Intelligence Act). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0206
*** - Federal Trade Commission (FTC). (2021). AI and Algorithmic Fairness: FTC Guidance on Automated Decision-Making. Retrieved from https://www.ftc.gov/industry/technology/artificial-intelligence
*** - Food and Drug Administration (FDA). (2021). AI/ML-Based Software as a Medical Device: A Regulatory Framework. Retrieved from https://www.fda.gov/medical-devices/software-medical-device-samd/artificial-intelligence-and-machine-learning-software-medical-device
*** - National Highway Traffic Safety Administration (NHTSA). (2022). Federal Automated Vehicles Policy: AI Regulation in Autonomous Systems. Retrieved from https://www.nhtsa.gov/vehicle-safety/automated-vehicles-safety
*** - U.S. Copyright Office. (2023). Artificial intelligence and copyright. Retrieved from https://www.copyright.gov/ai/

Article Info

Received: March 24 2025
Accepted: May 22 2025

How to cite this article:
Spulbar, L. F. (2025). Legal frameworks for AI-driven markets and their challenges and opportunities in the digital economy. *Revista de Științe Politice. Revue des Sciences Politiques,* no. 86, pp. 288 – 304.

by COVID-19 outbreak. International journal of production research, 58(10), 2904-2915.

Khan, L. M. (2019). The separation of platforms and commerce. Columbia Law Review, 119(4), 973-1098.

Kostka, G. (2019). China's social credit systems and public opinion: Explaining high levels of approval. New media & society, 21(7), 1565-1593.

Mitrache, M. D., Spulbar, L. F., & Mitrache, L. A. (2024). The Influence of AI Technology in Stimulating Growth and Innovation in Business. Revista de Stiinte Politice, (81), 51-61.

Mitrache, D. M., Spulbăr, L. F., & Mitrache, L. A. (2024). Corporate Governance Strategies Based On Harnessing Artificial Intelligence In The Synergistic Process Between Corporate Management And Intrapreneurship. Young Economists Journal/Revista Tinerilor Economisti, 21(43).

Pagallo, U. (2013). The laws of robots. Crimes, Contracts and Torts, Cham.

Pasquale, F. (2020). New laws of robotics. Harvard University Press.

Roberts, H., Cowls, J., Morley, J., Taddeo, M., Wang, V., & Floridi, L. (2021). The Chinese approach to artificial intelligence: an analysis of policy, ethics, and regulation (pp. 47-79). Springer International Publishing.

Selbst, A. D., & Barocas, S. (2018). The intuitive appeal of explainable machines. Fordham L. Rev., 87, 1085.

Spulbar, C., Birau, R., & Spulbar, L. F. (2021). A critical survey on efficient market hypothesis (EMH), adaptive market hypothesis (AMH) and fractal markets hypothesis (FMH) considering their implication on stock markets behavior. Ovidius University Annals, Economic Sciences Series, 21(2), 1161-1165.

Spulbar, L. F., & Mitrache, L. A. (2024). Considerations Regarding the Assessment of AI's Impact on Court Decisions: Developments and Perspectives. Revista de Stiinte Politice, (82), 99-106.

Stucke, M. E., & Ezrachi, A. (2016). Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy.

Sunstein, C. R. (2021). Sludge audits and anti-sludge policies. Behavioral Public Policy, 5(1), 48-68.

Tan, Z., & Zhang, C. (2021). China's PIPL and DSL: Is China following the EU's approach to data protection? Journal of Data Protection & Privacy, 5(1), 7-25.

Tzimas, T. (2023). Algorithmic transparency and explainability under EU law. European Public Law, 29(4).

Veale, M., & Zuiderveen Borgesius, F. (2021). Demystifying the Draft EU Artificial Intelligence Act Analysing the good, the bad, and the unclear elements of the proposed approach. Computer Law Review International, 22(4), 97-112.

von Moltke, A. K. (2023). Antitrust and Upstream Platform Power Plays: A Policy in Bed with Procrustes. Oxford University Press.

Wachter, S., Mittelstadt, B., & Floridi, L. (2017). Why a right to explanation of automated decision-making does not exist in the general data protection regulation. International data privacy law, 7(2), 76-99.

Wachter, S., Mittelstadt, B., & Russell, C. (2021). Why fairness cannot be automated: Bridging the gap between EU non-discrimination law and AI. Computer Law & Security Review, 41, 105567.

Zhang, A. H. (2024). The Promise and Perils of China's Regulation of Artificial Intelligence. Columbia Journal of Transnational Law (forthcoming).

and the decisions we make today will determine whether AI becomes a force for economic progress or a catalyst for digital inequality.

As we look ahead, the conversation must continue. AI is not waiting for regulators, policymakers, or businesses to catch up, it is moving forward with or without them. The real question is: Will we shape AI, or will AI shape us?

Authors' Contributions:

The authors contributed equally to this work.

References:

Acquisti, A., Taylor, C., & Wagman, L. (2016). The economics of privacy. Journal of economic Literature, 54(2), 442-492.

Abiri, G., & Huang, X. (2022). The People's (Republic) Algorithms. Notre Dame J. Int'l Comp. L., 12, 16.

Aldasoro, I., Gambacorta, L., Korinek, A., Shreeti, V., & Stein, M. (2024). Intelligent financial system: how AI is transforming finance. Bank for International Settlements, Monetary and Economic Department.

Amarikwa, M. (2024). Rules for Robots: Constitutional Challenges with the AI Bill of Right's Principles Regulating Automated Systems. University of Pennsylvania Journal of Constitutional Law, 26(4), 1176-1211.

Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. Journal of economic perspectives, 29(3), 3-30.

Barocas, S., Hardt, M., & Narayanan, A. (2023). Fairness and machine learning: Limitations and opportunities. MIT press.

Broinowski, A., & Martin, F. R. (2024). Beyond the deepfake problem: Benefits, risks and regulation of generative AI screen technologies. Media International Australia, 1329878X241288034.

Brynjolfsson, E., & McAfee, A. (2014). The second machine age: Work, progress, and prosperity in a time of brilliant technologies. WW Norton & company.

Calo, R. (2017). Artificial intelligence policy: a primer and roadmap. UCDL Rev., 51, 399.

Cheng, J., & Zeng, J. (2023). Shaping AI's future? China in global AI governance. Journal of Contemporary China, 32(143), 794-810.

Daly, A. (2019). Algorithmic oppression with Chinese characteristics: AI against Xinjiang's Uyghurs. APC.

Denvir, C., Fletcher, T., Hay, J., & Pleasence, P. (2019). The Devil in the Detail: Mitigating the Constitutional & Rule of Law Risks Associated with the Use of Artificial Intelligence in the Legal Domain. Fla. St. UL Rev., 47, 29.

Easley, D., Lopez de Prado, M., & O'Hara, M. (2012). The volume clock: Insights into the high frequency paradigm. The Journal of Portfolio Management, (Fall, 2012), Johnson School Research Paper Series, (9-2012).

Furman, J., Coyle, D., Fletcher, A., McAuley, D., & Marsden, P. (2019). Unlocking digital competition: Report of the digital competition expert panel. UK government publication, HM Treasury, 27.

Hu, J. (2024). Dispute Resolution and Social Governance in Digital China. Taylor & Francis.

Ivanov, D., & Dolgui, A. (2020). Viability of intertwined supply networks: extending the supply chain resilience angles towards survivability. A position paper motivated

and deploying AI systems should adopt transparent governance policies, robust risk assessment frameworks, and proactive ethical AI principles. Voluntary compliance with AI ethics charters and fair competition commitments can mitigate the need for overly stringent regulations. Moreover, integrating AI ethics committees within corporations could ensure that AI deployment aligns with societal and economic interests rather than merely focusing on profitability.

AI-driven economies also require consumer and business education. The general public, as well as businesses leveraging AI, must have a clear understanding of how AI systems function, their potential risks, and their impact on privacy, competition, and employment. Regulatory bodies should collaborate with academic institutions, civil society, and industry stakeholders to develop awareness campaigns, training programs, and public consultations that foster informed decision-making in AI adoption.

Looking ahead, the next phase of AI regulation will depend on technological advancements, policy evolution, and market adaptations. The regulatory landscape should be dynamic and capable of addressing emerging challenges such as AGI (Artificial General Intelligence), AI-human collaboration, and quantum-enhanced AI systems. Future regulatory discussions must also address AI's environmental impact, workforce displacement due to automation, and ethical concerns surrounding AI-human interactions.

6. Conclusions

Artificial intelligence is no longer a futuristic concept it is a reality shaping economic markets, influencing decision-making, and redefining the regulatory landscape. The challenge before us is clear: How do we govern an evolving technology without suffocating its potential? How do we ensure that AI-driven economies remain fair, competitive, and ethically sound, rather than tools of monopolistic power or instruments of unchecked surveillance?

Throughout this discussion, we have seen the legal complexities and economic opportunities that AI presents. The European Union has taken a structured and rights-based approach, the United States has leaned on sectoral governance and self-regulation, while China has integrated AI into its national strategy with strict government oversight. But in a world increasingly interconnected by AI-powered markets, can these competing models coexist, or will they lead to regulatory fragmentation that stifles cross-border AI collaboration?

Liability, bias, data privacy, and market fairness remain at the heart of AI regulation, but one fundamental issue persists: Can regulation keep pace with the rapid evolution of AI? Laws and policies are reactive by nature, while AI continues to evolve at an unprecedented rate. Will regulatory sandboxes, ethical AI principles, and adaptive legal mechanisms be enough to prevent AI-driven markets from spiraling into legal and economic uncertainty? Or will we find ourselves permanently chasing a technology that refuses to be contained?

Yet, AI regulation is not just a legal or economic issue it is a societal one. AI is not inherently ethical or unethical, fair or unfair it reflects the values and priorities of those who create and deploy it. So the ultimate question remains: What kind of AI-powered world do we want to build? One where technology serves only the most powerful, or one where it is harnessed for collective economic prosperity and human advancement?

The answers to these questions will define the next era of AI governance. While there may never be a perfect balance between innovation and regulation, the ongoing debate is a sign that we are asking the right questions. AI-driven markets are still in their infancy,

5. Balancing AI regulation, innovation, and market integrity

The regulation of artificial intelligence in economic markets is at a crossroads. As AI-driven markets continue to evolve, governments and policymakers face the challenge of crafting legal frameworks that balance innovation, ethical governance, and economic stability. Over-regulation risks stifling technological advancements and slowing AI-driven progress, while under-regulation could lead to market distortions, unfair competition, and ethical concerns. Achieving an equilibrium requires a strategic approach that considers both legal adaptability and economic dynamism.

