## 7.1 The Author's Perspective

In the role of an author, a researcher can apply journal evaluation to find a suitable venue for publication. The dimension of journal content helps to narrow down the number of periodicals by subject area. The other four dimensions are represented by indicators helping the author to identify a suitable journal for manuscript submission. Journal output identifies the number of research articles published per year, which helps to determine the chances of being published. The size of the potential readership (journal perception and usage) can be estimated by usage diffusion, i.e. the number of unique users of the journal on social bookmarking platforms. In the dimension of journal citations, it is helpful to analyze the percentage of uncited papers in the journal and the SCImago journal rank to indicate in how far the journal is cited by other prestigious sources. In journal management, the rejection rate and publication delay are the most important aspects influencing an author's choice of whether to submit his manuscript. Although a high rejection rate indicates high quality of published content, it may discourage an author from submitting. His chances of being published are higher if the rejection rate is low. Since the author aims to publish as fast as possible, journals with short publication delay are appealing.

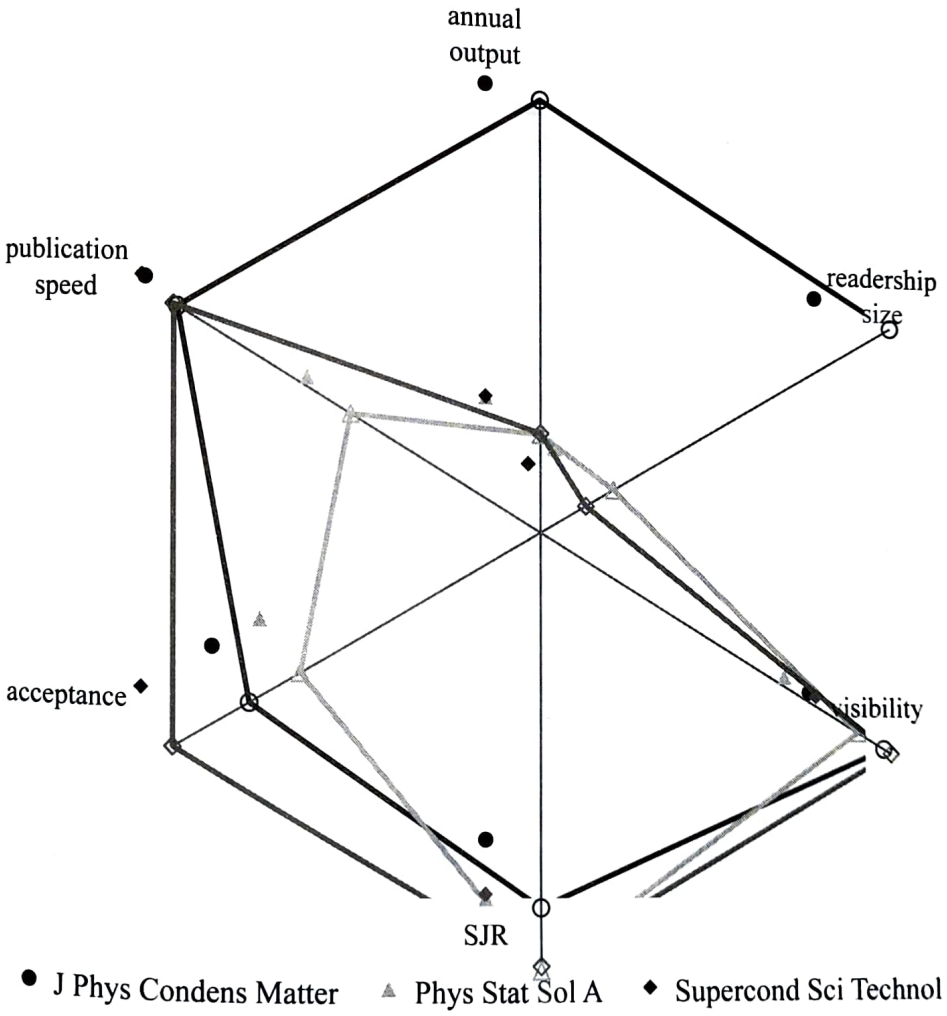


Figure 7.1 Comparison of J Phys Condens Matter, Phys Stat Sol A and Supercond Sci Technol in terms of journal output (annual output), journal perception and usage (readership size), journal citations (visibility, SJR) and journal management (acceptance rate, publication speed).

