

Are the Research Publications of Top Universities of Iran Mentioned on Social Media? An Altmetric National Scale Study

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ABSTRACT

This research is dedicated to detecting the presence and impact of research outputs published by top universities in Iran using an altmetric approach in order to provide some policy-making solutions to close the gap between universities and society. Based on the ranking of the top 15 universities in Iran using the Islamic World Science Citation (ISC), data from 2000-2023 were obtained by querying the names of each university through the Altmetric Explorer database in May 2024. Data analysis was done using the CRISP-DM model in Python. It became evident that 75,009 articles (20.26%) out of 365,282 published articles were mentioned on social media, mainly based on Mendeley and Dimensions AI. Moreover, the AAS continuously increased over the years with Engineering, Medical and Health Sciences, and Chemical Sciences gaining maximum attention. The USA, UK, Germany, and other developed high-income countries were identified as the primary mentioning sources. It is expected that the findings of this research, including the relatively low amount of mentions on social media, most of which were for interdisciplinary medical and health-related research, would enrich policymakers and researchers with valuable insights to follow trending topics and journals in order to increase the societal impacts of research publications.

Keywords: Altmetrics, Iran's research outputs, Iran's top universities, Research visibility, Social media and research, Social media mentions, University and society.

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INTRODUCTION

Over the past decades, profound scientific and technological transformations have compelled universities worldwide to re-evaluate their missions, objectives, and overall performance (Anguinis *et al.*, 2021; Bornmann, 2013). The responsive university model (emphasizing interaction with society alongside teaching and research) has gained increasing prominence (Sharma and Sharma, 2019). Universities are now striving to engage more deeply with the social fabric, extending their roles beyond traditional academic boundaries. This shift not only enriches education and knowledge dissemination but also fosters human development and excellence across individual, social, civic, and professional domains (Coletti and Dotti, 2021; Dima, 2017). Consequently, assessing the societal impact of university-driven research has become a crucial priority, as the value of research is increasingly

judged by its economic and social contributions (Coombs and Meijer, 2021; Giuffré and Ratto, 2014). Funding agencies, in turn, seek robust mechanisms for allocating resources effectively and evaluating researchers based on tangible performance indicators (Bornmann, 2013).

Measuring the quality and societal relevance of research outputs is therefore of great importance. Through systematic inquiry and scientific methods, universities aim not only to expand the frontiers of knowledge but also to contribute to evidence-based policymaking and informed decision-making (Newson *et al.*, 2021; Penfield *et al.*, 2014). In fulfilling these missions, universities play an essential role in advancing knowledge and promoting societal welfare by supporting governments, organizations, and communities (Ahmad, 2013; Holbrook, 2019; Rhodes and Pullen, 2017).

To maintain these contributions, universities must cultivate relationships with a wide range of stakeholders (students, alumni, researchers, industry partners, governments, funding bodies, and the public) and demonstrate measurable impact on each (Penfield *et al.*, 2014; Rhodes and Pullen, 2017). Accordingly, policymakers in many countries encourage universities to produce and apply



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research with relevance beyond academia (Coletti and Dotti, 2021, Giuffré and Ratto, 2014). This broader orientation has led to a gradual shift in research evaluation, from traditional bibliometric indicators toward measures that capture concrete, demonstrable societal impact. A single publication, for instance, may inform clinical guidelines, serve as an educational resource, inspire public engagement through media, or influence policy formulation.

The measurement of research performance remains a complex and often debated global issue, with individuals, institutions, and organizations continually refining the metrics used to capture it (Huang and Wang, 2018). Multiple approaches have been proposed to assess research productivity, among which peer review remains the most established. Peer review relies on expert judgment within a discipline to assess the scientific merit of publications and projects (Fedderke, 2013). Quantitative approaches, such as bibliometrics and scientometrics, have also been widely used to evaluate research impact through publication counts and citation analysis (Ajiferuke and Wolfram, 2013). Citations, in particular, serve as a key indicator of scientific influence within a field and are commonly employed to assess the contribution and performance of scholarly work (Anguinis *et al.*, 2021; Batooli *et al.*, 2022).

Traditionally, scholarly impact has been measured through citation counts, a metric grounded in Merton's cumulative-advantage theory that captures academic-to-academic influence but reveals little about how research reaches society (Merton, 1968). In response, the Altmetrics movement emerged to trace broader and more immediate signals of attention, including social media mentions, news coverage, Mendeley readership, and policy citations (Priem *et al.*, 2010). Meta-analytic findings indicate that while Altmetric indicators correlate modestly with citations, they align more strongly with public and policy engagement, highlighting their potential to complement traditional metrics in monitoring societal impact (Bornmann *et al.*, 2019). Altmetrics thus represent an evolving field devoted to assessing the social reach of scientific information (Torres-salinas and Robinson-garcia, 2016; Luo *et al.*, 2018). They draw upon digital traces from platforms such as Twitter, Facebook, Mendeley, YouTube, and even AI-based Q and A websites to quantify public interest and visibility (Bornmann *et al.*, 2019; Wooldrige and King, 2018).

Recent scholarship has begun to investigate the factors driving Altmetric variation across disciplines and outputs. Research shows that online visibility depends on topic relevance, open-access status, and the communication practices of authors and institutions (Haustein, 2019; Ortega, 2020). Moreover, disciplines addressing global challenges (such as medicine, climate change, and psychology) tend to receive disproportionate media and policy attention (Costas *et al.*, 2014). These findings suggest that Altmetric patterns not only reflect public curiosity

but also expose structural inequalities in research communication and dissemination.

Despite the growing body of international Altmetric studies, Iranian scholarship in this domain remains limited. Most existing research has been confined to single institutions, journals, or narrow thematic collections, rarely linking attention patterns to societal priorities such as the United Nations Sustainable Development Goals (SDGs) (Bonyadi Naeini and Moghiseh, 2022; Ghasemian *et al.*, 2023; Nemati-Anaraki *et al.*, 2020; Saberi *et al.*, 2021; Sedighi, 2021). Prior Iranian studies have largely focused on isolated cases (Alijani *et al.*, 2018; Amiri *et al.*, 2023; Zareivenovel *et al.*, 2024), whereas the present study expands the scope to the national university system, integrating data from Altmetric Explorer with Machine Learning and Natural Language Processing (ML/NLP) methods to connect institutional outputs with broader societal goals. To our knowledge, this represents one of the first national-level, SDG-oriented analyses of Iran's scientific landscape.

Using data-mining techniques implemented in Python, this research provides a comprehensive examination of the social impact of Iranian research outputs. As one of the earliest national-scale investigations employing Altmetric indicators, the findings hold significant implications for shaping science policy, informing funding strategies, and aligning university research with societal needs and global development agendas.

LITERATURE REVIEW

The proliferation of social media platforms has generated extensive data that offer valuable insights into how research outputs are disseminated, discussed, and utilized beyond academia. These data help universities and policymakers understand research visibility and public engagement, supporting more informed decision-making at both institutional and societal levels (Coombs and Meijer, 2021; Giuffré and Ratto, 2014).

Costas *et al.* (2014), in one of the earliest large-scale analyses, compared Altmetric indicators with traditional citations and found that only 15-24% of articles exhibited any Altmetric presence, highlighting the relatively limited but growing footprint of scholarly work on social media (Costas *et al.*, 2014). Similarly, Wasike (2021) examined the relationship between altmetric and citation-based indicators in communication studies and reported a significant positive association between them. Mentions on platforms such as Mendeley and ResearchGate not only reflected readership but also increased the likelihood of subsequent citations. These findings underscore the growing scholarly interest in assessing how social media attention relates to research impact and visibility (Coletti and Dotti, 2021; Costas *et al.*, 2014; Huang and Wang, 2018).

Scientometric and altmetric approaches have thus become integral tools for evaluating research performance, mapping

scientific domains and co-authorship networks, and analyzing both academic and societal influence. They enable the exploration of relationships between citation-based and online attention metrics. The UK's Research Excellence Framework (REF) pioneered a system-level attempt to link research activity to social and economic outcomes. Comparative analyses have since revealed that Altmetric coverage, while still limited, is expanding: roughly 15-24% of papers now receive some form of social media attention, with gradual increases over time (Costas *et al.*, 2015). Correlation studies consistently demonstrate small-to-moderate positive relationships between Altmetric Attention Scores and citation counts (Huang and Wang, 2018). However, disciplinary biases remain evident, as social sciences and humanities outputs (often published locally or in non-English languages) tend to receive less coverage (Haustein *et al.*, 2014).

