A nine-year (2012-2020) study of publication delay in an open access Library and Information Science journal

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ABSTRACT

This study attempts to map the publication delay of articles published in an international, peer-reviewed, open access Library and Information Science journal (LIS) i.e. the DESIDOC Journal of Library and Information Technology (DJLIT). An exploratory method was applied to collect data related to the editorial timeline through archival open access to the articles published in DJLIT during the period from 2012 to 2020. Data were tabulated in an Excel spreadsheet to facilitate statistical analysis and interpretation. The study finds a mean and median waiting time of approximately 176 days and 152 days respectively for articles before they got published. About 64.57 percent of articles went through revision. The majority of articles (i.e., 40.08%) experienced a delay between 100-199 days and were closely followed by 26.11 percent of articles with a delay of up to 99 days. Only 2.43 percent of articles fell in the 400-499 days delay category before being published. A strong influence of time between submission to final revision on overall publication delay was observed. The study did not find any correlation between the number of contributing authors and increasing delay in publication and contradicts the result obtained in another study on selected information science journals. The study is expected to help researchers and authors in the field of LIS to take informed decision before submitting their manuscripts to DJLIT for publication.

Keywords: Publication delay; Editorial timeline; Manuscript revision; Submission queue; Single journal studies.

INTRODUCTION

Publication of research articles in scientific journals is a lengthy process where cooperation between author(s), reviewers and editorial team is the essential prerequisite for successful completion of a journey that starts with manuscript submission and ends with final publication as a journal article, either in print or online version, or both. The passage of a manuscript through a journal editorial environment is a complex one where at each stage the suitability of the manuscript is critically verified before being sent to the next stage. The process traditionally starts with the editor's preliminary review to ascertain whether the subject matter of the manuscript falls within the scope of the journal along with an acceptable level of language clarity and a check for essential criteria that a manuscript is supposed to fulfill before its first submission. For this, an authoritative checklist such as the one recommended by the International Committee of Medical Journal Editors (ICMJE 2023) might come in handy to understand this stage.

In this respect, editorial policy differs from one journal to another. This is the first filter where several manuscripts get rejected and the other manuscripts are considered for single or multiple rounds of peer review as the case may be. All these actions are time-consuming and demand intense intellectual application as journals have been one of the most preferred channels of communication for exposing critical, crucial research output to the scholarly community. Any delay in any stage of this editorial process increases the overall time for a manuscript to see the final daylight as a journal article and thereby adversely affecting the contemporariness of the article. Additionally, the "publish or perish" phenomenon, originally coined by Coolidge in 1932 (Coolidge and Lord 1971) and defined by the Oxford Reference (2023) as "an attitude or practice existing within academic institutions, whereby researchers are under pressure to publish material in order to retain their positions or to be deemed successful"[1], which although associated with professional reputation, salary, and job mobility of faculty, is also responsible for heightened stress levels; the marginalization of teaching (more time devoted to preparation and revision of manuscripts than teaching); and research that may lack relevance, creativity, and innovation (Miller, Taylor and Bedeian 2011). Hence, a long publication delay may indirectly deny a faculty the due promotion for which submission of the proof of a certain number of publications within a stipulated time frame is a prerequisite. So, along with the reputation of a journal, it is of paramount importance to have the knowledge of publication delays in that journal before considering it for manuscript submission. To illustrate how authors could take an informed decision about selecting a journal for submission of research articles for publication, an effort has been made to assess the trend of delay in the editorial process of an open access journal that endeavours to bring recent developments in information technology, as applicable to Library and Information Science (LIS) by investigating the editorial timeline provided with published articles.

LITERATURE REVIEW

Research publication is widely considered as a critical factor for evaluating academic achievements of a researcher (Glick 2016; Rawat and Meena 2014) as well as first hand authentic communication of a breakthrough in a frontier of research or any intermediate stage of a research project, much of which would determine the future course of action. Thus, a lot of issues would be at stake if there is any delay in research publication and communication.The time span from submission of a manuscript to a peer reviewed journal to its subsequent publication may be divided into three distinct phases, (a) the time from submission to the first decision, (b) the time needed for the authors to revise, and (c) the time from acceptance to publication (Sharman 2012). Delay covering the aforesaid phases may be categorised into two i.e. acceptance delay (time from submission to acceptance) and publication delay (time from acceptance to publication) (Charen et al. 2020).