The influence of AI extends beyond economic markets, increasingly impacting judicial and regulatory decision-making. As AI-driven algorithms assist in legal analysis, case predictions, and even sentencing recommendations, concerns arise regarding transparency, accountability, and potential biases embedded in AI models. According to Spulbar and Mitrache (2024), the assessment of AI's role in court decisions presents both opportunities for efficiency and challenges in ensuring fairness and due process. They highlight the urgent need for legal frameworks that establish clear guidelines on AI-assisted judicial reasoning, preventing automated systems from undermining fundamental legal principles such as human oversight, fairness, and proportionality. These concerns mirror broader regulatory debates on AI's role in governance, competition law, and economic decision-making, emphasizing the necessity of comprehensive oversight mechanisms to prevent systemic distortions.

A key aspect of this balance is legal flexibility. AI is a constantly evolving technology, and static regulations may quickly become obsolete. Regulatory frameworks should be adaptive, allowing for periodic reassessment and revision in response to technological advancements. A model that incorporates regulatory sandboxes controlled environments where AI technologies can be tested under temporary legal exemptions could enable innovation while providing regulators with empirical data on AI's real-world implications. Such an approach would help ensure that AI regulations remain relevant and effective without hindering progress.

Harmonization of AI regulations across different jurisdictions is another essential factor. The current global landscape is fragmented, with the European Union, the United States, and China each adopting distinct regulatory philosophies. While these models reflect different political, economic, and cultural priorities, excessive divergence in legal frameworks may lead to regulatory conflicts, compliance burdens for multinational businesses, and barriers to global AI trade. International cooperation through standardized AI ethics guidelines, interoperability requirements, and cross-border compliance mechanisms could facilitate a more cohesive global AI governance structure.

AI-powered models are increasingly used to enhance managerial efficiency, automate compliance, and support strategic corporate decisions, raising important legal and ethical considerations. According to Mitrache et al. (2024), AI-driven corporate governance creates a synergistic link between corporate management and intrapreneurship, where organizations leverage AI to streamline operations, foster innovation, and maintain competitive advantages. However, they caution that without proper regulatory oversight, AI's role in corporate strategy could lead to unintended market consequences, governance loopholes, and ethical dilemmas. This highlights the need for adaptive legal frameworks that ensure AI-powered corporate governance aligns with market integrity, transparency, and fair competition.

Beyond legal mechanisms, industry self-regulation and corporate accountability will play a critical role in shaping the future of AI-powered markets. Companies developing

where tech companies wield significant influence over AI policy, China's regulatory model ensures that the state retains ultimate control over AI markets.

A key distinction of China's AI regulatory framework is its deep integration into national security and surveillance infrastructure. AI is widely used in facial recognition, predictive policing, and social credit systems, raising concerns about human rights implications (Cheng et al, 2023).

The Social Credit System, powered by AI and big data analytics, exemplifies how AI is used for both economic governance and social control. By monitoring businesses and individuals, the system enforces compliance with legal and ethical norms, rewarding good behavior and penalizing violations (Kostka, 2019). AI-driven surveillance also plays a crucial role in China's domestic security strategy, particularly in Xinjiang, where facial recognition and predictive analytics have been used for population monitoring, drawing international criticism (Daly, 2019).

Table 3: Comparison with the U.S and EU Approach

Feature	China (State-Driven Approach)	United States (Sectoral Approach)	European Union (Risk-Based Model)
Regulatory philosophy	Centralized state control over AI	Market-driven, sectoral laws	Rights-based, risk-based regulation
AI liability rules	State oversight, corporate compliance	Case-by-case enforcement	Strict liability for high-risk AI
Competition law	Government-enforced restrictions on tech monopolies	Industry self-regulation, DOJ oversight	Antitrust rules for AI pricing algorithms
Data privacy & AI	Government retains access to private data	Patchwork of state-level laws	GDPR-style consumer rights
AI and national security	AI integrated into surveillance and state governance	AI in defense, but with private sector control	Ethical AI focus, strict human rights safeguards

Source: Own work based on research methodology

China's AI regulation is unique in its combination of industrial policy, digital governance, and state security concerns. While the U.S. focuses on market-led innovation and the EU on human rights and transparency, China's model ensures that AI serves the strategic interests of the state.

China's AI governance model is shaping international regulatory debates, particularly in countries with state-controlled digital economies. Some nations have adopted elements of China's AI laws, particularly in data localization, AI-driven surveillance, and algorithmic content control (Cheng et al., 2023). However, this model has also raised concerns about the globalization of digital authoritarianism, with critics arguing that China's AI laws set a precedent for state intervention in AI markets at the expense of personal freedoms.

At the same time, China's leadership in AI infrastructure development particularly through the Belt and Road Initiative (BRI) is exporting its AI governance model to developing countries, influencing regulatory trends beyond its borders. This growing regulatory divergence between China, the U.S., and the EU raises critical questions about whether global AI regulation can be harmonized or whether competing AI governance models will fragment digital markets along geopolitical lines.

The United States' sectoral approach has advantages in fostering AI-driven innovation, particularly in finance, healthcare, and autonomous systems. However, its lack of a unified AI framework creates legal uncertainties, weak enforcement mechanisms, and potential risks of biased and unregulated AI deployment. As global AI markets evolve, pressure is mounting for the U.S. to adopt a more cohesive AI regulatory strategy that balances market flexibility with ethical and legal safeguards.

China's AI governance model is characterized by three key pillars: centralized government oversight, industry-driven compliance, and national security considerations. These elements are reflected in the country's legal framework, regulatory enforcement mechanisms, and long-term AI policy goals. The New Generation Artificial Intelligence Development Plan (AIDP), launched in 2017, sets ambitious objectives for China to become the world leader in AI by 2030. To achieve this, the government has introduced a series of laws and policies that balance economic incentives, strict regulatory oversight, and state control over data and digital infrastructure (Roberts et al., 2021).

Unlike the EU's AI Act, which primarily focuses on risk-based regulation, or the U.S. approach, which relies on sectoral laws, China regulates AI through a combination of government policies, administrative measures, and direct industry oversight. Some of the most significant regulatory initiatives include:

- The Personal Information Protection Law (PIPL). China's equivalent to the EU's GDPR, imposing strict data governance rules, but with a key difference. The Chinese government retains broad access to private data for national security and economic planning purposes (Tan et al., 2021).
- The Data Security Law (DSL). Establishes a hierarchical classification system for data, prioritizing government control over critical data, including AI-related datasets. Companies must store key data domestically and comply with stringent security protocols (Hu, 2024).
- The Algorithmic recommendation regulations require AI platforms to ensure algorithmic transparency and fairness, prohibiting recommendation systems from promoting content that disrupts social order. This regulation directly affects platforms such as TikTok and WeChat, reinforcing government control over digital media (Abiri & Huang, 2022).
- Deep synthesis and deepfake regulations are some of the first laws globally to regulate AI-generated content, mandating watermarking, identity verification, and government approval for AI-generated media (Broinowski et al., 2024).

These laws reflect China's dual approach to AI governance promoting AI-driven economic growth while ensuring strict government oversight and ideological alignment. Unlike Western regulatory models, which emphasize individual rights and market competition, China's AI laws prioritize social stability, state security, and economic centralization (Roberts et al., 2021).

China's AI regulation is closely linked to its industrial policy, where the government plays a proactive role in supporting domestic AI firms while regulating private sector influence. The State Council and the Cyberspace Administration of China (CAC) oversee AI development, ensuring that companies like Alibaba, Tencent, and Baidu align with national strategic goals.

However, the government has also taken steps to curb the power of large AI-driven tech companies. In 2020-2021, China launched a sweeping antitrust crackdown on AI-powered digital platforms, including Alibaba and Meituan, imposing heavy fines and stricter regulations to prevent monopolistic behavior (Zhang, 2024). Unlike the U.S.,

- The National Highway Traffic Safety Administration (NHTSA) regulates AI in autonomous vehicles, focusing on liability, safety standards, and accident accountability (NHTSA, 2022).

This decentralized model allows flexibility and sector-specific expertise but also creates inconsistencies in AI governance. Unlike the EU's AI Act, which establishes a unified compliance structure, the U.S. approach requires companies to navigate multiple regulatory bodies, increasing legal uncertainty. Critics argue that this fragmentation may lead to regulatory arbitrage, where firms exploit gaps between agencies to evade stricter oversight (Denvir et al, 2019).

A key legal challenge in the U.S. AI regulatory landscape is the lack of federal AI legislation. While several states have enacted AI-related laws such as Illinois' Biometric Information Privacy Act (BIPA) and California's Consumer Privacy Act (CCPA) there is no comprehensive national framework governing AI ethics, liability, or consumer protection. The Algorithmic Accountability Act, introduced in Congress in 2019 and 2022, sought to require companies to conduct AI impact assessments to mitigate risks of bias, discrimination, and consumer harm. However, legislative progress has been slow due to political divisions and lobbying by technology firms (Pasquale, 2020).

Despite the absence of AI-specific laws, existing federal regulations are being adapted to address AI-related risks. The Civil Rights Act and Equal Credit Opportunity Act are increasingly invoked to regulate AI-driven discrimination in hiring, lending, and criminal justice. The Antitrust Division of the Department of Justice (DOJ) has begun investigating AI-powered algorithmic collusion in pricing models, signaling a growing regulatory focus on competition law and AI-driven market power (Khan, 2019).

The AI Bill of Rights (2024) represents an important step toward a more structured AI governance approach. This policy framework outlines five key principles:

- Safe and effective AI systems;
- Algorithmic discrimination protections;
- Data privacy and control;
- Transparency and explainability;
- Human alternatives and fallbacks.

While the AI Bill of Rights provides guiding principles, it lacks binding legal enforcement, relying instead on voluntary compliance and agency-level oversight (Amarikwa, 2024). This reflects a broader trend in U.S. AI governance, where self-regulation and corporate accountability play a central role.

Table 2: Comparison with the EU Approach

Feature	United States (Sectoral Approach)	European Union (AI Act)
Regulatory structure	Decentralized, sector-specific	Centralized, risk-based framework
Main regulatory bodies	FTC, SEC, FDA, NHTSA, DOJ	European Commission, AI regulatory agencies
AI liability rules	Case-by-case enforcement	Strict liability for high-risk AI
Transparency requirements	Industry self-regulation	Mandatory AI documentation
Legal enforcement	No federal AI law, voluntary compliance	Binding EU-wide legislation

Source: Own work based on research methodology

no regulatory obligations. This tiered structure seeks to balance technological innovation with fundamental rights protection, ensuring that AI adoption does not compromise market integrity or consumer rights.