Different Altmetric data providers also exhibit complementary strengths: Altmetric.com more comprehensively tracks mentions in blogs, news outlets, and Twitter, while PlumX offers broader coverage of readership data, particularly from Mendeley (Ortega, 2020). Field-specific studies echo these trends across disciplines such as communication, where correlations between Altmetric and citation indicators are generally positive but modest, suggesting some predictive potential for longer-term citation impact (Luo *et al.*, 2018). In parallel, recent research has increasingly employed machine learning techniques for topic modeling and trend detection, enriching the methodological landscape of altmetric and scientometric analyses.

A central limitation of traditional citation-based evaluation lies in its narrow focus on scholarly influence, neglecting research uptake by other crucial stakeholders, including policymakers, practitioners, patients, and the general public (Aguinis *et al.*, 2021). Such metrics primarily capture “research-on-research” effects, overlooking broader societal contributions. Yet, in the contemporary scientific ecosystem (spanning research production, publication, dissemination, and application), universities are expected not only to generate and share knowledge but also to translate and exchange it effectively. Their impact is thus judged by the extent to which research contributes to real-world progress.

In contrast to global developments, altmetric research on Iranian scholarship remains limited in scope and scale. Existing studies have largely examined (1) individual institutions or journals, such as the Iran University of Medical Sciences (Nemati-Anaraki *et al.*, 2020) or the Medical Journal of the Islamic Republic of Iran (Saberi *et al.*, 2021); (2) topic-specific or time-bound datasets, including COVID-19-related publications (Bonyadi Naeini and Moghiseh, 2022); (3) field-restricted samples in areas like social and computer sciences (Sedighi, 2021); and (4) small-scale university comparisons within the social and behavioral sciences (Ghasemian *et al.*, 2023). Most of these studies rely on raw Altmetric Attention Scores or platform-specific mention

counts without normalization for publication volume, and typically conclude with basic descriptive statistics or zero-order correlations. Consequently, a comprehensive national-level assessment of Iranian research visibility and its alignment with societal goals remains lacking.

METHODOLOGY

Analytical approach

This study adopts a data-driven analytical approach, applying data mining techniques to uncover meaningful and actionable insights from large and heterogeneous datasets (Haustein *et al.*, 2014). This research framework is based on the Cross-Industry Standard Process for Data Mining (CRISP-DM) model; CRISP-DM is a widely used, flexible, and iterative methodology that emphasizes continuous communication and feedback at every stage to maintain alignment with research objectives. Its cyclical structure allows researchers to revisit earlier phases (such as data understanding or preparation) whenever new findings or challenges emerge, ensuring adaptability throughout the analysis. For data extraction, modeling, and visualization, the study utilized Python's Jupyter Notebook environment in combination with the Seaborn library to produce informative graphical outputs. Even after the completion of initial analyses, the CRISP-DM framework permits the refinement of models and visualizations when new insights arise, particularly during the post-analysis or implementation stages.

Novelty of the methodology

Early large-scale altmetric studies primarily focused on simple correlations between social media mentions and citation counts, often treating the Altmetric Attention Score (AAS) as a uniform indicator of “societal impact” (Bornmann, 2013; Bornmann *et al.*, 2019). Subsequent critical reviews have noted that most research designs continue to rely on this single composite metric and basic descriptive statistics, providing limited understanding of the specific social issues that scholarly attention reflects (García-Villar, 2021). Although platforms such as Altmetric Explorer have recently integrated filters aligned with the United Nations Sustainable Development Goals (SDGs), published applications of these features remain scarce and largely exploratory worldwide (Kokol *et al.*, 2022).

The present study advances this literature in three important ways.

First, it offers national-scale coverage with institutional granularity. We analyze 365,282 records across the 15 leading Iranian universities, representing a dataset substantially larger than any prior domestic investigation.

Second, the study implements a multi-layered analytical framework: Altmetric Explorer data were merged with ISC bibliographic records, then subjected to (a) topic modeling to

identify thematic structures, (b) mapping to the 17 UN SDGs, and (c) projection onto a bipartite university-SDG network. To our knowledge, this integrated combination of topic modeling, SDG alignment, and network analysis has not been previously applied in Iran and remains uncommon in the broader global context.

Third, we introduce normalized impact indicators to complement total AAS values. Specifically, we calculate the Altmetric-to-output ratio Table 1 and employ network-based centrality measures to account for differences in institutional productivity. These indicators directly address a key limitation repeatedly highlighted in earlier altmetric research (García-Villar, 2021).

Research questions

Building on the objectives outlined above, this study is guided by the following overarching research questions:

RQ1: What are the overall patterns and disciplinary distributions of Altmetric attention among research outputs from Iran's top universities?

RQ2: Why do certain research areas and outputs attract greater Altmetric attention than others, and how are these patterns shaped by disciplinary, societal, and communication factors?

RQ3: To what extent do Altmetric indicators correlate with traditional bibliometric measures (e.g., Dimensions citations and Mendeley readership), and what does this relationship imply for evaluating the societal impact of research?

Selection of universities

The Islamic World Science Citation Center (ISC) was chosen as the primary source for identifying Iran's top universities, as it functions as the official national benchmarking and ranking system recognized by the Iranian Ministry of Science, Research, and Technology (ISC, 2024). Unlike international databases such as Scopus or Web of Science, ISC focuses specifically on institutions across Islamic countries, providing localized performance indicators that better capture regional and national research priorities (Mongeon and Paul-Hus, 2016). This makes it a particularly appropriate source for a study centered on Iran's academic system and policy environment, while Altmetric Explorer was used to assess international visibility and online attention.

Although the initial plan was to include all Iranian universities, the scope and scale of the dataset necessitated a more focused approach. Accordingly, the sample was limited to the top 15 universities listed in the ISC database (University of Tehran, Ferdowsi University of Mashhad, Amir Kabir University, Sharif University of Technology, Tarbiat Modares University, Iran University of Science and Technology, Shahid Beheshti University, Imam Hosein University, Isfahan University of Technology, University of Shiraz, University of Tabriz, Allameh Tabataba'i

University, K. N. Toosi University of Technology, University of Isfahan, University of Guilan). These institutions represent national benchmarks due to their sustained investment in research infrastructure, human capital, and international collaboration. Evaluating the visibility and societal impact of their research outputs is therefore especially relevant for understanding broader patterns within Iran's higher education and research ecosystem.

Altmetric Explorer

Altmetric Explorer aggregates mention data from 16 distinct online sources. Mentions from all sources contribute to Altmetric's audit trail; however, only those with assigned weights influence the Altmetric Attention Score (AAS), while Dimensions citation counts and Mendeley readership are displayed separately. In addition to attention metrics, Altmetric Explorer provides a "Subject (Dimensions)" field for each indexed publication. This classification is inherited from the Dimensions database and follows the Australian and New Zealand Standard Research Classification - Field of Research (ANZSRC FoR 2020) system at the four-digit level.

During data export and preprocessing, the following steps were applied:

- The *Dimensions_FoR_primary* column was included in all exported records.
- When multiple FoR codes were listed for a single record, only the primary code assigned by Dimensions was retained.
- The four-digit FoR codes were aggregated into broader two-digit divisions for descriptive statistics, while the original four-digit codes were preserved for SDG-based topic modeling.
- Records without an FoR classification (fewer than 0.5% of the corpus) were labeled as "Unclassified" and excluded from discipline-level analyses.

Data collection and validation

Data collection was carried out in multiple stages. In the first stage, the name of each selected university was searched in Altmetric Explorer, and all available attention metrics were retrieved. These included mentions across various online sources such as X (formerly Twitter), news outlets, policy documents, and other digital media associated with the universities' research outputs. The collected data were then exported into spreadsheet files for further processing.

