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Characteristics of highly cited articles in management literature : Insights from the Academy of Management Journal

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This study analyzes the top 100 highly cited articles published in the Academy of Management Journal during the period 1985–2013, integrating bibliometric and altmetric indicators to reveal patterns of scholarly impact and research visibility. Leveraging data sourced from the comprehensive Web of Science database, a sophisticated array of analytical tools including Biblioshiny and HistCite were meticulously employed. Noteworthy findings unveil the heightened significance attributed to single-authored papers over their multi-authored counterparts, with a particular emphasis on the domain of Human Resource Management. Furthermore, a compelling negative correlation emerges between citation frequency and the number of authors involved. In addition, an insightful exploration into the social media landscape reveals blogs as the predominant platform, closely trailed by Policies. This seminal research offers profound insights into the nuanced dynamics of highly cited Management Literature, encompassing an intricate comprehension of scholarly communication trends and the changing impact landscape.

Keywords: *Highly cited articles, Scholarly publishing, Co-occurrence network, Altmetric, Citation score, Authorship pattern.*

Introduction

Bibliometrics is a quantitative research method used to analyze and measure patterns and trends within scholarly literature. It involves applying statistical and mathematical techniques to bibliographic data to gain insights into

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scientific knowledge's structure, growth, and impact. The primary goal of bibliometrics is to provide quantitative indicators and metrics that help evaluate the productivity, impact, and influence of researchers, publications, journals, and institutions. The present study employed bibliometrics techniques to evaluate the top hundred highly cited works of the Academy of Management. The Academy of Management has played a critical role in advancing the field of management and organizational studies, shaping the debates and discussions within the discipline, and contributing to developing new theories and approaches. Its influence can be seen in the work of many leading scholars in the field, and it continues to be a primary source of cutting-edge research in management today.

Theoretical Background:

The present study is theoretically grounded in Merton's normative theory of citation, which conceptualises citations as indicators of scholarly recognition and intellectual influence. Highly cited papers are considered representations of significant scientific contributions within a discipline. The study is further supported by Bibliometric indicators such as Authorship Pattern, International Collaborative Index (ICI) and Domestic Collaborative Index (DCI), Relative Quality Index, Global Citation and Local Citation Score, Normalized measures of Publications, Co-occurrence Network based on authors' keywords and Altmetrics techniques. These indicators are employed to measure authorship collaboration patterns, citation impact, country-wise productivity, quality and impact of scientific publications, thematic concentration and social media engagement of highly cited articles(HCA) in the Academy of Management Journal(AMJ). Together, these frameworks provide a robust theoretical basis for examining highly cited literature and mapping research trends of the AMJ.

Literature Review:

The study of highly cited articles (HCA) has been recognized as a widespread area of research across many disciplines and branches of knowledge. A literature search was carried out to retrieve HCA, resulting in a number of research papers with distinctive approaches. It was observed that studies have been conducted in different areas such as Medicine [1], Environmental and Occupational Health [2], Biochemistry and Biophysics [3], Library and Information Science [4, 5, 6, 7, 8], Material Science [9], Human systems Management [10], Knowledge Management [11, 12, 13], Kinesiology [14], Statistics [15], Psychology [16], Intelligent Transportation System [17], Sports [18], Software Engineering [19], Health Policy and Services [20], Environmental Sciences [21], Addiction Research [22], Medicinal Plants Research [23], Joint Arthroplasty Research [24], Insomnia [25], COVID-19 Vaccine Research [26]. Research has also been done to find out the trends and characteristics of HCA, such as Khan and Ho [27], focused on the merits and demerits of top-cited articles in environmental sciences. Abramoa, Cicero, and D'Angelo [28] conducted a study to assess whether the authors of HCA are also the most productive researchers. Abramoa and D'Angelo [29] made an attempt to rank the research organizations and countries by the

number of HCA per scientist and by the ratio of HCAs to total publications. Ribeiro and Atadeu [30] examined the HCA on Systematic Conservation Planning (SCP) with a focus on the temporal trends in the number of papers published in SCP, the geographic distribution of SCP authors, the ten most productive institutions in SCP, ten journals that published most of the highly-cited papers on SCP and the proportion of analytical studies by environmental realm. Giuffrida, Abramo, and D'Angelo [31] investigated whether all citations should be worth the same and have gone on to weigh them by various factors. This work of the authors takes an alternative approach to value the citations by the impact of the citing articles, regardless of the length of their reference list. Jelicic et al. [32] explored the research methodologies used in the most cited articles in the field of pediatrics and focused on the types of studies that become citation classics. Chen et al. [33] explored the interdisciplinary and the citation impact of HCA. Cunil et al. [34] emphasized how to accomplish a highly cited article in the tourism, leisure, and hospitality field.

Research on HCA has also been conducted based on different journals in order to map the academic journey of the journals in terms of topical trends and the impact of publications and to assess the intellectual impact of the journal. In this context, Price et al. [16] examined the top 100 most HCA as well as the 25 most HCA from 5 school psychology journals: *Journal of School Psychology, Psychology in the Schools, School Psychology International, School Psychology Quarterly, and School Psychology Review.* The authors focused on the general patterns found across these articles as well as the implications for reviewing these articles. Ahmed et al. [35] analyzed the attributes of 100 HCA published in the Journal of *Academic Librarianship* (JAL). Through their study, Luxenburg et al. [36] identified the most frequently cited articles published in the Journal of Arthroplasty (JOA). They analyzed the trends in the content and contributors of the literature within the journal. Arad, Pe'er, and Ofri [37] worked on the 100 most-cited articles published in the *Veterinary Ophthalmology* journal between 1998 and 2022 and provided insight into the impact of publishing in *Veterinary Ophthalmology* journal and a comprehensive understanding of the trends and the most influential contributions to the journal.

The study delved into the evaluation of journals within the "Strategy and Management" subject category using the SCImago Journal Rank (SJR) score as a benchmark. Notably, the investigation revealed that the AMJ journal has consistently held the top position in SJR scores for the consecutive years 2021 and 2022. Motivated by such journal specific studies on highly cited publications, the present research work has been modelled to provide the trends and characteristics of HCA of the Academy of Management Journal.