One of the key innovations of the AI Act is its emphasis on explainability and accountability. AI developers and deployers of high-risk AI systems must provide clear documentation of their models' decision-making processes, ensuring compliance with EU fundamental rights standards (Wachter, Mittelstadt, & Russell, 2021). The act also mandates the creation of conformity assessments, requiring companies to demonstrate that their AI systems meet regulatory standards before deployment. This approach is similar to the General Data Protection Regulation (GDPR), which imposes strict compliance requirements on organizations handling personal data.

However, the AI Act also faces significant legal and economic challenges. Critics argue that the compliance burden for high-risk AI systems may stifle innovation and deter investment in AI startups. Veale and Zuiderveen Borgesius (2021) highlight that smaller AI firms may struggle to meet the stringent documentation and auditing requirements, leading to a market environment where only large technology corporations can afford regulatory compliance. Additionally, there are concerns about regulatory fragmentation within the EU, as member states may interpret and enforce the AI Act differently.

Despite these challenges, the AI Act represents a significant step toward global AI governance. By establishing a structured framework for AI risk assessment and compliance, the EU aims to create a legal environment that fosters responsible AI development while protecting consumers and businesses. Moreover, the extraterritorial scope of the AI Act similar to the GDPR means that companies worldwide must comply if they offer AI services within the EU. This has led some scholars to refer to the AI Act as a model for "AI regulatory globalization" (Tzimas, 2023).

Unlike the European Union's centralized and comprehensive AI regulatory framework, the United States has adopted a sectoral and decentralized approach to AI governance. Rather than imposing overarching AI-specific legislation, the U.S. regulatory model relies on existing legal frameworks, industry self-regulation, and sector-specific guidelines to address AI-related challenges. This approach is rooted in the American legal and economic philosophy of market-driven innovation, which prioritizes technological advancement and economic growth over broad regulatory constraints (Calo, 2017). However, the absence of a unified federal AI law has raised concerns about regulatory fragmentation, enforcement gaps, and ethical risks in AI-powered markets.

One of the defining features of the U.S. AI regulatory approach is its reliance on industry-specific regulations. Various federal agencies oversee AI-related risks within their respective domains, leading to a patchwork of regulations that vary across sectors:

- The Federal Trade Commission (FTC) enforces AI-related consumer protection and competition laws, particularly in digital markets and data privacy. The FTC has warned against AI-driven deception, bias, and anti-competitive practices, emphasizing the need for algorithmic transparency and fairness (FTC, 2021).
- The Securities and Exchange Commission (SEC) regulates AI in financial markets, particularly in algorithmic trading and robo-advisors. AI-driven investment models are subject to SEC oversight to prevent market manipulation, insider trading, and systemic risks (Aldasoro et al., 2024).
- The Food and Drug Administration (FDA) oversees AI in healthcare, ensuring that AI-driven medical technologies meet safety, efficacy, and ethical standards before deployment in clinical settings (FDA, 2021).

AI-enabled collusion	Pricing algorithms autonomously coordinate to manipulate markets without explicit agreements	Increased scrutiny under antitrust laws, proposals for AI-powered regulatory enforcement	Ezrachi & Stucke (2016)
Intellectual property challenges	Uncertainty over copyright and patent protection for AI-generated content	U.S. Copyright Office rulings against AI authorship, ongoing legal debates	U.S. Copyright Office (2023)
Data privacy and AI	AI-driven data processing raises concerns about privacy, security, and cross-border data transfers	GDPR, California Consumer Privacy Act (CCPA), emerging AI-specific privacy laws	Wachter et al. (2017)

Source: Own work based on research methodology

While regulatory efforts are underway, the legal challenges of AI-powered economic systems require continuous adaptation and international cooperation. Policymakers must balance innovation with legal protections, ensuring that AI fosters economic growth without undermining ethical and societal values. A harmonized legal framework that addresses liability, competition law, intellectual property, and data governance will be essential in shaping the future of AI-driven markets.

4. Global Regulatory Approaches to AI in Markets

The legal governance of artificial intelligence in economic markets varies significantly across jurisdictions, reflecting differences in legal traditions, economic priorities, and technological strategies. While AI has the potential to enhance efficiency and market competition, its risks ranging from liability concerns to algorithmic bias necessitate proactive regulatory measures. The fragmented global regulatory landscape presents both challenges and opportunities for harmonizing AI governance.

Three major regulatory approaches have emerged in response to AI's economic implications: the European Union's risk-based regulatory model, the United States' sectoral approach, and China's state-driven AI governance. Each of these approaches reflects a distinct legal and economic philosophy, with the EU emphasizing fundamental rights and ethical AI, the US focusing on innovation and industry self-regulation, and China integrating AI development into its broader geopolitical and economic strategy. Understanding these models is essential for assessing their impact on AI-powered markets and evaluating potential paths toward international regulatory convergence.

The European Union has taken a proactive stance in AI regulation, positioning itself as a global leader in ethical AI governance. The Artificial Intelligence Act (AI Act) proposed by the European Commission in 2021 is the world's first comprehensive legislative framework designed to regulate AI across economic sectors. The AI Act adopts a risk-based approach, classifying AI systems into four categories based on their potential impact on fundamental rights and economic stability: unacceptable risk, high risk, limited risk, and minimal risk (European Commission, 2021).

At the core of the AI Act is the principle of proportional regulation, meaning that AI systems with higher risks are subject to stricter legal requirements. Unacceptable-risk AI systems, such as social scoring systems and subliminal manipulation, are outright prohibited. High-risk AI systems, including those used in hiring, financial services, and critical infrastructure, must comply with strict transparency, accountability, and data governance rules. Limited-risk AI applications, such as chatbots and recommendation algorithms, require only basic transparency measures, while minimal-risk AI systems face

interpretability remain key legal concerns, as courts and regulators struggle to assess whether an AI system's decisions comply with anti-discrimination laws.

AI-driven markets also pose significant antitrust and competition law challenges. Traditional antitrust laws are designed to prevent collusion and market concentration through explicit human agreements. However, AI-enabled pricing algorithms can engage in tacit collusion, where competing firms' algorithms learn to set prices in a way that maximizes collective profits without direct communication. Ezrachi and Stucke (2016) warn that existing antitrust tools may be insufficient to regulate AI-driven collusion, as intent a central element in competition law is difficult to establish when pricing decisions are made autonomously. Regulators in the European Union and the United States are currently exploring ways to adapt competition law to algorithmic markets, with proposals ranging from stricter algorithmic transparency requirements to the use of AI-powered enforcement mechanisms.

Intellectual property (IP) law faces new challenges with the rise of AI-generated content. Copyright and patent systems were designed to protect human creativity and invention, but AI is now capable of generating literature, art, and even novel scientific discoveries. The question of whether AI-generated works should be eligible for copyright protection remains unresolved. In the United States, the Copyright Office has ruled that only human-created works qualify for protection, but ongoing debates suggest that revisions to IP law may be necessary as AI becomes a more significant contributor to creative industries. Similarly, patent law faces issues regarding AI-assisted inventions, with policymakers considering whether AI should be recognized as an inventor or merely a tool used by human creators.

Data governance is another pressing legal challenge in AI-powered economic systems. The increasing reliance on big data for training AI models raises concerns about data privacy, security, and ownership. The General Data Protection Regulation (GDPR) has set global benchmarks for data protection, but enforcing these rules in AI-driven economies remains difficult. Many AI systems operate across multiple jurisdictions, creating conflicts between national data protection laws. Furthermore, AI's ability to infer sensitive personal information from seemingly benign datasets poses risks that existing privacy laws may not fully address. Wachter, Mittelstadt, and Floridi (2017) propose the concept of "right to explanation" as a legal safeguard, ensuring that individuals affected by AI-driven decisions have the right to understand and challenge automated processes.

The table below summarizes the key legal challenges associated with AI-powered economic systems and highlights regulatory responses from different jurisdictions:

Table 1: Key legal challenges and regulatory responses in AI-powered economic systems

Legal Challenge	Description	Regulatory Response	Source
Liability in AI decisions	Determining legal responsibility for AI-driven actions, especially in autonomous decision-making	EU AI Act (risk-based approach), proposals for AI-specific liability laws	Pagallo (2013)
Algorithmic bias	AI replicates historical biases, leading to discriminatory decisions in hiring, lending, and law enforcement	Fairness-aware AI models, EU GDPR transparency requirements, U.S. AI Bill of Rights	Barocas et al. (2023)

Beyond privacy, data-driven business models influence labor markets and economic inequalities. AI-powered automation, fueled by data analytics, has led to significant workforce disruptions, particularly in sectors reliant on routine tasks. Autor (2015) highlights that while AI enhances productivity, it also exacerbates income disparities by disproportionately benefiting high-skilled workers while displacing low-skilled labor. Data-driven gig economy platforms, such as Uber and Deliveroo, further illustrate how AI reshapes employment relationships, often blurring the lines between independent contracting and traditional employment. Regulatory bodies are grappling with how to adapt labor laws to the realities of algorithmic management and automated decision-making.

Despite these challenges, data-driven business models present opportunities for economic growth and regulatory innovation. AI-powered analytics enable firms to anticipate market trends, optimize supply chains, and enhance customer experiences. In financial services, data-driven risk assessment improves fraud detection and credit evaluation, increasing efficiency and financial inclusion. Moreover, AI-driven policymaking, where governments leverage big data to design evidence-based regulations, represents a promising development in economic governance. Sunstein (2021) argues that AI-enhanced regulatory models could lead to more precise and adaptive legal frameworks, reducing inefficiencies in traditional rule-making processes.

3. Legal challenges in AI-powered economic systems

Traditional regulatory tools were designed for human decision-makers, yet AI introduces complexity through autonomous actions, opaque decision-making processes, and cross-jurisdictional economic interactions. Ensuring that AI-powered economic systems function within legal and ethical boundaries while maintaining market stability and innovation requires a re-evaluation of liability structures, competition law, intellectual property rights, and regulatory enforcement mechanisms.

One of the most significant legal concerns surrounding AI-powered economic systems is the issue of liability. AI algorithms operate autonomously, making decisions without direct human intervention. This raises fundamental legal questions: Who is responsible when AI systems cause harm? Existing legal frameworks, such as product liability and negligence laws, are built on the premise of human agency. However, as AI models evolve and develop unexpected behaviors, establishing accountability becomes increasingly difficult. Pagallo (2013) highlights that traditional tort law principles may be inadequate for dealing with AI-driven errors, necessitating new legal doctrines such as strict liability for AI developers or the introduction of electronic personhood for advanced AI systems. The European Union's AI Act proposes a tiered risk-based approach, where higher-risk AI applications face stricter liability standards, yet the question of who bears ultimate responsibility remains unresolved.