In the second stage, the extracted datasets underwent a comprehensive preprocessing and validation procedure. This involved merging all records into a unified dataset, removing duplicate and empty entries, generating new thematic variables, assigning records to subject categories, labeling specific fields,

and converting publication dates from text strings to temporal formats suitable for analysis.

Following data preparation, the integrated dataset was analyzed using data mining and Exploratory Data Analysis (EDA) techniques to uncover patterns and dynamic relationships between research outputs and altmetric indicators. All analyses were performed using the Python programming language.

RESULTS

RQ1 - Overall patterns and disciplinary distributions of Altmetric attention

RQ1.1 The quantity of research outputs

The analysis showed that, among 365,282 publications examined, 74009 articles (20.26%) received at least one mention on social media platforms. The University of Tehran ranked first, with 72,103 indexed articles, of which 16,194 had social media attention. It was followed by Tarbiat Modares University (37,452 articles; 8,870 with mentions) and Sharif University of Technology (34,387 articles; 6,866 with mentions).

RQ1.2 Historical trend

We present the distribution of Altmetric Attention Scores (AAS) for research outputs published between 2000 and 2023, categorized by year of publication. The results reveal a steady upward trajectory, indicating that research produced by these

universities has attracted progressively greater social media attention over time. The highest average AAS was recorded for 2020, marking a peak in online engagement and suggesting that publications from this year resonated particularly strongly with the public and media audiences. Overall, this pattern points to a sustained rise in the visibility and societal engagement of Iranian university research, reflecting the growing role of social platforms in disseminating academic knowledge and amplifying its public impact.

We analyzed historical trends in both the depth of attention (measured by the average Altmetric Attention Score) and the breadth of attention, defined as the proportion of outputs with at least one Altmetric mention. Across the full period (1990-2023), both indicators exhibited significant upward trends. An Ordinary Least Squares (OLS) regression of log-transformed AAS on publication year revealed a positive association ($\beta=0.017$, 95% CI [0.016-0.019], $p<0.001$), corresponding to an average 1.8% annual increase in the geometric mean AAS.

A complementary logistic regression predicting coverage produced a similarly strong effect ($\beta=0.110$, 95% CI [0.107-0.113], $p<0.001$), indicating that the odds of a paper receiving any Altmetric attention rose by approximately 11-12% per year (Figure 1). Although the proportion of explained variance was modest ($R^2=0.011$; pseudo- $R^2=0.045$), the consistency and direction of both models highlight a clear and sustained growth trend in the online visibility of Iranian research over time.

Table 1: The number of research outputs and their Altmetrics indicators.

Name of the University	No. of articles	Articles with ≥ 1 Altmetric mention	Altmetric-to-output ratio [†]	Average AAS [‡]	Max AAS [§]
University of Tehran	72,103	16,194	0.22	3.99	4,568
Tarbiat Modares University	37,452	8,870	0.24	3.91	2,043
Sharif University of Technology	34,387	6,866	0.20	2.91	1,367
Amir Kabir University	35,987	5,753	0.16	1.78	1,367
University of Shiraz	24,052	5,572	0.23	2.68	633
Ferdowsi University of Mashhad	23,221	4,910	0.21	3.11	1,017
Shahid Beheshti University	21,230	4,793	0.23	3.41	1,410
Isfahan University of Technology	22,410	4,724	0.21	2.27	372
Iran University of Science and Technology	28,100	4,356	0.16	1.43	507
University of Tabriz	23,796	4,130	0.17	1.94	349
University of Isfahan	12,960	3,103	0.24	3.47	623
K. N. Toosi University of Technology	14,995	2,103	0.14	1.72	221
University of Guilan	11,113	2,049	0.18	3.16	790
Allameh Tabataba'i University	2,411	461	0.19	9.62	1,629
Imam Hosein University	1,105	125	0.11	1.94	25

[†]Altmetric-to-output ratio: Articles with ≥ 1 Altmetric mention $\div$ Total articles (rounded to two decimals).

[‡]Average AAS: arithmetic mean of the Altmetric Attention Score across all publications that received at least one Altmetric mention for the given university.

[§]Max AAS: the highest single Altmetric Attention Score recorded for any publication from the university.

Table 2: The most mentioned research outputs (AAS>1000).

Title	Author	Pub. Year	Alt. Score	Journal	University	Subject
Ivermectin: a systematic review from antiviral effects to COVID-19 complementary regimen.	Heiday F, Gharebaghi R.	2020	4568	Journal of Antibiotics	University of Tehran	Medical and Health Sciences; Medical Microbiology.
Global quieting of high-frequency seismic noise due to COVID-19 pandemic lockdown measures.	Lecocq T, Hicks SP, Van Noten K, van Wijk K, Koelemeijer P, De Plaen RSM, Massin <i>et al.</i> ,	2020	3149	Science	University of Tehran	Earth Sciences; Geophysics.
Origins and genetic legacy of prehistoric dogs.	Bergström, A., Frantz, L., Schmidt, R., Ersmark <i>et al.</i> ,	2020	2766	Science	University of Tehran	Biological Sciences; Genetics.
Ancient genomes revisit the ancestry of domestic and Przewalski's horses.	Gauntitz, C., Fages, A., Hanghøj, K., Albrechtsen, A., Khan, N., Schubert, M., Seguin-Orlando <i>et al.</i> ,	2018	2043	Science	Tarbiat Modares University; University of Tehran	History and Archaeology; Archaeology; Agricultural.
COVID-19 and male reproductive function: a prospective, longitudinal cohort study.	Hajizadeh Maleki, B., and Tartibian, B.	2021	1629	Reproduction	Allameh Tabataba'i University	Medical and Health Sciences; Paediatrics and Reproductive Medicine; Biological Sciences.
The origins and spread of domestic horses from the Western Eurasian steppes.	Librado, P., Khan, N., Fages, A., Kusliy, M. A., Suchan, T., Tonasso-Calvière, L., Schiavinato <i>et al.</i> ,	2021	1502	Nature	University of Tehran	History and Archaeology; Archaeology; Agricultural.
Relationship between blood clots and COVID-19 vaccines: A literature review.	Atyabi, S. M. H., Rommasi, F., Ramezani, M. H., Ghane Ezabadi, M. F., Arani, M. A., Sadeghi <i>et al.</i> ,	2022	1410	Open Life Sciences	Shahid Beheshti University	Biological Sciences; Biological Sciences.
Mapping 123 million neonatal, infant and child deaths between 2000 and 2017.	Burstein, R., Henry, N. J., Collison, M. L., Marczak, L. B., Sligar, A., Watson, S., Marquez, N., Abbasalizad-Farhangi, <i>et al.</i> ,	2019	1367	Nature	Amirkabir University of Technology; Tarbiat Modares University;	Medical and Health Sciences; 1117 Public Health and Health Services; 42 Health Sciences.
PiSHi: click the images and I tell if you are a human.	Mehrnezhad, M., Ghaemi Bafghi, A., Harati, A., Toreini, E.	2016	1017	International Journal of Information Security	Ferdowsi University of Mashhad	Information and Computing Sciences; Artificial Intelligence and Image Processing; Information Systems.

RQ1.3 The most mentioned research outputs

Analysis of the Altmetric Attention Scores (AAS) identified the most widely discussed and influential research outputs, as summarized in Table 2. The highest-ranked article originated from the University of Tehran, in the field of medical microbiology, and was published in The Journal of Antibiotics. This publication

achieved an exceptional AAS of 4,568, making it the most socially visible research output in the dataset.

Other highly mentioned papers addressed topics in earth sciences and geophysics (AAS=3,149), biological sciences and genetics (AAS=2,766), and history and archaeology (AAS=2,043). Collectively, the most impactful publications were primarily

affiliated with the University of Tehran, Tarbiat Modares University, and Shahid Beheshti University.

While the majority of top-performing outputs belong to the broad domain of health and medical sciences, a variety of disciplines (such as earth sciences, history and archaeology, computer and information sciences, and environmental studies) also feature prominently among the most visible and publicly engaged research topics.

RQ1.4 Attention distribution across platforms

Analysis of the dataset revealed a total of 4,394,529 recorded instances of online attention to research outputs. Table 3 summarizes the distribution of these mentions across different social media platforms, illustrating how engagement with Iranian university research is dispersed within the digital ecosystem.

