

## **Report for the 2021 *IISE Transactions* Survey**

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By the *IISE Transactions* Survey Committee

Yu Ding, Texas A&M University  
James Kong, Virginia Polytechnic Institute & State University  
Kamran Paynabar, Georgia Institute of Technology  
Oleg Prokopyev, University of Pittsburgh  
Jennifer Ryan, University of Nebraska–Lincoln

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## 1. Background

At the editorial board meeting during the 2020 Institute of Industrial and Systems Engineers (IISE) Annual Conference, the editorial board members decided to conduct a survey. The purpose is to understand how colleagues in our profession, i.e., the authors, contributors, and readers, view *IISE Transactions* as a publication outlet, and whether they have suggestions for improving the quality and reputation of *IISE Transactions*. In early November 2020, then Editor-in-Chief (EiC) Dr. Jianjun “Jan” Shi formed an *IISE Transactions* survey committee, chaired by then EiC-elected, Dr. Yu Ding, and comprising four additional members, Dr. Zhenyu “James” Kong, Dr. Kamran Paynabar, Dr. Oleg Prokopyev, and Dr. Jennifer Ryan, who collectively represent the four focused issue areas—design and manufacturing (D&M), quality and reliability engineering (QRE), operations engineering and analytics (OEA), and scheduling and logistics (S&L).

The committee crafted a survey of 32 questions. Several stakeholders were invited to provide their input, including the focused issue editors (FIEs) and the IISE Senior Vice President for Publications. The survey design was finalized by the end of 2020.

The survey was released to the professional societies in early January 2021 through multiple channels. A month period was provided for completing the survey. By February 5, the closing day of the survey, a total of 407 responses were received and recorded.

Dr. Hao Yan of Arizona State University volunteered his time, helping analyze the survey data and put them into a summary. The committee made use of Dr. Yan’s summary, conducted additional analysis and made a number of recommendations, which form the rest of this report.

## 2. Analysis and Observations

The committee first looked into who took the survey. Here is a quick summary.

- a) In terms of locations, 57% of the responses were from the US, followed by Asia (22%) and then Europe (12%).
- b) The vast majority, or nearly 90%, were from academia. The majority of the academics were from an industrial and systems engineering and/or operations research (IE/OR) department (60%), while the second largest was from a business/management school (BSchool) (30%). The majority of the academics are tenured or in tenure track (93%), with Full Professors accounting for 52%, Associate Professor for 22%, and Assistant Professor for 19% of the academic respondents, respectively.
- c) Slightly fewer than a half of the respondents (45%) are IISE members, and about 14% are IISE Fellows.
- d) Half of the respondents are not, or have not been, an administrator, while among the remaining half, a further half (or a quarter of the total) is the current or past department chairs/heads and the other half (or another quarter of the total) serves, or served, in other administrative capacities.
- e) About 45% of the respondents have not published papers in *IISE Transactions*, about one-third never reviewed an *IISE Transactions* paper, and three-quarter has not served on the *IISE Transactions* editorial board.
- f) In terms of research areas, the representation of the four focused issue areas is reasonably balanced. Based on the response about one’s primary subfield, the majority was from OEA and S&L focused issues, having a combined 61% of the responses, whereas QRE and D&M focused issues have a combined 39%.

### Journal Submission Preference

The committee next looked into the set of questions related to the respondents’ submission

preference, including both *IIE Transactions* and other journals. Specifically, the committee wanted to determine whether this preference depends on a number of respondent-associated factors.

A. Does the submission preference depend on the disciplines?

*IIE Transactions* is ranked at similar positions in terms of preference on the IE/OR and BSchool lists. Five of the top preferences on both lists are the same, although the specific orders are different. For the mathematics and statistics disciplines, it is understandable the preference goes to the statistical or engineering statistical journals. For other engineering departments, the responses are too few to register a meaningful observation.

B. Does the submission preference depend on the academic ranks?

The top mentions bear plenty of similarities. However, there does seem an increasing trend of preference for *IIE Transactions*, as the rank goes from Full Professor (*IIE Transactions* at #9) to Associate Professor (#8) and to Assistant Professor (#6).

C. Does the submission preference depend on the focused issue areas?

For QRE, it appears that *IIE Transactions*, *Techometrics*, and *Journal of Quality Technology* are considered the three most preferred journals. For S&L and OEA, the traditional four leading journals, i.e., *Operations Research*, *Management Science*, *Manufacturing & Service Operations Management*, and *Production and Operations Management*, are there. In D&M, the preference seems to be spread wide with no clear winners.

D. Nearly 30% of the respondents said they never submitted a paper to *IIE Transactions*. What does that tell us?

In terms of the primary subfield, OEA has more “never submitted” than its share among the overall respondents (37% overall, but 41% in “never submitted”) and then D&M (16% overall, but 21% in “never submitted”). There is not much difference for S&L between its overall percentage and the “never submitted” percentage. For QRE, however, this “never submitted” percentage reduces to 17% from its 23% overall percentage.

