# ORCID Adoption by the LIS Faculty Community of India: A Case Study

Sanjeev Kumar Jain[1*], Jignesh Makwana[1] and Kaja Bantha Navas R.[2]

[1]Department of Library Science, Sardar Patel University, Vallabh Vidyanagar - 388 120, Anand, Gujarat, India
[2]National Institute of Fashion Technology, Gandhinagar - 382 007, Gujarat, India
*E- mail: sanjeevjain.1980@gmail.com

**ABSTRACT**

The study aims to evaluate the utilisation of ORCID (Open Researcher and Contributor identifier) among LIS faculty members at UCG-approved Indian universities. An online survey was conducted to collect data from a representative group of 369 faculty members. LIS field who are associated with Indian Universities and actively involved in teaching and research activities. A simple random sampling procedure was used in the study to collect samples from respondents. Total 164 completed responses were received, with a response rate of 44.44 %. The results suggest that LIS faculty members had high awareness of ORCID. ORCID is a widely used system by LIS faculty members specially used to find and share information about research articles. The gender-wise awareness, ORCID Holders and the types of recommendations, ORCID Holder usage time examined. This study aims to provide a comprehensive analysis exploring the ORCID adoption among LIS faculty members in India and addresses multiple objectives.

**Keywords:** ORCID; LIS faculty community; Author identifier; Persistent identifier; Researcher identifier; Academic identity; Identification system

## 1. INTRODUCTION

Over the past decade, there has been a rise in the annual publication of scientific and scholarly journal articles. According to a report by STM, the number of academic journals has been growing at a rate of 5-6 % per year. As a result, approximately 3 million articles are now being distributed each year across 33,100 peer-reviewed English language journals[1]. Consequently, researchers are encountering difficulties in identifying, discovering, and evaluating their work due to this extensive volume of publications.

According to the All India Survey of Higher Education 2018-2019 (AISHE, 2019) findings, higher education in India consists of 993 universities offering degrees, 39,931 colleges, and 10,725 stand-alone institutes. The total student enrolment in the higher education system amounted to 37.4 million, while the number of teachers engaged in teaching and scholarly activities exceeded 14.16 lakh[2]. Due to the inadequate sharing of research activities, it is difficult for the research community to identify and recognise the research and its advancements within or among the institutions. Therefore, it is necessary to create visibility of research output and activities of institutions and individuals to make them more accessible and discoverable.

Differences in naming style across journals, countries, and cultures are enormous. There are many Agrawals, Guptas, Mukharjee, Sharmas, and Singhs among publishing authors in India. However, identification methods like searching research articles by name have been proven insufficient. Even name changes over time with marriage, divorce and other circumstances[3-4]. Such naming ambiguity problem can only be solved collectively using ORCID system.

As a community-driven, non-profit organisation, ORCID was founded in 2012 to enable a transparent and trustworthy connection between researchers and their contributions and affiliations. ORCID helps researchers and faculty members manage their online identities better, increase their visibility and discoverability, and improve the accuracy and reliability of research data.The ORCID platform offers a durable 16-digit digital identification number, known as an ORCID iD, which can own and control by the researcher and author. Many Indian universities and research institutions have started integrating ORCID into their research information management systems[5-6].

## 2. LITERATURE REVIEW

In this section, the researcher consulted many similar studies and a few selected studies reviewed here which can build a foundation for conducting this present study:

The Open Researcher and Contributor Identifier registry offers an opportunity to solve naming ambiguity problems and improve discoverability. The study of Haak and Fenne[5] explored the utilisation of ORCID identities by publishers and other stakeholders within the scholarly communication ecosystem to address the challenge of name ambiguity.This registration will facilitate the connection of digital research content and other academic contributions to the respective researchers.