The results highlight the broad visibility of academic work across diverse channels and emphasize the multifaceted nature of research impact, encompassing both scholarly audiences and the wider public. This diversity of engagement demonstrates that Iranian research outputs are increasingly resonating across a range of platforms, reflecting growing societal interaction with scientific content.

RQ1.5 Thematic distribution (FoR)

The Fields of Research (FoR) classification system used in Altmetric Explorer follows the Australian and New Zealand Standard Research Classification (ANZSRC) framework, which organizes disciplines hierarchically by two- and four-digit codes. The two-digit codes represent broad disciplinary domains, while the four-digit codes specify more detailed subfields. Each

publication may be associated with one or more FoR categories depending on its thematic scope.

In this study, thematic analysis was performed at the two-digit level to capture broader disciplinary trends. Table 4, based on the primary FoR category assigned to each article, summarizes the distribution of Altmetric attention across major subject areas, highlighting variations in online engagement among different fields of research.

The remaining subject areas, ranked in descending order of Altmetric attention, include biological sciences, information and computer sciences, mathematical sciences, physical sciences, earth sciences, environmental sciences, agricultural and veterinary sciences, psychological and cognitive sciences, technology, commerce, management, tourism and services, economics, studies in human society, and education. This pattern illustrates the diversity of academic engagement across disciplines, emphasizing that while engineering and medical and health sciences remain dominant, substantial online interest also extends to the natural, social, and applied sciences. Collectively, these results highlight the broad and multifaceted nature of Iranian universities' research contributions and their growing resonance across a wide spectrum of scholarly and societal domains.

The distribution of Altmetric attention across secondary subject categories mirrors the pattern observed in the primary classification. The Engineering field records the largest share, appearing as the second main subject category in 16,476 articles. It is followed by Biomedical and Clinical Sciences with 10,732 articles, and Chemical Sciences with 10,042 articles. This distribution highlights the interdisciplinary nature of Iranian research outputs, with Engineering frequently serving

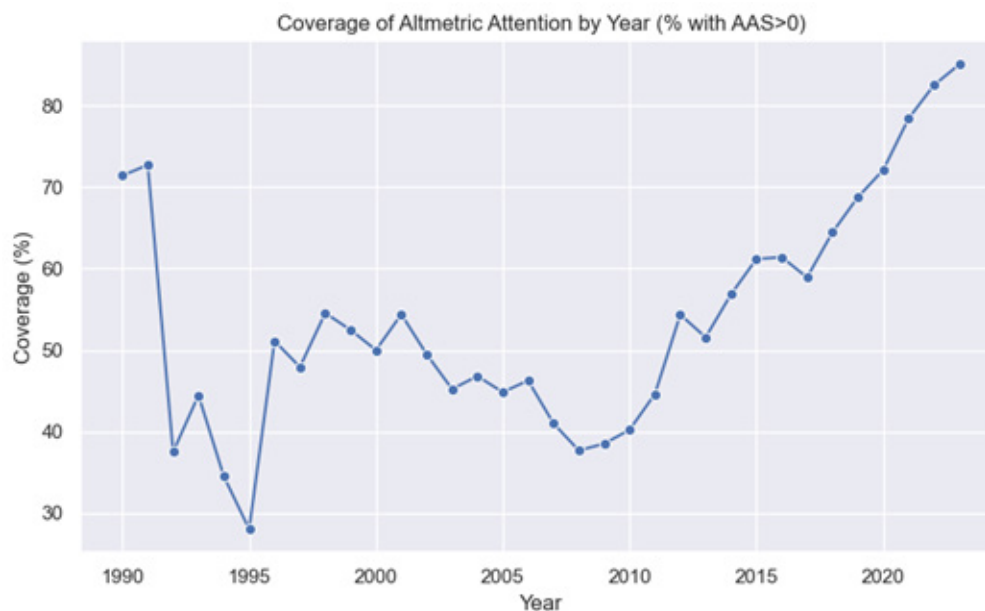


Figure 1: Coverage of the AAS trend by year in Altmetric Explorer (1990-2023).

Table 3: Distribution of attention to research outputs on social media.

Rank	Platform	Sum of attention	Average	Maximum
1	Mendeley readers	2,543,166	34.3629	2,915
2	Dimension Citations	1,627,042	21.9843	8,264
3	Twitter	182,797	2.46992	8,949
4	Patent	11,980	0.16187	248
5	News	10,282	0.13892	290
6	Facebook	6,056	0.08182	109
7	Wikipedia	5,302	0.07163	227
8	Blog	2,929	0.03957	34
9	Peer Review	1,541	0.02082	19
10	Policy	1,349	0.01822	12
11	Google +	733	0.00991	34
12	Video	636	0.00859	17
13	Reddit	557	0.00752	11
14	Q and A	77	0.00104	2
15	F1000	68	0.00091	4
16	Weibo	14	0.00018	4

as a secondary domain that intersects with other fields. The prominence of these dual classifications underscores the integrative role of engineering and related applied sciences in shaping the country's broader research landscape.

RQ1.6 Attention to research subjects across platforms

Table 5 summarizes the distribution of Altmetric attention across social media platforms for articles classified under the Engineering subject category. Among the 16,474 publications in which Engineering is identified as the primary field, the majority of attention originates from news outlets and Twitter (X), which together account for the largest share of online engagement. This pattern indicates that engineering-related research attracts substantial visibility in both professional media coverage and public discourse on social platforms.

The prominence of news outlets and Twitter (X) as key engagement platforms underscores the variety of channels through which academic research attains public visibility and recognition. Table 6 presents the distribution of Altmetric attention across social media platforms for articles categorized under the secondary subject area of Medical and Health Sciences. Within this field, the greatest volume of engagement arises from Twitter and news media mentions, which together constitute the primary sources of online attention to research outputs in this domain.

Table 7 presents the distribution of Altmetric attention across social media platforms for articles classified under the Chemical Sciences category. As shown, Twitter (X) and news outlets account for the majority of mentions, indicating that these platforms serve

as the principal channels through which research in chemical sciences gains public visibility and engagement.

RQ1.7 Countries benefitting from research outputs

A central goal of policy-oriented research is to generate scientific evidence and practical recommendations that support decision-making accordingly, this study investigated the extent to which Iranian universities' research output have been drawn upon in policy-making contexts worldwide, with particular attention to identifying the countries that have cited or incorporated these findings into policy documents and briefs. To this end, policy documents and briefs referencing research from each university were systematically analyzed, revealing a diverse and globally distributed set of beneficiary countries, with notable concentrations across Europe, North America, Africa, and Asia. Among all institutions examined (including Allameh Tabataba'i University, the University of Tehran, the University of Isfahan, Sharif University of Technology, Tarbiat Modares University, Amir Kabir University, the University of Shiraz, Ferdowsi University of Mashhad, Shahid Beheshti University, Isfahan University of Technology, Iran University of Science and Technology, the University of Tabriz, K. N. Toosi University, the University of Guilan, and Imam Hosein University). Swiss policy documents emerged as the most frequent citers of Iranian university research, appearing in the beneficiary lists of virtually every institution studied. The United States, the United Kingdom, Italy, and Luxembourg similarly demonstrated high citation frequency, each appearing across a large majority of the universities analyzed. Broader European representation was also evident, with France, Germany, the Netherlands, Belgium, Sweden, Denmark, Ireland, Norway, and Spain all present, albeit at varying frequencies.

Beyond Europe, Canada appeared consistently across many universities, while Australia and Chile featured in several cases. African nations (namely Kenya, South Africa, Uganda, and Botswana) were likewise identified as beneficiaries along the Philippines as recurring non-Western presence and the United Arab Emirates in select instances. Georgia, Morocco, and Brazil were each noted in connection with specific institutions. Taken together, these findings indicate that Iranian research outputs have been substantively utilized in policy contexts across multiple continents, with highest concentration of engagement observed in Switzerland, the United States, the United Kingdom, Italy, and Luxembourg.

RQ2 - Factors influencing Altmetric attention

The findings indicate that research outputs in Engineering, Medical and Health Sciences, and Chemical Sciences received the highest levels of Altmetric attention. Several interrelated factors help explain why these disciplines (and specific outputs within them) achieve greater visibility and engagement across online platforms.

