

## Designing and developing OM research – from concept to publication

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*Published in:*  
International Journal of Operations and Production Management

*DOI (link to publication from Publisher):*  
[10.1108/IJOPM-01-2017-0038](https://doi.org/10.1108/IJOPM-01-2017-0038)

*Publication date:*  
2018

*Document Version*  
Accepted author manuscript, peer reviewed version

[Link to publication from Aalborg University](#)

*Citation for published version (APA):*  
Caniato, F., Doran, D., Sousa, R., & Boer, H. (2018). Designing and developing OM research – from concept to publication. *International Journal of Operations and Production Management*, 38(9), 1836-1856.  
<https://doi.org/10.1108/IJOPM-01-2017-0038>

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**Designing and developing OM research – from concept to  
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Journal:	<i>International Journal of Operations and Production Management</i>
Manuscript ID	IJOPM-01-2017-0038.R1
Manuscript Type:	Viewpoint
Keywords:	Research design, Publication, Research competences

# Designing and developing OM research – from concept to publication

## Abstract

**Purpose** – Our purpose is to identify similarities and differences between qualitative-based and quantitative-based research, and to present recommendations for designing and conducting the research so that the possibilities of publishing it in leading OM Journals are improved.

**Design/methodology/approach** – The paper takes its outset in contributions made at the 2016 European Operations Management Association Young Scholars Workshop. The theme of the workshop was “Designing and developing research projects in Operations Management – from concept to publication”. Taking the perspectives of the case researcher, the survey researcher and the editor/reviewer, we present and discuss our views on and experiences with designing research for publication.

**Findings** – We identify a number of recommendations that researchers should use when designing, conducting and presenting their research for publication. The recommendations include the need to clearly and concisely establish relevance, account for choice of methodology as well as the operationalization, sampling, analytical and validation methods used, and demonstrate the contribution of the paper in the discussion section. Furthermore, we draw attention to the importance of developing a publication strategy as early as possible. Other important aspects include the title of the paper, keywords selection and rejection criteria. Finally, we stress the importance of “total quality management” in designing and executing OM research.

**Originality/value** – Going beyond the standard author guidelines found at journal web sites, we present a collection of viewpoints, which are based on our experiences as reviewers, editors and evaluators of OM research projects and their designs.

**Keywords** – Research design, Publication, Research competences

**Paper type** – General review

## Introduction

Like any scientific discipline, Operations Management (OM) depends on its scholars performing high-quality research that is both practically relevant and has theoretical impact. Publishing is one of the important requirements for PhD students to obtain their degree, and for young scholars to make progress in their academic career. High-quality research provides the basis for a high-quality thesis and papers, and requires research skills, disciplinary knowledge, and oral and written presentation proficiency. The European Operations Management Association (EurOMA) supports the development of these competences through the EurOMA Doctoral Workshop, its engagement in the EIASM EDEN doctoral seminar on “Research Methodology in Operations Management”, and the EurOMA Young Scholars Workshop (YSW). Offered to young scholars who have completed their PhD studies and have attained their first academic positions, the YSW has a rolling agenda, so that young scholars can step in anytime. The topics on the agenda include:

- Supervising MSc and PhD students.
- Teaching OM to MSc and MBA students.
- Career development – managing your way through academia.
- Operations management – research and practice.

The 2016 YSW focused on “Designing and developing research projects in Operations Management – from concept to publication”. This general review paper is based on the presentations from three OM scholars, who shared their views on and experiences with designing publishable research, and the resulting discussions with the young scholars attending the workshop. We examine common approaches to designing and reporting empirical research. Specifically, we seek to differentiate between qualitative and quantitative research and to align these approaches to reporting findings and preparing papers for publication in highly ranked OM-focused journals. First, taking a researcher’s perspective, we discuss and exemplify designing publishable case study and survey research, respectively. Next, we take an associate editor’s perspective on designing publishable research. Subsequently, we discuss the importance of “total (research) quality management” in OM research. We conclude the paper with a summary of key lessons for OM scholars.

## Designing publishable case study research

Case studies are the most frequently used qualitative research method in OM. Although they may be used for a variety of research purposes, case studies are particularly strong and most often used for theory building purposes (Voss et al., 2002; Ketokivi and Choi, 2014). In recent years, there have been calls across several management disciplines for developing good theory (Corley and Gioia, 2011; Yadav, 2014; Narasimhan, 2014). In OM, it has been suggested that many theoretical contributions are “vacuous”, without enough understanding and explanatory power (Schmenner et al., 2009). One reason may be that the training of OM researchers “... tends to favor empirical research that seeks to verify existing theory” (Skilton, 2011, p. 22), often leading to minimal impact.

Good theory is relevant and can have high impact (Van de Ven, 1989), and funding bodies increasingly assess the relevance and impact of the research proposed. A logical implication of this demand is that OM needs more research based on rigorously designed and executed theory-building case studies. This section addresses this implication. It is not intended to be a tutorial on case research – good guidelines have already been developed elsewhere (Yin, 2014; Miles and Huberman, 1994) and discussed in the context of OM research (Stuart et al., 2002; Voss et al., 2002). Instead,

this section aims to 1) discuss the most common shortcomings found in OM case research projects (despite existing guidelines); and 2) clarify a number of research design areas in which guidelines are highly tacit. The section draws on 1) literature on the case study method from the general and operations management fields; 2) case-based papers published in OM journals; 3) the author's experience in assessing, reviewing and teaching case-based research as a faculty member of the EDEN Doctoral Seminar on "Research Methodology in OM" and the EurOMA Doctoral Seminar dedicated to reviewing PhD research projects. The intention of this contribution is to draw attention of the OM research community, particularly early career researchers, to common pitfalls and misunderstandings related to the use of case studies, thereby contributing to improving the rigor and impact of case-based OM research. Several research design and execution decisions are addressed in the typical sequence in which they arise, with reference to exemplary papers whenever adequate.