Manuscripts written in poor English language (that the merit cannot be assessed), inconsistency in format, incomplete references, and not following the instructions to authors are some of the reasons behind desk rejection (Jafary and Jawaid 2006). The decision to desk-reject a manuscript would take time and the delay varies from journal to journal depending on the workload of the editorial teams. Normally quick desk-rejections do not require reviewers to be involved (Bilalli, Munir, and Abelló 2021). Collaborative writing with multiple authors may float myriad challenges in terms of varied levels of

[1] See https://www.oxfordreference.com/display/10.1093/acref/9780198845621.001.0001/acref-9780198845621-e-1975

engagement of contributing authors, diversity of work style, geographical separation from one another, lack of leadership quality of corresponding author, miscommunication, and varied levels of work pressure. The inability to come to a consensus decision may lead to poor manuscript drafting, unnecessary delay in first submission, manuscript revision and resubmission, either desk-rejection or rejection at review level, and frustration, and if selected then inordinate delay in final publication (Frassl 2018; Raff 2003; Taşkın et al. 2022).

Manuscript review process has the notoriety of being painfully slow and lacks in transparency in the sense that instead of providing information about the duration of the review process at more granular levels, it is commonly supplied in an aggregated manner (Bilalli, Munir, and Abelló 2021).

Xu, An and An (2021), while researching on the influence of editorial board members on publication delay when the members themselves publish in their own journals, found that board members' publications have shorter publication delay than non-board members and in addition, the academic articles by board members have more influence on average in term of citation counts.

Overall publication delay has been found to be strongly influenced by the total time taken by the peer review process. Given the voluntary nature of work of reviewers and without significant recognition, it remains a challenging task for editors to maintain and retain a pool of appropriately skilled reviewers. Indeed, there are certain subject areas for which scarcity of reviewers is highly visible. In such a situation to clear the backlog of submitted manuscripts, peer reviewers are shouldering tremendous burden and hence the delay (Nunan 2021). High quality papers help reviewers to make faster and more reliable decisions and upon publication these papers would likely to attract more citations. So, it may be possible that there exists a correlation between editorial delay time and number of citations received by the paper. Lin, Hou and Wu (2016), while working with all academic papers published in *Nature, Science* and *Physical Review Letters,* came to the conclusion that on average papers with shorter editorial delay do have larger probabilities of becoming highly cited papers.

Resorting to advanced online publication before the formal publication of printed counterpart has the advantage of shortening the time between reception and final publication of papers and thereby a chance to ramp up research dissemination (Carlos 2008). Online publication utilizes network centric channels for different stages of editorial formalities. This could explain strong association of online publication with reduced submission-to-publication time and in turn may guide a researcher to select journals with online publication over print publication (Sebo et al. 2019). On the other hand, with the proliferation of different digital publishing platforms, today, it is now possible to disseminate research outcomes to larger peer groups prior to peer review and formal publication in a journal. The ArXiv preprint server is arguably the best example of such platforms which is being frequently used by authors from physics and related disciplines to expose their research immediately online to a large audience in a citable and trackable manner along with feedbacks for improvement (if any) prior to conventional journal submissions (Flemming 2016).

Shortening the turnaround times of academic journals may help editors to speed up the overall publication process. But this advantage may turn into a number of disadvantages such as increased submission of low quality papers, increased workload of editors and

reviewers and increase in the number of rejections prior to publication. To tackle these difficulties Ofer (2006) proposed higher submission fees, withdrawing submission privilege of papers after a certain number of rejections, differential editorial delay in terms of more waiting time for low quality papers, and improving the review process efficiency.

Overall publication delays in scholarly journals vary depending on the disciplines they serve and from one journal to another journal even within a discipline (Garg and Kumar 2020; Christie et al. 2021). Different publishers need to be factored in the estimation of average delay as average delay varies for different publishers even when they publish journals on the same subject (Das and Das 2006). Research publications in prestigious journals are the dream of research scholars belonging to different geographical locations, socio-cultural and religious beliefs. As a considerable number of prestigious journals are published in English language and of Anglo-American origin, it is prudent to investigate whether the submissions from non-Anglo-American world experience any bias against. To this end Loonen (2005)'s evaluative study could not find any bias against non-Anglo-American submissions and the implicit delay was limited.

