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**Article**

## Publishing as an Agricultural Economist: Thoughts on Why, Where and How

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## Publishing as an Agricultural Economist: Thoughts on Why, Where and How

### Publizieren in der Agrarökonomie: Gedanken zum Warum, Wo und Wie

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#### Abstract

*Publishing provides the basis for scientific communication and thereby supports further scientific advances. Successfully publishing articles in peer-reviewed journals has become increasingly important for building an academic career, also for agricultural economists. The aim of this article is to motivate and encourage young agricultural economists with limited or no publishing experience to write research articles and submit them to peer-reviewed journals. In order to achieve this, some arguments are given 'why' peer-reviewed publishing is a worthwhile exercise. Then a look at journal quality and choice in our discipline addresses the 'where'. Finally a significant part is devoted to 'how' to write a paper suggesting a potentially useful sequence of steps and discussing elements and style of a typical empirical research article.*

#### Key words

*scientific publishing; peer-reviewed articles; journal choice; paper writing*

#### Zusammenfassung

*Publizieren ist die Grundlage wissenschaftlicher Kommunikation und trägt somit auch wesentlich zum wissenschaftlichen Fortschritt bei. Die erfolgreiche Veröffentlichung von Artikeln in begutachteten Fachzeitschriften hat mittlerweile eine große Bedeutung für die akademische Karriere, auch für Agrarökonominnen. Das Ziel des Beitrags ist die Motivation und Ermutigung junger Agrarökonominnen mit begrenzter oder fehlender Publikationserfahrung, Artikel zu schreiben und bei begutachteten Fachzeitschriften einzureichen. Zu diesem Zweck werden zunächst einige Argumente genannt, 'warum' dies eine sinnvolle Aktivität ist. Die Frage, 'wo' veröffentlicht werden soll, wird anschließend angegangen mit Betrachtungen zur Zeitschriftenqualität und -auswahl. Ein wesentlicher Teil des Beitrags beschäftigt sich aber schließlich mit dem 'Wie' des Schreibens eines Artikels. Dabei wird eine*

*aus Sicht des Autors nützliche Vorgehensweise vorgeschlagen und Elemente und Stil eines typischen, empirisch ausgerichteten Forschungsbeitrages diskutiert.*

#### Schlüsselwörter

*wissenschaftliches Publizieren; begutachtete Zeitschriftenbeiträge; Zeitschriftenauswahl; Schreiben von Beiträgen*

## 1 Introduction

This article about publishing as an agricultural economist is far from the type of research article that I will talk about later and that academics in our field typically aim to write. This article's contribution is not really new and it is of little relevance to most well published senior researchers. I will not carefully position it in a strand of literature on which it builds and I will cite only very few scientific articles on my way to the final paragraph. No hypothesis is tested. My methodology is as old as mankind's use of written language. I will also not carefully distinguish between reproducible findings and my own opinions. But the dissimilarities with a peer-reviewed journal article in the field of agricultural economics start even earlier: I didn't carefully choose the appropriate journal and hope to get 'good' referees for my manuscript. I have instead been asked to write it and if you are reading these lines, then you know that the responsible editors have politely allowed this article to be printed based on a new interpretation of the double-blind review process.

The aim of this article is to motivate and encourage young agricultural economists with limited or no publishing experience to write research articles and submit them to peer-reviewed journals. I try to achieve this by first providing some arguments about 'why' peer-reviewed publishing is a worthwhile exercise. Then I talk about the 'where', looking at journal choice and journal quality measures in our discipline.

But the largest share of my word count will be devoted to the ‘how’, i.e. what to consider when writing a research publication.

The article is based on the presentation I gave at the EAAE-sponsored PhD Workshop in Giessen. This, in turn, drew on a course on publishing and writing that I teach at the University of Bonn, on my – by now – three-year experience as an editor of the *European Review of Agricultural Economics* and on my own failures and successes in the publication process as an author. I will plagiarize some thoughts from RICH SEXTON (2009), who spoke at the same PhD Workshop about his views on publishing and I also need to thank Stephan Cramon-Taubadel who – some time ahead of me – started educating doctoral students in this area and generously shared his course syllabus and some background references with me when I started.