Obazenu & Ubo[4] emphasised the need for a standard format and consistent use of researcher names to facilitate their identification and discoverability. Boundry and Durand-Barthez[7] conducted a study on ORCID, ResearcherID, Academia.edu, and ResearchGate researchers in a medium-sized multidisciplinary French university (University of Caen Normandy). Caen University researchers are 75.1 % uninterested in author identifier services and 40.2 % in academic and social networks, so researchers should attend awareness and training events.

Da Silva, Jaime & A Teixeira[8] concluded that using ORCID for academic purposes and research integrity needs more comprehensive discussion among stakeholders, academics, authors, editors, publishers, funders, and policymakers. This study also suggested ORCID can be implemented after detailed deliberations with the academic community. Tran and Lyon[9] conducted a survey showing that the author identifier most commonly used was ORCID.

Additionally, the top profiling systems utilised by respondents were ResearchGate, LinkedIn, and Google Scholar. Librarians possess the capacity to spearhead comprehensive initiatives within the university community aimed at fostering the adoption and utilisation of ORCID. Borger[10] thoroughly examined the adoption and implementation of ORCID identifiers within the University of St Andrews academic community, focusing on their utilisation in research activities and administrative processes. The study investigated the utilisation patterns among researchers across several academic fields.

Arunachalam & Madhan[3] examined the advantages of implementing ORCID as a unique identifier for researchers and contributors in scholarly communication. The study suggested that research councils and funding agencies in India require researchers to implement ORCID and link ORCID iDs to funding and performance tracking. Brown and Demeranville[11] focused on persistent identifiers, such as ORCID, which can help unlock the potential of open research by connecting authors, publications, and workflows. This study suggested that the increasing adoption of identifiers offers a means of providing missing connections.

The literature review reveals similar studies conducted on ORCID awareness and adoption in different institutions and countries, and no such research study has been published in India. This study evaluated the utilisation of ORCID author identifiers among LIS faculty members in India.

## 3. OBJECTIVES

The specific objectives of the study are as follows:

- To identify gender differences in the usage and adoption of ORCID among LIS faculty members.
- To examine the ORCID awareness among the LIS faculty members.
- To identify the perceived benefits and purpose of using ORCID.
- To determine the relationship between ORCID awareness and purpose among LIS faculty members.
- To compare the ORCID holder's recommendations among LIS faculty members.

## 4. METHODOLOGY

The quantitative approach was used to collect data from the faculty members of Indian Universities via an online survey. The survey was designed in such a way that a single respondent could not provide more than one response. An online questionnaire was emailed to 369 LIS faculty members of UGC- approved Indian Universities engaged in teaching and scholarly activities. A simple random sampling procedure was used in the study to collect samples from respondents. During the survey, 164 completed responses were received, which shows a response rate of 44.44 %. SPSS software was used to process and examine the collected data, and every effort was made to make sure it was representative. The study is limited to only the LIS faculty members engaged in scholarly activities.

## 5. HYPOTHESES OF THE STUDY

The researcher framed a few hypotheses to check the significant difference between the selected user group across dimensions. These dimensions are awareness, recommendation and purpose, in which the item's correlations are established.

H1: There is no significant difference in the awareness among LIS faculty members with respect to their gender.

H2: There is no significant difference in the Purpose among LIS faculty members with respect to their gender.

H3: There is no significant difference in the ORCID holder among LIS faculty members with respect to their recommendations.

H4: There is no significant difference in the ORCID usage year among LIS faculty members with respect to their recommendations.

H5: There is a correlation between ORCID awareness among LIS faculty members with respect to their orchid purpose.

## 6. RESULTS

### 6.1 Demographic Analysis

In this section, the researcher presented the gender-wise and region-wise distribution of respondents. It is demonstrated in Table 1 that Out of 164 respondents,

119 (72.6 %) of the respondents are male, and 45 (27.4 %) are female. The data shows that male respondents are more dominant than female respondents. Most of the 95 (57.9 %) respondents belong to State Universities. However, the responses were received from universities across India.

