

Marquette University
e-Publications@Marquette

Management Faculty Research and Publications

Management, Department of

3-1-2011

Qualitative Case Studies in Operations Management: Trends, Research Outcomes, And Future Research Implications

Mark Barratt

Marquette University, mark.barratt@marquette.edu

Thomas Choi

Arizona State University at the Tempe Campus

Mei Li

Arizona State University at the Tempe Campus

Accepted version. *Journal of Operations Management*, Vol 29, No. 4 (March 2011): pg. 329-342. [DOI](#).

© 2011 Elsevier. Used with permission.

Qualitative Case Studies in Operations Management: Trends, Research Outcomes, And Future Research Implications

Mark Barratt

*Department of Supply Chain Management,
W. P. Carey School of Business, Arizona State University,
Tempe, AZ*

Thomas Y. Choi

*Department of Supply Chain Management,
W. P. Carey School of Business, Arizona State University,
Tempe, AZ*

Mei Li

*Department of Supply Chain Management,
W. P. Carey School of Business, Arizona State University,
Tempe, AZ*

Abstract: Our study examines the state of qualitative case studies in operations management. Five main operations management journals are included for their impact on the field. They are in alphabetical order: *Decision Sciences*, *International Journal of Operations and Production Management*, *Journal of Operations Management*, *Management Science*, and *Production and Operations Management*. The qualitative case studies chosen were published between 1992 and 2007. With an increasing trend toward using more qualitative case studies, there have been meaningful and significant contributions to the field of operations management, especially in the area of theory building. However, in many of the qualitative case studies we reviewed, sufficient details in research design, data collection, and data analysis were missing. For instance, there are studies that do not offer sampling logic or a description of the analysis through which research outcomes are drawn. Further, research protocols for doing inductive case studies are much better developed compared to the research protocols for doing deductive case studies. Consequently, there is a lack of consistency in the way the case method has been applied. As qualitative researchers, we offer suggestions on how we can improve on what we have done and elevate the level of rigor and consistency.

Keywords: Case studies, Research methods, Inductive. Deductive, Qualitative, Theory building, Theory, Testing

1. Introduction

Since the early 1980s there have been calls for empirical research methods in response to the over-reliance on the predominant analytical research paradigm in operations management (OM) (Buffa, 1980; Chase, 1980; Flynn et al., 1990; Meredith et al., 1989; Swamidass, 1991 ; Wood and Britney, 1989). More recently, there have been calls for more relevance and rigor when conducting empirically based research (Boyer et al., 2005; Eisenhardt and Graebner, 2007; Fisher, 2007 ; Roth, 2007). Academics in the OM field responded with predominantly deductive survey-based empirical studies (Scudder and Hill, 1998). Recently there have been a number of reviews of empirical research, focusing on specific topics such as operations strategy (e.g. Boyer et al., 2005), interdisciplinary and inter-organizational research (e.g., Buhman et al., 2005), sustainability (e.g., Kleindorfer et al., 2005), new product development (e.g., Krishnan and Loch, 2005), quality management (e.g., Schroeder et al., 2005), and supply chain management (e.g., Kouvelis et al., 2006). There have also been other studies that reviewed the state of survey research methods and data collection

techniques (Gupta et al., 2006; Rungtusanatham et al., 2003 ; Scudder and Hill, 1998).

As an alternative to survey-based research, other OM scholars have promoted the use of qualitative case study research (Lewis, 1998; McCutcheon and Meredith, 1993; Meredith et al., 1989 ; Voss et al., 2002). We define a qualitative case study as an empirical research that primarily uses contextually rich data from bounded real-world settings to investigate a focused phenomenon (adapted from Benbasat et al., 1987; Bonoma, 1985; Meredith et al., 1989; Meredith, 1998; Roth, 2007 ; Yin, 1994). This approach has appealed to researchers, as the field of OM has many emerging areas of research such as the integration of OM with other functional areas of the supply chain (e.g., Hines et al., 2002 ; Pagell, 2004). The intent is to build and extend theories (Eisenhardt, 1989 ; Yan and Gray, 1994) and to explore and better understand emerging, contemporary phenomena or issues in their real world settings (Flynn et al., 1990 ; Meredith, 1998).

This paper seeks to examine the state of and research outcomes from qualitative case studies in the OM field, as captured by the *inductive* and *deductive* articles published in five main OM journals (Barman et al., 2001; Barman et al., 1991 ; Olson, 2005). There have been similar papers in disciplines outside the OM field. For instance, Dubé and Paré (2003) reviewed the rigor and quality of case studies published in leading information systems journals during the period 1990–1999. We are not aware of any similar papers in the OM discipline, and we intend to fill this void. The purpose of our paper is four-fold. (1) It provides a summarizing review of the numerous guidelines for undertaking *inductive*-based case study research. (2) It captures the state of the scarce literature for undertaking *deductive*-based case study research. (3) It provides a review of the current state (1992–2007) of qualitative case studies and performs a gap analysis between the guidelines and the current state. The journals include four US-based journals and one European-based—*Decision Sciences* (DS), *International Journal of Operations and Production Management* (IJOPM), *Journal of Operations Management* (JOM), *Management Science* (MS), and *Production and Operations Management* (POM).¹ (4) It provides a review of theoretical

contributions made by the use of qualitative case studies and identifies subsequent opportunities to improve such theoretical contributions.

We begin by reviewing the literature on qualitative case-study methods, for both inductive and deductive approaches, focusing on the various research frameworks and guidelines that have been proposed to facilitate increased usage and level of rigor. After this, we present our research methodology and the results of our analyses. We then focus on the details of contributions made by the qualitative case studies, relative to the existing guidelines. We end with a general discussion and implications for future qualitative case studies.

2. Literature review

Across various management disciplines there has been recognition of the importance of bringing clarity and increased rigor to theory building and testing from case studies. A number of articles have attempted to provide guidance as to how to undertake such research from a variety of disciplines—management (Bitektine, 2008; Eisenhardt, 1989; Eisenhardt and Graebner, 2007; Harris and Sutton, 1986; Langley, 1999; Yin, 1989 ; Yin, 1994), information systems (Benbasat et al., 1987; Cavaye, 1996 ; Lee, 1989), marketing (Bonoma, 1985; Hillebrand et al., 2001 ; Johnston et al., 1999), and operations management (Meredith et al., 1989; Stuart et al., 2002 ; Voss et al., 2002). Based on this extant literature, we identify the key areas of consideration (i.e., inductive or deductive) and methodological approaches (i.e., sampling, data collection, and analysis).

We have divided the literature review into two sections—one on inductive qualitative case studies and the other on deductive qualitative case studies. To the best of our knowledge, we are the first to explicitly consider both inductive and deductive case approaches in a single review. In general, there has been much more extensive literature discussing the former, and our review reflects this state.

2.1. Inductive use of qualitative case studies

Much has been written about how to conduct an inductive case study (e.g., [Eisenhardt, 1989](#); [Meredith, 1998](#) ; [Yin, 1989](#)). We looked for basic requirements that are common to the articles that have provided such guidance.