Purpose of case studies

Case studies are most often used to build theory inductively. However, they can also be used for conceptual theory building purposes, in which the researcher applies deductive reasoning to develop relationships between constructs into an internally consistent theory (Handfield and Melnyk, 1998; Meredith, 1993). Cases can then be used to illustrate the theory (Wacker, 1998), so as to (Siggelkow, 2007):

1. Give concrete examples of the constructs employed in the theory, which helps the reader to imagine more easily how the conceptual argument might actually apply in empirical settings.
2. Illustrate the nature and scope of conceptual relationships (e.g., A leads to B).
3. Make it easier for the reader to assess the plausibility of the theory's relationships by illustrating examples of how A leads to B.

This use of cases is not always well understood and is sometimes misconstrued as theory testing or validation, in the sense that the cases usually show that the theory holds in the context of the case settings. However, in deductive studies, the cases are not core to the theory development process and, although they are usually presented after the theory, they are not intended to test theory (see Parmigiani and Rivera-Santos (2015) for an example).

Unit of analysis

The unit of analysis is key to the development of case studies but often regarded as problematic by researchers and reviewers. The definition of the unit of analysis should be related to the initial research questions. The most common units of analysis in OM are the firm, site and process. Working with higher-level units of analysis makes access to cases more difficult and is not always well understood. For example, if a study adopts the supply network as the unit of analysis and studies one specific network, it should 1) demonstrate that the number and type of focal entities in the network are adequate to capture network-level phenomena, and 2) recognize that it is employing a single case design. It has been argued that the smallest unit of analysis to capture network effects is the triad (Choi and Wu, 2009; see Dubois and Fredriksson (2008) for an example). Working with lower levels of aggregation (e.g., teams in a given firm) may allow for controlling for confounding factors (e.g., firm-level factors), albeit at the expense of external validity.

Case selection

Case selection is a critical decision in theory-building case research because it largely determines the extent to which the findings can be generalizable (external validity). Cases should be selected for theoretical reasons rather than randomly or with the purpose of being representative of a wider

population (Yin, 2014). Researchers should show that the selected cases possess specific traits that make them appropriate to address the research questions in the context of the conceptual framework that underpins the study. There are a number of theory-based logics for case selection, including achieving literal and theoretical replication (Yin, 2014; see Sousa and Voss (2007) for an example), studying a phenomenon with potential for new insights (e.g., Siggelkow's (2007) talking pig), and contrasting polar cases (e.g., high and low performers).

The researcher may have little leeway as to the choice of cases to be studied. For example, firm-sponsored projects require that the firms involved are studied. There may also be practical constraints, such as geographical distance or barriers in gaining access. In these instances, the ideal sequence of the research process (from research problem to case selection) may have to be reversed, with the researcher working backwards from the available cases to the identification of relevant research questions for which those cases are adequate. Although not ideal and potentially challenging, this is a valid procedure as long as the researcher can find a suitable match between a research question with the potential to contribute to knowledge and the traits of the available cases.

### Single versus multiple case study designs

An important decision in case selection is whether to use single or multiple cases. Each design has advantages and disadvantages. For a given level of resources, single cases allow for increased depth. The limitations, however, include reduced external validity, risk of misjudging the representativeness of a single event or exaggerating easily available data, and observer bias (Voss et al., 2002). A multiple case design reduces these limitations but implies reduced depth per case, for the same level of resources.

There are different perspectives on the importance of the limitations of single case designs, with positivist-oriented researchers attaching more importance to such limitations than interpretative-oriented researchers (Langley and Abdallah, 2011). Regardless of these differences, the single case design needs to be carefully justified. Situations for which this design may be appropriate include exploratory studies (e.g., finding an interesting research question or new constructs in the early stages of theory development), research questions that require rich data, longitudinal studies (which are often single case studies because of limitations in time, resources and access), and studying an exceptional, discrepant or revelatory case (see Åhlström and Karlsson (2000) and Lewis and Brown (2012) for examples). If a suitable justification is absent, the question arises why the researcher did not add at least one more case in order to mitigate some of the limitations of the single case design. In the end, the "acid" test for single case research is whether the insights generated (with the benefit of depth and/or longitudinality) are sufficiently novel and impactful (e.g., revelatory, or falsifying existing theories) to compensate for the limitations of the design. Thus, the bar is rather high for a theoretical contribution.

Despite its importance, insufficient or inadequate justification of case selection is perhaps the most common shortcoming of case research projects in OM.

### Field work reporting

All too often overlooked, yet crucial to the development of theory, replicability requires detailed reporting of field work aspects such as the type of data collected, number and length of site visits and interviews, type of respondents and questions asked, and how constructs were measured (Sousa and Voss, 2001; Vanpoucke et al., 2014). It is also important to establish whether the depth of the cases matches the complexity of the issues being studied. The depth of the field work needs to be

sufficient to achieve a minimal level of holistic understanding of each case on its own, including the characteristics of its “natural setting” (Leonard-Barton, 1990; Ketokivi and Choi, 2014). A clear and focused case research protocol (Yin, 2014), outlining precisely how the field work was conducted and summarizing its key aspects, has been shown to be a very helpful tool.

Insufficient reporting of information on field work still occurs in many projects. This is surprising, since it is a straightforward task. In addition, possibly due to declining resources for research in recent years, we come across ever more studies in which the field work is too shallow to really understand the issues being studied (e.g., too few interviews with too few respondents) and be able to claim holistic insight into the cases in their context.

Data analysis

The goal of data analysis is to derive research findings from the raw case data (e.g., interview transcripts, documents, observations). The findings represent the researcher’s interpretation of the data. Reporting on data analysis in journal paper format is a challenge due to the richness and volume of case data. Whenever possible, long case narratives should be avoided by using figures, models and visual displays (e.g., causal networks; Sousa and Voss, 2003). It is also useful to summarize, aggregate, classify or rate research constructs, thereby raising their abstraction level (Miles and Huberman, 1994). Papers should show not only the researcher’s interpretation of the data, but also some of the actual data in order to allow the reader to assess whether the author’s theorizing is plausible (Pratt, 2009). Strategies for doing this efficiently involve adding interview citations or illustrating a few “chains of evidence” from raw data to interpretation (Yin, 2014; see Contiero et al. (2016) for an example). Achieving the right balance between the extent to which interpretation and actual data are reported is not straightforward; single case designs often require showing more of the actual data than multiple case designs.