**Table 1. Demographics profile of the respondents (n=164)**

| Gender | Frequency | % |
|---|---|---|
| Male | 119 | 72.6 |
| Female | 45 | 27.4 |
| **University- wise distribution** | **Frequency** | **%** |
| Central universities | 55 | 33.5 |
| State universities | 95 | 57.9 |
| Deemed universities | 4 | 2.4 |
| Private universities | 10 | 6.1 |
| **Zone- wise distribution** | **Frequency** | **%** |
| Central | 29 | 17.7 |
| East | 26 | 15.9 |
| North East | 22 | 13.4 |
| North | 23 | 14.0 |
| South | 37 | 22.6 |
| West | 27 | 16.5 |

## 6.2 Level of Usage of ORCID Among LIS faculty Members

Table 2 shows that out of 164 LIS faculty members, 126 (76.8 %) have the ORCID and 153 (93.3 %) faculty members strongly recommend using the ORCID for research profile and identification. The 149 (90.9 %) respondents found that the ORCID and other unique identifiers are essential for online identification as an author and researcher.

**Table 2. Level of usage of ORCID among LIS faculty members (n=164)**

| Dimensions | Levels | Frequency | Percentage (%) |
|---|---|---|---|
| Importance of ORCID for identification | Yes | 149 | 90.9 |
| | No | 15 | 9.1 |
| LIS faculty members having ORCID | Yes | 126 | 76.8 |
| | No | 38 | 23.2 |
| Recommendation to use ORCID | Yes | 153 | 93.3 |
| Recommendation to use ORCID | No | 11 | 6.7 |

## 6.3 Awareness of ORCID

Figure 1 presents that most faculty members use the ORCID displayed in research articles/other publications. However, some said that Publisher asked for ORCID during the manuscript submission process, and few said that Guide/Research Supervisor asked for ORCID during the research. After the research article, the funding agency shared the highest significance level for ORCID

awareness. It is presented that 53.7 % of respondents were aware of ORCID through research publication, and 17.1 % reported their awareness about research funding towards ORCID.
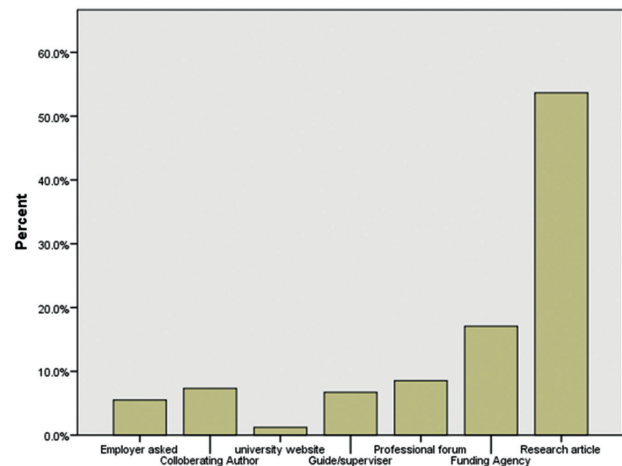


**Figure 1. Awareness about ORCID.**

## 6.4 Period of Using ORCID

Figure 2 indicates the period for which the faculty members used the ORCID. The study reveals that 40.51 % of the faculty members are connected with ORCID for more than three years, followed by 27.22 % for 1-3 years. Thus, the results show that ORCID is being adopted and popular among the LIS faculty members. Figure 2 is shown that the ORCID is popular and has enough awareness among the LIS faculty members. It also indicates that the correct target audience participated in this research survey.
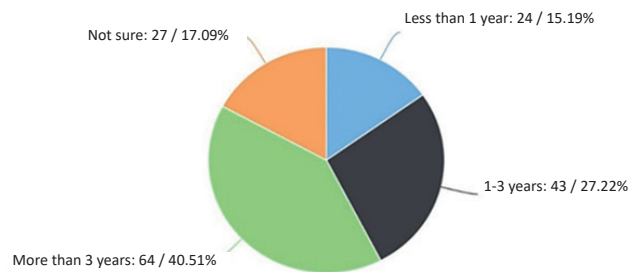


**Figure 2. Period of using ORCID.**

## 6.5 Perceived Benefits and Purpose of Using ORCID ID

Table 3 shows the purpose and perceived benefits of ORCID usage among the faculty. Table 3 reveals multiple answer responses, with 60.56 % reporting automatically updating their ORCID record by connecting it to other systems, such as Scopus, Crossref or DataCite, followed by 54.93 % of respondents said that ORCID is used to link ORCID into research data.