2.1.1. Justification of research approach

An important consideration for undertaking theory building case studies is to clearly articulate the rationale behind why such research is being conducted ([Eisenhardt and Graebner, 2007](#)). Justifications can include: there is a gap in existing theory that does not adequately explain the phenomenon under investigation ([Benbasat et al., 1987](#); [Eisenhardt and Graebner, 2007](#); [Meredith, 1998](#) ; [Rothlisberger, 1977](#)); the research is exploratory and therefore calls for case research to build theories ([Meredith, 1998](#) ; [Yin, 1989](#)); the research is explanatory (i.e., asking "how" and "why" types of questions) and the context and experiences of actors are critical ([Benbasat et al., 1987](#) ; [Bonoma, 1985](#)), especially the experiences of managers so as to increase the practical relevance of the findings ([Fisher, 2007](#)).

2.1.2. Research focus and specification of unit of analysis

When attempting to build theory from case studies, researchers should have a clear focus to collect specific data in a systematic manner ([Mintzberg, 1979](#)). This focus helps to define the research question, the types of data to be collected and the types of organizations to be approached ([Leonard-Barton, 1990](#) ; [Pettigrew, 1990](#)). Although research questions may evolve over time and constructs may be modified ([Eisenhardt, 1989](#) ; [Voss et al., 2002](#)), there must be focus which helps maintain consistency throughout data collection and analysis ([Benbasat et al., 1987](#)).

Once the research focus has been specified and the research questions have been articulated, the unit of analysis must then be clearly specified ([Yin, 1989](#) ; [Dubé and Paré, 2003](#)). When the unit of analysis is unclear, this influences the research questions and outcomes ([Yin, 1989](#)). [Dubé and Paré \(2003: 610\)](#) suggest that clearly defining the unit of analysis "is critical if we want to understand how

the case relates to a broader body of knowledge." Markus (1989: 23) further suggests that in exploratory research, clearly stating the unit of analysis "helps to define the boundaries of a theory which in turn set the limitations in applying the theory." A clearly stated unit of analysis can help identify applicable extant literature that can help clarify the phenomenon under investigation.

2.1.3. Research purpose and role of existing theory

Case studies are used primarily to develop new theories (e.g., Benbasat et al., 1987; Gersick, 1988; Harris and Sutton, 1986 ; Van de Ven, 1989). Researchers employ an inductive logic, utilizing a variety of methods to collect primarily qualitative data from which to develop relevant and testable theories (Eisenhardt and Graebner, 2007; Fisher, 2007; Roth, 2007 ; Voss et al., 2002).

An important question arises then as to the role of existing theories in this theory-building process. On the one hand, the grounded-theory approach, proposed by Glaser and Strauss (1967), is based on pure inductive logic, where the new theory is derived strictly from the data. On the other, Eisenhardt (1989) has suggested that this "clean slate" approach has generated confusion over role of extant literature and existing theories in the use of case studies for theory building purposes. She has proposed that this approach, as implied by the grounded theory approach, is impractical, since the study's purpose, site selection, and data gathering require some rationale or preconceived ideas. Subsequently, a number of articles have suggested the use of *a priori* constructs to help shape the initial design of theory building research (Bourgeois and Eisenhardt, 1988; McCutcheon and Meredith, 1993 ; Voss et al., 2002). However, such *a priori* constructs are only to be considered as tentative and may not be in the resultant theory (Eisenhardt, 1989 ; McCutcheon and Meredith, 1993). In the end, the higher the level of consistency between the emergent theory and existing theory, the higher the external validity achieved.

2.1.4. Sampling issues, case selection, and number of cases

Instead of statistical sampling from the defined population, case study researchers utilize a theoretical or biased sampling approach

where cases are chosen for theoretical reasons (Glaser and Strauss, 1967; Meredith, 1998; Eisenhardt, 1989 ; Yin, 1989). Cases are chosen that either predict similar results or contrary results (Yin, 1989). The use of polar extreme-types has also been suggested where cases have sharply contrasting characteristics (Miles and Huberman, 1984; Pettigrew, 1990 ; Yin, 1989). Leading companies have been used for the usefulness of the results for benchmarking purposes (Choi and Hong, 2002 ; Fisher, 2007). In this regard, when building theory from case studies, the selection of cases should be carefully thought out rather than opportunistically derived (Benbasat et al., 1987).

A question then arises as to the number of cases that researchers should select. Voss et al. (2002), recognizing this dilemma, suggest that the fewer the number of cases, the greater the opportunity for depth of observation. However, multiple cases can augment external validity and help guard against observer bias. In particular, for theory building purposes, the use of multiple cases is likely to create more robust and testable theory than single case research (Eisenhardt, 1989; Eisenhardt and Graebner, 2007 ; Yin, 1994). Eisenhardt (1989: 15) specifically suggested that in the range of 4–10 cases “usually works well.” She cautioned that if less than four it may become difficult to capture the complexity of the real world and if more than 10 it may become difficult for the researchers to cognitively process the information. Dyer and Wilkins (1991) countered this suggestion by arguing that single case studies enable the researcher to capture in much more detail the context within which the phenomena under study occur. Single case studies may be useful for longitudinal research (Narasimhan and Jayaram, 1998 ; Voss et al., 2002) and can be used if they are extreme exemplars or opportunities for unusual research access (Yin, 1994).

2.1.5. Data collection and analysis

There are several data sources: interviews either structured (interview tool remains fixed) or semi-structured (interview tool is updated based on emerging data), observations (e.g., plant tour, attendance at meetings), and archival sources (e.g., documents, historical records, organizational charts, and production statistics). While some researchers have used only one method (e.g., observation in Gersick, 1988), others have used multiple methods for the purpose

of "triangulation" of data from different sources (e.g., Eisenhardt, 1989 ; Choi and Hong, 2002). Using multiple data sources (Jick, 1979) provides increased reliability of data (Benbasat et al., 1987; Boyer and McDermott, 1999; Hyer et al., 1999 ; Leonard-Barton, 1990) and stronger substantiation of constructs and propositions (Benbasat et al., 1987; Eisenhardt, 1989 ; Voss et al., 2002). Another form of triangulation is the use of multiple investigators (Dubé and Paré, 2003 ; McCutcheon and Meredith, 1993). Benbasat et al. (1987) and Eisenhardt (1989) suggested that the use of multiple investigators leads to a better ability to handle the richness of the contextual data and more confidence in research findings.

At the core of theory building is data analysis (Dubé and Paré, 2003; Eisenhardt, 1989; Glaser and Strauss, 1967; Stuart et al., 2002 ; Yin, 1989). It needs to occur simultaneously and incrementally with data collection (Glaser and Strauss, 1967). Obtaining overlap between data collection and analysis allows the researchers to capture the reality that the data bring (e.g., McCutcheon and Meredith, 1993). Constructs and their relationships are adjusted as data are collected. Such adjustments may come from the addition of cases to pursue a particular emerging theme (e.g., Gersick, 1988), the addition of questions to an interview protocol (e.g., Harris and Sutton, 1986), and the addition of data sources in existing case studies (e.g., Burgelman, 1983 ; Sutton and Callahan, 1987).