## 2 Why Do We Care?

What motivates all of us to strive to publish in peer-reviewed journals and you to read this article? A simple explanation might be that this is how your supervisor expects you to attempt publishing your research. Your supervisor might be interested in this because it helps his or her reputation and/or that of the institution he or she is working for and you are getting your PhD from, plus he or she may think that it is good for you (which it is). If you are aiming to pursue an academic career, then the quality and quantity of your publications will certainly be very relevant to your success in finding a position. Besides, it may help you as well if you are interested in pursuing a job in a research environment different from academia, because it will provide you with a significant competitive edge over many other candidates. Even later, your publication record can influence promotion and pay in some countries and it is relevant for establishing you as an expert and thereby improving your competitive position in obtaining grant funding.

But why publication in ‘peer-reviewed journals’? One can alternatively post papers online with some visibility on web pages or with specialized service providers such as the ‘Social Science Research Network’ or ‘AgEcon Search’<sup>1</sup>. The main point is that journals with a review process provide quality screening and quality improvement. From a good journal

with good referees and editors scholars can expect a quality distribution of papers whose mean is significantly shifted upward and variance reduced relative to the quality distribution of non-reviewed working papers (‘grey literature’). This saves valuable time for the efficient communication of scientific advances because a quality check is done by few, serving many. That this process works, at least in principle, is accepted by most academics. An implication is that new articles are expected to cite relevant papers published before in peer-reviewed journals but the decision to cite ‘grey literature’ as an additional basis for their own research is left to the authors. Consequently, papers in peer-reviewed journals are on average cited more frequently than others providing another incentive to choose this path of research publication. As perceived quality is relevant to all those defining criteria for the performance of researchers, you can really only get all the rewards and reputation from publishing your research as stated above if you publish papers in peer-reviewed journals.

So, having established why we typically want to choose publication in a peer-reviewed journal, the choice of journal for submission of a paper is still to be made. Which is the right one among the available journals, given the specific characteristics of your paper and yourself?

## 3 Where to Submit the Paper?

All other things being equal, it is certainly desirable to send the paper to the journal that gives the highest reward for the researcher if the paper gets published. How do we measure that reward? Given that the ultimate objective of publishing scientific results is their relevance for others, the reward for authors or, termed differently, the quality of the journal could reasonably be defined as the potential attention received by the articles which appear in the journal. This potential attention is typically measured based on the frequency of citations to articles in the journal. Soon, we’ll come back to these citation measures below.

First we need to qualify the constraint we started with in the last paragraph: all other things rarely being equal. The higher the journal quality, the lower is, typically, the acceptance rate, i.e. the share of accepted papers in all submissions. Consequently, higher quality comes with a higher risk of rejection, and deciding where to submit a paper needs to be based on a risk-reward tradeoff (SEXTON, 2009). If time until publication or the number of publications in a limited

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<sup>1</sup> Please see <http://www.ssrn.com> and <http://ageconsearch.umn.edu/> for more information.

amount of time plays a crucial role for you, then the risk of rejection might weigh pretty heavily.<sup>2</sup> If the quality of the publication perceived by others matters most to you, then aiming high with respect to journal quality dominates the risk of rejection involved.

Another issue of journal choice and the likelihood of rejection relates to the fit of your specific paper to the scope of the journal. An initial selection of relevant journals should normally come from your own manuscript's reference list. Where are the articles relevant to your research published? This is always a good start. But at times, for example when you transfer theory or methodology from another field to your own area, most of the background literature might come from journals that are not suitable for your paper. In this case, you have to look at what journals say about themselves, after having picked potentially suitable ones from other reference lists or available services like *EconLit*<sup>3</sup> from the American Economics Association or the *Web of Knowledge* provided by Thomson Reuters<sup>4</sup>. The journals typically have an 'aims and scope' paragraph on their website and in the printed issues, if available. This should give a reasonable indication of your paper's a-priori suitability for the journal. If you are in doubt, you could send a brief e-mail with an abstract of the paper to the editor of the journal and ask if he or she considers the paper fitting. However, journal editors will check this anyway before sending papers for full review. If it isn't considered to fit into the journal's editorial policy, then they do a 'desk rejection', normally within three weeks from submission. This will, therefore, not significantly delay your overall publishing time.

### 3.1 Citation Measures

As stated above, the quality of journals is often considered to relate to the attention given to the articles they publish. This attention is often measured by the number of citations by other articles in the journals indexed by the indexing service applying the frequency criteria. I will now give a brief overview of the most important citation measures, including some discussion of the advantages and disadvantages of each of them. A comprehensive discussion of the pros and cons of available citation measures is outside the

scope of the paper, but a detailed analysis of citation-based measures is available elsewhere (MOED, 2005), and applications refer to general economics (e.g. RITZBERGER, 2008) and agricultural economics (e.g. ZAPATA, 2009).