Another critical area of legal scrutiny is algorithmic bias and discrimination. AI systems, particularly those used in hiring, lending, and criminal justice, have been found to reinforce existing biases due to the nature of their training data. Barocas, Hardt, and Narayanan (2023) argue that while AI promises objectivity, it often replicates historical inequities, leading to discriminatory outcomes. In response, jurisdictions such as the United States and the European Union have introduced regulations requiring transparency and fairness in AI-driven decision-making. However, enforcing these principles is challenging given the complexity of machine learning models. Explainability and

Despite these challenges, algorithmic decision-making also offers opportunities for regulatory compliance and risk mitigation. AI-powered compliance tools automate regulatory reporting, fraud detection, and financial risk assessment, reducing the burden on human regulators. In the banking sector, AI-driven anti-money laundering (AML) systems analyze transaction patterns to detect suspicious activities, enhancing financial security. Similarly, AI-driven tax compliance models help businesses navigate complex tax codes and optimize their financial reporting. Von Moltke (2023) argues that AI can serve as a regulatory tool rather than merely a subject of regulation, suggesting that well-designed AI systems can enhance governance and economic oversight.

The emergence of data as a core economic asset has led to the concept of "data capitalism," where companies derive value primarily from collecting, processing, and monetizing information. Zuboff (2023) argues that the modern economy is defined by surveillance capitalism, in which firms such as Google, Meta, and Amazon use predictive analytics to manipulate consumer behavior, creating new forms of market power. Unlike traditional business models that rely on tangible assets or labor, data-driven enterprises extract economic value from digital footprints, often without explicit consumer consent. This transformation has led to growing concerns about the monopolization of data and its implications for competition and market fairness.

Market concentration in data-driven economies is particularly evident in the dominance of tech giants that control vast datasets. Furman et al. (2019) note that companies with privileged access to consumer data gain a competitive advantage by refining AI models more effectively than smaller firms. The phenomenon of "network effects" reinforces this dominance, as larger datasets lead to better AI performance, attracting more users and further consolidating market power. This self-reinforcing cycle has led to regulatory scrutiny, with competition authorities investigating whether data monopolies stifle innovation and limit market entry for smaller competitors. In response, policymakers have proposed data-sharing mandates and interoperability requirements to level the competitive playing field. The European Union's Digital Markets Act (DMA) is one such attempt to address the monopolization of data by enforcing obligations on large online platforms.

According to Spulbar et al. (2021), the Efficient Market Hypothesis (EMH), which assumes that asset prices fully reflect available information, is being reconsidered in light of AI-driven adaptive trading strategies. However, while AI enhances market liquidity and predictive accuracy, it also introduces new risks, including algorithmic herding behavior, flash crashes, and potential market manipulation, requiring proactive regulatory oversight to ensure market integrity and stability.

A significant legal and ethical issue surrounding data-driven business models is the question of consumer privacy and data protection. AI-driven firms collect extensive user information to enhance personalized services, but this raises concerns about the potential misuse of personal data. The General Data Protection Regulation (GDPR) in the European Union sets strict guidelines on data collection, requiring informed consent and providing users with greater control over their information. However, research by Acquisti, Taylor, and Wagman (2016) suggests that consumers often lack a clear understanding of how their data is used, leading to an imbalance of power between individuals and corporations. The trade-off between personalized services and privacy remains a contentious debate, with scholars arguing that current legal frameworks may be insufficient to address the complexities of AI-driven data economies.

Legal frameworks for AI-driven markets and their challenges and opportunities in the digital economy

While AI's economic transformation presents significant opportunities, it also introduces regulatory and legal complexities. The autonomous and dynamic nature of AI systems challenges traditional legal frameworks, particularly in areas such as liability, competition law, and data governance. As AI continues to reshape economic structures, policymakers and legal scholars must develop adaptive frameworks that balance innovation with regulatory oversight.

The efficiency gains from algorithmic decision-making stem from AI's ability to process vast amounts of information at a speed and scale beyond human capabilities. In financial markets, machine learning models analyze historical price movements, macroeconomic indicators, and social sentiment to generate real-time trading strategies. AI-driven investment models outperform traditional portfolio management strategies due to their adaptability and ability to learn from new market conditions. However, these same characteristics pose challenges for financial regulators, as self-learning algorithms operate in ways that are difficult to predict and control. The Financial Stability Board (FSB) has warned that algorithmic decision-making, particularly in high-frequency trading, can amplify market volatility and increase the risk of systemic failures.

One of the most widely debated concerns surrounding algorithmic decision-making is the issue of bias and fairness. While AI is often perceived as objective, it is ultimately shaped by the data it is trained on. If the input data reflects historical inequities, the algorithm will likely perpetuate those biases in its decisions. In lending and credit markets, AI-powered risk assessment models determine an individual's creditworthiness based on complex predictive analytics. However, studies by Barocas, Hardt, and Narayanan (2023) have demonstrated that these models can unintentionally discriminate against marginalized groups, leading to regulatory scrutiny. In response, policymakers have advocated for fairness-aware machine learning models and explainable AI to ensure transparency and accountability in algorithmic decision-making.

A significant legal and ethical challenge arises from the "black-box" nature of many AI systems. Unlike traditional rule-based programming, machine learning models develop decision-making processes that are often opaque even to their creators. This lack of interpretability complicates efforts to assign liability when AI-driven decisions lead to negative economic consequences. According to Selbst and Barocas (2018), the opacity of algorithmic systems undermines traditional legal principles of accountability and due process, particularly in cases where AI influences employment, insurance rates, and criminal sentencing. The European Union's AI Act has proposed strict transparency requirements, mandating that high-risk AI systems provide explainability features to ensure compliance with legal and ethical standards.

Another area of concern is the growing role of algorithmic decision-making in market competition and pricing strategies. Companies increasingly deploy AI-powered dynamic pricing algorithms that adjust prices in real-time based on consumer demand, competitor pricing, and market conditions. While such strategies enhance efficiency, they also introduce risks of algorithmic collusion, where competing firms' AI systems learn to coordinate pricing strategies without direct human intervention. Ezrachi and Stucke (2016) highlight that traditional antitrust laws are ill-equipped to address AI-driven collusion, as current legal frameworks rely on explicit evidence of human intent. This regulatory gap has led competition authorities, including the U.S. Federal Trade Commission (FTC) and the European Commission, to explore new methodologies for detecting and mitigating AI-facilitated anti-competitive behavior.

with legal, regulatory, and ethical concerns, necessitating a deeper understanding of AI's economic role.

AI's economic impact can be traced back to its ability to enhance productivity and efficiency. Brynjolfsson and McAfee (2014) argue that AI contributes to the "second machine age," where machine intelligence increasingly complements and, in some cases, surpasses human capabilities in economic decision-making. Unlike earlier technological advancements, which primarily replaced routine manual labor, AI increasingly automates cognitive tasks, fundamentally changing white-collar industries. AI's ability to process vast amounts of data and detect complex patterns leads to optimized decision-making in business and finance, creating new economic opportunities while also generating regulatory uncertainties.

AI has become a key driver of business growth and innovation, reshaping market dynamics and economic structures. According to Mitrache et al. (2024), AI technology fosters competitive advantages by optimizing business processes, enhancing decision-making, and enabling data-driven strategic planning. However, they also emphasize that while AI accelerates economic expansion, its unregulated or poorly governed implementation may lead to disparities in market competition and ethical dilemmas.

One of AI's most transformative effects is in financial markets, where algorithmic trading systems execute transactions at speeds and frequencies beyond human capabilities. High-frequency trading (HFT) algorithms leverage AI to identify market patterns and execute trades within microseconds. According to Easley, López de Prado, and O'Hara (2012), HFT enhances liquidity and reduces bid-ask spreads but also raises concerns regarding market stability, systemic risk, and the potential for flash crashes. The 2010 Flash Crash, where AI-driven trading algorithms contributed to a sudden market downturn, highlights the unintended consequences of AI's growing role in financial decision-making. Regulatory bodies, such as the U.S. Securities and Exchange Commission (SEC) and the European Securities and Markets Authority (ESMA), have sought to impose stricter oversight on algorithmic trading, yet challenges persist in effectively regulating self-learning AI systems.

Beyond financial markets, AI is transforming supply chain management and logistics. Predictive analytics powered by AI allows firms to anticipate demand fluctuations, optimize inventory levels, and enhance operational efficiency. Ivanov and Dolgui (2020) discuss how AI-driven supply chain automation improves resilience, particularly in the face of global disruptions such as the COVID-19 pandemic. However, these advancements also raise concerns regarding employment displacement, data security, and the monopolization of AI-driven logistics platforms. Large multinational corporations, such as Amazon and Alibaba, leverage AI to achieve supply chain dominance, prompting antitrust regulators to examine potential market concentration risks.

The rise of AI-driven consumer behavior analytics further solidifies AI's role in economic transformation. Recommendation algorithms and personalized advertising models, such as those used by Google and Meta, analyze vast amounts of consumer data to predict purchasing preferences and influence decision-making. Shoshana Zuboff (2023) argues that AI-powered surveillance capitalism enables corporations to manipulate consumer behavior through predictive analytics, raising ethical concerns regarding privacy, autonomy, and informed consent. The European Union's General Data Protection Regulation (GDPR) seeks to mitigate these concerns by imposing stringent data protection requirements, but enforcement remains a challenge given the global nature of AI-driven economic activities.

Legal frameworks for AI-driven markets and their challenges and opportunities in the digital economy

1. Introduction

The accelerated introduction of artificial intelligence (AI) into world economies has wrought deep transformations in economic structures, modifying conventional systems of trade, competition, and regulation. AI-driven technologies from algorithmic trading, autonomous decision-making, and machine learning-based financial predictions are revolutionizing the way business is conducted. As these innovations bring about efficiencies and innovations, they also bring about novel legal and economic dilemmas. The autonomous character of the AI systems renders it difficult for current regulatory frameworks, with legal frameworks needing to be adaptive and forward-looking.