2.1.6. Organization of results

The biggest challenge behind data analysis is to demonstrate the objectivity of the process through which the data and field notes are developed into conclusions (Eisenhardt, 1989; Miles and Huberman, 1984 ; Van Maanen, 1988). The first step in this process is *within-case analysis*, where a single case description is offered and the emerging constructs and their relationships are delineated. At this stage, detailed, descriptive write-ups are created. Despite being descriptive, such case write-ups are core to the creation of insights (Gersick, 1988 ; Pettigrew, 1990), although there are no standardized formats for such write-ups (Yin, 1989). Case write-ups are deemed to be analysis as a result of the decisions that researchers make as to what the emerging issues are and how they should be captured in the write-ups.

Cross-case analysis is the act of comparing and contrasting the patterns emerging from the detailed case write-ups (Benbasat et al., 1987; Eisenhardt, 1989 ; Yin, 1989). Eisenhardt (1989) warns to guard against leaping to conclusions based on limited data. Nisbett and Ross (1980) and Miles and Huberman (1984) also warn against allowing the vividness or status of respondents to unfairly influence the case write-ups. Several articles (e.g., Eisenhardt, 1989; Miles and Huberman, 1984 ; Yin, 1989) articulate how to engage in cross-case analysis and overcome these pitfalls. The researchers should select two cases at a time and compare them noting the differences and similarities and repeat this procedure until all cases have been considered. Alternatively, they may select a few constructs based on the extant literature that describes the phenomenon of interest and then look for the evidences that address these constructs. Ultimately, the focus is on looking for similar patterns. But when differences occur they are not discarded until the uniqueness of the situation is clarified as having contributed to the difference. Another approach is to divide the data by its source (Bourgeois and Eisenhardt, 1988 ; Eisenhardt and Bourgeois, 1988). Findings from one form of data source are then corroborated by similar findings from another form of data.

2.1.7. Presentation of research outcomes

One of the ongoing challenges with case study research is how to present the research outcomes (Eisenhardt and Graebner, 2007 ; Miles and Huberman, 1984)—more specifically, how to draw and validate conclusions from data analysis (Miles and Huberman, 1984). It is not an easy task for researchers to present their data and defend the process, in the form of a “chain of evidence” which the reader can “readily follow” (Benbasat et al., 1987) as to how the researchers arrived at their research outcomes from the data that was collected.

Miles and Huberman (1984) have proposed numerous tactics for drawing case conclusions and to present findings. However, as far as the documentation of the report is concerned, many authors agree that there is no standard form (Miles and Huberman, 1984; Yin, 1989 ; Yin, 1994). For single-case studies it has been suggested that researchers present a detailed narrative supported by quotations from key informants and other forms of evidence (Yin, 1989). The narrative

is thought to be closely intertwined with the theory (Eisenhardt and Graebner, 2007). For multiple cases this challenge becomes even more critical and difficult. It requires a careful crafting and presentation of data to make the outcome self-evident to the readers. The use of tables and visual displays is often promoted as the way to convey and summarize the rich empirical evidence within case studies (Eisenhardt and Graebner, 2007; Miles and Huberman, 1984 ; Voss et al., 2002).

2.2. Deductive use of qualitative case studies

Although the majority of the OM case studies have taken the inductive, theory-building approach, a small number of authors have proposed their use for deductive, theory-testing purposes (McCutcheon and Meredith, 1993; Meredith, 1998 ; Voss et al., 2002). This proposal to test existing theory is in line with other studies in the general business disciplines: management (Bitektine, 2008; Bryman, 1988; Eisenhardt, 1989; Langley, 1999; Pinfield, 1986 ; Yin, 1994); information systems (Benbasat et al., 1987; Cavaye, 1996; Darke et al., 1998 ; Lee, 1989); and marketing (Bonoma, 1985; Hillebrand et al., 2001 ; Johnston et al., 1999). However, while we agree that qualitative case studies can be used for deductive purposes, it should be noted that despite the number of authors that propose and support the use for such purposes only a few offer insights as to how to actually undertake such research (Bitektine, 2008; Pinfield, 1986 ; Johnston et al., 1999). As such, the literature for deductive use compared to the inductive use of qualitative case studies is in need of further development.

2.2.1. Standing criticisms and potential solutions

There have been criticisms for using qualitative case studies for deductive, theory-testing purposes (Bitektine, 2008; Hillebrand et al., 2001 ; Johnston et al., 1999). These criticisms may have simply arisen from the lack of familiarity of qualitative methods (Bitektine, 2008 ; Roth, 2007); nevertheless, many researchers trained in positivist traditions have criticized theory-testing based on qualitative case studies on the grounds of "ambiguity of inferred hypotheses" and the "selective bias" (Bitektine, 2008: 161). Here, the concern is over

the degree of freedom that a researcher has to formulate hypotheses and the natural inclination to peek into the data. An additional concern is the risk of selectively looking for evidence that fit the *a priori* stated hypotheses.

The over-arching approach that has been proposed for the deductive use of qualitative case studies is that of *confirmation* (or falsification) of the appropriateness of a theory (Bonoma, 1985; Bryman, 1988; Johnston et al., 1999; Ross and Staw, 1993 ; Yin, 1994). Johnston et al. (1999) proposed three main requirements for using qualitative case studies for such confirmation purposes: (1) the case study must begin with an *existing theory* for the development of research hypotheses; (2) a systematic and logical research design should be followed; and (3) researchers should implement evaluation criteria to independently assess potential biases and to ensure the methodological rigor. These requirements are founded on the assertion that case studies are not to be viewed as "sampling units" in inferential statistics but rather as "individual studies" that are used to confirm or falsify a theory (Cavaye, 1996 ; Yin, 1994). In other words, lack of generalizability to the sampling population is not of main concern. What is important is the contextual data from case studies that are used to confirm or falsify a theory.

Following the development of the hypotheses, the systematic research design should incorporate: the clear definition of the unit of analysis, the careful selection of appropriate cases (Johnston et al., 1999) and triangulated data sources driven by the nature of the specific research questions (Bonoma, 1985 ; Yin, 1994). Concerning the selection of cases, the authors recognize that while a single case is possible, multiple cases are more compelling and make the research more robust. They also suggest that the cases be chosen to complement each other, in terms of similar contexts and or polar extreme types or to specifically investigate rival hypotheses (Johnston et al., 1999).

To overcome potential researcher bias, the issues of internal and external validity need to be considered together with reliability and objectivity (Johnston et al., 1999 ; Yin, 1994). One possible approach that can be utilized here is the use of multiple researchers (see also Dubé and Paré, 2003 ; McCutcheon and Meredith, 1993),

similar to the suggestions by Benbasat et al. (1987) and Eisenhardt (1989) for inductive research, which leads to a better ability to handle the richness of the contextual data and more confidence in research findings.