#### Impact Factor

The most widely used citation measure is the Journal Impact Factor, or, in short, Impact Factor (IF), that was first published by the Institute for Scientific Information (ISI) in the Science Citation Index in the 1960s and today continues to be reported in the Journal Citation Reports (JCR) by Thomson Reuters, both for the sciences and social sciences. It is defined as the average number of citations by articles in indexed journals in a given year of articles published in the journal in the preceding two years. For example, the 2009 IF of the American Journal of Agricultural Economics (AJAE) is 1.047. It is calculated as the number of cites in 2009 to articles in the AJAE during 2007 and 2008, which is 225, divided by the number of articles published in the AJAE in these two years, which is 215.

The IF has several advantages: it is an objective measure with clear rules regarding its calculation; with more than 9 000 journals indexed by Thomson Reuters, it has a far-reaching international coverage; and finally, the access to the IF is wide, even though institutions have to pay a licence fee.

The generally wide acceptance is, however, also problematic. It gives power to the provider THOMSON REUTERS who decides whether a journal will be indexed or not. Due to its history, there is a bias towards English-language journals and the sciences. Only 245 journals are currently listed in the economics category (THOMSON REUTERS, 2009). This is only a relatively small share of the more than 750 journals listed by the American Economic Association in *EconLit*. Consequently, the relevance of the IF for measuring citations in economics (as well as other social science disciplines) is limited, which sometimes creates conflict in institutions where the natural sciences dominate the discussion of evaluation measures and would like to establish the IF or related measures as the main criterion for evaluating publishing performance. In addition, two years is a rather short time horizon for the citation culture in economics. New theories and methods take much longer to establish themselves in this discipline and most of the citations to important articles will come long after the first two years since publication. In general, the IF should not be used to compare journals across different disciplines. But within a field

<sup>2</sup> A formal treatment of the strategic decision on where to submit a paper can be found in HEINTZELMAN and NOCETTI (2009).

<sup>3</sup> See <http://www.aeaweb.org/econlit/index.php>.

<sup>4</sup> See <http://www.isiknowledge.com>.



the IF, compared with the average IF in this field, can certainly give an initial indication of a journal's visibility.<sup>5</sup>

The IF is also often misused as a measure to evaluate a single author's publications. The average citations to a journal do not directly translate into citations for an author's publications. Articles in lower-level journals are sometimes highly cited, and top-level outlets always have a significant number of articles that are not cited at all. The currently increasing practice of reporting the average IF of an author's publications in his or her Curriculum Vitae will hopefully not become standard practice in the discipline of economics.

### Other Citation Measures

There are other citation measures that may solve some of the IF's disadvantages but also have their own. A fairly new addition by THOMSON REUTERS is the *5-year IF*. It is defined in the same way as the IF but the preceding five years, instead of two, are used to calculate the average number of citations of articles in a journal. In my view, the 5-year IF is better suited than the IF for the social science disciplines for the reasons mentioned above. It has the additional advantage that it will be less volatile for smaller journals compared with the IF where one year with a single highly cited article can cause the IF to go up significantly (and down again when this article doesn't count anymore for the calculation).

Another citation measure reported by THOMSON REUTERS is the *Cited Half Life* (CHL), defined as the median age of articles of a journal cited in the current JCR year. For example, a CHL of 8 in year 2009 indicates that 50% of all citations of articles in a journal in 2009 were citations to articles published in the years 2001 to 2008 and the other 50% of citations were to articles before 2001. Consequently, the CHL increases with the long-run quality of articles published in a journal. More general journals focusing on innovations in theory and methodology that are of wider interest to the profession tend to have higher CHLs. A disadvantage is the long time it takes for the CHL to go up so that it might unfairly return low values for young journals and those that have only recently gained in quality.

Some people argue that *Total Cites* is what really matters in evaluating journals, which is simply the number of citations in a given year to all articles of the current or previous years. It obviously also depends on the number of articles published in a journal, and is not a reflection of the average quality. However, as proponents say with some justification, a high number of submitted articles required for a large size journal also reflects authors' and readers' perceptions of the quality and importance of a journal. In the discipline of agricultural economics, with 4 189 citations in 2009, the AJAE is by far the journal with the largest number of total cites. In comparison, the European Review of Agricultural Economics (ERAE) only had about one eighth of these citations in 2009 (582), despite being comparable in IF over the previous three years and somewhat better in the 5-year IF published in the previous two years.