First, medical and health-related research naturally attracts extensive online attention due to its direct relevance to human welfare and societal well-being. Public interest in biomedical topics, especially during health crises such as the COVID-19 pandemic, greatly amplified the visibility of related studies. The open-access dissemination of pandemic research further enhanced accessibility and public reach, as shown in previous global analyses (Haustein, 2019; Ortega, 2020).

Second, engineering and technology research often gains attention through news coverage, patent mentions, and professional networks, reflecting its strong ties to practical innovation, infrastructure development, and industrial applications. Engineering outputs frequently yield tangible solutions (from renewable energy and automation to construction

and transportation systems) that are readily highlighted in both media and policy documents (Costas *et al.*, 2015).

Third, chemical sciences occupy a cross-disciplinary position, linking health, environmental, and industrial domains. Their research frequently addresses issues of immediate public concern (such as pharmaceuticals, pollution control, and sustainable materials), making these outputs highly shareable on social media and in news outlets. The problem-solving and interdisciplinary nature of the field further enhances its appeal to both scientific and non-scientific audiences.

In addition, factors such as open-access publication, international collaboration, and English-language dissemination appear to amplify visibility across disciplines. Articles published in reputable open-access journals or co-authored with international partners tend to circulate more widely across media channels, increasing both mentions and citations. Altmetric attention therefore reflects not only the intrinsic quality of research but also the accessibility and communication reach of its dissemination pathways.

Finally, disciplinary communication cultures shape how research is shared. Biomedical and engineering scholars often engage actively in public communication and digital outreach, whereas researchers in the humanities and social sciences typically rely on more traditional publication routes. These differences contribute to observed disparities in online visibility, consistent with earlier studies showing that fields with higher societal applicability and open dissemination practices tend to receive greater Altmetric attention (Haustein, 2019).

In summary, the prominence of Medical and Health Sciences, Engineering, and Chemical Sciences in Altmetric indicators arises from their societal relevance, practical impact, open-access dissemination, and proactive communication practices. Together, these factors explain why certain research domains

Table 4: The first thematic main category assigned to research outputs.

Name of Main Category	No. of Research Output	Name of Main Category	No. of Research Output
40 Engineering	17,490	51 Physical Sciences	2,771
32 Biomedical and Clinical Sciences	7,645	49 Mathematical Sciences	2,163
34 Chemical Sciences	7,452	42 Health Sciences	1,416
31 Biological Sciences	6,882	35 Commerce, Management, Tourism and Services	1,243
46 Information and Computing Sciences	4,580	11 Medical and Health Sciences	1,061
09 Engineering	3,873	06 Biological Sciences	939
30 Agricultural, Veterinary and Food Sciences	3,487	33 Built Environment and Design	895
37 Earth Sciences	2,817	02 Physical Sciences	826

Table 5: Social Media Distribution of “Engineering”-related articles.

Name of the Channel	No. of Mentions	Name of the Channel	No. of Mentions
News_mentions	8,798	Blog_mentions	122
Twitter_mentions	4,940	Google+_mentions	48
Patent_mentions	1,626	Video_mentions	24
Facebook_mentions	276	Reddit_mentions	12
Wikipedia_mentions	274	Q andA_mentions	3
Peer_review_mentions	223	Weibo_mentions	3
Policy_mentions	126	Pinterest_mentions	1
Total		16,476	

consistently attract higher levels of online engagement and societal recognition.

RQ3 - Relationship between Altmetric and bibliometric indicators

To explore the relationship between online visibility and traditional scholarly impact, we examined correlations between the Altmetric Attention Score (AAS) and two citation-based indicators: Dimensions citations and Mendeley readership. The correlation analysis revealed that AAS was only weakly associated with Dimensions citations (Pearson $r=0.071$; Spearman $\rho=0.106$; both $p<0.001$), suggesting that highly cited articles are not necessarily those receiving substantial online attention. By contrast, AAS showed a somewhat stronger (though still modest) association with Mendeley readership (Pearson $r=0.184$; Spearman $\rho=0.170$; both $p<0.001$), indicating that reader engagement on Mendeley aligns more closely with social media visibility than with formal citation patterns.

These results are consistent with prior international studies demonstrating that Altmetric indicators capture a complementary, rather than overlapping, dimension of research influence. For instance, Costas *et al.* (2015) reported weak-to-moderate positive relationships between altmetric indicators and citation counts across disciplines. Thelwall *et al.* (2013) highlighted that Altmetric indicators may precede or even substitute formal citations in rapidly evolving or publicly oriented disciplines such as health communication and environmental science.

Overall, while traditional bibliometric visibility may indirectly enhance Altmetric performance through increased exposure, the two metrics remain conceptually and functionally distinct, the former reflecting academic recognition within scholarly communities, and the latter representing societal engagement and public dissemination. Figure 2 illustrates the skewed distributions of both AAS and citation metrics, underscoring the limited overlap between highly cited and highly mentioned publications.

DISCUSSION

The results indicate that out of 365,282 articles published by Iran's top universities, 75,009 (20.26%) received at least one social media mention. The University of Tehran ranked first, with 72,103 articles in total and 16,194 receiving online attention, followed by Tarbiat Modares University (37,452 total; 8,870 mentioned) and Sharif University of Technology (34,387 total; 6,866 mentioned). This relatively limited presence suggests a moderate uptake of social platforms among Iranian researchers, likely influenced by both limited access to certain international platforms and differing patterns of scholarly communication. Similar proportions have been observed internationally. Robinson *et al.* (2014) found that only 19% of Web of Science articles published between 2011 and 2013 were mentioned on social media (Robinson *et al.*, 2014).

A rough comparison situates Iran's Figures within the global range reported by Costas, Zahedi, and Wouters (2014), who found that 15-24% of Web of Science publications attracted at least one Altmetric mention. In our dataset, 20.3% of papers from the 15 top Iranian universities received online attention, effectively mirroring this international average. However, while Mendeley readership is the most widespread source of Altmetric data worldwide (covering about 37% of WoS papers (Costas *et al.*, 2015), only 18% of Iranian publications registered Mendeley readers Table 2. This discrepancy likely reflects linguistic and infrastructural factors, such as the prevalence of Persian-language journals and the limited representation of domestic communication platforms (e.g., Telegram) in Altmetric coverage. Thus, Iran's altmetric visibility aligns with global baselines overall but remains underrepresented in reader-driven indicators, suggesting potential for improved international discoverability.

A year-by-year analysis of AAS revealed a steady upward trend, indicating that Iranian research outputs are increasingly visible on social media. This mirrors global findings by Costas *et al.* (2014), who documented a similar growth pattern, and reflects the broader integration of digital platforms into researchers' professional activities.

The examination of high-impact research outputs based on AAS showed that a paper in medical microbiology, co-authored by researchers from the University of Tehran and Ahvaz University of Medical Sciences, achieved the highest AAS (4,568) among all analyzed works and had received 193 citations at the time of data collection. Other highly visible publications appeared in earth sciences and geophysics, biological sciences and genetics, and history and archaeology, all published in 2020, a year marked by heightened global attention to scientific research. These results indicate that highly cited, internationally co-authored papers published in reputable journals tend to achieve substantial online visibility. The analysis of attention sources confirmed that Mendeley, Twitter, patent databases, and news media were the principal channels through which Iranian research was disseminated, consistent with previous observations in global studies (Robinson *et al.*, 2014; Shafiee *et al.*, 2023).

The disciplinary distribution of Altmetric attention revealed that Engineering, Medical and Health Sciences, and Chemical Sciences dominated the dataset. The influence of engineering knowledge spans multiple domains (industry, agriculture, medicine, housing, education, and environmental management), making it central to societal development. Interestingly, although most Iranian universities in this study are not primarily medical

institutions, their interdisciplinary collaborations with health sciences appear to drive higher attention levels.

Medical and health-related research, in particular, consistently attracts the highest social media attention due to its immediate relevance to public welfare. This visibility is amplified by extensive public and governmental funding, the prevalence of open-access publishing, and the societal urgency of health issues. During the COVID-19 pandemic, for example, open-access dissemination of biomedical findings significantly enhanced their reach and policy influence.