2.2.2. Two proposed approaches: use of competing theories and longitudinal data

Eisenhardt (1989) suggests that the confirmation approach can take two subsequent forms: namely examining the appropriateness of *competing theories* (Johnston et al., 1999; Keil, 1995 ; Pinfield, 1986) and utilizing a *longitudinal approach* (Anderson, 1983; Bitektine, 2008 ; Eisenhardt, 1989). Both approaches adopt the logic of confirmation/falsification of the appropriateness of a theory discussed above. They entail articulating a theory into a set of hypotheses and then comparing them against data either to confirm or falsify them. Key here is to devise ways to maintain objectivity and to guard against researchers' personal bias. The competing theories approach helps researchers minimize personal bias that may enter into the analysis by selectively looking for evidence that fit the hypotheses. The presence of competing theories would force the researchers to choose one theory over another. The longitudinal approach is similar to the "prospective case design," which is borrowed from the medical field (Bitektine, 2008). Here, hypotheses are formulated first in a prospective manner and then the qualitative data are collected at in different points across time.

Pinfield (1986) demonstrated an approach to enable the comparison and evaluation of two theoretically-derived perspectives of the organizational decision-making process (see also Keil, 1995). This approach was loosely based on two earlier approaches used by March and Olsen (1976) and Kagan (1978). Following the careful description of the two competing decision-making perspectives (e.g., structure vs. anarchic) across multiple dimensions, Pinfield (1986) collected data from multiple (four) sources to avoid interpretive bias. Utilizing a single case study of a complex decision making process within a single organization, five dimensions were drawn from the theoretically derived perspectives and considered in the analysis—decision definition, goals and technology, participation, contextual dependence

and time. In doing so the author made qualified recommendations as to the most appropriate theoretical perspective.

The use of longitudinal data builds on the application of the principles of prospective study design adapted from the field of medicine where cases are used to investigate suspected ailments. It uses "a comparison of a pattern of observed outcomes (on several variables) with some pattern of expected values derived from a given theory" (Bitektine, 2008: 162). This approach is akin to Popper's (1968) approach to falsifying theory—using a proposition under consideration to "predict outcomes for specific cases and subsequently investigate these cases to see whether the theory holds true for them" (Hillebrand et al., 2001: 652). The "falsification" of the theory arises when the theory under consideration does not hold true for the predicted outcomes. This pattern-matching technique (Campbell, 1966 ; Yin, 1994) allows for "outcome evaluation on multiple dimensions, where as little as one actual observation for a given dimension is available" (Bitektine, 2008: 162).

In fact, both approaches of competing theories and longitudinal data utilize pattern matching (Campbell, 1966 ; Yin, 1994). All that the pattern matching requires is "a theoretical pattern of expected outcomes, an observed pattern of effects, and an attempt to match the two" (Trochim, 1989, p. 360). In essence, the researchers are looking for patterns in the emerging data and then comparing the patterns against the theoretically derived hypotheses. Because the focus is on these patterns involving *a priori* determined constructs, there is less opportunity for making Type 1 error (i.e. false positive). In competing theories, emerging patterns are compared against multiple theories, and in use of longitudinal data, emerging patterns are compared against the prescribed theories over time. For example, Keil (1995) in examining the escalation of commitment in information systems tested three theories of escalation and, in doing so, used the theories as a template (i.e., stated hypotheses) for pattern matching. Also, Lee et al. (1996) in testing a model of voluntary employee turnover used pattern matching when the theorized essential features for a given decision path are judged to occur across multiple cases.

2.3. Summary of the literature review

It is clear from the literature reviews in Sections [2.1](#) ; [2.2](#) that the methodology for inductive case study purposes is significantly more developed and comprehensive than that for deductive case study purposes. This disparity between the levels of sophistication of the two research approaches is further evidenced by our analysis of the deductive articles in our sample that appear to have adopted an inductive logic and applied this to case studies for theory testing purposes. For instance, we found only three papers that partially followed the longitudinal approach and two papers that partially followed the competing theories approach out of a total of 35 deductive papers. Therefore, we have classified the research outcomes of these articles based on their stated approach and claimed outcomes rather than based on the emerging protocols we learned from our literature review. Such outcomes from the published articles range from "confirmation/falsification" to "revised frameworks or hypotheses" to "descriptive insights."

3. Methodology

Our goal is to report on the state of qualitative case study research. The published articles in five journals that met our definition of qualitative case studies became our data source. The five journals listed were selected on the basis of quality and impact (e.g., *Journal of Operations Management*, *Management Science*, etc.). Considerations were also given to geographic coverage (i.e., we wanted to include a leading European journal) and their stated acceptance of qualitative case studies (i.e., *International Journal of Operations and Production Management*).

3.1. Time horizon and article sampling

The time horizon for our research is 16 years, beginning in 1992, when POM was inaugurated, to 2007. We reviewed *all* the publication issues of the five journals during the specified time period. There were in total 5526 articles published from 1992 to 2007. We excluded any editorial articles or corrections to earlier articles. [Fig. 1](#) illustrates the process of sampling using DS as an example. In this

process, we first looked to see if the paper used some form of qualitative methods. We then applied our definition of qualitative case studies as articulated previously. Initially, we found 461 case-based articles that used either qualitative or quantitative or a mixture of both methods (for references, see under Supplemental Materials at <http://www.journaloperationsmanagement.org/>). By utilizing our sampling criteria we ended up with the total of 204 qualitative case studies—two from DS, 150 from IJOPM, 32 from JOM, 11 from POM, and nine from MS (for references, go to the same web address shown above).