Two major types of information demands can be distinguished, namely to obtain an overview of the research field, on the one hand, and to be updated in detail about current results from the research front, on the other. Since these requirements contradict each other in so far as most journals veer towards specialization in one of the two directions, these two information needs are treated separately. The reader's perspective is thus subdivided into a review and research journal scenario.

Review journals specialize in the publication of overview articles that summarize developments in a research field. In contrast to research journals which publish new research results of detailed topics, review journals typically have a general scope. As shown in table 2.5 in section 2.1.4, three of the 45 journals can be identified as review journals, i.e. Rev Mod Phys, Rep Prog Phys and Phys Rep. All of these are classified as general or multidisciplinary physics journals (section 3.2.1).

*Table 7.2* Mean number of review articles published per year ($P_{Rev}$), mean document length, citations/citee-ratio, 5-year impact factor, journal age and number of countries represented on the editorial board for Phys Rep, Rep Prog Phys and Rev Mod Phys.

| Journal | $P_{Rev}$ | Document length | Citations/ citee-ratio | 5-year IF | Journal age | Countries on EB |
|---|---|---|---|---|---|---|
| Phys Rep | 63.2 | 73.3 | 5.2 | 17.334 | 40 | 7 |
| Rep Prog Phys | 42.6 | 53.6 | 6.1 | 13.355 | 70 | 9 |
| Rev Mod Phys | 27.0 | 44.5 | 7.5 | 41.344 | 82 | 6 |

Figure 7.2 shows five indicators and the relative results for Phys Rep, Rep Prog Phys and Rev Mod Phys, which can be used to select a review journal. A reader who is looking for an overview wants to read as few reviews as possible, which, however, cover the reviewed topic extensively. In terms of journal output, the mean number of reviews published annually and the average page length are suitable indicators. In contrast to the author's perspective, the reader prefers a small output. Annual output represents the mean number of reviews published between 2004 and 2008 (section 2.1.1). Document length describes the average number of pages per document (section 2.1.2). The longer the review, the more detailed and comprehensive it is. The citations/citee-ratio is helpful to determine the diversity of the knowledge import, since it is a ratio of the number of cited references per cited journal (section 2.1.5). For a comprehensive and well-balanced review it is important to consider various informational sources, which is reflected in a low citations/citee-ratio. The 5-year impact factor can be used to determine the average citation rate of the review journals (section 5.1.1). The 2009 values are used since they cover the average number of citations of the documents published between 2004 and 2008. The number of nationalities represented on the editorial board indicate the international influence of the journal (section 6.2.2) and its publication tradition can be determined through journal age (section 6.1.1). For review journals, rejection rate and publication delay can be neglected, since most articles are solicited and topicality is not so important. The radar chart in figure 7.2 was constructed in the same manner as described above. The highest value per category was chosen as the benchmark and complementary values were used for those indicators, where low values

are regarded as better performance, i.e. mean number of reviews published annually and the citations/citee-ratio, where a low value indicates a broad and diverse import of knowledge. The absolute values per indicator per journal are listed in table 7.2.