Two types of data analysis weaknesses are common in OM research. First, many papers lack details on how the data analysis was conducted (Ketokivi and Choi, 2014). Second, papers often jump too quickly from the Methodology to the Findings section and do not sufficiently demonstrate that the findings are based on an independent assessment of the data by the *researchers*. In these instances, the analysis consists mainly of an account of what *respondents* have said, implicitly subscribing to and offering those views as the findings of the study. It is important, therefore, to provide sufficient detail concerning data analysis and interpretation.

Publication

Prestigious empirical OM journals demand research rigor and a strong contribution to theory. Regarding contribution, theory-building case research needs to clear a significant hurdle in terms of the generation of new insights and understanding. Empirical data and context should lead to new theoretical insight. It is important therefore to review the emergent theory against existing theory, and to determine what is similar, what is different and why (Eisenhardt, 1989). We have come across studies that were properly designed and conducted, but the emergent theory was not discussed in enough depth and did not therefore add sufficiently to extant knowledge. One point that is not always adequately understood, is that the emergent theory is not to be taken as speculative, pending confirmation of additional theory testing research. The emergent theory has already been tested as it is grounded in empirical observation, analysis (Ketokivi and Choi, 2014) and explanation of the focal phenomenon in its empirical setting. This abstract explanation is proposed to apply beyond the study’s case(s), within a certain scope of generalizability.



Concerning rigor, case research must be made transparent by demonstrating the concrete research actions taken in the context of the study, not just by declaring that a formalized process was followed (Holton, 2007; Gibbert and Ruigrok, 2010) (see Vanpoucke et al. (2014) for an example). This may include creatively using setbacks, discussing problems encountered on the way, and how these emerging issues guided further data collection and analysis. If trade-offs need to be made across different types of validity, case research should prioritize internal validity (making correct inferences about causal relationships) and construct validity (establishing correct operational measures for the concepts being studied) over external validity (generalizability of the findings) (Gibbert and Ruigrok, 2010). We have not often seen this level of transparency in OM case study reports.

Reporting case research in journal papers is a challenge because there is no standard structure that can be readily adopted. Some papers clearly divide theory from data (e.g., Sousa and Voss, 2007), while others mix both (e.g., Åhlström and Karlsson, 2000). Some papers focus more strongly on higher-level cross-case patterns (variable-oriented) (e.g., Sousa and Voss, 2001); others delve more strongly into the details of each case (case-oriented) (e.g., Ragin, 1987; Vanpoucke et al., 2014). This variability partly stems from differences in the nature of the research questions and the case study purposes. As guidance, researchers may consider modeling their work on an author who consistently publishes qualitative work and whose style they like (Pratt, 2009). Authors should also write the paper so that it helps the readers to reach their own conclusions, which is partly a matter of rhetoric (Langley and Abdallah, 2011). Thus, being a good writer is an important skill for case-based researchers. Finally, case papers should strike a balance between the extent of interpretation and showing details on the data.

Navigating the journal landscape is also important. Some journals are more receptive to case-based research than others. Even though a number of US-based journals have recently proclaimed openness to the case method (Ketokivi and Choi, 2014; Narasimhan, 2014), the percentage of case-based papers published in these journals (e.g., JOM, POM) remains significantly lower than in their Europe-based counterparts (e.g., IJOPM). If researchers target a journal less receptive to case research, it may be necessary to heed Stuart et al.'s (2002) advice to incorporate explicitly into the submission the arguments for conducting case-based research and to anticipate common criticism of case-based approaches.

Table 1 summarizes the above in terms of lessons for developing publishable case study research.

INSERT TABLE 1 APPROX. HERE

### Designing publishable survey research

In this section, we address the challenge of designing publishable quantitative research, involving the collection of a large-scale empirical data set, usually through survey methods, to be subsequently analyzed by means of statistical techniques. In OM, this is one of the most common research methods and a favored approach amongst researchers possessing statistical skills (e.g., Forza, 2002; Rungtusanatham et al., 2003). We focus on projects that involve multiple research groups from different countries, and discuss the main differences with more traditional, single-country surveys. OM has seen several international survey projects, which contributed significantly to the development of the field. Most projects started twenty or more years ago. Many of them are still active today, and have produced an impressive record of publications in all major OM journals. The main ones are:



- Manufacturing Futures Project Survey (De Meyer et al., 1989).
- World Class Manufacturing (subsequently renamed High Performance Manufacturing) (Flynn et al., 1997; Schroeder and Flynn, 2001).
- Global Manufacturing Research Group (Whybark, 1997).
- International Manufacturing Strategy Survey (Lindberg et al., 1998).

In this contribution, we use a more recent project, the International Purchasing Survey (IPS) (Luzzini et al., 2012; Kauppi et al., 2013), as an example, show the steps, the challenges and the trade-offs faced when dealing with large, complex survey projects, and discuss the learning that can be inferred from conducting and publishing the results of (multi-country) survey studies.

The IPS project

The IPS project was developed to reflect the increasing research and practical relevance of Purchasing and Supply Management (PSM) (Harland et al., 2006; Zheng et al., 2007; Wynstra, 2010). At the start of the project, PSM was still a relatively young and underdeveloped field of research. Most research had been exploratory and case-based. Little theory testing and generalization research had been conducted, with limited theoretical foundations (Chicksand et al., 2012; Spina et al., 2013; Spina et al., 2016). In 2007, an international group of PSM researchers therefore decided to launch a major initiative aimed at developing the field using a large-scale international survey.

The choice of survey research type

Deciding on the type of survey is the first important step. It is generally recommended to design surveys based on a clear theoretical and empirical need. Most survey research is used to test new, or to generalize existing, theory to new domains (based upon theoretically-grounded reasons for doing so). In the case of very new and emergent topics, exploratory or descriptive surveys can be adopted, but they usually provide limited theoretical contribution and have little publication potential (Forza, 2002). This contribution focuses on theory testing.