Research Gap:

Although the literature review indicates that extensive research has been published across disciplines and journals on highly cited publications, a gap in in-depth analysis of highly cited works within the management discipline has been identified. Existing studies have been based primarily on broad disciplinary analyses or evaluations of entire journals, which tend to obscure the unique characteristics of the most influential contributions.

Previously, citation analysis studies on AMJ have focused on the entire publication history of the journal, rather than on a systematic evaluation of the most cited articles, which ultimately raised inquisitiveness for further investigation into the top-notch articles of this elite journal [38]. This gap limits a deeper understanding of the high-impact production and maintenance of knowledge in management research. Thus, the current paper employs a narrowed-down bibliometric method to examine the top 100 most referenced articles in AMJ, with the specific purpose of determining the distinctive features of these works, the prevailing trends in the research, and the overall impact on the scholarly community.

Objectives of the Study:

The analysis of top 100 HCA of AMJ journal were carried out with the following objectives:

1. To examine the temporal distribution and document type
2. To study the authorship pattern in HCA
3. To explore the country wise distribution of HCA
4. To quantify the quality of scientific productivity
5. To investigate the thematic concentration HCA
6. To analyse the social media engagement of HCA
7. To study the correlation among bibliometrics variables

Materials and Methods:

Different tools and techniques have been used to analyze the top 100 articles of the Academy of Management Journal (AMJ). Biblioshiny and HistCite software were used for bibliometrics analysis. Python 3 was used to get an in-depth overview of the datasheet. The study used Bibliometrix, an R-based library package specially designed for Science Mapping. Biblioshiny, through its simplified web-based interface, facilitates its users to use the features of the Bibliometrix package. The study used the HistCite software to create the local citation network graphs. HistCite is a software specially designed for bibliometrics study on Web of Science (WoS) databases. The Matplotlib and Seaborn Libraries have been used in the Python 3 environment through the help of Jupyter Note Book Integrated Development Environment (IDE) to get the datasheet overview.

Data Retrieval:

WoS was selected due to its standardized citation indexing system, compatibility with bibliometric tools such as HistCite and Bibliometrix, and its established reliability in scientometric research. The meta-search was conducted using the publication title "Academy of Management Journal" as the criteria, yielding 2583 located publications up to December 2022. A sorting option of "Citation Highest First" was applied to refine the results, resulting in a descending arrangement of all publications. The bibliographic details of the initial 100 publications in this sorted list were considered for subsequent analysis.

Data Analysis and Interpretation:

The top 100 cited publications of AMJ include five categories of publication: Article, Note, Review, Article, Proceeding paper, and Editorial Material. Out of the 100 most cited publications, 82 were Articles, followed by Notes and Review papers, and the corresponding percentile is depicted in Figure 1.

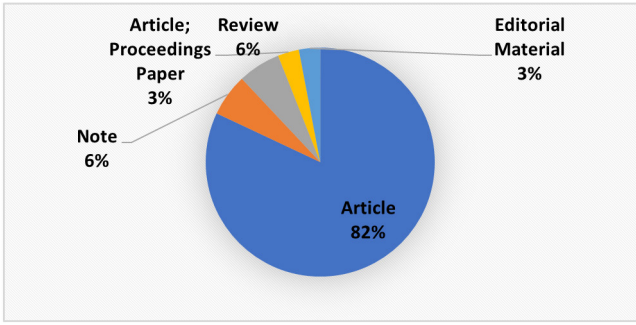


Figure 1

Types of Publications in Management Literature

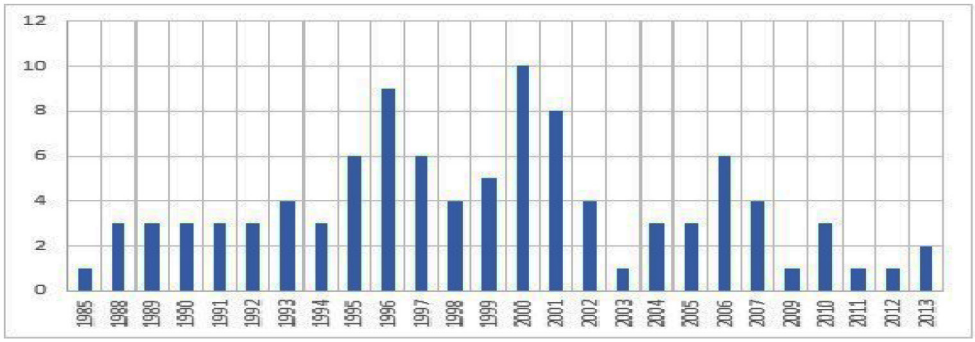


Figure 2

Growth of HCA in Management Literature over the Years

The study found that all the 100 top-cited articles were published across 29 years, i.e., between 1985 to 2013. It was noticed that the maximum number of highly cited publications were published in 2000, followed by 1996 and 2001. However, the other 23 years could also be treated as productive years, excluding the years 1986, 1897, and 2008. Year-wise growth of highly cited publications has been represented in Figure 2.