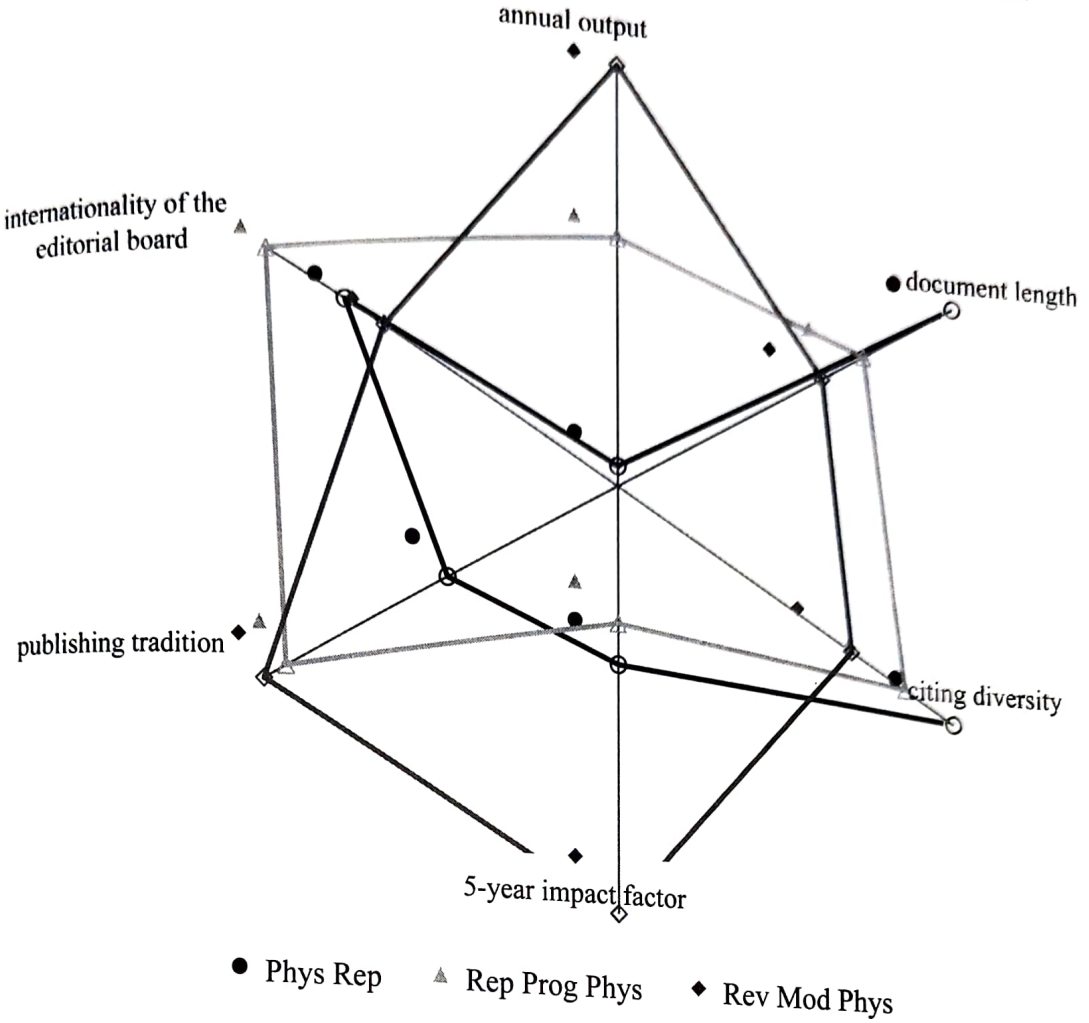


*Figure 7.2* Comparison of Phys Rep, Rep Prog Phys and Rev Mod Phys in terms of journal output (annual output, document length, citation diversity), journal citations (5-year impact factor) and journal management (publication history, internationality of the editorial board).

As shown in figure 7.2, the performance of the three review journals is well-balanced. While Rev Mod Phys has the highest 5-year impact factor, the lowest publication output and the longest publishing tradition, it is outdone by the other two journals in terms of comprehensiveness of the reviews, citing diversity and the internationality of the editorial board. Rep Prog Phys performs second best in all categories except board internationality, where it shows the highest number of nationalities, and the 5-year impact factor, where it has the lowest score. Phys Rep publishes the most comprehensive reviews and the most diverse citation behavior. However, it publishes the most documents per year, so that the reader has to read more. With an age of 40 years, it has the shortest publication history. A reader who wants to read as little as possible will probably select Rev Mod Phys. On average, it publishes only 27 reviews per year of 44.5 pages each. It is the journal with by far the highest 5-year impact factor and the longest publication history. Choosing Rev Mod Phys, one has to compromise with regard to the citing diversity and the international influence of the editorial board.

