The methods section/chapter: from tools & material to writing

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Brief background

- Associate professor of logistics and SCM: program leader for the bachelor of logistics management, NTNU.

- Teaching:
  - purchasing & logistics management
  - digital supply chain management

- Research
  - innovative procurement
  - digital supply chains

Special issue on sustainable network operations & supply chain management – *Sustainability* (due July, 2021)

**Network Operations and Supply Chain Management**

**Message from the Guest Editors**

Dear Colleagues,

Since the conception of supply chain management (SCM) in the early 1980s, this concept has evolved from a business consultancy product to an area of research and education at business schools worldwide. This Special Issue seeks to enhance how sustainable supply operations are achieved in the context of networked organizations. Network operations encompass here both managerial and the production of services and goods in all sectors of society. We invite papers that are based on conceptual, systematic literature reviews, and empirical research in the form of case studies and surveys. We will accept submissions that use other methodologies for the review process. We are interested in submissions that contribute to developing conceptual frameworks, insightful reviews, and empirical findings on any theme/topic in relation to sustainable supply as a networked and therefore complex phenomenon, an ecosystem.

**Deadline for manuscript submissions:** 15 July 2021
I will talk about:

• The purpose of the methods section or chapter.

• Where to start?

• The structure and write up of the methods section

• Navigating though the methods – some writing tips
I will now talk about:

- the purpose of the methods section or chapter.
The purpose of the methods section or chapter

- A blueprint of your research journey

- Provides information by which a study’s validity is judged (Kallet, 2004; Azevedo et al., 2011).

- Goal – increase validity and replicability of the study

- Often descriptive (high chances of missing technical details -> confusing the reader)
Example 1 – ease of replicability

Purchasing myopia

David H. Farmer

A SIMPLIFIED view of a manufacturing company as a customer of materials from one or more suppliers for another company means that the company is the "buyer" and the suppliers are the "sellers". If the necessary materials are not provided by the supplier, then the manufacturing company cannot proceed to make the end product. If the seller does not agree to provide the necessary materials in time, then this will not work either. Therefore, the end product is not applicable to the customer. If the material suppliers do not propose the necessary materials in time, then the manufacturing company is unable to function efficiently. The manufacturing company purchases more than half its production such as raw materials and supplies, in the independent of most manufacturing costs and their sources of supply is supplied.

Further, given the continuous development of the manufacturing and supply chain management, the manufacturing companies face many challenges, especially in the market. These companies are unable to compensate for the services of the manufacturing companies, which is in the interest of the companies that supply them. This is due not only to the high cost of manufacturing and supply management, but also due to the ability to compensate for the services of the manufacturing companies. They might lose, say, that it is in their best interest to substitute suppliers for supplies that are costly and are the cause of the manufacturing companies.

Therefore, the manufacturing companies need to be more active in selecting the materials and supplies that are cost-effective and are able to provide them with the materials they need. They must also consider the materials and supplies that must be delivered to the manufacturing companies on time. If the materials and supplies are not delivered on time, then the manufacturing companies will be unable to function efficiently.

Perspective

Purchasing myopia – revisited

David Farmer

The paper challenges the need to examine the potential for the development of the manufacturing and supply management. The manufacturing companies have the potential to improve the efficiency of their operations, but the potential is not being realised.

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I will now talk about:

- where to start?
But where does one start?

**DEDUCTION**

**IDEA**

All men are mortal.

**OBSERVATIONS**

Jason is a man.

**CONCLUSION**

Jason is mortal.

**INDUCTION**

**OBSERVATIONS**

I break out when I eat peanuts.

**ANALYSIS**

This is a symptom of being allergic.

**THEORY**

I am allergic to peanuts.

Source: danielmiessler.com/blog
I will now talk about:

• the structure and write up of the methods section
The structure and write up of the methods section

1. **Study design**

- Describe the study design, the main methodological characteristics of the study and data collection plan.
- Ethical considerations? NSD?