Authorship pattern:

Table 1

Authorship Pattern in Management Literature

Years	Single Au	Citations	ACPP	Double Au	Citations	ACPP	Au >=3	Citations	ACPP
Upto 1989	2	3094	1547	3	3219	1073	2	2545	1272.5
1990-1992	3	8314	2771.33	4	6288	1572	2	3323	1661.5
1993-1995	7	18742	2677.43	4	6436	1609	2	2435	1217.5
1996-1998	1	1387	1387	12	20022	1668.5	6	9631	1605.17
1999-2001	5	7776	1555.2	8	9877	1234.63	10	13580	1358
2002-2004	1	1124	1124	4	6811	1702.75	3	3763	1254.33
2005-2007	2	3470	1735	6	13980	2330	5	6352	1270.4
2008-2010	0	0	0	2	2740	1370	2	2649	1324.5
2011-2013	1	1694	1694	1	983	983	2	1963	981.5
TOTAL	22	45601	2072.77	44	70356	1599	34	46241	1360.03

As no such highly cited publications were produced in 1986 and 1987, the study divided the entire 29-year time span into nine blocks, each containing three years, except for the first block, which had five years. The study divided all 100 articles into three categories, such as single author, double author, and multiple authors, according to the number of authors who collaborate, to study the authorship pattern of the HCA. Table 1 represents the distribution of authorship pattern and citations across the blocks. The study found that a maximum number of highly cited works were published by the collaboration of 2 authors, followed by multiple collaborative and single-author works, respectively. The study noticed that a maximum of 7 single-author papers were published during 1993-1995, 12 of two authored papers were published during 1996-1998, and 10 multi-authored papers were published during 1999-2001. It is worth mentioning that despite the maximum overall double-author contribution, the Average Citation Per Publication (ACPP) value is highest for single-author work rather than collaborative works through a null contribution towards single-author works in the eighth block. Thus, single-author works may have more impact than collaborative works in the case of highly cited works (Table 1).

Country-wise Productivity:

The study has separated all the top 100 most cited works according to the author's country affiliation. Thus, the Total papers in Table 2 include local and international collaborative output. The study found that top cited works of AMJ were found across 12 countries. It was found that seven countries—namely the Netherlands, France, Taiwan, Finland, Israel, Cyprus, and South Korea—

contributed single publications to the top 100 HCA; therefore, these countries were clubbed together under the category "Other countries." The study further found that the USA topped the list by contributing the maximum number of papers (91), followed by Canada and England. The present study has tried to determine the international collaborative index (ICI) and Domestic Collaborative Index (DCI) for each country mentioned in Table 2. The ICI is a bibliometric measure that indicates the extent to which researchers collaborate internationally. The DCI is a bibliometric measure used to evaluate the degree of collaboration between researchers from the same country. The DCI can be used to assess the level of collaboration within a country's research community and compare the collaboration patterns of different countries [39]. The ICI and DCI were calculated by using the method suggested by [40].

DCI = ((Number of Domestically collaborated papers of a particular country)/(Total output of that country))/((Number of Domestically collaborated papers by all country)/(Total output of all countries))

ICI = ((Number of internationnaly collaborated papers by a particular country)/(Total output of that country))/((Number of Internationally collaborated papers by all country)/(Total output of all country))

Where DCI or ICI = 0 (Shows the collaboration correspondence to the world average)
DCI or ICI > 1 (Shows the collaboration higher than the world's average)
DCI or ICI<1 (Shows the collaboration lower than the world's average)

Table 2

Country-wise Collaboration Pattern in Management Literature

Country	Output	Collaborative Output	Domestic collaboration	International collaboration	DCI	ICI
USA	91	71	58	13	1.19	0.51
CANADA	10	8	2	6	0.37	2.15
ENGLAND	5	5	0	5	0	3.58
AUSTRALIA	3	3	0	3	0	3.58
CHINA	2	2	0	2	0	3.58
Others	7	7	3	4	0.8	2.04

The USA overwhelmingly dominates the output and has a higher-than-world-average Domestic Collaboration Index, reflecting the fact that its high-impact research is largely supported by strong intra-national networks of collaboration, with relatively little dependence on international collaboration. Countries with lower output, such as Canada, England, Australia, China, and those grouped under "Others," show strong ICI scores, implying that these countries increasingly endeavour to produce high-quality research through cross-border collaboration.

Relative Quality Index :

The Relative Quality Index (RQI) is a metric commonly used in bibliometrics studies to assess the quality and impact of scientific publications within a specific field or discipline. It compares the citation impact of individual articles, journals, or researchers by considering the average citation rates within a given reference set. Their RQI value can judge the quality of papers over the period. The RQI is defined by the proportion of the ratio of the fraction of citations for all the cited references in a given block to the fraction of citations for all the cited references of the concerned study. The measure of RQI indicates the high-quality papers in a given block of time. The present study used the formula suggested by [41] To calculate the RQI for each block.

RQI = ((Number of cited publications in a particular block)/(Total citations received in that block))/((Total Cited publications)/(Total Citations))

Where RQI>1 (Shows average citation is more than the overall average citations)
RQI<1(Shows average citation is less than the overall average citations)

Table 3

Relative Quality Index

Years	No. of Citations	Cited Reference	RQI
1985-1989	8858	296	0.763815
1990-1992	17925	690	0.879877
1993-1995	27613	798	0.660574
1996-1998	31040	1410	1.038315
1999-2001	31233	1521	1.113134
2002-2004	11698	694	1.356063
2005-2007	23802	804	0.772102
2008-2010	5389	374	1.586336
2011-2013	4640	509	2.507446

Table 3 represents the distribution of RQI values across the studied period. The study noticed a constant increase in the RQI value during the studied period, but a slight deviation was noted during 1993-1995 and 2005-2007. The RQI value was low during 1993-1995. The value of RQI was highest during 2011-2013. As a result, the AMJ has seen an upsurge in the number of high-quality papers over the past year.

Global Citation Score and Local Citation Score:

A data sheet was prepared to process the data through the HistCite software to study the citation metrics for the present study. Year-wise local citation score and global citation score were analyzed for each of the papers. The ***Local Citation Score*** (LCS) is defined as

the number of citations received by a paper within a collection, whereas the ***Global Citation Score*** (GCS) is defined as the citations received by citing papers across all databases [42]. Table 4 represents the distribution of LCS and GCS in different year blocks. Figure 3 represents the interconnected nodes in local citation network. The LCS was highest from 1996 to 1998, and the GCS was highest from 1999 to 2001. The LCS score was 0 during 2011-2013. The study analyzed the cited references of all the papers and found a total of 5287 cited references were used by the top 100 most cited papers of AMJ. The study noticed a total of 63 papers were locally cited. It is also observed that 63% of HCA in the present study are somehow responsible for the top 100 most cited papers.