Similarly, Chemical Sciences play a vital role due to their relevance to food production, energy, pharmaceuticals, and environmental sustainability. Their inherently practical and interdisciplinary nature makes chemical research highly shareable on both scientific and public communication platforms.

Altmetric variations across disciplines can thus be interpreted through two lenses: societal relevance and communication culture. Fields such as health and medical sciences attract the greatest public interest because their results directly affect human lives and policy decisions (Costas *et al.*, 2014; Haustein, 2019). In contrast, engineering and chemical sciences gain attention when their innovations translate visibly into technologies or

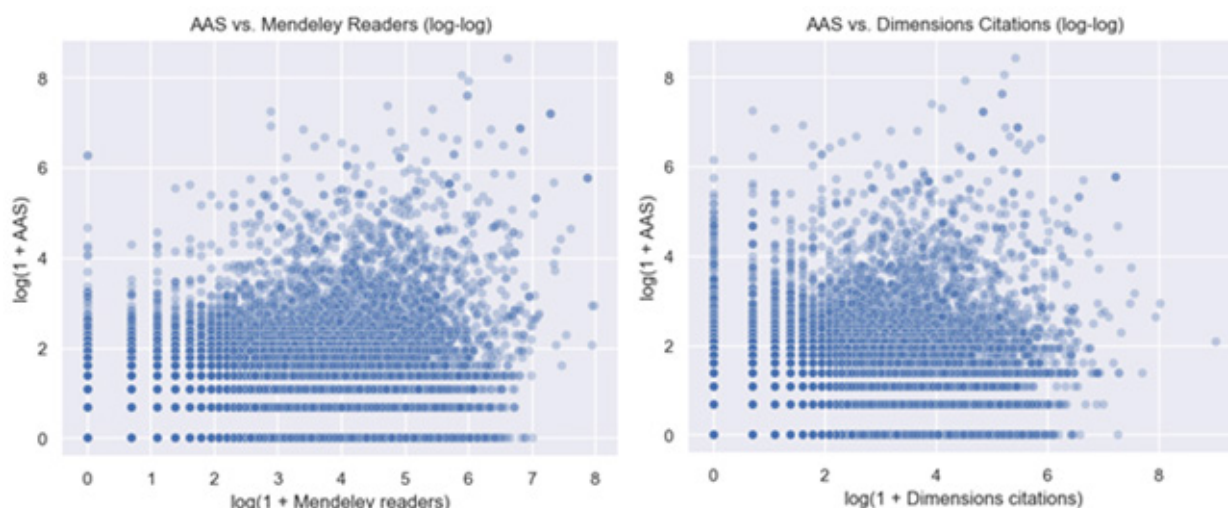


Figure 2: Scatterplot of AAS vs Mendeley readership and AAS vs Dimensions Citations.

Table 6: Social Media Distribution of “Medical and Health Sciences”-related articles.

Name of the Channel	No. of Mentions	Name of the Channel	No. of Mentions
Twitter_mentions	7,024	Blog_mentions	87
News_mentions	2,380	Video_mentions	34
Patent_mentions	405	Google+_mentions	18
Policy_mentions	266	Reddit_mentions	15
Facebook_mentions	228	F1000_mentions	8
Wikipedia_mentions	177		
Peer_review_mentions	90		
Total		10,732	

Table 7: Social Media Distribution of “Chemical Sciences”-related articles.

Name of the Channel	No. of Mentions	Name of the Channel	No. of Mentions
Twitter_mentions	5,356	Policy_mentions	24
News_mentions	2,791	Google+_mentions	20
Patent_mentions	1,354	Reddit_mentions	12
Wikipedia_mentions	192	Video_mentions	4
Facebook_mentions	174	Q and A_mentions	2
Blog_mentions	78	Weibo_mentions	1
Peer_review_mentions	34		
Total		10,042	

environmental solutions with practical benefits. The prominence of these fields in the dataset reflects their tangible impact and alignment with media and policy priorities.

Another critical determinant is accessibility. Research that is openly available, internationally co-authored, or addresses globally salient issues (e.g., pandemics, climate change) tends to receive greater online engagement. These patterns correspond with global evidence indicating that visibility is driven by both content relevance and dissemination strategy (Bornmann, 2014; Haustein, 2019). Accordingly, disciplinary differences in Altmetric performance reflect not only the volume of publications but also the extent to which research resonates with societal needs, media narratives, and public discourse.

Analysis of thematic distributions across social media platforms further revealed distinct engagement patterns. In Engineering, most mentions appeared in news outlets, followed by Twitter, patent sources, Facebook, and Wikipedia. In Medicine and Health Sciences, attention was dominated by Twitter and news, followed by patents, policy documents, and Wikipedia. For Chemical Sciences, Twitter, news, and patent mentions were again the leading channels, followed by Wikipedia, Facebook, and blogs. These patterns confirm that news media and Twitter serve as central vectors for research dissemination, with journalists and public users alike relying on these platforms to access and share scientific content.

Finally, the analysis of countries benefiting from Iranian research outputs through policy citations revealed that high-income nations, including the United States, the United Kingdom, and Switzerland, are the most frequent users of these findings. Policymakers in these contexts rely heavily on scientific evidence to inform decisions, demonstrating that Iranian research has achieved measurable international policy relevance. Strengthening the production of evidence-based research and ensuring its accessibility to policymakers can therefore further enhance the global impact of Iranian universities' research portfolios.

IMPLICATIONS

It is important to note that the Altmetric Attention Score (AAS) reflects the volume of online mentions rather than their valence or practical uptake. A paper may gain visibility on platforms such as X (formerly Twitter) due to controversy, methodological flaws, or politicized debates; conversely, research that quietly informs policy decisions may receive little public attention (Sugimoto *et al.*, 2017). Therefore, high Altmetric attention should not be interpreted as inherently positive or policy-relevant impact. The findings of this study provide a useful signal of research visibility, but such metrics must be triangulated with qualitative analyses (including sentiment analysis, citation-context examination, and policy-document tracing) before concluding societal benefit.

Building on the patterns identified in this research and international best practices from early-adopter institutions, we outline three cost-effective and high-impact strategies for strengthening the connection between universities and society through improved visibility and engagement.

Embed real-time Altmetric dashboards in institutional repositories

- *Rationale.* Dashboards make it easier to identify which outputs resonate beyond academia and help librarians and communication officers recognize items warranting additional promotion (Ortega, 2020).
- *Action.* Integrate the free Altmetric badge widget on article landing pages and include an institutional-level dashboard on the repository homepage.
- *Outcome.* Researchers receive immediate feedback on engagement, while communication teams can highlight high-impact outputs in press releases, newsletters, and annual reports.

Offer short “Altmetrics for Researchers” workshops

- *Rationale.* Evidence shows that hands-on training can double the likelihood that scholars share preprints,

visual abstracts, and datasets online (Toupin *et al.*, 2022).

- *Action.* Library or research office staff can conduct 2-hr workshops covering (a) how Altmetric Explorer collects mentions, (b) platform-specific biases, and (c) simple strategies for improving online visibility (e.g., sharing open-access links, using lay tags on Mendeley).
- *Outcome.* Enhanced digital literacy and a culture of proactive, responsible research dissemination.

Encourage one-paragraph public summaries or visual abstracts for societally relevant papers

- *Rationale.* Plain-language or graphical summaries have been shown to increase Twitter shares and media coverage by 6-120% (Bornmann *et al.*, 2019).
- *Action.* Journals or institutional repositories could include an optional “Societal Impact” field during submission, supported by design templates (e.g., Canva or Adobe Express) for rapid infographic creation.
- *Outcome.* Greater accessibility of research findings to journalists, policymakers, and NGOs, reinforcing the university’s role in promoting evidence-informed social impact.

Collectively, these strategies would enhance universities’ capacity to translate research visibility into meaningful engagement, ensuring that scholarly communication extends beyond academia and contributes more directly to societal progress.

LIMITATIONS AND FUTURE STUDIES

This study applied a data-mining approach to investigate the societal visibility of research outputs from Iran’s leading universities using Altmetric indicators. While this approach offers valuable insights, several methodological and contextual limitations should be acknowledged.