<table>
<thead>
<tr>
<th>Research design</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploratory</td>
<td>survey or interviews or case study etc</td>
</tr>
<tr>
<td>Descriptive</td>
<td>survey or interviews or case study etc</td>
</tr>
<tr>
<td>Explanatory</td>
<td>survey or interviews or case study etc</td>
</tr>
<tr>
<td>Action research</td>
<td>Action research or interviews or observation etc</td>
</tr>
<tr>
<td>Experimental</td>
<td>survey or experimental observation or interviews, or cohort studies etc</td>
</tr>
<tr>
<td>Grounded theory</td>
<td>survey or interviews or Focus groups etc</td>
</tr>
<tr>
<td>Longitudinal</td>
<td>multiple interviews or case study etc</td>
</tr>
<tr>
<td>Quasi experimental</td>
<td>Survey or non-randomized experiment etc</td>
</tr>
<tr>
<td>Mixed methods</td>
<td>Concurrence (QUAL + quan) or sequential (QUAL → quan) etc.</td>
</tr>
</tbody>
</table>

Source: Miller & Dreyer (2012).
The structure and write up of the methods section...cont’d

2. Selection of participants

- selection criteria and selection methods is the basis for generalization.

- describe the study context, e.g. location

- Describe the sampling technique and recruitment

- provide descriptive data of the study sample, e.g. sample demographics

Source: research-methodology.net
The structure and write up of the methods section…cont’d

3. Data collection

• describe the data collection process, the variables measured, and how they are measurement.

• variables should be operationally **not** conceptually defined.

• how did you control for biases and errors?

Source: globalpatron.com/blog
The structure and write up of the methods section...cont’d

4. Data analysis

- describe with the statistical or non-statistical methods used data analysis.

- link to the aims of the study and describe what will be presented in the results section.
I will now talk about:

- navigating though the methods – some writing tips
Writing tips of navigating though the methods

• Methods are boring to read – use short sentences (to the point), provide justifications and visuals if possible.

• Look at what others have done in that field – focus on the writing style or the institutional/journal guidelines. Example: systematic literature reviews.

• Provide as much “technical” detail to allow the reader make own judgements: allow for replication and to increase study validity. e.g. by describing the samples demographic profile

• Use past tense – you have already completed your study, right?

• Use subheadings/subsections, e.g. study design, data collection, Validity and reliability of survey instrument, data analysis etc

• Allow for (chrono)logical flow – let the reader “come along with you”: mirror the flow of your results were possible.
Example 2

Method

This paper presents a single in-depth case study (Kotekivi and Choi 2014). We elected to use the case study approach for two main reasons. First, to gain a deeper understanding of how the purchasing coordination problem occurs, at least from the perspectives and experiences of organizational members who were involved in the problem (Yin 2018; Gioia et al. 2012). Second, although a lot is known about the coordination of purchasing activities generally, little is known about how the coordination problem "becomes" when the firm manufacturing operations go offshore. Therefore, this case study serves to both generate and elaborate on theory about the purchasing coordination problem (Kotekivi and Choi 2014).

Research Context and Data Collection

The environment in which data are collected determines the extent to which the researcher can correctly decipher the right cues about organizational behavior and choices (Gioia et al. 2012). In this case, the study took place in two business units of a large multinational engineering corporation. Both business units were previously independent operations responsible for niche markets in their respective industries. One business unit was responsible for one product group in the portfolio of plant automation products located in Europe for market-based reasons. The other business unit was responsible for the second category of products in the automation portfolio and was located in Asia for cost reasons.

In 2009, the company reorganized its manufacturing facilities from Europe to Asia, for reasons we discuss later in the case description. Along with production, the purchasing unit was relocated as well, while its the product development unit was retained at the European facility. The problem we investigate concerns purchasing as a support function and a boundary spanning unit to both production at the Asian facility and product development in the European facility. More specifically, the problem is conceptualized as that of locations where previous purchasing routines and capabilities are dismantled and rapidly rebuilt with new and somewhat different roles, yet these must rapidly support cross-functional and cross-business unit operations. The context therefore called for a review of the purchasing coordination problem beyond just organizational and functional boundaries to that of integration of information and communication processes within geographically disjointed manufacturing processes (Moses and Ahlström 2006).

The primary source data were twelve (12) semi-structured interviews equivalent to 602 min of tape-recorded data were conducted and transcribed by the first author. Most of these data were gathered during two site visits to the factories in Europe and in Asia. These data were

Source: Mugurusi & de Boer (2019) - SPAR.
**Sum-up**

- Remember that your methods serves two purposes: (1) help your readers understand your study, (2) helping others replicate your study.

- Provide enough information for full replication – makes your study more rigorous and transparent.

- Methods then materials versus Materials – then methods.

- Draft first, write later.

- Be reflexive.
References


Thank you for your attention

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