The emergence of artificial intelligence within economic markets introduces a range of both prospects and challenges. On one side, AI contributes to increased productivity, diminishes transaction expenses, and streamlines supply chain processes. Conversely, issues related to liability, algorithmic prejudice, intellectual property protections, and market consolidation necessitate immediate legal scrutiny. Regulatory agencies globally face the complex task of reconciling the promotion of innovation with the imperative of maintaining equitable market practices. The absence of clear legal norms poses a threat of regulatory arbitrage, in which companies exploit gaps between jurisdictions to skip compliance.

This paper attempts to critically analyze the evolving legal frameworks for AI-powered markets, both the challenges and opportunities they present to the digital economy. The study will assess the strengths and weaknesses of existing legal strategies for dealing with economic disruptions from AI, examine promising new models including the EU AI Act, the US sectoral approach, and China's AI governance framework, and discuss antitrust ramifications of algorithmically determined prices and market concentration.

In addition, it will discuss possible paths toward greater regulatory efficiency using AI-driven compliance mechanisms, smart contracts, and risk minimization strategies to ultimately offer a balanced approach that balances innovation with economic and ethical concerns.

This study adopts a multidisciplinary approach, incorporating legal analysis, economic theories, and regulatory case study analysis. It stringently examines existing legal tools and court precedents while analyzing the vast implications of artificial intelligence on market structures. The comparative examination of different international regulatory models will provide insightful views concerning the effectiveness of different approaches. In addition, the paper employs economic principles such as competition theory, transaction cost theory, and innovation policy in order to put into context the legal issues involved. By combining these perspectives, this research seeks to give a detailed examination of the legal structures of AI-powered markets and their effects on the digital economy.

2. AI-Driven markets overview

Artificial intelligence has emerged as a key driver of economic transformation, redefining market operations, reshaping competitive dynamics, and influencing global economic structures. Its integration into economic processes enables automation, enhances decision-making, and accelerates innovation. AI-powered technologies are at the core of contemporary digital markets, influencing areas such as financial trading, supply chain management, and consumer behavior analytics. However, these transformations come

Revista de Științe Politice. Revue des Sciences Politiques • No. 86 • 2025: 288 – 304

ORIGINAL PAPER

Legal frameworks for AI-driven markets and their challenges and opportunities in the digital economy

Lucian-Florin Spulbar[1)]

Abstract:
The speedy inclusion of artificial intelligence (AI) in international markets has brought about unparalleled challenges and prospects, hence the need to develop flexible legal systems. AI-powered markets transform conventional economic structures by facilitating algorithmic trade, autonomous decision-making, and data-guided business models. Nevertheless, these developments present regulatory concerns regarding responsibility, bias, intellectual property rights, and market competition forces. This article discusses the changing legal landscape governing AI in economic applications, exploring both the limitations of existing frameworks and emerging regulatory approaches.
One of the key challenges of AI regulation is achieving a balance between legal control and innovation. The traditional tools of regulation are unable to address the autonomous and dynamic nature of AI, invoking concern regarding liability, transparency, and compliance. Moreover, the use of AI in market concentration and algorithmic price setting gives rise to antitrust concerns, necessitating pre-emptive legal intervention to ensure level competition. Conversely, AI provides an opportunity for streamlining regulatory efficiency, automating compliance, and mitigating financial risk through predictive analytics and smart contracts.
This study critically assesses global legal frameworks, including the European Union's AI Act, the United States' sectoral regulations, and China's AI regulation policy, against their economic effect. Through an appraisal of legal precedents and current policy debates, the paper presents an equilibrium framework that encourages technological advancement with ethical and economic balance.
Lastly, the intersection of AI, economics, and law calls for a changing regulatory environment that provides room for innovation without undermining market integrity. Surmounting these challenges is essential to having a healthy digital economy that boosts the fortunes of businesspeople, consumers, and policymakers.
Keywords: *AI regulation, digital economy, legal frameworks, algorithmic governance, market competition.*

JEL Classification: G15, F63, K20.

[1)] Master's Degree Student, University of Craiova, Faculty of Economics and Business Administration, Craiova, Romania, Email: lucian.spulbar01@gmail.com.

Universităţii'Constantin Brâncuşi'din Târgu-Jiu Seria Economie, (6).
Surden, H. (2018). Artificial intelligence and law: An overview. Ga. St. UL Rev., 35, 1305.
Topol, E. (2019). Deep medicine: how artificial intelligence can make healthcare human again. Hachette UK.
Wilson, H. J., & Daugherty, P. R. (2018). Human+ machine: Reimagining work in the age of AI. (No Title).
*** - Eurostat. (2022). Automation and Robotics in European Manufacturing: Employment Impact Report. European Commission. Available at: https://joint-research-centre.ec.europa.eu/scientific-activities-z/employment/automation-and-robots_en
*** - IBM Corporation. (2021). AI and Customer Service: How Watson Assistant is Transforming Support Operations. Available at: https://newsroom.ibm.com/2021-09-09-IBM-Watson-Launches-New-AI-and-Automation-Features-to-Help-Businesses-Transform-Customer-Service
*** - McKinsey Global Institute. (2021). The Future of Work After COVID-19. McKinsey & Company. Available at: https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-covid-19
*** - OECD. (2019). The Future of Work: Employment Outlook 2019. OECD Publishing. Available at: https://www.oecd.org/content/dam/oecd/en/publications/reports/2019/04/oecd-employment-outlook-2019_0d35ae00/9ee00155-en.pdf
*** - OECD. (2024). Generative AI set to exacerbate regional divide in OECD countries, says first regional analysis on its impact on local job markets. Available at: https://www.oecd.org/en/about/news/press-releases/2024/11/generative-ai-set-to-exacerbate-regional-divide-in-oecd-countries-says-first-regional-analysis-on-its-impact-on-local-job-markets.html
*** - Siemens AG. (2020). How AI is Transforming Smart Factories: The Siemens Approach to Industrial AI. Siemens Press Release. Available at: https://www.siemens.com/us/en/company/topic-areas/smart-factory.html
*** - U.S. Bureau of Labor Statistics. (2022). AI and Automation: Labor Market Effects in the U.S. Department of Labor. Available at: https://www.bls.gov/opub/mlr/2022/article/growth-trends-for-selected-occupations-considered-at-risk-from-automation.htm
*** - World Economic Forum. (2020). The Future of Jobs Report 2020. WEF. Available at: https://www.weforum.org/publications/the-future-of-jobs-report-2020/

Article Info

Received: March 24 2025
Accepted: May 20 2025

How to cite this article:
Spulbar, L. F., Mitrache, L. A. (2025). How humans and AI can thrive together in the workplace?. *Revista de Ştiinţe Politice. Revue des Sciences Politiques,* no. 86, pp. 274 – 287.

as a society, choose to wield its power. Will we embrace AI as a partner in innovation, ensuring that it serves human progress? Or will we allow it to become a disruptive force, widening economic disparities and deepening social inequalities? The future of work will not be defined by AI alone, but by the choices we make today in shaping a world where humans and AI thrive together.

Authors' Contributions:

The authors contributed equally to this work.

References:

Acemoglu, D., & Autor, D. (2011). Skills, tasks and technologies: Implications for employment and earnings. In Handbook of labor economics (Vol. 4, pp. 1043-1171). Elsevier.

Amabile, T. M. (2020). Creativity, artificial intelligence, and a world of surprises. Academy of Management Discoveries, 6(3), 351-354.

Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. Journal of economic perspectives, 29(3), 3-30.

Boddington, P. (2017). Towards a code of ethics for artificial intelligence (pp. 0-143). Cham: Springer.

Brynjolfsson, E., & McAfee, A. (2017). Machine, platform, crowd: Harnessing our digital future (Vol. 4, No. 1, pp. 1448-1476). New York: WW Norton & Company.

Choi, T. M., Wallace, S. W., & Wang, Y. (2018). Big data analytics in operations management. Production and operations management, 27(10), 1868-1883.

Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. Harvard business review, 96(1), 108-116.

Filippucci, F., Gal, P., Jona Lasinio, C. S., Leandro, A., & Nicoletti, G. (2024). The impact of Artificial Intelligence on productivity, distribution and growth.

Jiang, F., Jiang, Y., Zhi, H., Dong, Y., Li, H., Ma, S., ... & Wang, Y. (2017). Artificial intelligence in healthcare: past, present and future. Stroke and vascular neurology, 2(4).

Manyika, J., Chui, M., Miremadi, M., Bughin, J., George, K., Willmott, P., & Dewhurst, M. (2017). A future that works: AI, automation, employment, and productivity. McKinsey Global Institute Research, Tech. Rep, 60, 1-135.

Marcus, G., & Davis, E. (2019). Rebooting AI: Building artificial intelligence we can trust. Vintage.

Mitrache, M. D., Spulbar, L. F., & Mitrache, L. A. (2024). The Influence of AI Technology in Stimulating Growth and Innovation in Business. Revista de Stiinte Politice, (81), 51-61.

Popescu J, Spulbar L.F. & Smarandescu A (2024). Examining the Impact of AI Technology on Marketing Strategies in Financial Services. Annals of'Constantin Brancusi'University of Targu-Jiu. Economy Series/Analele Universităţii'Constantin Brâncuşi'din Târgu-Jiu Seria Economie, (6).

Roll, I., McNamara, D., Sosnovsky, S., Luckin, R., & Dimitrova, V. (2021). Artificial intelligence in education. Berlin: Springer International Publishing.

Schumpeter, J. A. (2013). Capitalism, socialism and democracy. routledge.

Spulbar, L. F., & Mitrache, L. A. (2023). The Strategic Role Of Corporate Finance In Sustainable Business Practices. A Conceptual Framework. Annals Of'constantin Brancusi'University Of Targu-Jiu. Economy Series/Analele

In terms of outcomes, Siemens has achieved higher productivity and cost savings, with a 30% reduction in downtime due to predictive maintenance. IBM, on the other hand, has seen a 30% reduction in customer service workload, allowing agents to focus on high-value interactions. Both companies demonstrate that AI can drive efficiency while maintaining a human workforce, but the way AI is applied depends on industry-specific needs.

5. Conclusions

The integration of artificial intelligence into the workforce is no longer a distant possibility but a present reality, transforming industries, redefining job roles, and reshaping the nature of work itself. While initial fears of widespread job displacement due to AI-driven automation persist, the evidence suggests that AI is not a force of destruction but one of transformation. The key to ensuring a positive outcome in this transition lies in viewing AI as a collaborative tool, one that enhances human potential rather than rendering it obsolete.

Throughout this study, we have examined how AI is being adopted across various industries, demonstrating a consistent pattern of augmentation rather than replacement. From Siemens' smart factories, where AI optimizes efficiency while humans oversee production, to IBM's customer service transformation, where AI enhances, rather than eliminates, human agents, it is clear that the most effective AI implementations are those that balance technological efficiency with human expertise. The real challenge, therefore, is not how to stop AI from replacing jobs, but how to redesign the workforce to accommodate an AI-driven economy.