First, the study focused exclusively on 15 top universities within a single developing country. Although this sample captures a significant portion of national research output, it does not represent the diversity of regional or specialized institutions that may follow distinct knowledge-transfer patterns. Future studies should consider expanding the sample to include a broader range (or even the full spectrum) of universities within Iran and across other countries to enhance generalizability.

Second, the study relied on publications indexed by the Islamic World Science Citation Center (ISC) as the primary bibliographic source. While ISC provides extensive coverage of Persian-language journals, it offers uneven representation of conference proceedings, book chapters, and other non-journal outputs. Consequently, the final dataset (~365,000 records,

2012-2024) exceeds the volume retrieved from comparable Scopus searches (~125,000 records) but may still omit relevant materials not indexed by ISC.

Third, the analysis was restricted to records classified as “articles” or “reviews,” excluding editorials, letters, and conference abstracts. Furthermore, although the corpus is bilingual, Altmetric platforms favor English-language outputs, which may inflate the relative visibility of English publications compared to those in Persian (Haustein *et al.*, 2015).

Fourth, regarding Altmetric platform coverage, Altmetric Explorer tracks 16 sources of online attention. This study aggregated all of them into a single composite Attention Score but examined Mendeley readership and Dimensions citations in greater detail, as these indicators serve as proxies for scholarly uptake. Platform-specific patterns in news, policy, or social media engagement were therefore not analyzed in depth.

Fifth, the Altmetric-to-output ratio employed here adjusts for institutional productivity differences but does not account for disciplinary or linguistic biases in attention, nor does it capture the qualitative dimension of engagement (e.g., sentiment, audience type, or citation context).

These caveats should be kept in mind when interpreting university-level comparisons and SDG proximity patterns. Future research could build upon this work by:

- Extending the analysis to the complete set of Iranian universities or conducting multi-country comparisons.
- Triangulating ISC data with other databases such as Scopus, Web of Science, or Crossref Event Data to improve coverage and validation.
- Incorporating a wider range of document types, including conference proceedings and policy briefs.
- Performing platform-specific analyses to uncover discipline- and language-dependent attention dynamics.
- Integrating qualitative and sentiment analyses to complement quantitative attention metrics with interpretive insights.
- Such expansions would provide a more nuanced understanding of how research outputs circulate, engage audiences, and contribute to evidence-based policymaking in diverse academic and societal contexts.

CONCLUSION

The research provides a comprehensive analysis of the social media presence and societal impact of research from Iran’s top 15 universities. The following key conclusions can be drawn:

- **Moderate Social Media Visibility:** Approximately 20.26% of the 365,282 articles examined received at least

one mention on social media, a figure that aligns with international baselines of 15–24%.

- **Leading Institutions:** The University of Tehran maintains the highest volume of research outputs and the most social media mentions, followed by Tarbiat Modares University and Sharif University of Technology.
- **Dominant Disciplines:** Engineering, Medical and Health Sciences, and Chemical Sciences attract the highest levels of Altmetric attention. This prominence is attributed to their direct relevance to human welfare, industrial innovation, and practical societal solutions.
- **Growth Trends:** There is a steady annual increase in the online visibility of Iranian research, with a notable peak in average Altmetric Attention Scores (AAS) recorded in 2020.
- **Distinct Metric Dimensions:** Altmetric indicators capture a complementary rather than overlapping dimension of research influence compared to traditional citations. While AAS shows only a weak association with Dimensions citations, it correlates more strongly with Mendeley readership.
- **Primary Platforms and Global Reach:** The most significant sources of mentions are Mendeley, Twitter (X), and news outlets. Furthermore, Iranian research has achieved international policy relevance, frequently cited in policy documents from high-income nations such as Switzerland, the United States, and the United Kingdom.

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ABBREVIATIONS

AAS: Altmetric Attention Score; **ANZSRC:** Australian and New Zealand Standard Research Classification; **CRISP-DM:** Cross-Industry Standard Process for Data Mining; **EDA:** Exploratory Data Analysis; **FoR:** Fields of Research; **ISC:** Islamic World Science Citation Center; **ML/NLP:** Machine Learning and Natural Language Processing; **OLS:** Ordinary Least Squares; **REF:** Research Excellence Framework; **SDGs:** Sustainable Development Goals (United Nations).

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

- Aguinis, H., Yu, L., and Tosun, C. (2021). How to enhance scholarly impact: recommendations for university administrators, researchers, and educators. *International Journal of Contemporary Hospitality Management*, 33(8), 2485–2499.
- Ahmad, J. (2013). Can a university act as a corporate social responsibility (CSR) driver? An analysis. *Social Responsibility Journal*, 8(1), 77–86.
- Ajiferuke I, Wolfram D. (2010). Citer analysis as a measure of research impact: library and information science as a case study. *Scientometrics*, 83(3):623–38.
- Alijani, Rahim; Mortazavipour, Seyedeh Fahimeh Mrs.; and Khasseh, Ali Akbar, "Visibility of Iranian LIS Departments in ResearchGate: An Altmetric Study" (2018). Library Philosophy and Practice (e-journal). 2085. <http://digitalcommons.unl.edu/libphilprac/2085>
- Amiri, M. R., Saberi, M. K., Ouchi, A., Mokhtari, H. and Barkhan, S. (2023). Publication Performance and Trends in Altmetrics: A Bibliometric Analysis and Visualization. *International Journal of Information Science and Management (IJISM)*, 21(1), 97–117. doi: 10.202034/ijism.2022.1977686.0
- Batooli, Z. Mohamadloo, A. and Nadi-Ravandi, S. (2022). Relationship between Altmetric and bibliometric indicators across academic social sites in article-level : the case of Iranian researchers Top Papers in clinical medicine. *Library Hi Tech*, 39(4), 1025–1049.
- Bonyadi Naeini, A., and Moghiseh, Z. (2022). *Altmetric study of scientific outputs of Iranian researchers on coronavirus*. *Scientometrics Research Journal*, 7(1), 277–297. <https://doi.org/10.202070/rsci.2020.13360.1447>
- Bornmann, L. (2013). What is societal impact of research and how can it be assessed? A literature survey. *Journal of the American Society for Information Science and Technology*, 64(2), 217–233
- Bornmann, L., Haunschild, R., and Adams, J. (2019). Do Altmetrics assess societal impact in a comparable way to case-study data? An empirical test of the convergent validity of Altmetrics based on data from the UK Research Excellence Framework (REF). *Journal of Informetrics*, 13(1), 325–340. <https://doi.org/10.1016/j.joi.2019.01.008>
- Bornmann, L. (2014). Do altmetrics point to the broader impact of research? An overview of benefits and disadvantages of altmetrics. *Journal of Informetrics*. 8(4), 895–903
- Coletti, P., and Dotti, N. F. (2021). Knowledge co-production promoting policy change in time of decentralisation: A comparison of two cases from Brussels. *Local Government Studies*, 47(2), 276–295.
- Coombs, S. K., and Meijer, I. (2021). Towards Evaluating the Research Impact made by Universities of Applied Sciences. *Science and Public Policy*, 48(2), 226–234.
- Costas, R., Z. Zahedi, and P. Wouters. (2014). Do Altmetrics correlate with citations? Extensive comparison of Altmetric indicators with citations from a multidisciplinary perspective. *Journal of the Association for Information Science and Technology*, 66(10), 2003–2019.
- Costas, R., Zahedi, Z., and Wouters, P. (2015). How well developed are Altmetrics? Cross-disciplinary analysis of the presence of alternative metrics in scientific publications. Paper presented at the 14th International Conference on Scientometrics and Informetrics, Vienna, Austria. <https://doi.org/10.48550/arXiv.1507.02095>
- Dima, G. (2017). Towards Building a European Common Reference Framework for University Social Responsibility. *Balkan Region Conference on Engineering and Business Education*, 3 (1), 440–445.
- Federke, J.W. (2013). The objectivity of the national research foundation peer review in South Africa assessed against bibliometric indexes. *Scientometrics*, 97(2), 177–206.
- García-Villar, C. (2021). A critical review on Altmetrics: Can we measure the social impact factor? Insights into Imaging, 12(1), 92. <https://doi.org/10.1186/s13244-021-01033-2>
- Ghasemian, A., Asnafi, A. R., and Erfanmanesh, A. (2023). *Altmetrics study on research outputs in fields of social sciences in top Iranian universities (2010–2020)*. Library Philosophy and Practice, Article 7718. <https://digitalcommons.unl.edu/libphilprac/7718>
- Giuffrè, L., and Ratto, S. E. (2014). A New Paradigm in Higher Education : University Social Responsibility. *Journal of Education and Human Development*, 3(1), 231–238.
- Haakman, M., Cruz, L., Huijgens, H. et al. AI lifecycle models need to be revised. *Empir Software Eng* 26, 95 (2021). <https://doi.org/10.1007/s10664-021-09993-1>.
- Haustein, S., Sugimoto, C. R., and Larivière, V. (2015). Guest editorial: Social media in scholarly communication. *Aslib Journal of Information Management*, 67(3), 257–260.
- Haustein, S. (2019). Scholarly Twitter metrics. In W. Glänzel et al. (Eds.), *Springer Handbook of Science and Technology Indicators* (pp. 729–760). Springer.
- Haustein, S., I. Peters, J. Bar-Ilan, J. Priem, H. Shema, and J. Terliesner. (2014). Coverage and adoption of Altmetrics sources in the bibliometric community. *Scientometrics*, 101(2): 1145–1163.
- Haustein, S. (2019). *Scholarly communication and bibliometrics: Diverging or converging paths?* *Frontiers in Research Metrics and Analytics*, 4, 37.
- Holbrook, J. B. (2019). Designing responsible research and innovation to encourage serendipity could enhance the broader societal impacts of research. *Journal of Responsible Innovation*, 6(1), 84–90.
- Huang w, and Wang p Wu (2018). A correlation comparison between altmetric Attention Scores and Citations for Six PLOS journals. *PlosOne*, 13(1), 194–206.
- Huang w, and Wang p Wu (2018). A correlation comparison between altmetric Attention Scores and Citations for Six PLOS journals. *PlosOne*, 13(1), 194–206.
- Huang w, and Wang p Wu (2018). A correlation comparison between altmetric Attention Scores and Citations for Six PLOS journals. *PlosOne*, 13(1), 194–206.
- Islamic World Science Citation Center (ISC), (2024). *About ISC*. Retrieved from <https://isc.ac>
- Kokol, P., Blazun Vošner, H., and Kokol, M. (2022). Mapping research that connects the UN Sustainable Development Goals and Altmetrics: A bibliometric review. *Journal of Cleaner Production*, 330, 129787. <https://doi.org/10.1016/j.jclepro.2021.129787>