There is a significant dependency between one’s profession (academia versus non-academia) and whether one submits to *IIE Transactions*. Non-academics do not appear to submit to *IIE Transactions* regularly. About 85% of non-academic respondents said they never submitted, compared to 29% of academic respondents.

In terms of the department, the “never submitted” percentages in BSchool or IE/OR are comparable.

In terms of regions and countries, the “never submitted” percentages match reasonably with the percentages of the geographical locations of the respondents. The Asian region “never submitted” portion does see a decrease (from 22% overall to 12% “never submitted”). Some regions such as Australia and Africa registered in this survey no submission to *IIE Transactions*. However, the sample size is too small to draw meaningful conclusions.

From the responses, it was noticeable that 12 respondents, about 10% of the “never submitted” group, were (or are) on *IJSE Transactions* editorial board, as an Associate Editor (AE) or a Department Editor (DE).

- E. Among those who chose the option that *IJSE Transactions* is the best journal, how do the respondents distribute?

Among those who think that *IJSE Transactions* is one of the best, 94% of the respondents are from academia, with 64% from IE/OR and 18% from BSchool. This is a higher percentage from IE/OR and a lower one from BSchool when we compare them with the overall percentage of the respondents (57% IE/OR and 30% BSchool).

It is interesting to see a lower percentage of Full Professors ranked *IJSE Transactions* as one of the best journals (37% here versus 52% of those who completed the survey).

For those respondents who rank *IJSE Transactions* as one of the best journals, they tend to be IJSE members (58% here vs 44% who took the survey), or publish in *IJSE Transactions* regularly (more than three papers in the past five years), or review *IJSE Transactions* submissions regularly (37% here vs 25% who took the survey).

In terms of subfields, a higher percentage of QRE chose *IJSE Transactions* as one of the best journals (36% here vs 23% overall) but a lower percentage of OEA did the same (22% here vs 35% overall).

One question asks about journal ratings. Forty percent did not respond or said “Do not know.” Among the remaining 60% who did respond, 66% considered *IJSE Transactions* as Tier 1 or A.

Several organizations provide journal ratings, all of which are outside the US. These organizations represent the business, production, management, and economics professions. The list of organizations that this survey collected includes: Australian Business Deans Council (ABDC), UK’s Chartered Association of Business Schools (ABS), French National Centre for Scientific Research (CNRS), Federation of Management Societies of China (FMSC), and German Academic Association of Business Research (VHB). The most recent ratings we can gather are:

Table 1. Ratings of *IJSE Transactions*

Organization	<i>IJSE Transactions</i>	Highest rating
ABDC	A	A*
ABS	3*	4*
CNRS	Not rated	1 (smaller better)
FMSC	A	A
VHB	A	A+

### **Speed and Quality of Review Process**

In the survey, one of the most mentioned remarks is to make the review process quicker, while we do want to stress that there were also voices cautioning that speeding up the process could be at the expense of sacrificing review quality. In terms of how slow the review process, measured by the time from submission to the first decision, could discourage submissions, the bulk of responses fall between three to six months and exhibit a bimodal pattern. In terms of how fast the review process

would need to be to encourage submissions, it seems that a review process needs to be wrapped up within two months to accomplish this.

In terms of review quality, 51% of the respondents were satisfied. An additional 21% considered *IISE Transactions'* review constructive, albeit tough, whereas 28% did not think the review reports constructive, regardless of whether it is harsh or otherwise.

In terms of the topic coverage, more than 60% of the respondents considered *IISE Transactions* having the right breadth and topic trendiness. Among those who disagreed, more considered the journal not broad enough (22%) than too broad (7%), and topic too traditional (27%) than too trendy (6%).

### **Topic Coverage**

In responding to the question of "What topics should be covered that are not currently adequately represented or that do not have an appropriate home department within *IISE Transactions*?" There are more than one hundred responses. But most of the suggestions are about some topical areas that are in fact represented in the current journal. The recent publications on a specific topic may not necessarily be plenty, but that is different from not having an appropriate home department within *IISE Transactions*. One suggestion responding more directly to the question is that the area of human factor and ergonomics is missing from the current *IISE Transactions*. However, there is a separate journal run by IISE on that topic, i.e., *IISE Transactions on Occupational Ergonomics and Human Factors*.

### **Responses to Open-ended Questions**

The committee would like to note a few observations collected from the set of open questions.

- A. Responses focused on two aspects of the composition of the *IISE Transactions* editorial board. One is the geographical location, and the other is the expertise representation. Many felt that the current editorial board is too North American oriented and lacks international representations. On the expertise representation front, several comments pointed out that the current board is too academic oriented and lacks the knowledge of practical relevance.
- B. Concerning the structure of the editorial board and decision choices, the general sentiment is that *IISE Transactions* has too many layers in its editorial/decision structure. There are many comments suggesting either changing the focused issue structure altogether, or if that is not possible, change the decision structure by combining DE/AE layers.
- C. There are certain degrees of dissatisfaction with the review quality, although a combined 72% of the respondents considered *IISE Transactions* review reports constructive. The voice of dissatisfaction appears stronger in the responses to the open questions. Some comments alleged potential biases against lower tier schools, or unrecognized authors, or people not in certain research groups. We want to note that *IISE Transactions* uses a strict double-blind review process precisely for the purpose of avoiding if possible, or alleviating at least, such type of bias.
- D. There are discussions on how to best handle desk rejections. On this issue, there are conflicting views. Some suggested doing more desk decisions to avoid unlikely successful submissions lingering too long in the review process and unnecessarily consuming reviewer resources, while others think desk rejections should be reduced or handled more carefully.