Now, it is intriguing to investigate if there exists any significant influence of publication delay on the impact factor of a scholarly journal. Higher impact factor journals attract a large number of submissions, a significant trait that goes with remarkably high rejection rates and a relatively quicker movement of the selectively chosen manuscripts from submission to the acceptance stage. So, any delay from submission to acceptance in the high impact factor journals tends to have a negative association with the impact factor (Pautasso and Schäfer 2010; Yu and Lee 2007). Contradictory results are also evident (Tort, Targino and Amaral 2012). Khosrowjerdi, Zeraatkar and Vara (2011), while studying the publication delay of twenty-six Iranian scholarly periodicals published in Persian, did not find any significant relationship between the delay and the periodicals' impact factors as presented by the Islamic World Science Citation Centre. Guo, Xiaoxiao and Yugang (2021) while conducting a study on publication delay adjusted impact factor (PDAIF), found that PDAIF would bring a greater impact factor increase for journals with longer publication delay. Shi et al. (2017) examined three journals in information science namely the *Journal of Informetrics, Scientometrics,* and the *Journal of the Association for Information Science and Technology* (JASIST) and discovered that one journal's impact factor is dependent on other journals' publication delays.

It is not possible to get details about duration of the first review round, total review duration, immediate rejection time, the number, quality, and difficulty of referee reports, the time it takes authors to revise and resubmit their manuscript, and overall quality of the experience from each of the published articles as rarely journal publishers reveal that level of granularity (Björk and Solomon 2013). Delay of any kind in this workflow induces stress in a researcher (Teixeira da Silva and Dobránszki 2017) and excruciating slow progress cause frustration (Chaitow 2019). If available, an analytical insight into review experiences of authors could throw light on how scientific fields differ from each other in these aspects. Huisman and Smits (2017) extracted information on the above parameters from SciRev.sc website and analysed to conclude that clear differences exist in these aspects between scientific fields, with Medicine, Public health, and Natural sciences showing the shortest durations and Mathematics and Computer sciences, Social sciences, Economics and Business, and Humanities the longest. Naturally, authors rate shorter peer review processes and those of accepted papers more positively.

A thorough search in Google Scholar and Library Information Science and Technology Abstract (LISTA) could not fetch any publication delay study on LIS journals from Asia. Being one of the most sought-after journal platforms for publication of research related to various facets of Information Communication Technology (ICT) application in libraries (in South Asian and especially in Indian context), it is quite intriguing to have an idea about the movement of a manuscript from submission to its final publication, and for this reason a study on the publication delay of *DESIDOC Journal of Library and Information Technology* (DJLIT) was undertaken to bridge the gap.

About DESIDOC Journal of Library and Information Technology (DJLIT)

DESIDOC Journal of Library and Information Technology (DJLIT), an international, peer-reviewed, open-access journal, started its maiden voyage in the year 1981 with the title *DESIDOC Bulletin* (Bansal 2013) and published by Defence Scientific Information & Documentation Centre (abbreviated as DESIDOC). From 1985 onwards the frequency of the *DESIDOC Bulletin* was changed and it became bi-monthly with coverage of other technical information centres and libraries of the Defence Research and Development Organisation (DRDO). In the initial years, the motto of this bulletin was to publish library activities, translations, meetings, courses organised, papers published by Defence Scientific Information and Documentation Centre (DESIDOC) personnel, and other activities related to DESIDOC. Articles started appearing in 1985 issues onwards. The title of this bulletin was changed in January 1991 and renamed the *DESIDOC Bulletin of Information Technology.* The second title change came in the year 2008 following the suggestion of the editorial board meeting to rename the bulletin as *DESIDOC Journal of Information Technology* (Kumar, Bansal and Kanungo 2014). The journal touched another milestone when in 2007 the whole editorial and publication process migrated into an Open System Software environment. At present, the journal accepts and publishes research and review papers on information technology applications in library activities, services, and products. The journal is listed in Web of Science Core Collection under Emerging Sources Citation Index (ESCI) and is also indexed in Scopus, LISA, LISTA, EBSCO Abstracts/Full-text, Library Literature and Information Science Index/Full-text, The Informed Librarian Online, DOAJ, OpenJ-Gate, Indian Science Abstracts, Indian Citation Index, Full text Sources Online, WorldCat, Proquest, and OCLC. The growing importance of this journal internationally was reflected in two different bibliometric studies carried out at two different points in time. Pandita (2014) in his study (2003-2012 timeframe) found contributions from 22 different countries whereas Singh and Kumar (2021) during the 2010-2019 timeframe, observed contributions from 33 countries scattered all over the world (excluding India).