In addition, the scope of the survey needs to be determined: many surveys have a limited geographical scope, usually a single country, which is generally due to practical limitations (e.g., availability of resources). Multi-country surveys instead have the ambitious goal to collect a large number of responses with an international (or even global) perspective, thus providing a richer and more comprehensive perspective on the phenomena under investigation, as well as allowing for cross-country comparison. These surveys cost more in terms of data collection and coordination efforts.

The research framework

Adopting or developing a theoretically sound research framework is a key step in designing survey research, irrespective of the geographical scope, as it provides a common and consistent structure for the research and the survey questionnaire. The framework needs to define the main constructs and their relationships, covering the research questions and illustrating the hypotheses that will be tested, all of which need to be clearly derived from the literature and theoretically motivated (Forza, 2002).

This was particularly challenging in the case of the IPS project, which involved a network of academics from research institutions from different countries in Europe and North America. Bringing together a large network of researchers created several challenges: different research interests, need to accommodate different backgrounds and theories, and coordinating a large group of people. In

order to allow for enough breadth and variety while preserving commonality and consistency, an overall framework model was designed. The framework draws on the traditional “goals-practice-performance” framework (e.g., Voss, 1995) and similar approaches in the PSM domain (e.g., Gonzalez-Benito, 2007), and links business strategy to purchasing strategy, organization and skills, and performance. In addition, an innovative perspective was added, i.e. a focus on a single purchasing category, in line with the stream of research dating back to Kraljic (1983), who recommends different strategies, processes, tools and performance criteria, depending on category characteristics. Finally, several contextual variables were included in the framework, in line with the contingency perspective (Sousa and Voss, 2008).

### Questionnaire design

A well-designed survey questionnaire is vital for collecting valid and usable data. Carefully undertaking all the required steps is key to its success – operationalizing the constructs included in the theoretical framework, identifying proper measures and formulating questions correctly, all of which should be based on consolidated literature, and validating the questionnaire by pilot testing it with target respondents. These steps are well covered in survey design textbooks (e.g., Dillman, 2000), but not always clearly followed and reported in papers. In particular, construct operationalization is sometimes overlooked. In the case of cross-cultural, multi-language surveys, additional challenges with translation and cultural differences (e.g., Survey Research Center, 2010) must be dealt with and reported.

In the case of the IPS, once the overall framework was consolidated, the questionnaire was developed. We exploited existing constructs as much as possible, and prepared a “construct book”, which summarizes, for each construct, the detailed questions and scales used, with references to their sources. For each construct, the book explains whether it is a 1<sup>st</sup> or 2<sup>nd</sup> order, and reflective or formative, construct.

In many cases, we could not find questions and scales already validated, and had to rely on adjacent domains. For example, the scales for measuring the absorptive capacity (Cohen and Levinthal, 1990) of the purchasing function were adapted from scales originally developed for manufacturing practices by Tu et al. (2006). This implied that the validity and reliability of these measures had to be tested before they were used in subsequent analyses. To ensure homogeneity in the questionnaire, for most questions Likert-like perceptive scales were adopted: 1-6 scales for “opinion” questions (no intermediate answer was allowed), and 1-7 scales for comparative questions (the intermediate answer, “equal to”, was allowed).

The questionnaire was jointly developed by all the members of the network, and then tested with managers in all the countries involved. The feedback collected was shared with the whole network. The original questionnaire was developed in English, the common language of the project, and in each country, where English was not the main language, translation was needed. We adopted the Translation, Review, Adjudication, Pre-testing and Documentation procedure (Harkness et al., 2003) to ensure that the translation did not affect the validity and reliability of the questions.

### Sampling

Sampling is critical – achieving generalizability without proper sampling is not possible. Furthermore, the unit of analysis and the sampling method must be consistent – inconsistency increases the risk of collecting data that are not reliable.

Sampling was another key decision for the IPS, indeed. First, the target industries were selected. Since PSM is relevant in manufacturing and service industries, we decided to cover a broad range of private sectors. Second, as a structured approach to PSM is rare in small firms, a minimum size of 50 employees was agreed on. Third, the respondents were asked to select and address a specific purchasing category and to provide details about that category.

Each partner was charged with identifying the reference population in their country and extracting a sample to invite to the survey. An important lesson learned here concerns the importance of consistency. Some countries performed random sampling from an official list of the national population of firms fulfilling the above criteria, while other countries used a list of contacts from members of professional associations. It is important to choose one method.

Data collection

Collecting data requires developing a tool to administer the survey. Today, surveys are usually administered online, exploiting the numerous benefits offered in comparison with traditional paper-based surveys (e.g., higher flexibility, no need to transcribe data, and immediate availability of responses). This, however, does not reduce the need for a engagement and control of the respondents. The methods available vary from preliminary contact via telephone to present them with the project and ask them to participate, to “simply” sending out e-mails. Experience shows that calling is more time consuming, but leads to better control of the respondents, a higher response rate, higher data quality, and eventually better chances to get the research published

In the case of the IPS, once the sample was defined in each country and the contact information was retrieved, data collection could start. The main tool was an online platform, which allowed the survey to be administered in all the required languages and a common database with all responses to be built. Centralized management resulted in a highly consistent data gathering process, but also high coordination efforts. Each potential respondent received a dedicated web link. This allowed the local teams to control the respondents and trace progress of survey completion. In some countries, telephone contacts could be used to make the first contact, while in other countries only e-mails could be sent. Telephone contacts resulted in significantly higher response rates than establishing contact thorough e-mails. However, using different ways of contacting possible respondents, created some problems related to the consistency of data collection, which is a challenge anyway in the case of multi-country surveys.

Data analysis

Survey data analysis methods are broad and well established, and go beyond the scope of this contribution. Here we would like to stress the importance of checking for potential biases (e.g., non-response and common method) in the data and validating construct measures, by adopting proper methods according to their nature (i.e. reflective or formative). In addition, with multi-country surveys, measurement equivalence also needs to be taken into account, as well as consistency in the way data are used by the researchers involved.