## 6.6 Cross Tabulation of Using ORCID ID

Table 4 shows the importance of cross-tabulation for ORCID for identification with ORCID holders and recommendations for using ORCID vs ORCID Holders. It

revealed that LIS faculty members with ORCID strongly recommend usage to others. Further, LIS faculty with ORCID ID know the importance of ORCID ID.

**Table 3. Purpose of the ORCID among the LIS faculty**

| Purpose of the ORCID among the LIS faculty | Selections | % all question responses |
|---|---|---|
| Entering my ORCID iD during paper submission | 77 | 54.23% |
| Linking my ORCID iD to research data | 78 | 54.93% |
| Automatically updating my ORCID record by connecting it to other systems, such as Scopus, Crossref or DataCite | 86 | 60.56% |
| Using my ORCID iD to log in to a website | 34 | 23.94% |
| Entering my ORCID iD during grant applications | 21 | 14.79% |

*Multiple answers were permitted

**Table 4. Purpose of the ORCID among the LIS faculty**

| Cross tabulation | Levels | LIS faculty members having ORCID | | Total |
|---|---|---|---|---|
| | | Yes | No | |
| Importance of ORCID for identification | Yes | 120 | 29 | 149 |
| | No | 6 | 9 | 15 |
| | | 126 | 38 | 164 |

| Cross tabulation | | LIS faculty members having ORCID | | Total |
|---|---|---|---|---|
| | | Yes | No | |
| Recommendation to use ORCID | Yes | 124 | 29 | 153 |
| | No | 2 | 9 | 11 |
| | | 126 | 38 | 164 |

## 6.7 Gender-wise Analyses of ORCID Awareness and Purpose

Two hypotheses were framed to check the significant difference between ORCID awareness and gender, ORCID purpose and gender. Thus, the hypotheses are as follows:

*H1: There is No significant difference in the awareness among library science faculty members with respect to their gender.*

*H2: There is No significant difference in the purpose among LIS faculty members with respect to their gender.*

The investigator analysed the hypotheses through SPSS; the results presented in Table 5, and in the SPSS output for ORCID awareness, obtained a t-value of 1.631 and the statistical significance (2-tailed p-value) of the paired t-test (P-value), which is 0.105 as the p-value is more significant than 0.05 (i.e., $p < .05$), it can be concluded that there is no significant difference in the awareness among library science faculty members concerning their gender. In other words, the difference between mean ORCID awareness towards gender is not equal to zero. Thus hypotheses H1,"There is no significant difference in the awareness among library science faculty members to their gender", stands accepted.

In the SPSS output (Table 5) for ORCID Purpose obtained a t- value of 0.383 and the statistical significance (2-tailed p-value) of the paired t-test (P-value), which is 0.702 as the p- value is more significant than 0.05 (i.e., $p < .05$), it is concluded that no significant difference in the purpose among library science faculty members to their gender. In other words, the difference between mean ORCID purpose towards gender is not equal to zero. Thus, hypotheses H2, "There is no significant difference in the purpose among LIS faculty members to their gender", stands accepted.