OBJECTIVES AND HYPOTHESES

To examine the extent of publication delay of DJLIT, the current study investigate:

a) The overall average time taken by any article to get published in the journal and the minimum and maximum time taken by articles in a volume.

b) To calculate the period of delay under which the majority of articles have fallen.

c) To examine whether overall publication delay had any dependency on the number of contributing authors of an article.

d) To investigate the stage of the editorial timeline that had the maximum influence on the overall prolongation of the time of travel of articles from submission to final publication in the journal.

Hypotheses

1. Overall publication delay was dependent on the number of contributing authors for a multi-authored article, i.e. larger the number of contributing authors, the longer the time taken to revise their article (in case of a revision).
2. The time taken from submission to completion of the final revision of an article had the strongest influence on the overall publication time of an article in DJLIT.

METHODS

The metadata of publication history required for analysis, keeping in mind the stated objectives, was retrieved from the host website of the journal, accessible at https://publications.drdo.gov.in/ojs/index.php/djlit/issue/archive for articles published during the period from the year 2012 to 2020. The decision to select the period was based on the 2021 coverage information of the journal with SJR of 0.29 on Scimago Journal & Country Rank[2]. Individual articles were visited and it was noticed that the editorial timeline was provided under four date headings namely "Received", "Revised", "Accepted", and "Published". This information was extracted into an excel spreadsheet, and an online age calculator software (available at https://www.calculator.net/ agecalculator.html) was used to calculate the time gap between the date of a manuscript being "Received", "Revised", "Accepted", and "Published" and tabulated under the symbols denoting six groups namely:

1) R1 (in days)= 'Received-Revised'
2) R2 (in days)= 'Revised-Accepted'
3) R3 (in days)= 'Accepted-Published'
4) R4 (in days)= 'Received-Accepted'
5) R5 (in days)= 'Received-Published', and
6) R6 (in days)= 'Revised-Published'

This was to facilitate the application of statistical measures for the purpose of analysis and interpretation of the collected data. The 'Calculator.net' provided the difference between any two dates in terms of year, month, week, day, hour, minute and second in a single go which, no doubt, helped the author to understand publication delay in different levels of granularity. As a matter of data collection policy, it was decided at the outset to exclude guest editorials and articles with the erroneous file format and/or absent editorial timeline. Accordingly, guest editorials from issue no. 1, 5, and 2 from volume no.32, 33, 36, and 39 respectively had been excluded from the study[3]. The fifth to the eleventh article from issue 1 of volume 32, the fifth article from issue 2 and third article from issue 5 of volume 36, the last article from issue 3, and the second article from issue 4 of volume 37 had not been considered due to one of the reasons as mentioned in the data collection policy[4]. The data were collected during November 2021.

[2] Available at: https://www.scimagojr.com/2021/journalsearch.php?q=21100212132&tip=sid.

[3] 5th-11th articles of vol. 32(1): no editorial timeline.
5th article of vol. 36(2): error in submission date.
3rd article of vol. 36(5): error in submission date.

[4] Last article of vol. 37(3): pdf file did not open.
2nd article of vol. 37(4): no editorial timeline.

RESULTS

After the application of filter criteria, a total of 497 articles were considered to be suitable for the study and accordingly were subjected to further analysis. Out of 497, articles written by two authors conjointly had the maximum density (49.7%; 247) (Table 1). The distant second spot was occupied by 28.97 percent of articles contributed by single authors and 15.10 percent were authored by three. The rest of the articles were written conjointly either by four authors (4.02%) or by five authors (2.21%).