To wrap up this brief overview on citation measures, we conclude that these criteria are transparent and reproducible, and in this sense objective. Each single citation measure has advantages and disadvantages as a quality measure. Evaluation of journal quality will hopefully not turn to any single one of them in a standard fashion as this is likely to cause journal editors to act strategically and attempt to inflate the chosen measures, independent of true quality changes in the background.

The citation measures discussed here are all regularly updated and provided in the JCR of THOMSON REUTERS. Because of the limited journal coverage in the field of economics mentioned above and the comparatively stronger relevance of the 'grey literature' in the discipline, economics departments at U.S. universities have started to use *Google cites*<sup>6</sup> to an author's articles as a measure for evaluating single-researcher performance in addition to citations measured by Web of Knowledge from THOMSON REUTERS. The former include a much larger range of citations identifiable over the internet, not only peer-reviewed journals. The downside of this is the limited transparency regarding precisely which citing publications are exactly included. Furthermore, journal quality evaluation with *Google cites* is currently not possible, as an aggregate classification for a journal comparable to the JCR is currently not provided.

<sup>5</sup> It might be useful to restrict the journal comparison to a more specialised sub-discipline instead of a wider discipline like 'economics. See BARRETT et al. (2000).

<sup>6</sup> See <http://www.google.com/scholar> or the service 'Publish or Perish' which is based on *Google cites* and provided by Harzing.com under [www.harzing.com/pop.htm](http://www.harzing.com/pop.htm).

### 3.2 Expert-based Journal Ranking

An alternative journal quality evaluation is provided by expert-based journal rankings. These are typically based on surveys of publishing actors (authors and referees) and allow a broader range of characteristics beyond citations to be taken into account, such as the perceived quality of the review process or the assessment of the relevance of published articles. The effort to produce and regularly update such rankings is considerable. They are most often done by larger institutions that set the criteria to coincide as closely as possible with the aims of those institutions<sup>7</sup>. Recently, a journal ranking relevant for agricultural economists, and based on interviews with German-speaking researchers in the field was provided by a German and Austrian initiative (see DABBERT et al., 2009). These rankings may help newcomers to get a quicker overview of journals and their quality relevant to this discipline, including those for which the IF is not available. It differs from rankings for economics journals as it also reflects relevant interdisciplinary journals where agricultural economists publish jointly with colleagues from animal and crop production or nutrition in fields like climate change impacts, animal disease management, food safety, etc.

## 4 Some Hints on the 'How'

We now turn to the process of writing a manuscript for submission to the journal of choice. We start from the point where the research has been performed and you are ready to report on it. Consequently, one would assume that you already know the relevant literature and you had a clear research question posed before you started. Or not? Well you would not be the first needing to modify or improve the precision of the research question and to take a new look at the literature after you've got your initial results. So you might reach this point with some backtracking and you have to be aware that writing a paper might mean you have to go over the same ground again.

If you have completed a PhD dissertation as a monograph at this stage already, then you have reported on your research before, but it is not in the format and length of a journal article. Moreover, the

scope is likely to be too much for a single paper and many elements often required for a dissertation are not suitable here as will become more apparent further below. A simple extended summary of your dissertation will not sufficiently allow motivating and documenting the breadth of the research performed. The best strategy for writing a journal article in this case is to follow the same general approach as if you didn't have completed a dissertation yet. It will keep you from sticking to structure and elements not suitable for the purpose. However, you might be able to more quickly perform certain tasks in the process as you have tried to explain your work already once and you invested already a lot in potentially useful elements for presenting the approach and results. Let's now turn to what I find a useful sequence of steps in the paper writing process<sup>8</sup>.

### 4.1 Write Down the Key Message

What is the main or key message you want to tell the reader with your intended paper? What is the core result that should make it worthwhile for others to read it? Write the key message down in one sentence. It is really important that you spend sufficient getting it right, because, as will become clear, it will guide you through everything that follows and is a precondition for being focused, clear, and confident. If you can't do this, then think about the reason. Is the key message not clear in your mind? Are you trying to do several things at the same time and does this suggest that you should split the paper into two? Does your main result sound trivial, suggesting that you have a problem with the relevance of your results?

Key messages are not short summaries of papers. They should not contain why you did your research and how you did it. Just what – certainly in view of the literature – you consider the main finding of your research. Examples could be: "A firm's size and reliance on export markets are important factors in explaining why food processing companies consider certification" or "Discarding zero trade flows between countries will bias estimates of regulatory impacts on agricultural commodity trade" or finally "German consumers' willingness to pay for vitamin additives to milk depends on health information provided at the time of purchase".