## 6.8 Analysis of ORCID Holders and Their Recommendations

Further, One more hypotheses was framed to check the significant difference between the ORCID holders and their recommendations. Thus, the Hypotheses is as follows:

*H3: There is No significant difference in the ORCID holder among LIS faculty members with respect to their recommendation.*

The investigator analysed hypotheses through SPSS; the results are presented in Table 6. The SPSS output for ORCID Holder and their recommendations obtained a t-value of 5.112,and the statistical significance (2- tailed p-value) of the paired t-test is 0.899 as the p-value is more significant than 0.05 (i.e., $p < .05$), it can be concluded that no significant difference in the ORCID holders and their recommendations. In other words, the difference between mean ORCID holders towards the suggestions is not equal to zero. Thus Hypotheses H3,

**Table 5. Gender-wise analysis of ORCID awareness and purpose**

| Dimensions | Gender | N | Mean | Standard deviation | df | t value | P value |
|---|---|---|---|---|---|---|---|
| ORCID awareness | Male | 119 | 5.07 | 2.816 | 162 | 1.631 | 0.105 |
| | Female | 45 | 4.22 | 3.316 | | | |
| ORCID purpose | Male | 119 | 9.17 | 10.378 | 162 | 0.383 | 0.702 |
| | Female | 45 | 9.89 | 11.721 | | | |

**Table 6. Analysis of ORCID holders and their recommendations**

| Dimensions | Recommendation | N | Mean | Standard deviation | df | t value | P value |
|---|---|---|---|---|---|---|---|
| ORCID holders | Yes | 153 | 1.19 | .393 | 162 | 5.112 | 0.899 |
| | No | 11 | 1.82 | .405 | | | |

**Table 7 Correlation between the dimensions**

| Dimensions | | ORCID awareness | Purpose |
|---|---|---|---|
| ORCID awareness | Pearson correlation | 1 | .204** |
| | Sig. (2-tailed) | | .009 |
| | N | 164 | 164 |

**Correlation is significant at the 0.01 level (2-tailed)

**Table 8. Correlation between the dimensions**

| Dimensions | | Agreement | Recommendation |
|---|---|---|---|
| Agreement | Pearson correlation | 1 | .507** |
| | Sig. (2-tailed) | | .000 |
| | N | 164 | 164 |

** Correlation is significant at the 0.01 level (2-tailed)

"There is no significant difference in the ORCID holder among LIS faculty members to their recommendation", stands accepted.

### 6.9 Correlation Between the Dimensions

The Pearson Correlation method has been used to measure the correlation between the dimensions, ORCID awareness and purpose, ORCID agreement and recommendations (Tables 7 & 8). In this section, it is essential to establish the relationship between the framed dimensions considered here and check the dependency between the variables for the same purpose. The following hypotheses were formulated.

*H4: There is a positive correlation between ORCID awareness among LIS faculty members with respect to their ORCID purpose.*

After examining Table 7, it reveals that the minimum value of Pearson Correlation is 0.204 with a significant 0.000, respectively, ORCID awareness and purpose. This concludes that Hypotheses 4 is accepted, but the correlation between ORCID awareness and purpose is weak. Further, we have framed Hypotheses (H5) between ORCID agreement and ORCID recommendations, and the result is presented in Table 8

*H5: There is a positive correlation between the ORCID agreement among LIS faculty members to their ORCID recommendations.*

After examining Table 8, it reveals that the value of Pearson Correlation is 0.507 with significant 0.000, respectively, ORCID agreement and recommendations. It concludes that Hypotheses 5 is accepted. The correlation is strong between the ORCID agreement and recommendations

### 7. FINDINGS

After analysis, the investigator came out with findings towards gender-based awareness, ORCID holders, recommendation types, and ORCID holder years of utilisation. The different hypotheses were framed to signify no significant difference between ORCID awareness and gender with a p-value of 0.105, and the purpose of the ORCID and gender with a p-value of 0.702. Moreover, there was no significant difference between ORCID recommendation and ORCID holder, with a p-value of 0.899. Thus hypotheses stand accepted. Further, inter construct correlation between ORCID agreement and ORCID recommendations is found to be 0.507 and ORCID awareness and purposes 0.204. Therefore, there is a positive correlation between the ORCID agreement and ORCID recommendations, whereas there is a weak relationship between ORCID awareness and purpose. In order to increase the understanding of ORCID among faculty members in Library and Information Science (LIS), it is recommended to arrange workshops and offer hands-on training sessions.