Table 1: Grouping of Articles Based on Author and Publication Time

No. of contributing authors	No. of articles belonging to different R5 groups (in days)					
	Below100	100-199	200-299	300-399	400-499	500-599
1	45	53	22	20	4	0
2	64	101	53	24	5	0
3	14	29	19	10	2	1
4	5	11	1	2	1	0
5	1	4	3	3	0	0

The categorisation of articles based on the time taken by a manuscript for the journey from submission in the DJLIT open journal system to its publication as an article (in terms of days) revealed that 39.84 percent (n=198) of the articles fell in the '100-199' days category (Table 1). This was followed by 25.96 percent, 19.72 percent, and 11.87 percent articles falling in the 'Below 100', '200-299', and '300-399' days category respectively. Only 12 manuscripts waited between 400 to 499 days and only one manuscript fell in the '500-599' days category before being published and therefore together they shared only 2.63 percent of the total articles under investigation for the longest version of waiting time.

A wide gap was observed among articles belonging to an issue as well as within a volume regarding the time taken by an article from submission to its final publication (R5 'Received-Published') in DJLIT (Table 2). The average minimum time clocked at 37 days (approx.) whereas in the case of the average maximum time it was 401 days (approx.) and the mean volume-wise difference stood at 364 days (approx.). This clearly points out two extremes where one article was published just 16 days after submission and another one had to wait 554 days before publication, although they belong to different volumes. Special mention may be made about volume 38 where the range stood at 501 days with 554 days to be the longest delay from submission to publication.

Upon scrutiny, it was found that the article that has experienced the longest delay had the longest frustrating stagnation period of 543 days from submission to the final day of revision as other editorial formalities took only eleven days. The article might have waited for a long time before it was assigned to peer reviewers, or it might have gone through multiple rounds of peer review and revision. Except for speculation, nothing could be ascertained about the inordinate delay due to the lack of details and that could have compromised the article's novelty.

Table 2: Volume-wise Publication Time Distribution

Volume	R5 (From submission to publication)				
	Min. Time	Max. Time	Volume-wise difference	Mean	Median
32	16	448	432	206.82	190
33	38	411	373	196.95	162
34	36	361	325	188.9	178.5
35	28	333	305	140.26	127
36	52	372	320	142.43	124.5
37	50	448	398	197.7	165.5
38	53	554	501	196.05	173
39	18	264	246	115	104
40	41	414	373	178.71	176

Interestingly, volume 39 was the fastest among volumes published (under consideration) with a mean delay of 115 days. Issues no. 2 and 6 of this volume were special issues dedicated to "Promoting and maintaining integrity in higher education and research" and "Research data management" respectively. Although submissions, as well as peer reviews, are generally bound by a strict deadline for a special issue, the mean delay from submission to publication for issues no. 2 (106.55 days) and no. 6 (133.22 days) could not explain much about volume 39 being the fastest volume as mean delay of 112.78 days for this volume excluding the special issues did not show any remarkable fluctuation from the overall mean. But the mean value(μ) of the time taken from submission to the completion of revision (R1) of all manuscripts (μ of R1= 75 days) for volume 39 which was found to be the fastest among all volumes could be the reason behind the shortest publication time of volume 39.

A total of 321 (64.59%) manuscripts went through revision process. The average waiting time (μ) for a manuscript from submission to its final revision was found to hover around 109.22 days with a range between 2 to 543 days and a standard deviation (σ) of 84.33 days, while the mean waiting time for manuscript submission to publication as article (R5) clocked at 175.65 days with a standard deviation of 103.51 days. An intriguing trend was observed here while calculating the percentage of articles in different volumes that went through revision (Table 3). It was found that, except for volume number 37, there was an almost steady increase in the number of articles that went through the revision process in each subsequent volume with the incident touching zenith in volumes 39 and 40 (i.e. 100% revision).