<sup>7</sup> For example, the ranking provided by the German association of university teachers in the area of business economics and administration: <http://vhbonline.org/service/journal/>.

<sup>8</sup> What follows is inspired by CFA (2010), but adapted to my own experience with the publishing culture in the (agricultural) economics discipline.

## 4.2 Produce an Outline

Producing an outline which identifies the main sections and their core content in bullet form is a useful next step. The successfully written key message will help you to limit the elements to those that are necessary to get the message across and to avoid excursions in 'also interesting' directions. It is important that you try to lead the reader through a logical structure where he or she always knows what you are currently writing about and why. Take your time with this task before you start writing sentences and paragraphs.

To provide some orientation for this outlining process and the later writing, I will go through the typical sections of an empirical paper in our discipline and discuss aims, relevant content and standard mistakes related to those sections. This basic structure might ultimately not be the one that you will choose, but nevertheless it can serve as a starting point and if you deviate from it then you should know why. Whatever you do consciously for a good reason has a better chance of being followed by the reader. The sections I would like to differentiate are (1) Introduction, (2) Literature review, (3) Theory/model, (4) Methodology and data, (5) Results, and (6) Conclusions.

### Introduction

The introduction starts with the background to the problem, trying to show why your research is relevant. It might be a highly topical policy question, something relevant for businesses in the agro-food sector, and/or relate to an ongoing discussion in the scientific literature. It should end with stating the deficiencies of the current literature in dealing with this issue, i.e. your perception of the problem that you would like to address. Consequently, it is at this point that you need to introduce your view on the state of the literature in a rudimentary fashion. Note that this deficiency does not always have to be a theoretical or methodological question. It could also be that the empirical evidence on certain issues is currently limited.

The objective of your paper in one or two clear sentences should follow almost automatically from this problem background and the identified deficiencies in how it has been treated so far. If you set it up right, then it is also easy to write what you claim is the contribution of your paper to the literature. If you submit a paper to a peer-reviewed journal, your introduction should explicitly position your research in the work others have done before you and state your opinion of its contribution to this body of work. In quite a few papers that I have seen in my job as editor,

the referees have had the painful task of seeking this out in what follows later, which is always a bad start. Don't be obscure about where you stand. Take the risk that they might disagree with what you claim or express reservations early in their reading.

There are different practices regarding the inclusion of your main result in the introduction. I don't find it very important here, because it has to be in the abstract preceding the article. The final paragraph of the introduction should give an overview on the structure of the paper. Don't spend more than one sentence per section, but try to convey the point that content and sequence are logical ingredients for the task of leading to your key message.

### Literature Review

The introduction should allow the interested reader to get a quick overview of the objective, claimed contribution and content of the paper in order to decide if it is worthwhile reading on. It, therefore, should not extend over several pages but stick to the most important things. Consequently, it is quite often necessary to detail the relevant background literature and your specific contribution in a separate section containing a review of the literature.

This literature review should cite the papers that best describe the state-of-the-art in scholarly research that is relevant to setting the stage for your contribution. If you submit your paper to a highly ranked journal, the editor is likely to choose one or two of the key authors in this area as reviewers, and it would not be particularly helpful in increasing the chances of acceptance of your submission to have omitted their papers. This in turn should not lead you to cite everything you have read in the area - only what is required to identify the position of your article in the literature. Here again, the key message should guide you in your selection of cited papers. You should include those with similar or contrasting messages and the ones that provided the theoretical and methodological background to the work you do have done in arriving at your main result. But do not report the detailed history of the research developments in the wider field. Note that most editors will get quite sceptical if your reference section contains more than 40-50 papers unless you are writing a review paper. And even below this number, good referees and editors would like you to limit yourself, as the core of your work can easily get lost if you wander off too far afield.

Apart from the number of cited references, it is important that the literature review should not contain a

series of short summaries but rather a discussion of relevant contributions. It needs to provide some value-added compared with the sum of abstracts of the contributions cited. Although your own contribution to the literature has to be clearly stated, overcritical assessment of the existing literature should be avoided unless absolutely needed for the development of the paper.