- E. While 60% of the respondents are fine with the current four focused issues and their names, the other 40% suggested some name changes. The suggestions are split among the four focused issues. There does not appear a converging theme for what the new name ought to be for D&M and OEA. But for S&L, the suggestions point to “Supply Chain and Logistics,” or some variance of that. For QRE, the suggestions point to “Quality, Reliability and Data Science.”
- F. Many suggested increasing the presence of *IISE Transactions* on social media. The most suggested platforms are LinkedIn and Twitter.
- G. When asked about the number of submissions, not all respondents felt that the number of submissions needs to be increased, although the majority did feel that *IISE Transactions* should, and could, attract more papers. Running special issues is the most mentioned idea. Others felt that *IISE Transactions* should try invite or commission papers, especially review and positioning papers from top scholars in the field or run a fast track to encourage submissions.
- H. The question of increasing citations appears a difficult one. Most of the respondents felt that there is no easy way to accomplish that. The content and substance of the papers published in *IISE Transactions* was emphasized more than the review speed and other factors. Respondents seemed to agree that in order to be cited more often, the papers published herein need to have good quality, present exciting results, be innovative, and address important and timely issues. Some (although very few) suggested requiring authors to cite *IISE Transactions* papers. To be clear, *IISE Transactions* cannot make such requirements without relevance and context.

In closing, multiple respondents emphasized that before the journal, *IISE Transactions*, can be improved, we should improve IISE itself because strong journals are typically associated with strong societies. We certainly agree with this message but that goes beyond the journal’s purview. We will pass along the message to the Institute’s leadership and feed back to colleagues in our professions.

### 3. Recommendations

The committee would like to make the following recommendations for the EiC and the senior editor team of *IISE Transactions* to consider. The recommendations are organized in four categories.

1. Concerning the content of the journal:
  - To better promote frontier research for the industrial and systems engineering profession, *IISE Transactions* needs to identify the exemplifying, cutting-edge areas and then build a unique brand for being the leading journal. Opportunities appear especially in the interdisciplinary interface of traditional areas, in which novel and quality research papers may not fit the standard mold of existing peer journals.
  - Focused issue names. To embrace a broader definition for some of the focused issues, consider changing the focused issue name of Scheduling and Logistics to Supply Chain and Logistics, with its acronym staying as S&L, and the name of Quality and Reliability Engineering to Quality, Reliability and Data Science. For the latter, the focused issue changes its acronym from QRE to QRDS.
  - New paper type. Consider inviting/commissioning review, positioning, and

prospective papers from research leaders in our professional field.

- Broaden accommodation. Exploring possible ways to accommodate some of the submissions on human factor and ergonomics topics and potentially to create a department for handling rigorous practice-oriented submissions.
2. In the context of the editorial board:
- Composition of editorial board. The current *IJSE Transactions* editorial board does have members from outside the US. The non-academic members are indeed relatively few. To broaden representation, *IJSE Transactions* should consider adding more qualified international and non-academic members to its editorial board.
  - Training of editorial board members. While the journal has some generic training materials for editorial board members, some tailored training materials specifically for *IJSE Transactions* would be helpful to bring the new editorial board members to speed. Developing and deploying training materials will help improve the quality and speed of the review process.
3. In terms of the decision structure:
- Editorial decision layers. The four-layer system that *IJSE Transactions* currently uses is more than the society norm, which is usually a three-layer system or a two-layer system. *IJSE Transactions* can consider reducing the number of decision layers; for example, combining the DE/AE function and consolidating them into one layer.
  - Fast track. Some peer journals recently implement FAST TRACK submissions to accommodate various types of papers and expedite the review process. *IJSE Transactions* should explore the feasibility and benefit of having FAST TRACK submissions.
  - Desk rejects. Desk rejects serve its purpose of providing quick feedback to authors and saving reviewer resources for those submissions that have a higher likelihood of success. It would be better to create a formal guideline for desk rejects, including encouraging whoever makes a desk reject to consult another editorial member to avoid potential bias.
4. About the outreaching and promotion of the journal:
- Website. Update regularly the *IJSE Transactions* website and the pre-submission and post-acceptance checklists.
  - Office hour. *IJSE Transactions'* EiC and FIEs should consider holding a monthly office hour to broaden engagement with the members of our professional community.
  - Social media. Make greater use of social media platforms. Form a social media team and provide periodical updates to our professional community.
  - Outreach to business schools. Proactively reach out to the department chairs and faculty members for relevant departments in business schools and provide evidence regarding quality and impact of *IJSE Transactions*.