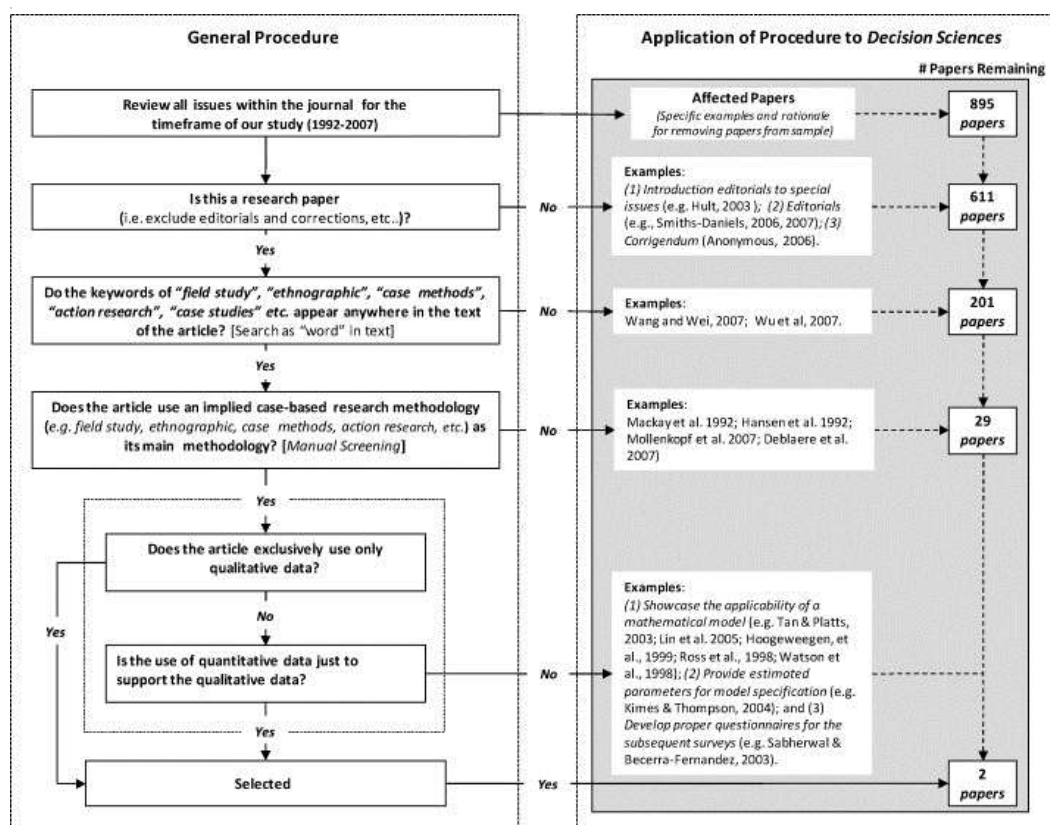


Fig. 1. Article sampling criteria and their application using *Decision Sciences* as an example.

3.2. Coding

We have coded all 204 qualitative case studies by the coding criteria shown in Table 1. Two of the researchers coded all of the articles and then the third researcher reviewed all of the coding.

Through the coding process, inter-coder agreements remained in the 80–85% range. Any issues or exceptions were discussed and resolved by all of the researchers through consensus.

Table 1. Coding criteria.

Coding criteria	Description of criteria
Year of publication	In what years were the articles published?
Article authors	Who were the authors of the article?
Journal	Which of the five journals was the article published in?
Major focus of article	What was the major focus of the article?
Unit of analysis (UofA)	What unit of analysis was adopted by the case study(ies) (Yin, 1989)?
Statement of unit of analysis	To what extent was the unit of analysis clearly stated?
Justification of research approach	To what extent had the authors justified their choice of research approach?
Mode of research	Did the authors follow an Inductive or deductive mode of research?
Degree of alignment	Bearing in mind the stated research goal, how appropriate were the selected cases?
Theoretical lens	Which theories or literatures influenced the authors' framing of the research?
Methodology	Did the authors use a single, multiple or longitudinal case study approach?
Sampling strategy	What was the logic behind the case sampling—theoretical or convenience?
Case selection strategy	If theoretical sampling was adopted, what kinds of strategies were used to select cases?
Number of cases	How many cases were selected for the research?
Data sources	Were there multiple sources of data, such as interviews, observations, and/or documents?
Data source triangulation	How much data triangulation was adopted and in what form?
Role of existing theories	Were existing theories used to develop constructs and/or used to examine the findings?
Data analysis	To what extent were within and cross-case analyses carried out?
Research outcomes	What types of findings were produced, such as frameworks, propositions or descriptive insights?

Once we were able to ascertain the unit of analysis, we examined each article and determined whether the article provided sufficient justification for the adoption of a case study as the selected research approach. We determined what primary research topic that the article was focusing on (which is presented in [Table 3](#) below) and whether the articles had clearly stated the unit of analysis and in what

context it occurred. Regarding the use of existing theories, we looked to see if any theories were being used to frame the research, or if no theories were used, then what bodies of literature were being used. We also examined each article to determine what sampling approach had been adopted. We determined how many cases were being used. We reviewed the data collection techniques used and examined the data analysis approaches deployed. Lastly, we reviewed the research outcomes of each article. [Appendix A](#) contains a more detailed explanation of the evaluation criteria, the scales that were adopted, and the rationale for the scales.

3.3. Analysis approach

We summarized all coding results on a large spreadsheet. Classifying qualitative case studies by their research orientation (i.e., inductive or deductive) and the form of their research outcomes (i.e. frameworks, propositions, or insights), we reviewed each category in depth. We looked for common patterns across each of the categories, but whenever a deviation occurred, we investigated it further ([Poole and Van de Ven, 1989](#)). To reduce all research topics to a few categories, the three researchers engaged in a Q-sort activity. Each person independently grouped the individual topics into a smaller number of key categories, and then all three discussed discrepancies together. Overall, we found about 85% agreement among the sorters. Any issues or exceptions were discussed and resolved by all of the researchers through consensus.

The purpose of the present research is descriptive and inductive and was not conducive to inferential statistics. Also, the research entailed census rather than survey. We have used a qualitative trend and pattern analysis to develop a greater understanding of contributions from qualitative case studies in OM and to identify potential opportunities for improvement. We have presented these analytical results in the forms of tables and figures.

4. Analysis, results and implications

In this section we present the analysis and general trends. We focus on the differences between the inductive and deductive case

studies, in terms of the research outcomes and the underlying methodological issues that relate to the rigor of such studies.

4.1. General trends for qualitative case studies

Over the period 1992–2007, as evidenced in [Fig. 2](#), qualitative case studies constitute a very small portion of the published papers. Nonetheless, while the total number of articles shows in general a decreasing trend, the number of case studies shows an increasing trend. The growth has come slowly but steadily from an average of 1.4% of the total number of articles published in these journals for 1992–1996 to an average of 6.8% for 2003–2007.

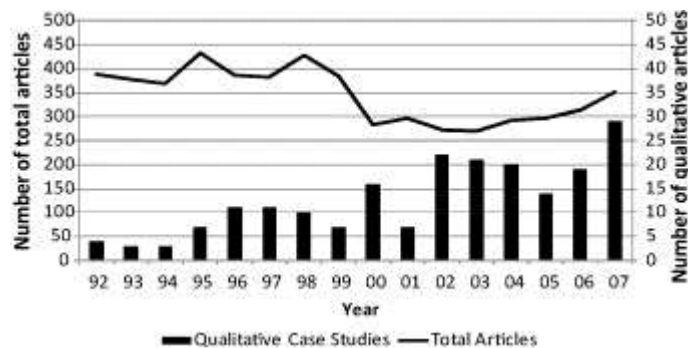


Fig. 2. Number of qualitative case studies vs. total number of articles.

4.1.1. Qualitative case studies by journal

Of the five journals in [Table 2](#), *IJOPM* has published the largest number of qualitative case studies (150), followed by *JOM* (32), then by *POM* (11), *MS* (nine) and lastly *DS* (2). The post hoc column in [Table 2](#) captures articles that took one approach in the main body of research and then adopted the other in a post hoc analysis.

Table 2. Case studies by Journal and Research Orientation.