Table 4

Local Citations and Global Citations over the period

Year	Total Records	LCS	GCS
1985-1989	7	26	8700
1990-1992	9	19	17367
1993-1995	13	39	26660
1996-1998	19	41	30028
1999-2001	23	15	30296
2002-2004	8	9	11344
2005-2007	13	9	23121
2008-2010	4	1	5161
2011-2013	4	0	4533

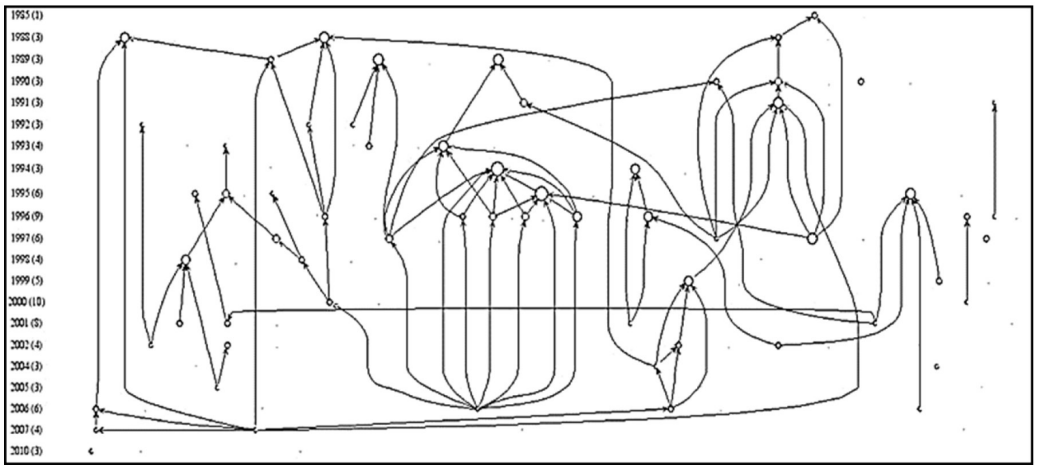


Figure 3

Local Citation Network in Management Literature

Correlation:

The study aimed to analyze the characteristics of the top 100 cited articles through a correlation study. However, the limited sample size might introduce bias in the correlation results. To address this, the study employed normalized measures for the variables under examination. In this study, the normalized measure is defined by the value of each variable for a single publication during a time block. Thus, normalized measures represent the value of all four concern variables for a single publication published during a particular time block. Thus, the total citing periods were divided into nine blocks, as previously discussed, and each block was assigned a numerical value in ascending order (e.g., the first time block, 1985-1989, designated as 1, and so on). The study focused on four variables: Cited Reference Count, Number of Pages, Times Cited in All Databases, and Number of Authors. Normalized measures were taken for these four variables in the correlation analysis. The study determined the normalized values of the abovementioned variables for each publication in each time block. The Cited Reference Count, Number of Pages, Times Cited, and Number of Authors were calculated for each publication in the first time block, and the same processes were repeated for all the other time blocks. The resulting values were obtained by dividing the number of publications by each of the four variables, providing a comprehensive perspective for each publication within its respective time block.

Normalized Measures:

Table 5 represents the normalized measures of each publication under each time block. Table 5 shows that the cited reference count per publication is highest in the last block. However, the number of pages per publication is highest during the second block, and the number of citations per publication is highest in the third block. The number of authors per publication is highest during the last block, followed by the fifth and eighth blocks.

Table 5

Normalised Measures in Management Literature

Time Block	No of Publications	Cited Reference Count	No. of Pages	Times Cited, All Databases	No. of Authors
1	7	42.29	25.14	1265.43	2
2	9	76.67	29.22	1991.67	1.89
3	13	61.38	25.62	2124.08	1.62
4	19	74.21	24.05	1633.68	2.47
5	23	66.13	16.48	1357.96	2.52
6	8	86.75	17.63	1462.25	2.38
7	13	61.85	15.23	1830.92	2.23
8	4	93.5	19.25	1347.25	2.5
9	4	127.25	25.5	1160	2.75

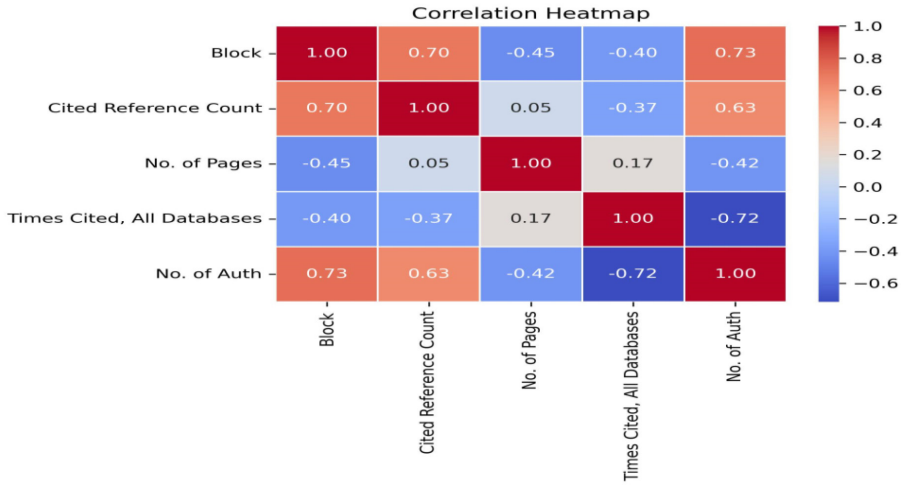


Figure 4

Correlation Heatmap-1

Figure 4 represents the correlation matrix between the variables represented in Table 5. The study used Spearman's rank correlation coefficient (ρ) to determine the variables' relationships. Spearman's correlation, also known as Spearman's rank correlation coefficient, is a statistical measure that quantifies the strength and direction of the nonlinear monotonic relationship between two variables [43]. It is often used when the relationship between the variables is not expected to be linear**.** Spearman's correlation coefficient (ρ) ranges between -1 and +1. A perfect negative monotonic correlation has a value of -1, suggesting that when one variable rises, the other variable continually falls. An ideal positive monotonic correlation has a value of 1, meaning that while one variable increases, the other rises concurrently. No monotonic association between the variables is indicated by a value of 0.