### Theory

Good quality empirical papers require you to base your analysis on an explicit theoretical framework and, if possible, to state clear hypotheses to be tested, even though the latter is stressed more in the natural sciences. For example, econometric analyses trying to explain individual behaviour can often draw upon a wide range of possible determinants. If you do not explain why you consider certain determinants to be relevant and hypothesize how they affect the behaviour to be explained, your analysis degrades to a pure statistical exercise governed by data availability. The interpretation of the statistical results is then easily driven by the sampling noise. This approach is sometimes called ‘empiricism’ and you should avoid the impression that you have followed it. After all, the main point of doing economic analysis is to identify patterns of behaviour with relevance beyond the specific object of analysis. You can only achieve this if your analysis is based on a theory that is more widely applicable.

Nevertheless, the theory section should build upon your literature review and focus on new elements while relevant existing ones are briefly referenced. In the context of dissertations, supervisors often require you to describe explicitly the full theory underlying your analysis. In an article, you should only do this in detail if the theory is part of your own contribution. Repetition of textbook theory or even of recently published papers is not necessary, takes up valuable space and often drives referees nuts.

So we have established that an underlying theory for an empirical paper is important, but a detailed presentation of other people’s work is not appropriate unless, of course, it is absolutely necessary, i.e. if you are criticizing it and your paper is going to propose an alternative, improved, theoretical framework on which the empirical analysis will be based. Consequently, a separate theory section is only really useful if the theory is part of your contribution. Otherwise, one can combine this with the literature review. In both cases you should finish with the hypotheses you would like to test with your empirical application, independent of

whether it is an econometric application allowing for statistical tests or an application of a simulation model helping to rigorously connect complex sets of assumptions.

### Methodology and Data

Although authors may choose to keep methodology and data in separate sections, I’ll treat them here in combination, as there is a clear relationship between them. Depending on the nature of the analysis, the optimal sequence of the presentation might also differ. The basic objectives of writing about your methodology are to reveal your motivation for choosing it and to make your approach – in principle – reproducible for the reader. Motivation should demonstrate that, given your objective and the data which is available, you have chosen the appropriate state-of-the-art technique. If the methodology is part of your paper’s contribution, then this section should carefully argue why your new methodology is better than any previously used, possibly for the specific data set available to you.

For example, starting from a theory section that derived a functional relationship between commodity trade flows and a set of determinants, this section would need to add the statistical model, i.e. add error terms and assumptions about their distribution. In order to make appropriate assumptions about the data-generating process, you need to look at the data. If they consist of a significant share of zero trade flows, the statistical model should allow for such observations. The econometric procedure to estimate the model’s parameters of interest should then follow from the statistical model presented.

This section might also describe a more complex simulation model with a set of equations. If this is lengthy and the actual model used contains details with little relevance to your main contribution, you should illustrate the basic structure and refer to details in an appendix or to accessible model documentation. No matter what type of mathematical model you talk about, you need to make sure that you introduce all symbols in the context of their first use.

The description of the data should include the time periods and cross-sectional units covered. All variables should be defined precisely, including their sources in the case of secondary data. If you employ primary data, i.e. you performed your own survey, then the sample selection, the survey design (questions asked), sample size and its determination (e.g. number of individuals interviewed or asked to fill out a survey and the number of usable observations returned) are of



importance. These points may sound self-evident, but even experienced authors don't always address them appropriately in their first submission to a journal. Carelessness in the description might quickly annoy referees and a 'poorly written' paper is closer to rejection than a 'well written' one with a comparable contribution.

## Results

Even though by now you're probably tired of hearing it, the results section too should be written in keeping with the key message. Choose the tables and figures that most efficiently communicate your core findings and refrain from providing every piece of information that can be drawn from your analysis. Tables and figures should be self-explanatory and contain a precise, fully informative title. The units used and names of variables and parameters have already been introduced and should be readily understandable. In general, the description of results should have a clear connection to the theory and methodology section and should not contain new concepts and naming conventions. Avoid repetition of information in the text that is already contained in tables and figures. Only use the text to provide additional information or to stress and interpret certain elements given in tables and figures.

Authors sometimes have the tendency to document everything they have done and they fail to specify precisely which part of the information is ultimately relevant. For example, you might come to a final model specification through a statistical comparison of several estimated model variants. There is no point in presenting and interpreting results of those models that were statistically rejected and are consequently irrelevant. You only need to describe precisely how you arrived at your final specification, as this is important for the interpretation and evaluation of the results. Provide only information of immediate relevance to the flow of the arguments and move more detailed background tables or figures to the appendix if the information contained is referenced in the text. Otherwise leave them out completely. An alternative may be making them available on your website and providing the address in the paper.