One of the most critical strategies in this transformation is reskilling and upskilling the workforce. AI may replace repetitive tasks, but it cannot replicate creativity, critical thinking, emotional intelligence, or ethical reasoning, all of which are becoming increasingly valuable in the digital age. Companies that invest in reskilling initiatives and hybrid AI-human roles will create a more adaptable workforce, ensuring that technological advancements lead to progress rather than displacement. At the same time, governments must play an active role in facilitating this transition by funding AI education programs, incentivizing responsible AI deployment, and ensuring ethical regulations that prevent exploitative automation.

Furthermore, AI's ability to analyze vast amounts of data, detect patterns, and optimize processes has made it an essential component of modern work environments. However, these capabilities also come with risks algorithmic bias, data privacy concerns, and the potential for over-reliance on AI decision-making all pose ethical dilemmas that must be addressed. Ensuring that AI remains an enhancement rather than an uncontested authority in decision-making is crucial in maintaining human accountability, fairness, and ethical governance in the workplace. As Mitrache et al. (2024) emphasize, "AI technology represents not only an operational tool but a catalyst for business transformation, driving strategic innovation and redefining competitive advantage in the digital economy.

At its core, the AI revolution is not about the replacement of human labor but the redefinition of human purpose in the workforce. History has shown that technological advancements, from the industrial revolution to the rise of the internet, have always led to new opportunities, despite initial fears of job loss. AI is no different. The question is no longer whether AI will take over jobs but rather how society will choose to integrate AI into the workforce in a way that fosters both economic growth and human well-being.

If AI has the potential to enhance human creativity, improve efficiency, and elevate problem-solving capabilities, then the real challenge is not AI itself but how we,

To address these issues, IBM deployed Watson Assistant in its support centers, allowing AI to handle basic customer inquiries in real time. The AI system was trained on vast datasets of past customer interactions, enabling it to provide instant responses to frequently asked questions. This resulted in a 30% reduction in human workload, as AI efficiently handled simple requests without human intervention. However, IBM recognized that AI alone was not sufficient for delivering a high-quality customer experience, especially in cases requiring nuanced understanding, emotional intelligence, or complex troubleshooting.

To enhance its customer support model, IBM introduced a hybrid AI-human collaboration system. When a customer asks a question that AI cannot confidently resolve, Watson Assistant provides real-time recommendations to human agents, suggesting possible solutions based on historical data. The agent then reviews, refines, and personalizes the response before delivering it to the customer. This approach ensures that AI serves as a support tool rather than a replacement for human judgment, allowing customer service representatives to focus on problem-solving rather than memorizing technical details.

The impact of AI integration has been significant. IBM has reported faster resolution times, higher customer satisfaction scores, and lower operational costs. Additionally, AI-powered analytics provide insights into customer behavior and common pain points, enabling IBM to proactively improve its services. By analyzing thousands of interactions, Watson Assistant helps IBM identify recurring issues, optimize workflows, and enhance training programs for human agents.

Another major benefit of AI implementation at IBM is the global scalability of customer service. Watson Assistant supports multiple languages and operates 24/7, ensuring that customers receive assistance at any time, regardless of location. This has been particularly beneficial for IBM's international clients, who require consistent and reliable support across different time zones.

4.3. Two approaches to AI-human collaboration

Both Siemens and IBM have successfully integrated AI into their operations, but they have taken different approaches based on their industry needs. Siemens has focused on AI-assisted manufacturing, optimizing production efficiency while ensuring human workers remain central to operations. In contrast, IBM has used AI to enhance customer service, automating routine tasks while allowing human agents to focus on complex inquiries.

A key similarity between both companies is their commitment to AI as an augmentation tool rather than a replacement for human workers. At Siemens, AI-powered predictive maintenance and quality control improve manufacturing precision, yet humans oversee and refine AI-generated decisions. Similarly, IBM's Watson Assistant automates basic customer inquiries but keeps human agents in control of complex problem-solving and personalization.

However, there are notable differences in how AI transforms job roles in each company. Siemens has shifted traditional assembly-line workers into AI-assisted technical roles, requiring reskilling in digital manufacturing and automation management. Meanwhile, IBM's approach involves enhancing existing job functions, where AI supports customer service agents without requiring a complete role transformation. This distinction reflects the difference between AI-driven job evolution in manufacturing versus AI-enhanced efficiency in service-based industries.

systems. Workers now act as process supervisors, quality control experts, and AI trainers, ensuring that the technology operates efficiently while continuously adapting to new challenges.

One of the most significant innovations introduced by Siemens was the use of AI-driven predictive maintenance. Traditionally, industrial machinery is maintained on a fixed schedule, which can lead to unnecessary servicing or unexpected breakdowns. Siemens integrated machine learning algorithms to predict failures before they occur, allowing for maintenance only when necessary. This not only reduced downtime by 30% but also lowered maintenance costs and improved energy efficiency. Workers were trained to interpret AI-generated reports, enabling them to make informed maintenance decisions rather than following rigid schedules.

Beyond predictive maintenance, AI has also transformed quality control and defect detection at Siemens. In the past, quality assurance relied heavily on human inspectors who visually checked products for defects. While effective, this process was slow and prone to human error. Today, Siemens uses computer vision AI to scan components with extreme precision, identifying microscopic defects in milliseconds. However, the final decision on whether to reject or repair a product is still made by human inspectors. This approach combines AI's speed with human judgment, ensuring that products meet both technical and customer standards.

Siemens' experience highlights a broader workforce transformation in the AI era. Employees who previously performed repetitive assembly tasks have been retrained to operate and improve AI systems. The company has invested heavily in reskilling initiatives, offering workers AI training programs and encouraging them to develop technical competencies in data analytics, robotics, and digital manufacturing. This shift has created new career paths, such as AI maintenance specialists, automation engineers, and human-AI collaboration managers, ensuring that human expertise remains central to Siemens' success.

Siemens demonstrates that AI adoption does not have to result in job losses but rather job evolution. By integrating AI as a collaborative tool, Siemens has increased efficiency, reduced costs, and improved product quality while ensuring that human workers remain at the heart of decision-making processes. The company's approach underscores the importance of redesigning job roles, investing in workforce development, and fostering a culture where AI enhances human capabilities rather than replacing them.

4.2. Case study of IBM (2021)

IBM, a global leader in artificial intelligence and enterprise solutions, has successfully integrated AI into its customer service operations to improve efficiency, reduce response times, and enhance the customer experience. Instead of replacing human agents, IBM developed Watson Assistant, an AI-powered virtual agent designed to handle routine inquiries while working alongside human representatives. This approach has allowed the company to balance automation with human expertise, ensuring that customer support remains fast, accurate, and personalized.

One of IBM's key challenges was scaling its customer service operations without increasing costs or reducing service quality. Traditional call centers required large teams of human agents to handle customer inquiries, leading to long wait times, inconsistent responses, and high operational costs. Additionally, repetitive queries, such as password resets and basic troubleshooting, occupied a significant portion of agents' time, preventing them from focusing on more complex customer needs.

The successful integration of AI into the workforce requires collaboration between businesses and policymakers. Companies must lead the way in implementing AI responsibly, ensuring that automation improves efficiency without leading to mass layoffs. This can be achieved through internal workforce transitions, where employees are retrained and reassigned rather than being replaced. Governments, on the other hand, must introduce forward-thinking policies that support AI-driven workforce transformation. These policies should include funding for AI education programs, incentives for businesses to invest in employee training, and ethical regulations to prevent worker exploitation. In addition, public-private partnerships can play a crucial role in aligning industry needs with education curricula, ensuring that students graduate with the skills necessary for an AI-augmented economy. A strong social safety net will also be essential during this transition. Governments should consider policies such as universal basic income or wage subsidies for workers in industries undergoing significant AI-driven transformation. These measures would provide financial security while workers reskill and transition into new roles, reducing the economic shock of AI adoption.

Beyond technical and policy solutions, fostering a culture of AI-human collaboration will be critical in ensuring a smooth transition into the future of work. Many employees fear AI because they see it as a threat to job security, rather than as a tool to enhance their productivity. To change this perception, companies must be transparent about how AI is implemented, emphasizing its role as a collaborative assistant rather than a competitor. Building trust in AI also requires a strong focus on ethical AI deployment. Organizations must ensure that AI systems are free from bias, explainable in their decision-making processes, and aligned with human values. Workers should be encouraged to participate in AI-related decision-making, giving them a sense of control over how AI affects their roles. Making AI adoption a participatory process increases the likelihood that employees will embrace its benefits rather than resist change. Companies must also rethink workplace dynamics to accommodate AI-human teamwork, which includes developing AI literacy training for all employees, promoting cross-functional collaboration between AI engineers and industry specialists, and ensuring that workplace environments support creativity, critical thinking, and adaptability. Organizations that prioritize a human-first approach to AI integration will create more engaged, innovative, and resilient workforces.

4.1. Case study of Siemens (2020)

Siemens, a global leader in industrial automation and manufacturing, has been at the forefront of integrating artificial intelligence into its production processes. As the company sought to enhance efficiency while maintaining high-quality standards, it faced a common industry challenge: balancing automation with human expertise. Siemens recognized that while AI-driven automation could optimize factory operations, human oversight and problem-solving remained critical to achieving sustainable innovation.

To address this, Siemens developed and implemented AI-powered systems in its manufacturing plants, particularly in its Amberg Electronics Plant in Germany. The facility is widely regarded as one of the most advanced smart factories in the world, where 75% of production processes are automated, yet human workers remain essential to managing, monitoring, and improving operations. AI systems analyze vast amounts of real-time data to predict equipment failures, optimize workflows, and identify defects with 99.9% production accuracy. However, rather than replacing factory workers, Siemens redesigned job roles to allow employees to work alongside AI-powered

caused by its aging population. Many Japanese companies, such as Toyota and Honda, integrate robotics into manufacturing processes, allowing them to compensate for workforce declines while simultaneously creating AI-integrated roles. This strategy reflects a national effort to align AI adoption with demographic challenges, ensuring that automation enhances productivity rather than leading to widespread job losses.

Although AI's impact on employment is universal, countries respond differently based on economic priorities and policy frameworks. The United States remains a global leader in AI innovation but lags in public workforce adaptation. The European Union balances AI growth with strong worker protections, preventing abrupt job displacement. Meanwhile, Japan's aggressive AI integration helps counteract demographic challenges while ensuring a stable workforce transition. Despite these differences, all regions must focus on reskilling and human-AI collaboration to prevent AI from becoming a disruptive force in labor markets.