### 8. DISCUSSION

The data analysis results show that 90.9 % of faculty members know the importance of ORCID, and 93.3 % of LIS Faculty members recommend using ORCID with others. The findings indicate that LIS faculty members had high ORCID awareness in India. Further, ORCID is the most popular system LIS faculty members use to discover and share research article information. Our result towards the purpose of the ORCID among the LIS Faculty members supported ORCID's popularity in India. The study's primary limitation was that the respondents were limited to the LIS faculty community from India. Further, the authors plan to conduct this research with huge, universally relevant samples. All our hypotheses statements are accepted (Kazmier, 2005)[12]. Our study results claim to evaluate the utilisation of ORCID among LIS faculty members at Indian Universities.

### 9. CONCLUSION

ORCID offers many features that improve the research ecosystem. These include persistent identification, research system integration, interoperability, privacy and control, researcher profiles, funding and publication system integration, research collaboration, API and integration, and worldwide recognition. In recent years, Indian LIS academics are becoming more aware of ORCID's importance. Many university LIS departments encourage staff and students to utilise ORCID. LIS faculty acceptance of ORCID is still in its early phases due to a lack of

awareness of its benefits, technical issues, dislike to change, and insufficient support.

Arunachalam and Madhan[3] stated that in India, the advancement of various fields through research could be facilitated by mandating the use of ORCID IDs for researchers and grant seekers by prominent research councils like the Council of Scientific and Industrial Research (CSIR), Indian Council of Agricultural Research (ICAR), and Indian Council of Medical Research (ICMR), as well as funding agencies such as the Department of Science and Technology (DST), the Department of Biotechnology (DBT), and the University Grants Commission (UGC). This approach could be further encouraged by university vice-chancellors, directors of research institutions, and governing boards of academies, professional associations, and societies, requiring all researchers under their purview to register for an ORCID ID. Additionally, individuals submitting manuscripts to scholarly journals, academies, CSIR-NISCAIR, ICAR, ICMR, etc., should provide their ORCID iDs during submission. Adopting an ORCID-based tracking system would significantly benefit India's various science, technology, and innovation domains.

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## CONTRIBUTORS

**Mr Sanjeev Kumar Jain** received his Master Degree in Library and Information Science from Dr Hari Singh Gaur University, Sagar. Currently, is enrolled as PhD Research Scholar at Dept. of Library Science, Sardar Patel University, Vallabh Vidyanagar, Anand (Gujarat). He is also working as Head Resource Centre at NIFT and published articles in journals and conferences. His contribution towards this study is the collection, analysis and interpretation of data and reporting.

**Dr Jignesh Makwana** has completed his BLISc, MLISc from Saurashtra University, Rajkot and PhD in Library & Information Science from Hemchandracharya North Gujarat University, Patan (Uttar Gujarat) in March 2015. He is presently the Assistant Professor in Dept. of Library Science, Sardar Patel University, Vallabh Vidyanagar, Anand (Gujarat). He has published many research articles in journals and conference proceedings. He has eleven years of experience as a librarian at various environments and levels and twelve years of teaching experience in Library & Information Science subjects.

**Mr Kaja Bantha Navas** received his Engineering Master's in Industrial Engineering from Thiagarajar College of Engineering. He is an Assistant Professor in the Department of Fashion Technology, NIFT Gandhinagar. He received the Global Engineer Leadership Scholarship for Summer Research School, National Tsing Hua University, Taiwan. He is author of a text book for Rural Management Business Analytics, Mahatma Gandhi National Council of Rural Education, MHRD. He has 25 Design Patents grants and 3 products patent grants and 25 research publications to his credit.
His contribution to this study is the conceptualisation of the study and review of the final draft.