## Conclusions

The concluding section of the paper should contain a brief restatement of the paper's objective and a very short summary of what you did to achieve the objective. Then the major findings should be described and

possibly compared with previous results in the literature. Conflicting results in particular are highly interesting including your interpretation of why you came to different conclusions. You should also make an effort to include a discussion of the wider implications of the results obtained, not only in terms of research progress, but also for the "real world".

Some thoughts on useful further research in this area following your assessment of the limitations of your analysis are useful. Typically you're well aware of some of them, but avoid boring statements about general limitations that apply to almost every analysis just to comply with what you think is expected to conclude a journal article. The referees are likely come up with any relevant limitations anyway, and these can be added in the course of the review process.

## 4.3 Writing first Abstract and Title

After the outline has been produced it is time to write the first abstract. Writing this 'executive summary' of your paper will provide a good check of whether you are fully clear about it. Apart from the title, the abstract is the part of your article read first and most often. It provides an excellent opportunity to get people interested in the details of what you have to say.

The length of the abstract for many journals is around 100 words. This is not much, but it is surprising how easy it is to waste a large proportion of these words. The abstract should contain everything relevant – and only that: background to the problem; the objective of the paper, which can sometimes be combined with its contribution; the theory, methodology and data used to achieve this objective; finally, the main finding, i.e. the key message. For each of these items, a maximum of two sentences must suffice; for some you need only one. Give it a first try and then look at the result in detail: do you have repetitions that can be avoided by improving the structure? Is every word necessary to convey the information? Have you avoided long and cluttered sentences? In my course on publishing and technical writing, we go through each participant's abstract and we often end up with cutting the length of the first version by one third or more, without losing any (relevant) information in the process. On the contrary, the paper's motivation and content typically come out more clearly. When you are satisfied with your version of the abstract let your colleagues read it and make improvements based on their comments. This will prevent that the abstract being clear only to you.

The final element of concern is the title. After writing the abstract it might be a good idea to revisit your current working version. The title is the element of your paper that people will see first. It should capture the attention and contain key words that people would use if they are looking for your type of research. Make it as short as possible (40 to 50 characters) focusing on one idea or subject. Limitations and context can be safely added in the abstract and introduction. Avoid using colons. They might be good for incorporating complex messages into titles in a precise fashion, but they are overused. I would estimate that almost half of the authors submitting to ERAE use colons. Short titles are more powerful and one can often avoid colon formulation without much loss to the message. As you can see from the title of this paper, I really meant to say ‘often’ and not ‘always’ in the previous sentence. I really could not find a good straight title without a colon that still has the elements I wanted to include.

#### 4.4 Writing the Paper

With the outline and the abstract in hand, you have excellent guidance for writing the paper. You know where you are going and the relevant elements needed to get there. The process of writing can now be seen as bringing the bullet points of your outline and their logical connection to life for somebody who doesn’t know what you know about your research. To do this well might be easy for some and difficult for others. Perhaps you are like me, with limited success in literature and essay-writing subjects in school. The good thing is that writing a scientific paper is not like writing a novel. It is not about describing people or feelings with a rich set of ever changing adjectives and metaphors. Most skills necessary to write a good scholarly article can be practised with success. An important component that can be learned is paying attention to detail.

It is useful to keep four basic objectives in mind: try to convey only the required information (‘relevance’) and with the maximum brevity possible while still being clear (‘succinctness’); make sure you cover everything necessary for the reader to follow you to the main finding (‘comprehensiveness’) and deliver sections and paragraphs in a logical, appropriate flow (‘coherence’).

The last objective deserves an extra word. We have already talked about the structure of the whole paper, how it should be clear to the reader at all times, where things go and why. What is true for the overall

paper also applies to sections and even paragraphs. Give every paragraph its own objective – at least in your own mind. Within each paragraph, strive to move from the more general to the specific. This will help the reader to understand the overall context when you get to the details. For example, a paragraph in the theory section is intended to introduce the behavioural model you choose: you should not talk about your assumptions on how individuals form expectations about output prices before introducing what overall objective they pursue (profit maximization, utility maximization, etc.). If possible, start the paragraph with the key message you want the paragraph to deliver.