4. Strategies for a human-AI collaborative workforce

As AI becomes increasingly integrated into the workplace, the focus must shift from job displacement to job transformation. The key to a successful transition lies in ensuring that AI enhances human capabilities rather than replacing them. To achieve this, a combination of reskilling initiatives, organizational restructuring, education reforms, and policy interventions is necessary to create a balanced, productive, and inclusive AI-driven economy.

One of the biggest challenges of AI adoption is the widening skills gap, as many traditional jobs evolve to incorporate AI tools. Workers need to develop new technical competencies while also strengthening human-centric skills that AI cannot replicate. Addressing this challenge requires investment in large-scale reskilling programs by both businesses and governments. Companies must provide continuous learning opportunities such as AI literacy training, coding boot camps, and digital transformation workshops to help employees adapt to new workflows. At the same time, workers must take personal responsibility for lifelong learning, acquiring skills in areas such as data analysis, AI ethics, and problem-solving to remain competitive in an AI-driven job market. However, technical knowledge alone is not sufficient. Soft skills, including emotional intelligence, creativity, and ethical reasoning, will be essential in workplaces where human judgment complements AI-driven automation. Education systems should place greater emphasis on critical thinking, adaptability, and communication skills, as these will be just as valuable as technical expertise in the evolving labor landscape.

For AI to truly benefit the workforce, companies must rethink how jobs are structured. Instead of seeing AI as a replacement for human labor, organizations should focus on redesigning roles to maximize human-AI collaboration. This means shifting from full automation to augmentation, where AI handles repetitive or data-heavy tasks while humans focus on strategic decision-making and creative problem-solving. A clear example of this approach can be found in healthcare, where AI-powered diagnostic tools analyze medical images with high accuracy. However, the final diagnosis and patient interaction remain the responsibility of human professionals. Similarly, in finance, AI-driven risk assessment tools help analysts evaluate market trends, but human intuition and ethical judgment are still necessary for making high-stakes investment decisions. Instead of eliminating jobs, AI should be integrated into hybrid roles that combine technical expertise with industry knowledge. A marketing strategist with AI proficiency, for example, can leverage machine learning to optimize advertising campaigns, while a human resources professional trained in AI can use predictive analytics to improve hiring decisions.

cybersecurity, and AI governance. The key challenge is reskilling and workforce adaptation to ensure smooth transitions into AI-augmented professions.

AI adoption and its effects on the workforce vary significantly across regions due to differences in economic structures, government policies, and investment in AI-driven industries. While the United States leads in private-sector AI innovation, the European Union places stronger emphasis on worker protections and reskilling initiatives. Meanwhile, Japan has one of the highest automation rates globally, primarily driven by labor shortages and an aging population.

The table below summarizes these regional differences in AI adoption and labor market impact. The data is compiled based on reports from the U.S. Bureau of Labor Statistics, the European Commission's Eurostat, and the Organisation for Economic Co-operation and Development (OECD).

Table 3: Regional AI Labor Market Trends

Region	Jobs at Risk (%)	AI adoption rate	Government AI reskilling programs
United States	16%	High (esp. in tech & finance)	Moderate (private sector-driven)
European Union	14%	Varied (high in Germany, low in Eastern Europe)	Strong (EU-funded initiatives)
Japan	21%	Very High (automation-heavy)	Strong government support

Source: made by the author based on information from Eurostat (2022), U.S. Bureau of Labor Statistics (2022), and OECD (2024)

In the United States, approximately 16% of jobs are at risk of automation. AI adoption is particularly high in industries such as finance, healthcare, and technology, where major companies like Google, Amazon, and Tesla are driving AI investment. However, the U.S. government's role in AI workforce reskilling is relatively limited, with most retraining initiatives coming from the private sector. This has resulted in regional disparities, where areas heavily dependent on manufacturing and routine labor face significant employment challenges. For example, while Silicon Valley benefits from AI-driven job creation, parts of the Midwest, historically reliant on manufacturing, experience higher levels of job displacement without adequate federal reskilling programs.

In contrast, the European Union exhibits a more balanced approach, with an estimated 14% of jobs at risk of automation. AI adoption varies significantly across member states, with Germany, the Netherlands, and Scandinavian countries leading in AI-driven automation, while Eastern European nations lag due to lower technological investment. However, the EU compensates for this disparity with robust government-funded AI training programs. Germany's "AI Made in Germany" strategy, for instance, includes public funding for AI workforce development to ensure that industrial automation does not lead to mass layoffs. By focusing on retraining and upskilling workers, the EU mitigates some of the employment risks associated with AI adoption and promotes a smoother workforce transition compared to the U.S.

Japan, with approximately 21% of jobs at risk, has one of the highest AI automation rates globally. Unlike the U.S., where automation is primarily market-driven, Japan's government actively funds AI reskilling programs to address labor shortages

(2019) estimates that 14% of jobs in developed countries are at high risk of automation, while 32% of roles will undergo significant changes, requiring reskilling.

From an economic perspective, AI-driven employment shifts align with Schumpeter's (2013) theory of Creative Destruction, which argues that technological progress eliminates certain jobs while generating entirely new industries. This pattern was observed during the Industrial Revolution and more recently with the rise of the internet economy. Similarly, Skill-Biased Technological Change (SBTC) (Acemoglu & Autor, 2011) suggests that low-skill, routine jobs are the most vulnerable to AI, while jobs demanding technical knowledge, creativity, and problem-solving will grow. Autor (2015) further explains that automation leads to job polarization, reducing middle-skill roles while increasing demand for both low-skill service jobs (e.g., caregiving, hospitality) and high-skill digital jobs (e.g., AI development, data science).

Despite concerns, history suggests that AI will redefine rather than eliminate employment. Job displacement will be most significant in manufacturing, data entry, and administrative roles, while growth will be seen in AI-related professions, digital marketing, cybersecurity, and AI ethics. Regional studies highlight different adaptation strategies, for example, European Union governments invest heavily in AI reskilling programs, while the U.S. relies more on private-sector-led training initiatives.

To fully capitalize on AI's benefits, governments, businesses, and educational institutions must focus on workforce adaptability. This includes updating school curricula to include AI and digital skills, corporate training programs, and stronger public-private partnerships. Instead of fearing AI, the focus should be on reskilling and integrating AI-human collaboration into the workforce to drive economic growth and innovation.

AI's impact on employment is uneven across industries, with routine and repetitive jobs facing the highest risk of automation, while complex, creative, and technical roles are expanding. According to the U.S. Bureau of Labor Statistics (2022) and OECD (2019), jobs in data entry, assembly line work, and customer service are declining, whereas demand is growing for AI specialists, cybersecurity experts, and healthcare technicians.

The key labor market shift follows Skill-Biased Technological Change (SBTC) (Acemoglu & Autor, 2011), meaning low-skill jobs are being automated while high-skill digital roles are rising. Job polarization (Autor, 2015) also plays a role, middle-skill roles, such as administrative and clerical jobs, are shrinking, pushing workers into either low-skill service jobs or high-skill technical professions.

Table 2: Which jobs are most affected?

Job type	Risk of automation	Job market trend
Data entry clerks	High	Declining
Assembly line workers	High	Declining
Customer service reps	Moderate	Shift to AI-assisted roles
Retail cashiers	High	Declining
Administrative assistants	Moderate	Changing
AI specialists	Low	Rapid growth
Cybersecurity experts	Low	Increasing demand
Healthcare technicians	Low	Growing sector

Source: made by the author based on information from U.S. Bureau of Labor Statistics (2022)

AI is not leading to mass unemployment but rather shifting labor demand. Routine jobs are at risk, while AI-driven roles are expanding, particularly in technology,

lawyers alone (Surden, 2018). Legal research tools like ROSS Intelligence utilize AI to assist lawyers in preparing cases, reducing the time needed for manual legal research. However, the interpretation of law, courtroom strategy, and client advocacy remain inherently human tasks, requiring emotional intelligence, ethical reasoning, and persuasive argumentation. AI enhances efficiency but does not replace the expertise and judgment of legal professionals.

AI is also reshaping the education sector by personalizing learning experiences and assisting educators. AI-driven adaptive learning platforms, such as Carnegie Learning and Coursera's machine learning algorithms, tailor educational content to individual students' needs, helping them learn at their own pace (Roll et al., 2021). Automated grading systems reduce teachers' workloads, allowing them to focus more on student engagement and mentorship. However, despite these advancements, AI cannot replace the emotional intelligence, motivation, and real-time adaptability that human teachers provide. The role of educators remains irreplaceable in fostering critical thinking, creativity, and social skills, qualities that AI cannot replicate.

3. The Impact of AI on Employment

The introduction of AI into the workforce has raised concerns about large-scale job displacement. However, market studies indicate that while AI eliminates some jobs, it simultaneously creates new roles requiring different skill sets. The key challenge is managing this transition and ensuring that workers acquire the skills needed for AI-driven industries.

Recent reports from the World Economic Forum (WEF, 2020) and McKinsey Global Institute (2021) provide an overview of AI's impact on employment:

Table 1 AI's impact on global job markets

Study Source	Estimated Job Loss (by 2025)	Estimated Job Creation (by 2025)	Net Impact
World Economic Forum (2020)	85 million jobs displaced	97 million new jobs created	+12 million jobs
McKinsey Global Institute (2021)	30% of global jobs affected	New AI-driven sectors expanding	Overall labor shift, not mass unemployment
OECD (2019)	14% of jobs highly vulnerable to automation	32% of jobs significantly changing	Reskilling required

Source: made by the author based on information from W.E.F (2020), OECD (2019) and McKinsey Global Institute (2021)

Artificial Intelligence is transforming the job market by automating routine tasks while creating new opportunities that require specialized skills. The World Economic Forum (2020) predicts that by 2025, AI will displace 85 million jobs but create 97 million new roles, resulting in a net gain of 12 million jobs. Similarly, the McKinsey Global Institute (2021) highlights that 30% of jobs worldwide will be affected by automation, yet rather than causing mass unemployment, AI will shift employment patterns. The OECD

that AI can be a powerful tool when used to complement human expertise rather than substitute for it (Wilson & Daugherty, 2018).