In the case of the IPS, after the data collection had been completed, non-response and common method bias tests were performed to ensure the quality of data. At this point the question was raised: how can we ensure that data gathered in different countries, with some differences in collection methods, can be pooled together without introducing errors? To answer this question, a set of tests, reported by Knoppen et al. (2015), was performed to validate measurement equivalence across the whole sample.

Having solved this issue, the next step was the validation of measures through exploratory and confirmatory factor analysis. It was important that all partners measured the constructs consistently in order to preserve the coherence of the project. Subsequent analyses were performed either by the national teams, or by international teams combining researchers from different institutions. Each team focused on specific research questions, usually adopting a subset of the data. A preliminary “call for interest” was issued to foster international collaboration and avoid a situation where different teams worked separately on the same topic.

### Publication

Survey-based papers are usually well accepted in OM journals, but the requirements are becoming stricter, in particular as regards rigor in all the phases of the research. Recent statements from journal editors have set new methodological challenges (e.g., Guide and Ketokivi, 2015). Combining multiple sources of information (using multiple respondents or combining primary and secondary data) is increasingly encouraged. We recommend developing a publication strategy from the beginning of the project, shared by all the participants and including rules for data usage and a selection of the target journals. This is even more important for large-scale projects involving multiple research teams.

In the IPS, too, publication was the ultimate goal of, and a particularly sensitive issue for, all participants. A clear strategy and a code of conduct were defined and agreed among all participants. The first key decision was to restrict the use of data to the active members of the network. Co-authors from outside the network could be involved if complementary expertise was needed and expected to enhance the overall quality of the publication. As a first step, presenting papers at international conferences was strongly encouraged, to give visibility to the project and collect as much feedback as possible. For journal publications, it was agreed to target only internationally recognized journals. A list of preferred journals was defined, while still allowing some variety to avoid the risk of sending too many papers to the same journals. It was also agreed that, before submitting papers to journals, they would be shared within the network for an internal “friendly revision”, which could improve the chance of publication and at the same time allowed a form of mutual control. So far, 13 papers based on the first edition of the project have been published in international journals such as IJOPM, IJPE, SCM:IJ, IJPR, IMM, and IBR. Other papers are still under review.

Table 2 summarizes the above in terms of lessons for developing publishable survey research.

INSERT TABLE 2 APPROX. HERE

### Designing publishable research – an associate editor’s perspective

In this section, we present the observations and experience of an associate editor of \*\*\*\* who has been involved in processing around 1500 submissions over a three-year period and has developed a clear understanding of the issues that potential authors should seek to address when submitting to an OM journal. Broadly speaking, OM authors tend to submit to top OM journals. The mission for three of these journals – IJOPM, JOM, and POM – shown in Table 3, demonstrates the importance of original, leading-edge contributions that are both academically and practically relevant.

INSERT TABLE 3 APPROX. HERE

Top OM journals receive many submissions and have high rejection rates. For example, \*\*\*\* has an overall rejection rate of over 90%. It is therefore important to pay particular attention to aspects that may result in papers that are desk-rejected, returned for modification, or rejected in the course of

the review process. We address these aspects in the sequence in which they appear in the process.

The title

The title may seem a straightforward element but it is sometimes not given sufficient thought. The title should be concise (many papers are returned because the title is too long or too complex), and clearly indicate the main issue(s) that the paper seeks to explore. Furthermore, the title often sets the scene for the language quality of the paper; a cumbersome or vague title may suggest a cumbersome or vague paper. Examples of clear and concise titles are detailed in Table 4.

INSERT TABLE 4 APPROX. HERE

Keywords

Whilst keywords should accurately capture the essence of the research, it is also important to note that many journals use the keywords to identify possible reviewers through the “auto-suggest” search function in submission systems. For example, a recent submission to \*\*\*\* included the keywords – “Logistics Service Providers” and “Sustainable Practices”. Both keywords yielded nil returns for reviewers. In this instance, the authors would have been more successful using “Logistics” and “Sustainability” as keywords since many reviewers include these in their respective areas of specialism and would be willing to review the paper. If the research is novel or at the fringes of the journal scope, it would be prudent to include keywords that are likely to be broad enough to accommodate the main thrust of the work presented in the paper. Table 5 demonstrates a range of keywords, which did not align to the expertise areas of reviewers and could have been altered to make identification of reviewers easier while still accurately reflecting the content of the paper.

INSERT TABLE 5 APPROX. HERE

The structured abstract

The abstract is the first impression that the editors and reviewers have of the submitted paper. It is therefore important to clearly communicate the nature of the research, the research question(s), the method(s) used, and the contribution of the research to the OM readership. If the paper is submitted without reference to the abstract requirements of the journal, then the first impression of the work is that the authors have not given sufficient time or thought to the most basic aspects associated with the submission process. However obvious and straightforward this may seem, experience indicates that insufficient focus on the abstract results in papers being returned and delayed.

Language quality

OM journals attract submissions from a wide variety of countries. It is often more challenging for authors for whom English is not the native language to communicate to the standard required of academic journals. Whilst editors and reviewers will take this into account, it is important for authors to ensure that the quality of communication has been rigorously assessed prior to submission. This can be achieved in a number of ways, including sharing the research with colleagues, presenting at conferences, and using a professional editing service. An increasing number of authors use the latter, and our experience is that such a service provides observations and suggestions that result in a more professional and polished submission.

Common reasons for rejection

Generally, there are three types of reject decision – “Editor (or desk) reject” (the paper is rejected by the editor and does not enter the full review process), “Reviewer reject” (the paper has been sent to reviewers who then recommend “reject”) and, more rarely, a “Revision reject” (the paper is rejected



despite revisions made).