The research observed a strong positive correlation between the number of blocks with cited references and the number of authors. Consequently, it is reasonable to infer that both cited reference counts and the number of authors per publication increase over time, representing multi-authorship trends for highly cited publications. A pronounced negative correlation becomes evident when examining the number of citations across all databases in relation to the number of authors. A moderately positive correlation between the cited reference count with the number of authors reflects that the increase in multi-authorship tends to increase in the use of cited reference count in publications.

Co-occurrence Network based on Authors keywords:

The co-occurrence network represents the relationship among different keywords. The authors' keywords were input in Biblioshiny to produce the co-occurrence network. Figure

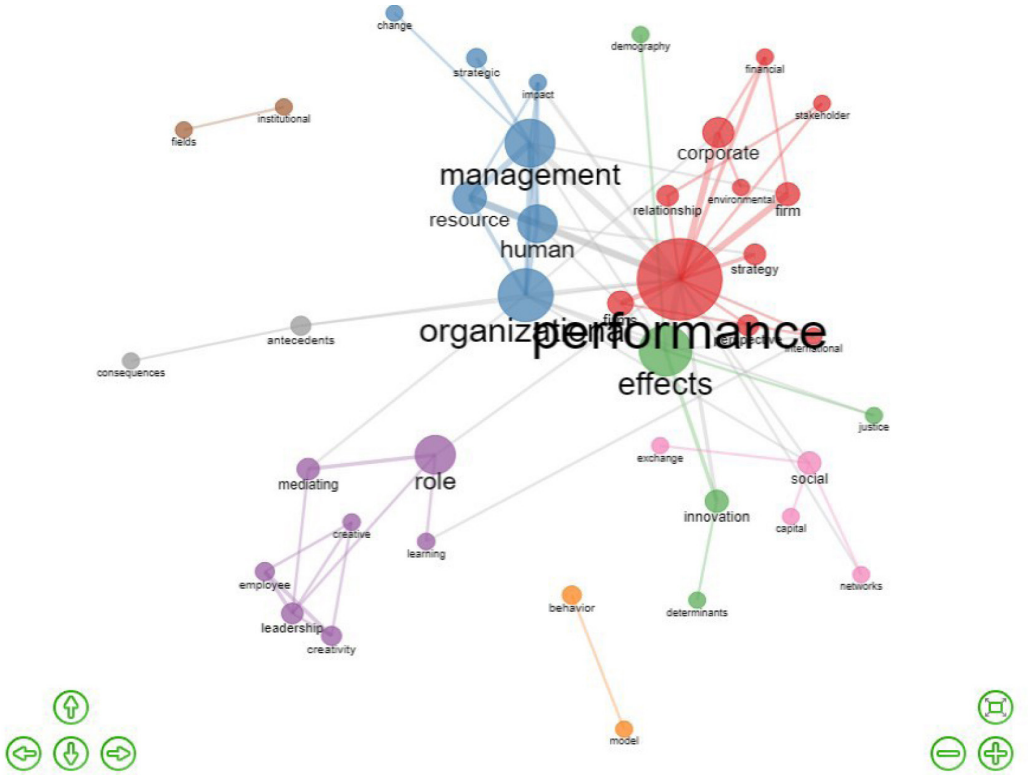


Figure 5

Co-occurrence Network of Authors' keywords

5 illustrates the co-occurrence network created with eight clusters using the authors' keywords. Each cluster consists of different nodes, and different colors represent each cluster. The size of the nodes represents the frequency of the words. Each node is connected with other nodes, and the connected nodes represent the association between different words in Management Literature. Out of the total 8 clusters, the red cluster is the most significant, followed by the blue and green color clusters. Brown and yellow color clusters are the smallest clusters, each having two nodes. The largest node of the most significant cluster is titled "performance," which is connected with the other nodes, namely, "organizational", "human", "resource", and "management". The node "Performance" is also connected with the largest nodes of the other clusters, such as "Role" and "Effect".

Trending words in Management:

Titles of the top 100 most cited works were taken as input in Biblioshiny by setting the minimum word frequency at five and the number of words per year at 5 to get the trending title keywords. The frequency of the keywords was represented by the circles of different