One of the most striking examples of AI-driven creativity is found in the arts and design industry. AI-powered tools, such as OpenAI's DALL·E and DeepDream, assist artists by generating new visual concepts based on learned patterns. Amabile (2020) notes that AI can expand creative possibilities by providing inspiration and variations, yet the final refinement and emotional depth remain uniquely human qualities. Similarly, in music composition, AI programs like AIVA (Artificial Intelligence Virtual Artist) generate melodies that human musicians can refine and incorporate into their work.

In the business sector, AI is transforming decision-making by processing vast amounts of data and identifying patterns that would otherwise be difficult for humans to detect. Advanced machine learning models analyze customer behavior, financial risks, and market trends, allowing companies to make informed strategic decisions. Studies by Filippuccini et al. (2024) suggest that AI-driven decision support systems lead to better business outcomes by reducing uncertainty and improving forecasting accuracy. However, human oversight remains critical in interpreting AI-generated recommendations and making final strategic choices.

Another domain where AI augments human decision-making is healthcare, particularly in diagnostics and treatment planning. AI-powered systems like IBM Watson Health analyze medical records, research papers, and clinical data to assist doctors in diagnosing diseases and recommending treatment options. Topol (2019) argues that while AI can process medical data with exceptional speed and accuracy, human doctors provide the necessary contextual understanding, ethical judgment, and patient empathy that AI lacks. The combination of AI-driven diagnostics and human expertise leads to more precise and personalized healthcare.

AI also enhances scientific research and innovation by accelerating data analysis and hypothesis generation. Machine learning models assist researchers in drug discovery, climate modeling, and genomics, enabling breakthroughs that would take humans significantly longer to achieve manually (Marcus & Davis, 2019). For example, AI-driven algorithms have been instrumental in predicting protein structures, a critical advancement in medical and biological sciences. However, human scientists remain indispensable for interpreting results, formulating theories, and designing experiments.

Despite AI's remarkable contributions, ethical concerns arise regarding the potential over-reliance on AI-generated outputs. Studies emphasize that AI, while powerful, is not infallible and can introduce biases based on the data it is trained on (Boddington, 2017). Human critical thinking and ethical judgment are essential to ensuring AI's role remains supportive rather than deterministic.

The healthcare sector has embraced AI-driven solutions to improve diagnostics, patient care, and medical research. AI-powered diagnostic tools, such as deep learning models used for medical imaging, assist radiologists in detecting diseases like cancer with high accuracy (Jiang et al., 2017). IBM Watson Health, for instance, analyzes vast amounts of medical literature to support doctors in making evidence-based treatment recommendations. However, while AI can rapidly process and identify patterns in medical data, human doctors remain essential for interpreting results, considering ethical implications, and providing patient-centered care (Topol, 2019). Additionally, AI-powered robotic surgery, such as the Da Vinci system, enhances the precision of surgical procedures but still requires human surgeons to oversee and control the operation.

In the legal profession, AI is transforming case research, contract analysis, and legal documentation. Natural language processing (NLP) algorithms scan vast legal databases, summarizing relevant case law and regulations more efficiently than human

While AI excels in data processing and pattern recognition, it lacks human intuition, creativity, and emotional intelligence. Recent research emphasizes that AI functions best when augmenting rather than replacing human decision-making. In creative industries, AI assists in generating design ideas, composing music, and even writing code, yet human professionals remain essential for refining and contextualizing AI-generated outputs. Similarly, in financial services, AI is reshaping marketing strategies by enhancing customer insights, predicting consumer behavior, and optimizing personalized recommendations. As Popescu et. al (2024) argue, "AI-driven data analytics have revolutionized the way financial institutions personalize marketing strategies, allowing firms to anticipate customer needs and enhance service efficiency in unprecedented ways." This demonstrates that AI is not just a tool for automation but a valuable asset in improving strategic decision-making.

Beyond marketing, AI also plays a critical role in corporate finance, particularly in managing financial risks, ensuring sustainable business growth, and optimizing investment decisions. AI-powered financial models analyze vast datasets to provide real-time insights into risk exposure and profitability, helping executives make informed strategic decisions. Spulbar and Mitrache (2023) emphasize this shift, stating that "corporate finance has evolved from a purely analytical function to a strategic driver of sustainable business practices, where AI-powered financial intelligence allows firms to optimize investment decisions while integrating sustainability principles." This highlights AI's growing influence in corporate decision-making, where financial professionals leverage AI insights to balance profitability with long-term sustainability goals.

In manufacturing, AI enhances productivity through predictive maintenance, a system that analyzes sensor data to predict potential equipment failures before they occur. Research by Manyika et al. (2017) found that predictive maintenance reduces downtime by up to 50%, significantly improving efficiency and cost-effectiveness. Major companies like General Electric and Siemens have adopted AI-driven predictive maintenance strategies, demonstrating how AI-human collaboration leads to more stable and efficient industrial operations.

Similarly, in supply chain management, AI-driven forecasting models optimize inventory control, demand planning, and logistics. Studies indicate that machine learning algorithms improve demand forecasting accuracy by 20-50%, leading to reduced waste and better resource allocation (Choi et al., 2018). AI-powered logistics platforms, such as those used by Amazon and DHL, automate warehouse operations, enabling faster and more accurate order fulfillment.

Another sector that has witnessed significant productivity gains from AI is healthcare. AI-powered administrative automation helps streamline patient scheduling, medical billing, and data entry, reducing the burden on medical staff (Topol, 2019). Hospitals have reported improved efficiency as AI systems handle routine documentation tasks, allowing doctors and nurses to focus on patient care.

Despite these advancements, the role of human workers remains crucial. AI systems require supervision, maintenance, and ethical oversight to ensure responsible deployment. As Wilson and Daugherty (2018) argue, AI should be viewed as an augmentation tool rather than a replacement for human labor. The most effective AI implementations are those where humans and AI collaborate, leveraging each other's strengths to optimize efficiency and productivity.

Unlike traditional automation, which focuses on replacing routine tasks, AI-driven augmentation enhances human cognitive abilities by providing insights, generating creative content, and supporting complex decision-making processes. Research highlights

1. Introduction

The rapid advancement of Artificial Intelligence (AI) has transformed the global workforce, sparking intense debates about its implications for human employment. While some fear that AI will replace human jobs, others argue that it has the potential to complement and enhance human labor, fostering increased productivity, efficiency, and innovation. AI-driven technologies, such as machine learning, natural language processing, and robotics, are being integrated into diverse industries, reshaping the way work is performed. From automating repetitive tasks to assisting in complex decision-making, AI is proving to be a powerful tool that, when used effectively, can improve workplace outcomes rather than diminish human roles.

Historically, technological advancements have disrupted labor markets but also led to the creation of new jobs and industries. The industrial revolution replaced many manual tasks, yet it also generated opportunities for workers in new sectors. Similarly, AI is changing job structures, requiring workers to adapt to new roles that demand collaboration with intelligent systems. Rather than eliminating the need for human expertise, AI augments human capabilities by handling large-scale data processing, recognizing patterns, and executing routine functions with speed and accuracy. This shift allows employees to focus on creative problem-solving, strategic thinking, and interpersonal tasks that AI cannot replicate.

However, the integration of AI into the workplace also presents significant challenges. Concerns over job displacement, algorithmic bias, and the shifting demand for skills have fueled discussions on how society should prepare for an AI-driven economy. Workers need to acquire new competencies to remain competitive in an evolving job market. Businesses, governments, and educational institutions play a crucial role in facilitating this transition by implementing reskilling programs, investing in AI literacy, and creating policies that ensure an inclusive and equitable workforce.

This paper explores the ways in which AI and human labor can coexist to create a more efficient, innovative, and adaptable workforce. By examining case studies from industries such as healthcare, finance, and manufacturing, it highlights the benefits of AI-human collaboration and the steps necessary to harness AI's potential while addressing its challenges. Instead of perceiving AI as a threat to employment, this research advocates for a future where AI and human intelligence work together, fostering sustainable economic growth and redefining the nature of work in the digital age.

2. The role of AI in enhancing human work

Artificial Intelligence has become an integral part of modern workplaces, improving efficiency and streamlining operations across various industries. By automating repetitive and time-consuming tasks, AI allows human workers to focus on more complex and creative problem-solving. This shift does not merely replace human labor but instead optimizes workflows, reducing errors and increasing overall productivity.

One of the key ways AI enhances efficiency is through robotic process automation (RPA), which automates structured, rule-based tasks. Studies by Brynjolfsson and McAfee (2017) suggest that AI-powered automation has led to measurable productivity gains in industries like finance, customer service, and logistics. For example, banks use AI-driven algorithms to handle routine customer inquiries, process transactions, and detect fraudulent activities in real time, reducing manual intervention while improving accuracy (Davenport & Ronanki, 2018).

Revista de Științe Politice. Revue des Sciences Politiques • No. 86 • 2025: 274 – 287

ORIGINAL PAPER

How humans and AI can thrive together in the workplace?

Lucian-Florin Spulbar[1)], Lavinia-Adelina Mitrache[2)]

Abstract:
The use of Artificial Intelligence (AI) in the global workforce has prompted a controversy about whether it will affect human jobs. As much as people are afraid of losing their jobs, another school of thought indicates that AI and human labor can work together to boost productivity, creativity, and efficiency. This paper explores how AI has the potential to help humans get their job done more effectively, not to substitute for them. It calls for adapting the human capital, launching training programs, and redesigning job tasks. Based on research from multidisciplinary fields, this study discusses examples of successful partnerships of AI and humans in different sectors, such as healthcare, finance, and manufacturing.
Besides, this paper critically analyzes the ethical, economic, and social implications of AI diffusion in the labor market, with reference to issues of algorithmic bias, job polarization, and the dynamic nature of labor demand. The argument emphasizes the need for policymakers, educators, and business leaders to develop an AI-congruent workforce through inclusive policies and continuous learning mechanisms. Rather than viewing AI as an existential threat to employment, this study argues that leveraging AI in a beneficial manner by augmenting human creativity, emotional intelligence, and problem-solving capabilities with machine productivity can build a more resilient and flexible labor market. This research reimagines the place of AI in work. It advocates for a future in which humans and AI coexist and work harmoniously together, contributing to economic and technological growth in a rapidly evolving digital age.

Keywords: *Artificial Intelligence (AI), human-AI collaboration, job automation and workforce adaptation, AI ethics, future of work and technology.*

JEL Classification: J24, O33, M15

[1)] Master's Degree Student, University of Craiova, Faculty of Economics and Business Administration, Craiova, Romania, Email: lucian.spulbar01@gmail.com.
[2)] PhD student Doctoral School of Economics Sciences "Eugeniu Carada", Economics specialization, Craiova, Romania, Email: mitrachelavinia6@gmail.com.