For “Editor reject”, the most common reasons include lack of congruence with the mission of the journal, lack of a potential contribution, or issues related to the author guidelines (e.g., length, referencing style, abstract design). Opportunistic submissions, which do not have the potential to contribute sufficiently to the journal readership, are rejected straightaway. If, however, the paper fits to the mission of the journal, it is assessed in terms of its potential contribution. If the contribution is not clearly identifiable or not convincingly argued, the editor may decide that the paper should not progress to the formal review stage since the likely result would be a “reviewer” reject decision.

“Reviewer reject” follows if a paper lacks a clear or justifiable contribution to the field of OM. This may be due to issues related to method – the majority of papers rejected by reviewers suffer from fundamental problems associated with the methods used to collect, analyze and interpret empirical data. If there is a lack of clarity with regard to the methods used, it is likely that the reviewer proposes a major revision.

At the outset, the authors’ and the journal’s ambitions are generally aligned; authors want to publish their work and journals are in the business of publishing research. The journal is represented by its editor and, unless the paper is “Editor rejected”, two or three of its reviewers – good but busy academics, not paid for their efforts, but willing to help the authors, will conduct a preliminary review of the paper and only continue if they like what they are reading. It is therefore fundamentally important to ensure that the submission meets the editor’s and reviewers’ expectations. Table 6 summarizes the first checks the editor undertakes in order to be able to decide whether to “editor-reject” or send on to reviewers, and the aspect reviewers look at before they decide whether to do a detailed review or not.

INSERT TABLE 6 APPROX. HERE

Finally, authors should be aware that getting beyond the first stage of the review process does not guarantee their paper will be accepted for publication. Less common than rejects in the first round of the review process, a “Revision reject” decisions occur if the revision does not adequately or convincingly address earlier reviewer comments and also if the authors address some rather than all the observations of the reviewers.

The editor/reviewer based lessons for developing publishable research are summarized in Table 7.

INSERT TABLE 7 APPROX. HERE

### **Designing publishable research – total (research) quality management**

The purpose of this section is to show the importance of adopting a “total (research) quality management”, which basically holds that the “goodness” of any research depends on the “goodness” of the underlying research design and execution (see Figure 1).

INSERT FIGURE 1 APPROX. HERE

#### **A good question**

All good research starts with a good question. However, what is a good question? First of all, the research question reflects the nature of the discipline. Most OM research falls under the heading of applied research. Applied research is original investigation undertaken in order to acquire new knowledge, but directed primarily towards a specific practical aim or objective (OECD, 2002; Jonker



and Pennink, 2010). Thus, a good OM question is not only theoretically but also practically relevant.

Second, a good research question reflects the “state-of-the-theory”. Christensen (2002) distinguishes two main stages of theory building. The first stage involves the development of descriptive theory, the second that of normative theory. The state-of-the-theory has important implications for aspects such as research methodology. Early stage research aimed at observing, describing and measuring a phenomenon is typically performed using qualitative approaches, such as case studies. Quantitative approaches, supported by survey instruments, are typically used to test descriptive statements of association, formulate statements of causality, and identify the circumstances under which these statements hold.

Third, a good research question reflects the problem the research intends to solve. The most common examples of research problems are (Schuring, 1997):

- Gap research – “terra incognita”, the bottom of Christensen’s descriptive theory pyramid.
- Contradiction – similar theories say conflicting things about the same phenomenon.

Unfortunately, we see too much “gap” research, which actually concerns a gap in the researcher’s knowledge, not a gap in theory. We also see a lot of research aimed at dealing with contradictions which, however, may be fake and due to differences in conceptualization, operationalization and/or context.

Other types of research problems are:

- Untested theory – OM has a lot of that.
- Generalization – aimed at establishing the validity of a theory beyond the settings in which the phenomenon has been studied so far.
- Anomaly – an empirical phenomenon that does not fit the theory; the famous example in physics is the anomaly of water; there are plenty anomalies in OM and related areas, too.
- Reconciliation – different theories say different things about the same empirical phenomenon.

Each of these types have their own research implications. (Genuine) gap research may require explorative case research, with limited detail, if any, in operationalization. A survey study or action research may be used to test theory. Generalization requires studying a theory outside the domain in which it has been developed. Using analytical methods enabling the discovery of, for example, u-shaped relationships helps discovering anomalies, while dealing with them may require using theory from an adjacent discipline.

Finally, a good research question meets criteria such as: is the research implied by the question relevant and important? Research usually starts with an idea, a theme, which is not researchable per se, but needs further analysis. A review of what existing theory and practice have to say, will help establish the relevance and importance of the research. In spite of many calls for empirical relevance – see Boer et al. (2015) for an overview, this aspect is all too often overlooked. De-Margerie and Jiang (2011) suggest criteria such as: descriptive and goal relevance, operational validity, timeliness, and readability/understandability, all of which essentially point to the importance of relating the research to problems experienced and solutions sought by practitioners.

Good research design

A good but poorly researched question will lead to poor results. Here, research design and execution play a key role. There are several excellent books helping researchers design their study (e.g., Miles

and Huberman, 1994; Dillman, 2000; Yin, 2014). Common to all these books is that the research design contains:

- A researchable formulation of the research problem (objective, question).
- An account of the research methodology used to perform the study – e.g., case research, action research, survey research, database analysis, modelling and simulation, or some combination of these and other methodologies.
- An operationalization of the research problem. For quantitative researchers, this is a *sine qua non*, which, however, is overlooked in too many case studies or other forms of qualitative research.
- An account of the research methods or techniques used in the study, for example, interviews, observations, questionnaires, or experiments to collect data, triangulation to validate the data, verification to validate the findings, i.e. the interpretation of the data.
- An account of the research sample / sampling criteria, important in case studies and survey studies alike.
- An account of the data sources, including observees, interviewees, respondents, or participants in an experiment, as well as written material, such as reports, accounts, databases.
- Planning (schedule, work break down) of the research, including a contingency plan.
- Expected results, possibly in the form of propositions or hypotheses.
- Limitations of the study – are a key ingredient of the theory developed as a result of the study and play an important role in the formulation of further research.