- Luo, F., Zheng, H., Erdt, M., Sesagiri Raamkumar, A., Theng, YL. (2018). A Comparative Investigation on Citation Counts and Altmetrics between Papers Authored by Top Universities and Companies in the Research Field of Artificial Intelligence. In: Erdt, M., Sesagiri Raamkumar, A., Rasmussen, E., Theng, YL. (eds). *Altmetrics for Research Outputs Measurement and Scholarly Information Management. Communications in Computer and Information Science*, 856. Springer, Singapore. https://doi.org/10.1007/978-981-13-1053-9_9 (Accessed September 19, 2024).
- Merton, R. K. (1968). The Matthew effect in science. *Science*, 159, 56-63.
- Mongeon, P., Paul-Hus, A. (2016). The journal coverage of Web of Science and Scopus: A comparative analysis. *Scientometrics*, 106(1), 213-228.
- Nemati-Anaraki, L., Razmgir, M., and Moradzadeh, M. (2020). *Scientific impact of Iran University of Medical Sciences researchers in ResearchGate, Google Scholar, and Scopus: An Altmetrics study*. *Medical Journal of the Islamic Republic of Iran*, 34, 142. <https://doi.org/10.34171/mjiri.34.142>
- Newson, R. S., Rychetnik, L., King, L., Milat, A. J., Bauman, A. E., Health, P., Road, F. (2021). Looking for evidence of research impact and use : A qualitative study of an Australian research-policy system. *Research Evaluation*, 30(4), 458-469.
- Ortega, J. L. (2020). Altmetric monitoring of institutional repositories: Best practices and impact on scholarly communication. *Journal of Librarianship and Information Science*, 52(4), 974-986. <https://doi.org/10.1177/0961000619878844>
- Ortega, J. L. (2020). *Altmetrics data providers: A meta-analysis review of the coverage of metrics and publications*. *El profesional de la Información*, 29(1), e290107.
- Penfield, T., Baker, M. J., Scoble, R., and Wykes, M. C. (2014). Assessment, evaluations, and definitions of research impact : A review. *Research Evaluation*, 23(1), 21-32.
- Piwowar, H., Priem, J., Larivière, V., Alperin, J. P., Matthias, L., Norlander, B., ... Haustein, S. (2018) The state state of OA: A large-scale analysis of the prevalence and impact of Open Access articles., *PeerJ*, 6, e4375.
- Priem, J., Taraborelli, D., Groth, P., and Neylon, C. (2010). Altmetrics: A manifesto. Altmetrics.org.
- Rhodes, C., and Pullen, A. (2017). Changing the world ? The politics of activism and impact in the neoliberal University. *Organization*, 25(1), 139-147.
- Robinson-García, N., Torres-salinas, D. and Costas R. (2014). New data, new possibilities: Exploring the inside of Altmetric.com, *Archivos*, 23(4), 7-16.
- Saberi, M. K., Ebrahimi, S., and Mozafari, A. (2021). *An Altmetrics analysis of the articles published in the Medical Journal of the Islamic Republic of Iran (1987-2020)*. *Medical Journal of the Islamic Republic of Iran*, 35, 189. <https://doi.org/10.47176/mjiri.35.189>
- Sedighi, M. (2021). *Assessing research impact based on Altmetrics: Case study of Iranian scientific products in social sciences and computer science indexed in Scopus*. *Iranian Journal of Information Processing and Management*, 36(3), 679-708.
- Shafee, S. H., Soleimani, M., Pendar, E. and Pishkuhi, M. A. (2023). Evaluation of the correlation between Altmetric Attention Score and citation number of top 50 articles in Orthopedics. *International Journal of Information Science and Management*, 21(1), 1-15.
- Sharma, D., and Sharma, R. (2019). A Review Literature on University Social Responsibility Initiatives in the Global Context. *Journal of Emerging Technologies and Innovative Research*, 6(6), 27-35.
- Sugimoto, C. R., Work, S., Larivière, V., and Haustein, S. (2017). Scholarly use of social media and Altmetrics: A review of the literature. *Journal of the Association for Information Science and Technology*, 68(9), 2037-2062.
- Thelwall, M., Haustein, S., Larivière, V., and Sugimoto, C. R. (2013). Do altmetrics work? Twitter and ten other social web services. *PLOS ONE*, 8(5), e64841.
- Torres-salinas, D., and Robinson-garcía, N. (2016). Can we use Altmetrics at the institutional level ? A case study analysing the coverage by research areas of four Spanish Universities. *Proceedings of the 21st International Conference on Science and Technology Indicators*, València (Spain), September 14-16. DOI: <https://arxiv.org/abs/1606.00232> (Accessed September 19, 2024).
- Toupin, R., Thom, S., and Kostoff, M. (2022). Training scholars to communicate research online: Effects on Altmetric visibility. *Journal of the Association for Information Science and Technology*, 73(8), 1085-1098. <https://doi.org/10.1002/asi.24609>
- Wasike, B. (2021). Citations Gone #Social: Examining the Effect of Altmetrics on Citations and Readership in Communication Research. *Social Science Computer Review*, 39(3), 416-433.
- Wooldridge, J. and King, M. (2018). Altmetric scores: An early indicator of research impact. *Journal of the Association for Information Science and Technology*, 70(3), 271-282.
- Zareivenovel M, Nemati-Anaraki L, Ouchi A, Nourizadeh M, Aghashahi M. Iranian Journal of Allergy, Asthma, and Immunology: A Bibliometric and Altmetric Analysis from 2005 to 2022. *Iran J Allergy Asthma Immunol*. 2024 Feb 11; 23(1):29-51. doi: 10.18502/ijaai.v23i1.14952.

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