Write in a basic and simple form ensuring easy readability. Using simple and non-convoluted sentences might be a challenge, especially for me and my German colleagues. For a long time, to display intellect and scientific competence, at least in the liberal arts and social sciences, people felt obliged to use complicated, though grammatically correct, nests of several subordinate clauses. Technical writing avoids this for the sake of easy access to the core information. That doesn’t mean thinking about formulation is less important. Formulation matters for succinctness. You can start a set of sentences in a way that means you are later forced to repeat information. Or you can reorganize it and avoid repetition. We also frequently employ a large number of filler words with no immediate purpose. For example, in the last sentence the word ‘immediate’ is not very relevant, because it wasn’t my intention to say that filler words had a hidden purpose. So we can leave it out. Certainly, everything can be overdone and a limited use of filler words might make the reading more enjoyable than stripping everything down to the bare bones of information. But in my experience, the problem of most writers is to having too many irrelevant elements in their writing, distracting from the relevant core. Hence my emphasis. Many of us need to train our awareness of this.

When finishing the writing, the mistake often made is to spend too little time on the concluding section and on bringing both introduction and abstract to perfection in the light of the final version of the other sections. Of all the parts of your paper, the abstract and the first and the last paragraphs of introduction and conclusions are read the most. In contrast, the theory and methodology sections are typically only read by graduate students, referees, and those engaged in similar work, i.e. the clear minority of all readers. To get people interested in your work, and to get it

cited and used, it is therefore advisable to invest in optimizing the heavily read sections as much as the technical description of your research. For this, it is helpful to give your completed draft paper to a colleague for feedback. If you can afford any extra time, it is also extremely useful to let a paper rest for two or three weeks and then look at it again. You will be surprised to notice that many things had slipped by you when you did the supposedly final reading too close to the first writing.

As a final step before submission, it is often worthwhile seeking the opinion of a mother-tongue reader if you have not written the paper in your first language. But make sure you carefully check the use of technical terms of the corrected version as these often create difficulties for language editors not close to the discipline.

## 5 Final advice

After you have submitted your paper to one of the internationally visible agricultural economics journals or a close interdisciplinary journal, and it has not been desk-rejected, you will get a decision typically within 2-4 months. Some review processes run into problems such as the difficulty of quickly finding suitable referees, one of the typically two evaluations<sup>9</sup> is severely delayed, or a difficult decision arises due to conflicting comments, requiring another opinion or a significant input of time by the editor to weigh up the pros and cons. In these cases, the review times may be extended, but this should be the exception.

Only very rarely will you get a response after the first submission that the paper is great and only minor editorial changes will make it ready for publication. Out of about 160 papers that I have been responsible for as an editor, exactly one paper came close to this. It hasn't happened to me as an author at all. So, the best you can realistically hope for is that the current version of your paper is rejected for publication, but a major revision is invited. This is a very good outcome! The only real alternative is final rejection and this happens to the vast majority of papers submitted to high-standard journals in our discipline (for example, more than 80% of all papers submitted to ERAE and AJAE).

If you receive the chance to revising the paper, then the probability of acceptance after revision is

much higher than before (more than 50%). If you get the chance, you should use it, even if the comments seem fundamental and somewhat frustrating to you. At least the editor must have thought that you had a chance of successfully revising. In general, don't take the referee reports personally, even if unprofessional reviewers are demeaning in their comments. Respond carefully, one by one, to the issues raised. You don't need to do everything the referees request but, if you don't, you need to be able to carefully argue why. Make your changes in the paper as clear as possible so that the reviewers don't have to start searching or are left wondering what exactly you have changed in response to their comments. Do not try to fool the referees or the editor, counting on their sloppiness. You are much better off by dealing with them in a direct, transparent way.

Finally, assign the highest possible priority to the revision of vested manuscripts. At a time when I didn't understand the importance of promptness, I came back too late to manuscripts for which I had got a "revise and resubmit" decision from very good journals in economics and agricultural economics. I basically wasted these chances because, when I finally got round to the revision, they were either no longer considered as revision and would have had to be submitted as new papers, or in the meantime I was further ahead with the research and it made no sense to stick to the general approach employed in the original paper – again making it a new paper. Apart from this, it is always very inefficient to go back to a specific research exercise too long after you have left it. Probably, in Europe, with the much stronger emphasis on publications in our field today compared with 15 or even 10 years ago, you are less likely to make this kind of mistake. But don't look at publishing articles only as something required and painful. It might actually turn into something enjoyable once you have gained confidence through practice and your first successes. It's really rewarding to see the final copy of your article in the typesetting of the journal!

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<sup>9</sup> The ERAE is an exception in this regard with the typical number of invited referees being equal to three.

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