Journal	Total	Inductive	(%)	Deductive	(%)	Adoption of post hoc analysis (Ind-Ded or Ded-Ind)
<i>DS</i>	2	2	1	0	0.0	None
<i>IJOPM</i>	150	119	58.3	31	15.2	2 Ind-Ded, 6 Ded-Ind
<i>JOM</i>	32	29	14.2	3	1.5	2 Ind-Ded, 1 Ded-Ind
<i>MS</i>	9	8	3.9	1	0.5	None
<i>POM</i>	11	11	5.4	0	0.00	1 Ind-Ded
Total	204	169	82.8	35	17.2	

As seen in Fig. 3, it appears that 2000 was a watershed year for the qualitative case study methodology in IJOPM, when 15 papers were published. Besides IJOPM, JOM and POM have been taking the lead in publishing qualitative case studies. JOM has been consistently publishing case studies, at least one article every year. POM published qualitative case studies actively from 1996 to 2007, with the exception of 1999–2000 and 2005–2006 when no qualitative case studies were published.

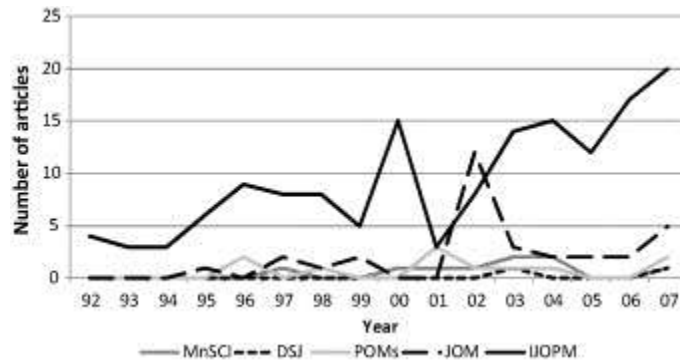


Fig. 3. Number of qualitative case studies by year.

4.1.2. Qualitative case studies by topic

Based on the identification of the primary topic for each article, Table 3 presents the 14 major OM topic areas that used a qualitative case study method. The area with the most qualitative case study publications is manufacturing strategies. Initially, the high number of qualitative case study publications in the area of manufacturing strategies seemed to be counter-intuitive. Qualitative case studies are typically used for exploring an area not previously studied, yet the topic of manufacturing strategies in general has been studied intensively for several decades (e.g., Hayes and Wheelwright, 1979; Miller and Roth, 1994 ; Skinner, 1980). However, a closer look at the focus of study revealed that a large number of qualitative case studies in this area were *integrative* in nature, for instance, combining theories in manufacturing strategies with other areas such as contingency theory (Sousa, 2003 ; Sousa and Voss, 2001), modularity (Salvador et al., 2002), and engineering (Narasimhan and Jayaram, 1998 ; Voss and Winch, 1996). The integrative studies provided articles with rich areas for theory building in previously well studied areas.

Table 3. Research outcomes by topic and mode of research.

Topic	Inductive research outputs (n = 169)								Deductive research outputs (n = 35)								Over all	Tot als
	Framework		Proposi tions		Descrip tive insights		Inducti ve sub- totals		Confi rm vs. falsif y		Revised framew ork or hypothes es		Descrip tive insights		Deduct ive sub- totals			
	n	(%)	n	(%)	N	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)		
Manufacturing strategy	11	6.5	1	4.1	42	24.9	60	35.5	5	14.3	5	14.3	4	11.4	1	40.0	74	36.3
Org. behavior	4	2.4	2	1.2	6	3.6	12	7.1	3	8.6	0	0.0	3	8.6	6	17.1	18	8.8
Integration	4	2.4	4	2.4	6	3.6	14	8.3	2	5.7	1	2.9	0	0.0	3	8.6	17	8.3
Strategic sourcing	7	4.1	2	1.2	6	3.6	15	8.9	0	0.0	2	5.7	0	0.0	2	5.7	17	8.3
Perf. measurement	1	0.6	1	0.6	10	5.9	12	7.1	0	0.0	2	5.7	1	2.9	3	8.6	15	7.4
Service operations	2	1.2	6	3.6	3	1.8	11	6.5	0	0.0	0	0.0	3	8.6	3	8.6	14	6.9
Demand chain mgmt.	4	2.4	2	1.2	4	2.4	10	5.9	0	0.0	0	0.0	0	0.0	0	0.0	10	4.9
Knowledge mgmt.	1	0.6	2	1.2	5	3.0	8	4.7	1	2.9	0	0.0	0	0.0	1	2.9	9	4.4
Plant mgmt.	1	0.6	1	0.6	6	3.6	8	4.7	1	2.9	0	0.0	0	0.0	1	2.9	9	4.4
Supply chain mgmt.	1	0.6	2	1.2	4	2.4	7	4.1	0	0.0	0	0.0	1	2.9	1	2.9	8	3.9
Environmental mgmt.	0	0.0	4	2.4	3	1.8	7	4.1	0	0.0	0	0.0	0	0.0	0	0.0	7	3.4
Inventory mgmt.	0	0.0	1	0.6	2	1.2	3	1.8	0	0.0	0	0.0	0	0.0	0	0.0	3	1.5
Project mgmt.	2	1.2	0	0.0	0	0.0	2	1.2	0	0.0	0	0.0	0	0.0	0	0.0	2	1.0
Retail strategy	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	2.9	1	2.9	1	0.5
Totals	38	22.5	34	20.1	97	57.4	16	82.8	1	34.2	10	28.6	13	37.1	3	17.2	204	100

4.1.3. Qualitative case studies by research outcomes

We examined the qualitative case studies for their research outcomes, as shown in Table 3. For 169 *inductive* articles, 38 or

22.5% produced forms of frameworks or models. For example, Wu and Choi (2005) developed a typology of supplier–supplier relationship configurations, supported by eight propositions related to the interactions between competing suppliers. In Danese et al. (2006) a model of the sequences of improvements in pharmaceutical supply networks was developed. Thirty-four or 20.1% developed formally stated propositions; for example, Grutter et al. (2002) developed nine propositions relating to work team performance in South African manufacturers. An additional example can be found in Krajewski et al. (2005), where eight propositions were developed relating to the reaction strategies adopted by suppliers in build-to-order supply chains.

For deductive-oriented qualitative articles, twelve or 34.3% provided forms of confirmation/falsification of theoretically derived hypotheses. For example, in Jensen and Szulanski (2007), the article's original hypotheses were confirmed (i.e., that the use of templates increases the effectiveness of knowledge transfer). In Lewis (2000), the author refuted their initial hypothesis that becoming lean does not automatically result in improved financial performance for an organization. Ten or 28.6% provided revised hypotheses/frameworks as their research outcomes. For example, in Bititci et al. (2005), revised hypotheses concerning how existing performance measure can be used for measuring performance in extended enterprises were produced. In Mosey (2005) the author produced a revised framework for understanding how small and medium-sized enterprises (SMEs) develop a dynamic capability for new-to-market product development.