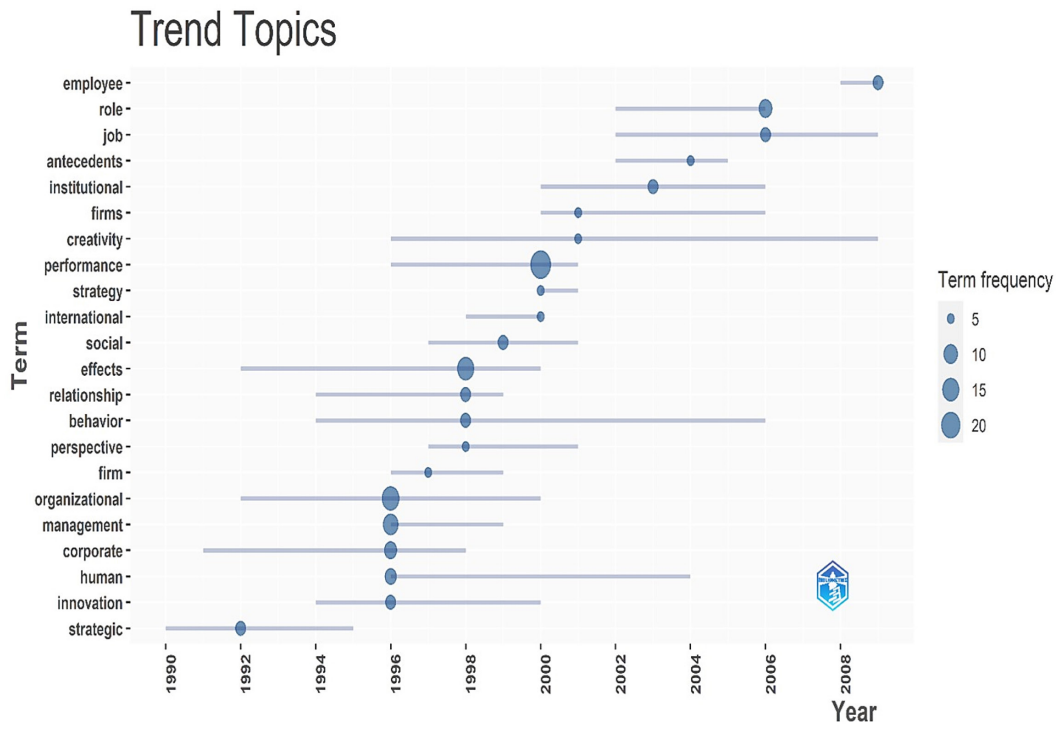


Figure 6

Trend Topics in Management Literature

sizes [44]. Figure 6 illustrates the title keywords along with their occurrence year and frequency. Though the most cited works of AMJ were spread across 29 years, i.e., between 1985 to 2013, no such frequently used words were found from 1985 to 1991 and 2009 to 2013. The term "strategic" was used five times in the titles published in 1992. The minimum frequency was set as 5, i.e., Figure 5 Only shows the keywords that were used a minimum of 5 times. The word "employee" was used five times in the titles published in 2008. The term "performance" was the most used in the titles of the top 100 cited works, and the occurrence of the word "performance" in the titles was found during the year 2000. Five of the most frequently used words were found during 1996, out of which words like "organizational" and "management" were primarily used in the titles.

Thematic Evolution:

Figure 7 illustrates the thematic evolution of authors' keywords. These four different themes have been deduced by the intersection of 2 axes, viz. Centrality and Density. The upper right quadrant is called the Motor Theme, which has a higher value of centrality and density. The motor theme represents the most mature topics with relevant content in the

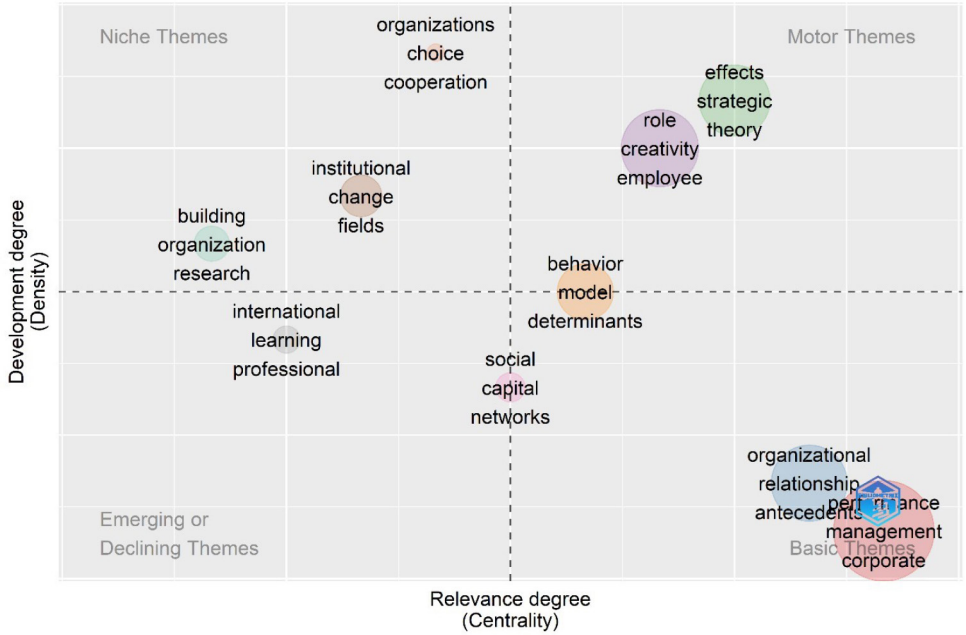


Figure 7

Thematic Evolution of Management Literature

given literature. The upper left corner is called the Niche Theme, which is low on centrality and high on density; thus, this theme represents already developed areas in the field but marginalized areas in Management Literature. The lower-left corner represents the Peripheral theme, which is low on centrality and density; thus, the topics in this area are either emerging, less researched, or marginalized areas in Management Literature. Similarly, the lower right corner is a primary theme, high on centrality and low on density. Thus, it represents fundamental topics in the given literature.

HCA on the lens of altmetrics:

Social media metrics, or altmetrics, have emerged as a valuable tool for assessing the impact of scholarly research. Altmetrics provides alternative metrics beyond traditional citation-based metrics, capturing the social media and online attention garnered by the researchers. These metrics encompass various impact dimensions, including mentions, downloads, views, likes, shares, and discussions on different platforms like Twitter, Facebook, and blogs [45, 46]. Altmetrics offers several advantages over traditional metrics. Firstly, they provide a more immediate impact assessment by capturing real-time interactions and discussions shortly after publication [47]. Secondly, altmetrics capture a broader range of impact beyond scholarly circles, revealing how research resonates with the public, policymakers, and the media [48]. Altmetrics allow researchers to understand the reach and visibility of their work, foster collaboration, and make informed decisions.

As the scholarly landscape evolves, altmetrics play a crucial role in evaluating research impact in the digital era, providing researchers and institutions with a powerful tool to assess the broader dissemination and influence of scholarly outputs.

In the present study, the data was retrieved from *www.Altmetrics.com*. The altmetrics data were called with an Application Programming Interface (API) on Google Sheets by writing the suitable API code on the App Script of Google Sheets that are available on the Extension option of the Google Sheet. The present study did not get any DOI for five publications published during 2005, 2006, and 2007. A total of 19 DOIs were not indexed on Altmetrics.com; thus, no data were found for those 19 DOIs. Hence, data from 23 (19+5=23) publications were not found on Altmetrics.com.