#### Good execution

Execution concerns collecting and analyzing the data, and developing the contribution. In data collection and analysis, the decisions embedded in the research design are executed. The discussion confronts the findings with, and *refers to*, the theoretical background and shows how and where the research solves the research problem and, thus, contributes to existing theory by filling a gap, showing that tentative theory formulated previously does indeed hold (or not) or reconciling different reports on the same empirical phenomenon.

#### A good contribution

Several indicators of good theory have been proposed (e.g., Dubin, 1969; Whetten, 1989). According to Handfield and Melnyk (1998), good management theory is comprehensive (i.e., are all relevant factors included?) and parsimonious (i.e., does it capture the few crucial variables and interactions required to understanding the phenomenon?). Furthermore, good theory is “not wrong”, i.e. based on rigorously designed and performed research, falsifiable, and useful (i.e. it deals with a problem of “real importance” and explains, that is, provides insight). Although they are closely related, the goodness of a journal *contribution* should not be confused with the goodness of a theory. Of course, studies aimed testing or generalization of existing theory should take their starting point in good theory, while “gap” research should aim at developing good theory. However, a good contribution in the field of management in general and OM in particular, meets two criteria (Corley and Gioia, 2011): originality, which may range from incremental to revelatory, and utility, i.e. usefulness for theory and/or practice. Considering that practitioners (operations managers) are important customers of OM research, we should like to add usability

Figure 2 summarizes the discussion in this section.

INSERT FIGURE 2 APPROX. HERE

**Consolidation – implications for scholarly practice**

Most journals have a list of author guidelines. This paper adds a number of important suggestions:

- Develop a convincing argument, based in theory and/or practice, for the relevance and importance of the research problem.
- *Account* for choice of methodology as well as the operationalization, sampling, analytical and validation methods used.
- Demonstrate the contribution of the paper by confronting the findings with previous theory in the discussion section.
- Appreciate the importance of the title and the keywords of the paper.
- Be conceptually clear and show quality in terms of communication.
- Develop a publication strategy as early as possible.
- Implement “total quality management” in designing and executing OM research.
- Understand the reviewing process, including where and why papers may be rejected.

Authors can and should consider these guidelines carefully in order to increase the likelihood of their research being published and receiving the coveted “acceptance” e-mail from the journal editor.

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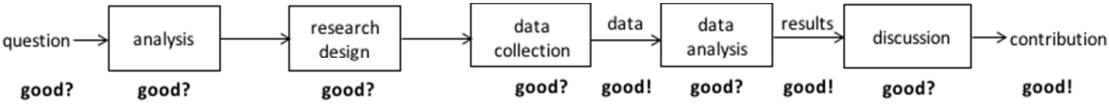


Figure 1 – Total research quality management.

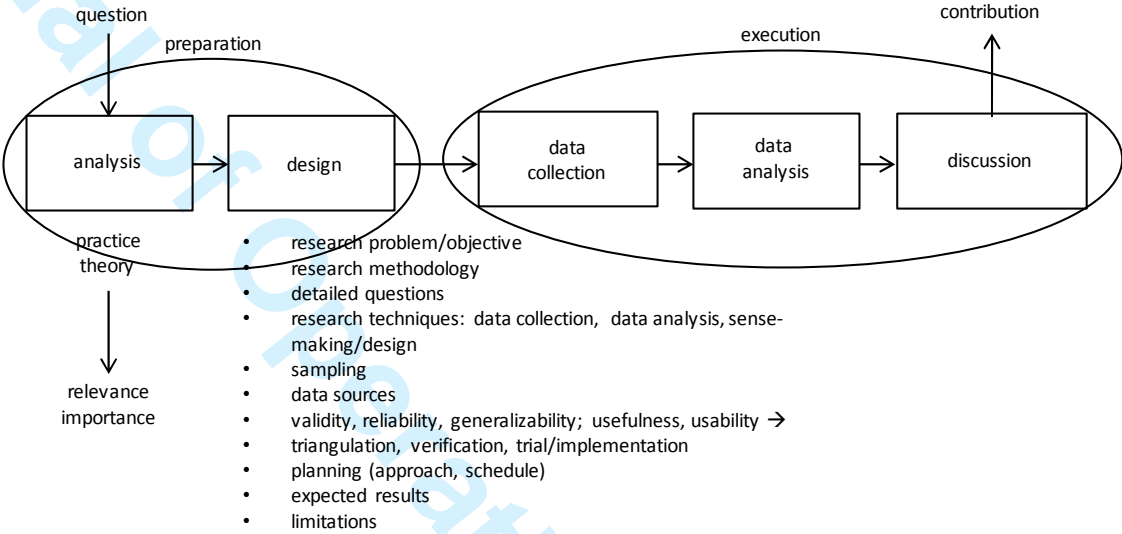


Figure 2 – A good research process. process

Table 1 – Qualitative case study research

Lessons for publishability
Be able to: <ul style="list-style-type: none"> <li>Account for the choice of doing case study research.</li> <li>Account for the case selection criteria and conducting single or multiple case studies.</li> <li>Infer and discuss implications of these choices.</li> </ul>
Clarify the specific purpose and role of the case study/studies in the research – e.g., inductive versus deductive theory development.
Account for and report field work and data analysis at a level of detail that provides transparency and allows replication, including methods used to collect, analyze and validate data.
Present and discuss findings against existing theory.
Develop a publication strategy – pre-choice of potential outlets.

Table 2 – Quantitative/international survey research

Lessons for publishability
Be able to: <ul style="list-style-type: none"> <li>Account for the choice of doing survey research.</li> <li>Clarify the underlying research model and the nature of the constructs/scales/data – 1<sup>st</sup>/2<sup>nd</sup> order, reflective/formative, use of different Likert scales, primary/secondary data.</li> <li>Account for the sampling criteria and the data collection methods.</li> <li>Infer and discuss implications of these choices.</li> <li>Be consistent and theoretically solid in the way data are used and interpreted.</li> <li>Conduct thorough and rigorous data analysis, adopting the proper methods and reporting all the relevant information.</li> </ul>
Use existing scales as much as possible, to improve replicability and comparability with previous studies.
Ensure uniformity in translation practices, local sampling/contacting respondents, database accessibility.
Develop a consortium-level publication strategy – pre-choice of potential outlets, joint papers.