This has left ample space for speculation. A surprising coincidence was the replacement of University Grants Commission (UGC) approved list of journals for research publication and career advancement by the UGC-CARE list with effect from 14th June 2019 (University Grants Commission 2019). The cascading effects of UGC's decision not to allow publications in other than CARE list journals for career advancement along with a zero-tolerance policy for plagiarism (which prohibits the quick publication of articles in dubious and predatory journals against a certain amount of money as a publication fee) might have redirected the manuscript submission traffic to reputed journals including DJLIT (in the Indian context). This single incident could have triggered an increase in article submission traffic to DJLIT and might have forced the editorial policy to put submitted

manuscripts under a stricter peer review process and plagiarism check to meet a high standard.

Table 3: Percentage of Papers Revised before Publication

Vol no.	Papers published (x)	Papers revised before publication (y)	%[(y/x)*100]
32 (2012)	58	11	19.0%
33 (2013)	60	14	23.3%
34 (2014)	60	30	50.0%
35 (2015)	53	46	87.0%
36 (2016)	47	33	70.2%
37 (2017)	56	25	45.0%
38 (2018)	60	59	98.3%
39 (2019)	52	52	100.0%
40 (2020)	51	51	100.0%

A total of 131 (40.8%) revised papers did not have any information about the acceptance date and hence directly went into publication whereas the rest of 190 papers have a different date of acceptance before they were published on the scheduled date and thereby added more days to waiting time. The reason for the inconsistency related to the acceptance date could not be ascertained. Only two articles were found to have been accepted on the day of their final revision (R2=0). Otherwise, the difference between final revision and acceptance stood at a minimum of 1 day to a maximum of 244 days. A total of 144 (out of 176) articles that have not experienced a delay due to revision went directly into publication. The remaining 32 papers experienced additional delays as those were accepted on a different date other than the publication date. There are altogether 222 articles that have information on the acceptance date. Based on this, the mean delay was calculated from the date of acceptance to the date of publication (R3) which stands at 64.09 days and can be designated as the production delay. The delay ranges from zero delays (i.e., date of acceptance coincided with the date of publication) to a waiting time clocking 348 days. Had DJLIT resorted to an 'Online first' publishing policy, the publication time for an author's research could have been cut short considerably.

Testing of Hypotheses

(a) Hypothesis 1

As for multi-authored articles, contributing authors might not belong to the same geographical region, might not have the same institutional affiliation, and might have varied academic and professional workloads. Therefore, it is assumed that in case of multiple revisions, there could be a possibility of a delay to get required revisions done by the corresponding author while coordinating the responsibilities of other contributing authors given their time constraints. Against this backdrop, it would not be out of tune to examine whether the overall publication time attribute of an article had anything to do with the number of contributing author attribute. A Chi-Square test was carried out for the following (5x5) table (Table 4).

Table 4: A 5x5 Table for Chi-Square Test

No. of contributing authors	No. of articles belonging to different R5 groups					Row total
	<100	100-199	200-299	300-399	400-499	
1	45	53	22	20	4	144
2	64	101	53	24	5	247
3	14	29	19	10	2	74
4	5	11	1	2	1	20
5	1	4	3	3	0	11
Column total	129	198	98	59	12	496

The '500-599' R5 group has been excluded as only one article was figured in this group. The test was done with the formula:

$\chi^2 = \Sigma\{(f_o-f_e)^2 / f_e\}$,

where f_o and f_e represent observed frequencies and expected frequencies respectively.

$\chi^2 = \Sigma\{(f_o-f_e)^2 / f_e\} = 16.37$.

Degree of freedom = (row-1)(column-1)
= (5-1)(5-1) = 4x4 = 16.

For 16 degree of freedom, the tabulated value of χ^2 at 5% level is 26.30 and at 1% level is 32.00. Since the observed value of χ^2 is well below the 5% tabulated value and 1% as well, it is highly significant.

In order to have a more inclusive outcome (as articles belonging to the '500-599' R5 group were excluded from the Chi-Square test and the '400-499' R5 group has a very limited number of papers) by considering all the articles, the Kruskal-Wallis Test, a nonparametric version of the One-Way ANOVA Test, was performed by grouping the number of articles under 1-author (146 articles), 2-authors (244 articles), and multiple authors (104 articles). One hundred random samples of corresponding R5 days (dependent variable) of articles from each group were drawn with the help of a random sample generator site (available at: https://www.dcode.fr/random-sampling). The samples were thus fed to the online Kruskal Wallis Test Calculator[5] to be calculated at 0.05 significance level (α). The hypothesis for Kruskal Wallis Test are:

H_0 = The mean publication delay across the three groups doesn't show any remarkable variation.