The individual altmetrics mentions of all the 77 highly cited publications have been mentioned in Figure 8. It is clear from Figure 8 that highly cited publications of AMJ have maximum mentions over Blogs, i.e., 53.8%. Thus, it suggests that the highly cited publications in Management Literature get utmost attention through the blog posts. Similarly, the policymakers take highly cited publications as references for making new policies, as the score suggests 17.9%. A moderate level of engagement can be noticed on Twitter, as the score is 6.8%. The 9% and 9.4% scores on MSM and Wikipedia, respectively, indicate that the research has been reported or referenced in news articles, magazines, or other media outlets and integrated into Wikipedia pages, reflecting its significance and impact beyond academia. The other includes the altmetrics scores over various platforms such as gplus, patents, qna, videos, and Peer_review_site.

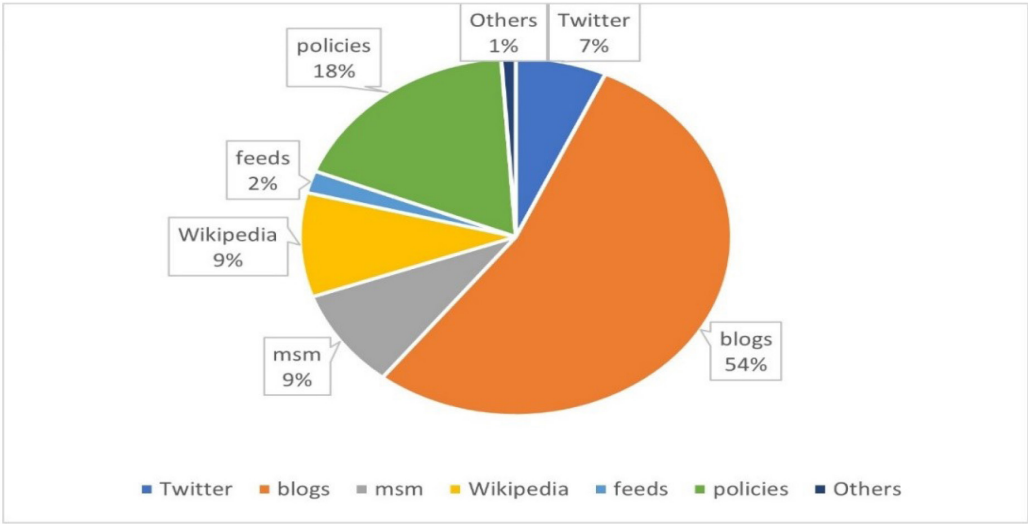


Figure 8

Altmetrics trends in Management Literature

Table 6 shows the overall altmetrics scores of publications published during the time blocks and their citations and cited references. The overall altmetrics score was highest for the publications published during 1999-2001, followed by the publications in1993-1995, i.e., 148. The score for the block during 1996-1998 was 146. The overall altimetric score was lowest for the papers published from 1985 to 1989.

The study tried to find a correlation between the overall altmetric score, no of citations, and cited references. For this purpose matplotlib library in Python 3 is used. Figure 9 represents the correlation among these variables. Overall altmetrics score is positively correlated with no citations and cited references. A highly positive correlation can be found between cited references and no citations.

Table 6

Altmetrics Scores in Management Literature in Different Time Blocks

Year	Overall Altmetric Score	No of Citations	Cited References
1985-1989	16	8858	296
1990-1992	136	17925	690
1993-1995	148	27613	798
1996-1998	146	31040	1410
1999-2001	191	31233	1521
2002-2004	136	11698	694
2005-2007	69	23802	804
2008-2010	108	5389	374
2011-2013	60	4640	509

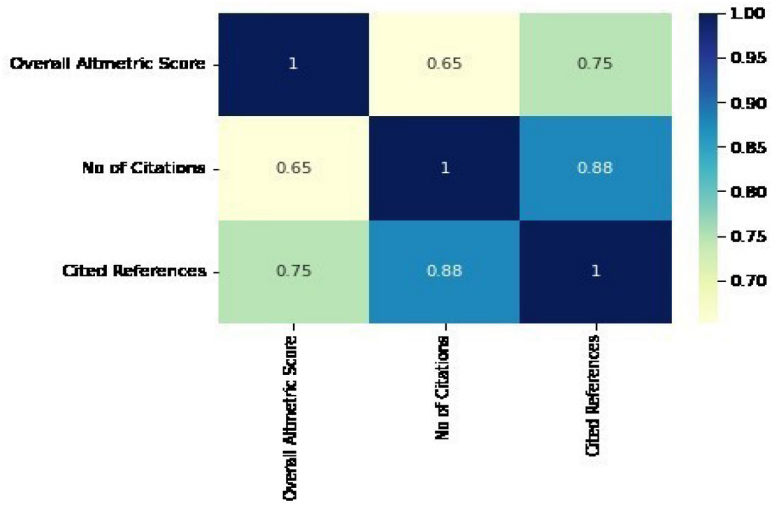


Figure 9

Correlation Heatmap-2

Table 7

Individual Altmetrics Scores of Top 10 Publications

Year	Title	Twitter	Blogs	tMsm	Wikipedia	feeds	Policies	Others
2003	When the show must go on: Surface acting and deep acting as determinants of emotional exhaustion and peer-rated service delivery	1	23	12	7	1	0	0
1990	Psychological conditions of personal engagement and disengagement at work	4	25	8	8	1	1	1
2010	Job engagement: antecedents and effects on job performance	0	18	7	0	2	1	1
1995	The impact of human-resource management-practices on turnover, productivity, and corporate financial performance	10	35	3	1	0	9	4
2013	Inside the hybrid organization: selective coupling as a response to competing institutional logics	1	8	5	0	0	1	1
1995	Affect-based and cognition-based trust as foundations for interpersonal cooperation in organizations	1	6	4	1	0	0	0
2000	Consequences of abusive supervision	0	18	2	14	1	1	0
2010	Building sustainable hybrid organizations: the case of commercial micro finance organizations	0	5	2	0	1	1	0
2001	Why people stay: Using job embeddedness to predict voluntary turnover	0	6	0	1	1	4	0
2006	Constructing professional identity: The role of work and identity learning cycles in the customization of identity among medical residents	0	3	3	0	0	0	0