4.1.4. Qualitative case studies by research orientation

Of the 204 qualitative case studies included in this study, most adopted the inductive approach. Ones that used deductive approach were clearly in a minority. As shown in Table 3 above, 169 (82.8%) were inductive (i.e., theory building) and 35 (17.2%) were deductive papers (i.e., theory testing). We note that 31 of the 35 deductive, theory-testing articles came from IJOPM. Nevertheless, the number of deductive case studies exceeded our expectations, especially given the criticisms surrounding this approach as discussed under the literature review. As evidenced by Fig. 4, while the number of qualitative case studies that adopted the inductive approach has increased significantly

since 2000, the number of case studies that adopted the deductive approach has shown a slow decline.

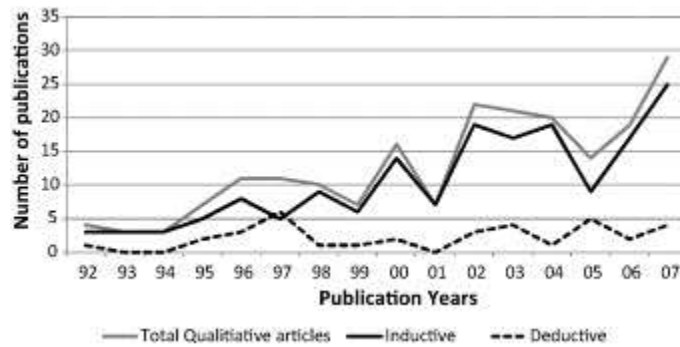


Fig. 4. Qualitative case study articles—inductive vs. deductive (1992–2007).

4.2. Inductive vs. deductive case studies: key patterns and differences

We now offer the results of a more detailed analysis, based on Table 4. While the case studies have produced some significant contributions in terms of their research outcomes, all articles have been examined for potential ways to improve quality and rigor. They are examined in light of the differences between the research outcomes and what our earlier literature review informed us about the requirements of a scholarly case study.

Table 4. Summary comparison of inductive and deductive research outputs (by methodological issues).

	Inductive research outcomes (<i>n</i> = 169)						Deductive research outcomes (<i>n</i> = 35)					
	Framework or propositions		Descriptive insights		Total		Confirm/falsify		Rev frame/hypos or descriptive insights		Total	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
Justified research approach												
Yes	19	11.2	13	7.7	32	18.9	1	2.9	5	14.3	6	17.1
Partial	33	19.5	37	21.9	70	41.4	3	8.6	10	28.6	13	37.1
No	20	11.8	47	27.8	67	39.6	8	22.9	8	22.9	16	45.7
Totals	72	42.6	97	57.4	169	100.0	12	34.3	23	65.7	35	100

	Inductive research outcomes (<i>n</i> = 169)						Deductive research outcomes (<i>n</i> = 35)					
	Framework or propositions		Descriptive insights		Total		Confirm/falsify		Rev frame/hypos or descriptive insights		Total	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
Unit of analysis												
<i>Clearly stated</i>	22	13.0	17	10.1	39	23.1	0	0.0	6	17.1	6	17.1
<i>Not clearly stated</i>	50	29.6	80	47.3	130	76.9	12	34.3	17	48.6	29	82.9
<i>Totals</i>	72	42.6	97	57.4	169	100.0	12	34.3	23	65.7	35	100
Theory vs. phenomenon												
<i>Theory</i>	8	4.7	7	4.1	15	8.9	0	0.0	4	11.4	4	11.4
<i>Phenomenon</i>	62	36.7	84	49.7	146	86.4	12	34.3	19	54.3	31	88.6
<i>Neither</i>	2	1.2	6	3.6	8	4.7	0	0.0	0	0.0	0	0.0
<i>Totals</i>	72	42.6	97	57.4	169	100.0	12	34.3	23	65.7	35	100
Sampling strategy												
<i>Theoretical</i>	58	34.3	62	36.7	120	71.0	6	17.1	12	34.3	18	51.4
<i>Convenience</i>	5	3.0	13	7.7	18	10.7		5.7	6	17.1	8	22.9
<i>Random</i>	1	0.6	1	0.6	2	1.2	0	0.0	1	2.9	1	2.9
<i>No logic offered</i>	8	4.7	21	12.4	29	17.2	4	11.4	4	11.4	8	22.9
<i>Totals</i>	72	42.6	97	57.4	169	100.0	12	34.3	23	65.7	35	100
Number of cases												
<i>1</i>	11	6.5	34	20.1	45	26.6	6	17.1	9	25.7	15	42.9
<i>2</i>	4	2.4	6	3.6	10	5.9	1	2.9	1	2.9	2	5.7
<i>3</i>	8	4.7	13	7.7	21	12.4	2	5.7	2	5.7	4	11.4
<i>4–10</i>	37	21.9	35	20.7	72	42.6	2	5.7	7	20.0	9	25.7
<i>>10</i>	12	7.1	9	5.3	21	12.4	1	2.9	4	11.4	5	14.3
<i>Totals</i>	72	42.6	97	57.4	169	100.0	12	34.3	23	65.7	35	100
Triangulated data sources												
<i>Yes</i>	56	33.1	68	40.2	124	73.4	10	28.6	14	40.0	24	68.6
<i>No</i>	15	8.9	22	13.0	37	21.9	0	0.0	9	25.7	9	25.7
<i>Not stated</i>	1	0.6	7	4.1	8	4.7	2	5.7	0	0.0	2	5.7
<i>Totals</i>	72	42.6	97	57.4	169	100.0	12	34.3	23	65.7	35	100
Data analysis												
<i>Within & cross-case</i>	45	26.6	31	18.3	76	45.0		5.7	7	20.0	9	25.7

	Inductive research outcomes (n = 169)						Deductive research outcomes (n = 35)					
	Framework or propositions		Descriptive insights		Total		Confirm/falsify		Rev frame/hypos or descriptive insights		Total	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Within-case only	12	7.1	41	24.3	53	31.4	6	17.1	10	28.6	16	45.7
Cross-case only	11	6.5	22	13.0	33	19.5	4	11.4	6	17.1	10	28.6
None	4	2.4	3	1.8	7	4.1	0	0.0	0	0.0	0	0.0
Totals	72	42.6	97	57.4	169	100	12	34.3	23	65.7	35	100

4.2.1. Inductive qualitative case study papers

Table 4 is reframed into Fig. 5 ; Fig. 6. According to Fig. 5, the research outcome categories of the "Framework" and the "Proposition" consistently scored higher, in terms of the percentage of articles that met the research design criteria, than the "Descriptive Insight" research outcome category over all of the methodological design issues. For example, in terms of justification of case research approach, 28 of 34 (i.e., 82.4%) of articles that produced propositions and 24 of 38 (i.e., 63.2%) of articles that produced frameworks provided at least partial or full justification for their choice of research approach compared to only 50 of 97 (i.e., 51.5%) of articles that produced descriptive insights. Fig. 5 would suggest that, generally speaking, the articles in the "Framework" and "Proposition" research outcome categories were methodologically more rigorous than the articles in the "Descriptive Insight" research outcome category.