Table 3 – The mission of three leading OM journals

Journal title	Journal mission
IJOPM	“To publish leading-edge, innovative research that has the potential to significantly advance the field of Operations Management, theoretically and/or practically.”
JOM	“To publish original, empirical operations management research that demonstrates both academic and practical relevance.”
POM	“To serve as the flagship research journal in operations management in manufacturing and services.”

Table 4 – Example titles of accepted \*\*\*\* papers

Title	Observations
“Executing strategy through comprehensive performance measurement systems”	<p>A clear, confident yet concise, title linking strategy to performance measurement.</p> <p>The paper sought to demonstrate the importance of performance measurement in relation to the development of cost leadership and differentiation strategies. A novel approach to the exploration of performance measurement, which went beyond the operational mechanics often associated with papers exploring performance measurement.</p>
“Institutional sustainable purchasing priorities: stakeholder perceptions versus environmental reality”	<p>There is a current debate regarding the reality of sustainable purchasing and the subsequent impact upon stakeholders. The title captures all the key elements of the paper in a succinct and clear manner.</p> <p>An interesting and topical paper with a clear and relevant focus. Purchasing is now regarded as a key strategic aspect of an organization’s competitive arsenal.</p>
“To tweet or not to tweet? Exploring the effectiveness of service recovery strategies using social media”	<p>A long title but one that demonstrates the novelty of the topic and aligns service operations within the burgeoning social media environment.</p>
“Making the business process outsourcing decision: why distance matters”	<p>Whilst the topic is not particularly novel the title indicates where the contribution is being made – distance and its subsequent impact upon the outsourcing relationship. The title demonstrates a valid and relevant addition to the research exploring outsourcing.</p>
“Supply-side resilience as practice bundles: A critical incident study”	<p>A concise title, which also includes reference to the primary approach to gathering data.</p> <p>Supply-side resilience is an interesting topic, grounded in the growing body of supply chain risk research. Assessing such risk as practice bundles was innovative and the outcomes relevant to the operations and supply community.</p>

Table 5 – Keywords selection

Keywords	Observations
Technology implementation, Management of technology, Alignment processes, Network of organizations	Whilst these keywords resonate with the broad content of the paper, they were inappropriate for generating appropriate reviewers. More appropriate keywords would have been 'Operations Technology' and 'Supply Networks'.
Horizontal collaboration, Collaboration enablers, Logistics management	The keywords generally reflect the content of the paper, but their use as reviewer identifiers yielded a nil return. More successful terms would have been 'Logistics' and 'Buyer-supplier relationships', which reflect both the content of the paper and the terms used by reviewers to reflect their expertise.
Resilience, Counterfeiting	Whilst one might consider 'Resilience' as an appropriate keyword the auto-suggest resulted in a nil return. The altered search term of 'Supply chain resilience' resulted in only a single return. Needless to say, 'Counterfeiting' yielded no returns. In some ways, this reflects the novelty of the content, which makes the importance of selecting broader keywords more challenging but more important.

Table 6 – First checks leading to desk or immediate reviewer reject

Editor	Editor and/or reviewer	Reviewer
Topic does not fit	Bad English	Sloppy argumentation
Paper is too long	Uninteresting topic	No research question/ objective
Formal requirements (e.g., structured abstract) are not met		Local references in an international journal
		No references to key sources on the topic
		Poor rigor
		No discussion section/ discussion without references

Table 7 – Submission checklist

Aspect	Solution
Title	<ul style="list-style-type: none"><li>Length should be consistent with the journal’s requirements. Failure to adhere to the requirements may lead to the paper being returned and the period for review extended.</li><li>A complex title often suggests a complex or poorly structured paper. Remember the title is the first thing the editor will see.</li></ul>
Keywords	<ul style="list-style-type: none"><li>Keywords are used by the editors to identify reviewers. If the research is novel, the keywords may not identify an appropriate reviewer. Failure to consider the importance of identifying obvious keywords can lead to difficulty in identifying a suitable reviewer and a delay in the review process.</li></ul>
Structured abstract	<ul style="list-style-type: none"><li>The abstract should adhere to the journal guidelines (and not those of another journal – the editor will see this).</li><li>The structured abstract is the first page of a paper and needs to clearly and effectively communicate all aspects of the submission.</li></ul>
Introduction/ background	<ul style="list-style-type: none"><li>Clear and concise articulation of the research is critical. Avoid broad, untestable and general observations regarding the field of enquiry.</li><li>Communicate professionally and convincingly. Overconfident claims regarding the research outcomes will send clear warning signs to the editor.</li><li>The background should be unambiguously clear about the need/relevance and the type of research (gap, test, generalization, ...).</li></ul>
Research design/ methods	<ul style="list-style-type: none"><li>The main concerns of reviewers tend to focus upon methods. Ensure that the methods are clearly justified and that any assumptions are commensurate with the research need and problem (objective/questions).</li><li>Be open about any limitations associated with sample size and choice.</li><li>Account for all steps in the research including methods used to collect, validate and analyze data, and validate findings.</li><li>Ensure that the research design supports any subsequent claims that are made about the development of tools/techniques or frameworks. Do not develop “universal” frameworks based on small, context-specific samples.</li></ul>
Findings/results	<ul style="list-style-type: none"><li>Make sure that the findings flow naturally from the literature review and the research problem (objective, questions) identified in the literature, and clearly derive from the data analysis.</li><li>Clarity of language and communication is important. Use an appropriate mix of figures, tables and text to communicate the findings.</li></ul>
Discussion	<ul style="list-style-type: none"><li>If the paper is developing a framework or reporting a similar output, ensure that the scope of the framework is commensurate with the scope of the research. If the paper only explores a single case, then it seems unlikely that the framework will be universally applicable.</li><li>Discuss the findings in view of extant theory. A discussion section without references fails to achieve its purpose.</li></ul>