H_a = At least one of the three groups has a significantly different publication delay.

The Kruskal-Wallis H test indicated that there is a non-significant difference in the dependent variable between the different groups, p = .1396, with a mean rank score of 142.71 for 1 Author, 144.27 for 2 Authors, 164.53 for multiple authors. The test statistic H equals 3.9377, which is in the 95% region of acceptance: [0, 5.9915]. Since the p-value > α, H_0 can not be rejected and clearly, the difference between the mean ranks of all groups is not big enough to be statistically significant.

[5] Available at: https://www.statskingdom.com/kruskal-wallis-calculator.html

Hence, it is concluded that overall publication time is independent of the number of contributing authors for a multi-authored article, i.e. a large number of contributing authors of an article did not necessarily take a long time to revise their article, and hence hypothesis 1 is rejected. This also indicates that authors of multi-authored papers largely complied with the deadline ethics of DJLIT which could either be the result of their enthusiasm to get the paper published or the apprehension of getting rejected.

(b) Hypothesis 2

While counting the number of articles in DJLIT that went through all the sub-stages of the editorial timeline, it was found that out of 497 only 190 articles fulfilled the criterion. Although it is understandable that the longer a manuscript gets stagnated in any sub-stage of the editorial timeline, the more it adds to the cumulative delay; there could be a possibility of exerting the strongest influence by one sub-stage of the editorial time frame than the rest on overall article publication time. In order to substantiate this speculation in DJLIT, Pearson's Correlation coefficient (r) [$r = \Sigma((X - My)(Y - Mx)) / \sqrt{((SSx)(SSy))}$ where Mx= mean of X values and My= mean of Y values] was calculated in turn by considering the values of R5 (n=190) at Y-axis and values of R1 (n=190), R2 (n=190), and R3 (n=190) at X-axis. R4 (=R1+R2) and R6 (=R2+R3), being dependent entities, were deliberately excluded.

The 'r' values from Figure 1 indicate that there exists a strong positive correlation (near linear presentation) between the time taken from submission to completion of final revision (R1) and overall publication time (R5), i.e., high R1 values go with high R5 values and vice versa but very weak (Figure 1(a)), although positive, correlations were observed between R2 and R5 (r= 0.4325) (Figure 1(b)) and R3 and R5 (r= 0.3637) (Figure 1(c)). Therefore hypothesis 2 is accepted.

Overall, the major findings that have been identified during the study are summarized as follows:

(a) Almost 40 percent of articles took between 100 and 199 days to get published after submission to DJLIT.

(b) Only 38.23 percent of articles have gone through all the sub-stages of the editorial timeline.

(c) There was an almost steady increase in the number of articles that went through the revision process in each subsequent volume during the period of study.

(d) Overall publication delay was found to be independent of the number of contributing authors for a multi-authored article, i.e. a large number of contributing authors did not necessarily take a long time to revise their article. This contradicts the research findings by Taşkın et al. (2022) on selected six information science journals: *ASLIB Journal of Information Management, Journal of Documentation, Journal of Informetrics, Journal of the Association for Information Science and Technology, Online Information Review,* and *Scientometrics.*

(e) There exists a strong positive correlation between the time taken from submission to completion of final revision and the overall publication time of an article.

(f) Inconsistency was observed in terms of non-availability of the date of acceptance in almost 44.87 percent of articles. Viswakarma and Mukherjee (2014) in their case study of library science journals from SAARC countries did not find in the journals of SAARC region any inclusion of information relating to submission date and revision in the article.