Table 7 Represents the individual altmetrics scores of the top 10 publications across various platforms. The "Others" category in Table 7 compiles altmetrics scores from platforms with limited representation. It encompasses altmetrics scores from peer review sites, Facebook walls, videos, and Google Plus (g+). The process began by sorting the top 10 publications based on their overall altmetrics scores. The DOIs of these top 10 publications were then recorded in a Google Sheet, and their individual altmetrics scores were acquired through the utilization of an API within the same Google Sheet. The data presented in Table 7 unequivocally demonstrates that the top ten most extensively referenced publications, determined by their overall altmetrics scores, were prominently featured in blogs. Notably, the publication titled "The Impact of human-resource Management Practices on Turnover, Productivity, and Corporate Financial Performance," was published in 1995, achieved the highest score not only in the blogs category but also secured the highest scores in the Policies and Twitter categories. Moreover, the publication with the highest overall altmetrics score, entitled "When the Show Must Go on: Surface Acting and Deep Acting as Determinants of Emotional Exhaustion and Peer-rated Service Delivery," published in 2003, attained the highest score on blogs (23). Following this, it received scores of 12 on MSM, seven on Wikipedia, one on feeds, and one on Twitter. Interestingly, only one publication, "The impact of Human Resource Management Practices on turnover, productivity, and corporate financial performance," received a score on Facebook. Similarly, there was only a solitary instance of a publication, "Psychological Conditions of Personal Engagement and Disengagement at Work" obtaining a score on Videos.

Findings:

1. The study observed that the top 100 most HCA in the AMJ were published from 1985 to 2013. Among these highly cited works, a majority were in the form of journal articles. It suggests that scholarly communication in the Management Literature is predominantly conducted through journal articles. The years with the highest number of highly cited works were primarily around 2000, closely followed by 1996. Throughout the examined timeframe, the study identified a notably modest growth rate. However, an analysis of the RQI data indicates that the papers published within the 1985 to 2013 period had a more significant impact than other papers.
2. The research revealed that while multi-authored papers constitute the largest share in terms of overall paper count and cumulative citations within the category of multi-authored papers, the average citation per publication for single-authored papers surpassed that of multi-authored ones. It suggests that single-authored papers carry a higher average quality value compared to multi-authored papers, indicating a greater significance attributed to single-authored contributions.
3. This research performed a citation analysis on the top 100 HCA, identifying 5287 references used. It also examined local citation patterns, showing that other works

referenced 63% of these papers. Notably, the "Impact of Human Resource Management" area received significant attention among the local citations.

4. The present study used new normalized measures to conduct a correlation study among the variables. The study found a highly negative correlation between number of citations received and number of authors. It is worth mentioning that a significant positive correlation was observed between both time and cited references, as well as time and the number of authors. Thus, it can be comprehended that with an increase in time, the number of authors and cited references also increased.
5. This study aimed to assess the presence of the top 100 most highly regarded works on social media. Out of these 100 works, data was available for 77 papers. The research revealed that Blogs had the highest social media presence, followed by Policies. Notably, among the top 100 publications, those published between 1999 and 2001 exhibited greater social media activity than others. Additionally, the study conducted a correlation analysis among various variables such as "overall altmetrics score," "Number of citations," and "Cited references." The results indicated a strong positive correlation between the "overall altmetrics score" and both "cited references" and the "number of citations." It suggests that the social media visibility of highly cited works in AMJ is influenced mainly by the quantity of references used in the work and the number of citations they receive.

Discussion and Conclusion:

The current research's primary objective was to comprehensively analyze the top 100 most cited publications in management discipline. A diverse set of bibliometric tools and techniques have been employed. Furthermore, the study has integrated Altmetrics techniques to assess the social media visibility of the highly cited AMJ publications. The AMJ is regarded as a highly prestigious journal in Management disciplines, which devoted its scope to building up a new system and theory of management. Thus, there is a significant curiosity in comprehending the impact of the highly cited works in this journal on the larger academic community, especially within the realm of management. The study follows a descriptive approach, delving into the nature and characteristics of the top 100 highly cited publications from the AMJ. The initial segment of the research on quantitative analysis of these highly cited publications encompasses studies on authorship, growth rates, and country-specific productivity. Subsequently, the study transitions to a qualitative exploration of the top 100 highly cited works, primarily concentrating on the evolution of terminologies and language within these works. The third part of the study was to inspect the social media presence of these top 100 highly cited publications. Further, the present research also employed a correlational study to showcase the correlation among various variables of Management Literature. As the study highlights the significance of influential works in management, researchers can draw insight from these findings to target their contributions effectively. By aligning their work with the themes and trends identified, researchers can enhance the relevance and impact of their studies. The present study's

potential as a methodological and conceptual reference can empower researchers to conduct high-quality, impactful research in the management field. By building upon the insights, methodologies, and analytical approaches presented, scholars can advance the boundaries of knowledge and contribute meaningfully to the academic community.

Limitations and Future Research Directions:

The study adopted a systematic and multidimensional approach to assess the 100 most cited publications of the AMJ. While this approach provides significant insights into influential contributions shaping management scholarship, certain limitations must be acknowledged. First, although AMJ holds a premier position in management research, focusing exclusively on this journal may overlook highly influential works published in other leading management journals. Second, focusing on the top 100 most cited AMJ articles may miss much less cited studies with important theoretical and/or practical contributions. Third, the study relies exclusively on the WoS database for data retrieval. Although WoS provides standardized citation indexing and high-quality bibliographic records suitable for scientometric analysis, reliance on a single database may exclude highly cited works indexed in other bibliographic sources such as Scopus or Google Scholar. Differences in database coverage, citation indexing policies, and journal inclusion criteria may influence citation counts and rankings. Future research may therefore extend this work by incorporating other databases for comparative validation, including additional top-ranked management journals, and expanding the dataset beyond the top 100 articles to provide a more comprehensive assessment of highly cited Management Literature.

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