*Table 7.3* Median number of references per page (scholarliness), usage ratio (UR), highly citedness ($C_{max}$), cited half-life ($T_{\frac{1}{2}}^{cited}$), editor-publication ratio and correction rate for Eur Phys J B, Phys Fluids and Soft Matter.

| Journal | Scholarliness | UR | $C_{max}$ | $T_{\frac{1}{2}}^{cited}$ | Editor-publ. ratio | Correction rate |
|---|---|---|---|---|---|---|
| Eur Phys J E | 3.6 | 11.2% | 5.6% | 5.6 | 0.237 | 0.6% |
| Phys Fluids | 2.6 | 8.1% | 2.6% | > 10 | 0.018 | 1.3% |
| Soft Matter | 5.6 | 14.2% | 13.5% | 2.1 | 0.134 | 0.3% |

A reader interested in the current results of the research front is interested in a specific subject area. The network graph in figure 3.33 in section 3.4.1, which displays journal similarity based on bibliographic coupling and co-citations, is used to identify Eur Phys J E, Phys Fluids and Soft Matter as similar journals in terms of their co-citation and bibliographic coupling values. They belong to the large group of mathematical and statistical physics and more specifically focus on the sub-specialty of soft matter physics.

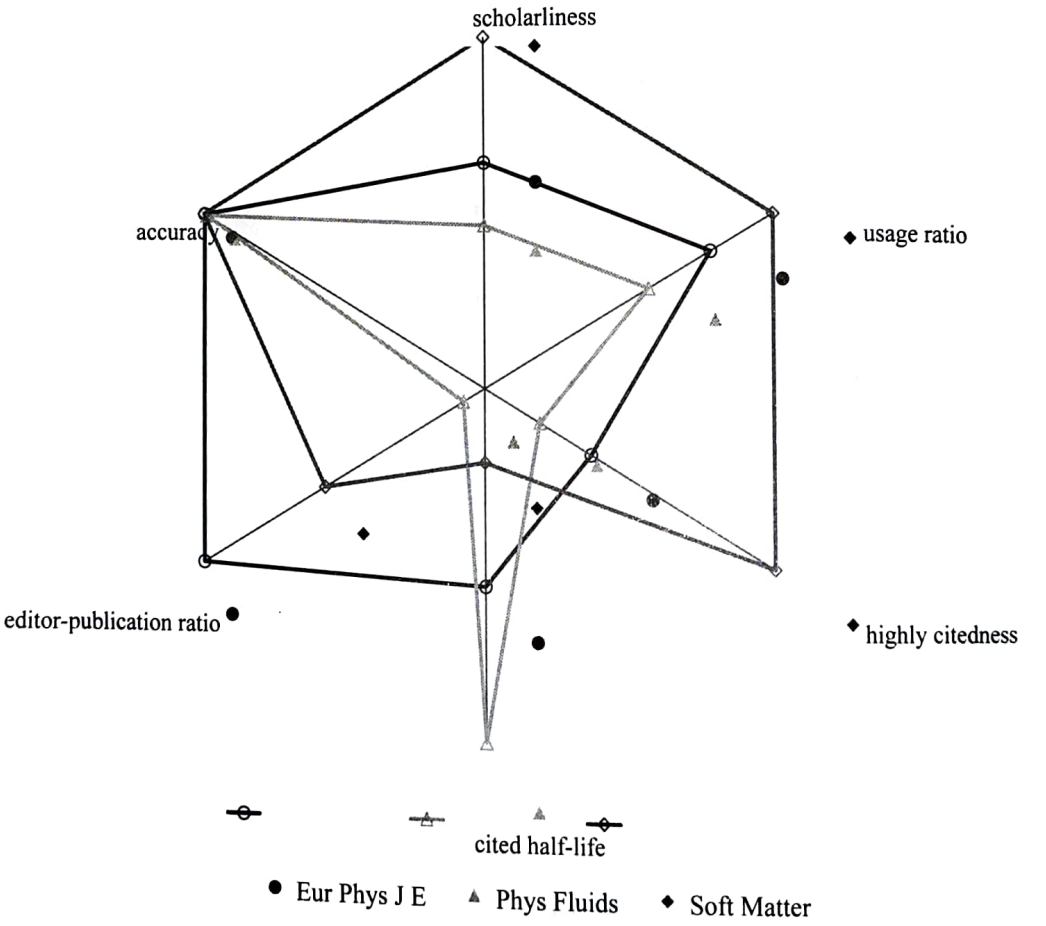


*Figure 7.3* Comparison of Eur Phys J E, Phys Fluids and Soft Matter in terms of journal output (scholarliness), perception and usage (usage ratio), journal citations (highly citedness, cited half-life) and journal management (editor-publication ratio, accurateness).