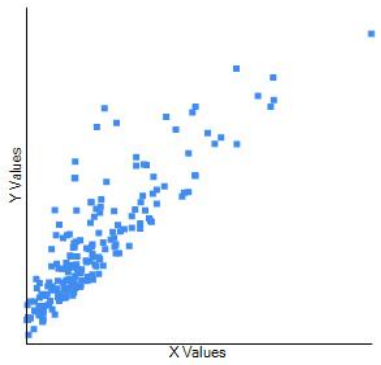
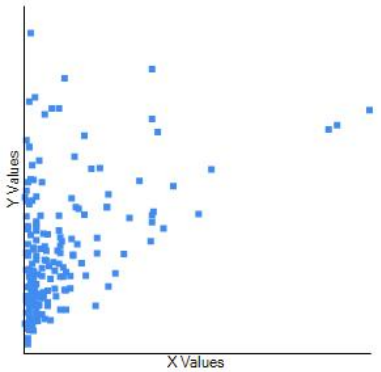
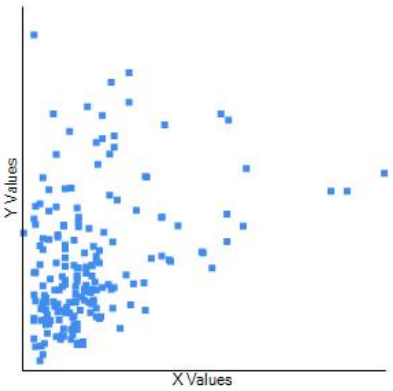
X-Axis	Y-Axis	Value of r	Graphical presentation
R1	R5	0.8672	 **(a)**
R2	R5	0.4325	 **(b)**
R3	R5	0.3637	 **(c)**

Figure 1: Influence of Different Stages of Article Publication Time on Overall Publication Delay

DISCUSSION

Being one of the premier research publishing platforms in the field of LIS, DJLIT generates many aspirations among LIS professionals to get their research published in this journal, which along with other reasons mentioned earlier, might have resulted in a long queue. With a long submission queue, there might not be any visible movement of a manuscript in the early stage after submission. The movement gets further delayed due to other

contributing factors. One such factor may be the time taken by the editorial team to check whether the topic of a manuscript falls within the scope of DJLIT and whether the initial mandatory submission criteria (along with necessary certification) have been met or not. With a long queue of manuscripts, it might sometimes become extremely challenging for editors to find suitable peer reviewers as the existing panel of peer reviewers might already be overstretched with multiple manuscripts under their review. This hampers the forward movement of a manuscript. Moreover, although desirable, assigning a rigid time frame for the peer review process might prove counterproductive as the daunting task of evaluating cutting-edge research by examining large datasets, suitability of methodology, outcome, and its impact on further research and society, requires the highest level of scholarship and ample time. In addition to this, a manuscript might undergo multiple rounds of peer review before being accepted for other editorial formalities. Delay on the part of the authors for not being able to finish the suggested revision within the prescribed time frame might prolong the review process manifold. All these activities collectively stretch the gap between submission to final revision. Hence time taken from submission of a manuscript to completion of its final revision had been the single most influencing factor in prolongation of the article's waiting time before publication in DJLIT.

The whole study was based on the editorial timeline information collected from the articles published during the period from the year 2012 to 2020 and hosted on the open journal system platform of DJLIT. Due to erroneous file format and the absence of an editorial timeline, a number of articles (as described in the methodology) could not be accommodated in the study. On the other hand, there is every possibility that the articles under consideration might have a hidden history of multiple instances of review, re-review, and rejection in some other journals. Had there been a provision to track down that frustrating period of journal shopping (Powell 2016, p. 149), a clear picture could have been sketched about the exact time taken by an article from inception to its final publication in DJLIT. DJLIT editorial timeline does not provide any information about the time taken for copyediting (may include initial copyedit, author copyedit, and final copyedit), layout editing, and proofreading (by author, proofreader, and layout editor). Naturally, any delay that might have resulted from these activities could not be ascertained and as a result, could not be accommodated in this study.

CONCLUSIONS

The publication ecosystem for journal articles needs to be ramped up with the recording and provision of detailed information related to peer review timelines to avoid frustrations among authors. Had there been details of the number of times an article has been subjected to revision, it would have been easier to calculate more precisely the average time taken in each round of peer review. In view of the extraordinary delay of 300 days or more as experienced by 14.49% of articles, further investigation may be carried out in some other studies to understand the effects of inordinate delay on career advancement, further research work, and so on. Editorial policymakers of DJLIT may adopt an 'Online first' policy for speedy online publication of cutting-edge research and nascent ideas much ahead of print publication.

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AUTHOR DECLARATION

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