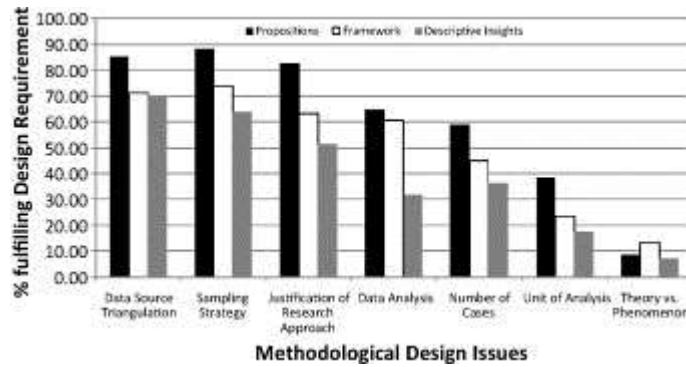


Fig. 5. Inductive articles (by research outcome) fulfilling methodological design issues.

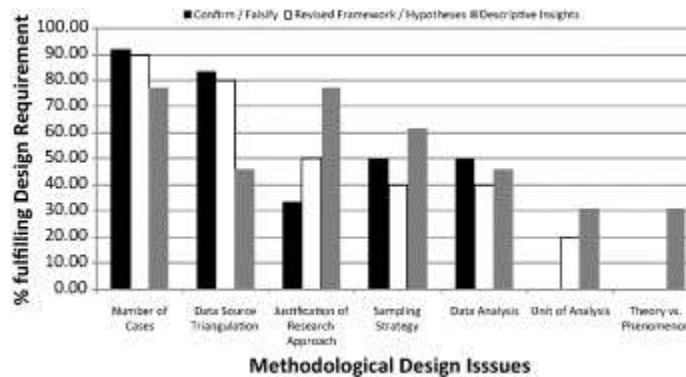


Fig. 6. Deductive articles (by research outcome) fulfilling methodological design issues.

4.2.1.1. Justification of research approach

The majority (102 of 169, i.e., 60.4%) of inductive case studies provided at least some justification for their choice of the case study methodology as their research approach and why they were undertaking an inductive study, as recommended by Yin (1989) and Eisenhardt and Graebner (2007). It should be noted that the majority of cases that did not justify their use of case study method were from IJOPM. Justification of the case methodology is associated with certain types of research outcomes. For cases that did not justify the use of case methodology, about half (i.e., 48.5%) ended with descriptive insights only. For cases that did justify the use of case methodology, only about a quarter (i.e., 27.8%) ended with descriptive insights. The remaining majority of articles developed either a theoretical framework or set up formal propositions. This pattern of relationship between the justification of case approach and research outcome may have suggested that case approach justification is one of the salient

indicators of an overall rigorous case study design which produces meaningful results.

4.2.1.2. Unit of analysis (UOA)

Overall, for inductive articles there are more case studies that did *not* clearly state their UOA (76.9%) than those that did (23.1%). This is seen as a potentially significant area for improvement because clearly stated unit of analysis makes a difference in terms of the resulting research outcomes ([Dubé and Paré, 2003](#); [Markus, 1989](#) ; [Yin, 1989](#)). A higher percentage of studies that clearly stated their UOA were able to derive frameworks or proposition compared to those who produced only descriptive insights (56.4% vs. 38.5%).

4.2.1.3. Theory vs. phenomenon

Overall, a small percentage of case studies used an existing theory as opposed to a phenomenon occurring in the literature to frame the research. An existing theory (i.e. transaction cost economics, resource based view, etc.) adds validity to the conclusions one may draw from the data whether inductive or deductive, whereas a phenomenon pertains to the specific context in which the case studies are conducted (i.e. service operations, knowledge management, etc.). According to [Table 4](#), case studies that focused on a phenomenon occurring in the literature increased the likelihood of deriving descriptive insights as opposed to a framework or formal propositions.

4.2.1.4. Sampling approach

Discussion of the sampling approach is universally important and is explicitly expressed across different methodologies. For the case articles we reviewed, the majority used theoretical sampling (71%), the remaining used approaches ranging from convenience sampling (10.6%) to random sampling (0.6%). We should note that 29 cases (17.2%) did not mention their sampling logic at all. Of the cases that did not use theoretical sampling, 72.4% of these cases only produced descriptive insights. In comparison, of the case studies that adopted theoretical sampling, only 51.7% resulted in producing descriptive

insights. All of the 21 articles (12.4%) under descriptive insights that did not offer sampling logic came from IJOPM.

4.2.1.5. Number of cases

Seventy-two (42.6%) articles were in line with the ideal number (i.e. between 4 and 10 cases), as suggested by [Eisenhardt \(1989\)](#). Of 76 articles that used less than 4 cases, 34 (20.1%) articles used a single case, all of which produced descriptive insights. For 21 (12.4%) articles that used over ten cases, there was a tendency to derive more framework/proposition than purely descriptive insights.

4.2.1.6. Data sources

Overall, 124 out of 169 (73.4%) inductive articles used triangulated data sources. In terms of research outcomes, the use of triangulated data sources had a big impact on the development of formal propositions or frameworks, whereas only 22.2% (16 of 72) of articles did not use triangulation. This percentage is higher for cases that produced descriptive insights at 30%, i.e. 29 of 97 articles.

4.2.1.7. Data analysis

For inductive studies that used both within and cross-case analysis, the majority of them (45 out of 76 or 59.2%) were able to derive either a theoretical framework or formal propositions. This percentage is much lower for cases that used only within case or only cross-case analysis.

4.2.1.8. Summary of inductive qualitative case study papers

The inductive articles that were more rigorous with their research design managed to produce frameworks or propositions as an outcome of their research compared to those that were less rigorous. When examining the differences between the three main research outcomes (i.e. frameworks, propositions and descriptive insights), we found three key drivers: (1) justification for choice of case-based research methodology, (2) clearly stated unit of analysis, and (3) the use of multiple case studies leading to both within and cross-case analysis. All of these three drivers represent significant opportunities

for improving the methodological rigor and contributions. Along with the three drivers we also found that case based studies are doing better with issues relating to the use of theoretical sampling, the use of triangulated data sources, the choice of an appropriate number of cases with which to undertake their research, and the use of theory and phenomena drawn from the literature in framing their research. Finally, in terms of the research outcomes, the articles that produced only descriptive insights represent a significant opportunity for potential improvement. While making some basic contribution in terms of the insight they provide, further work remains to move the theory building element of these articles to the point where they can begin to be tested.

4.2.2. Deductive case study papers

A more confusing picture is shown in [Fig. 6](#). We could not detect any patterns between the methodological design categories and the level of rigor. Under justification of research approach, sampling strategy, unit of analysis and theory vs. phenomenon, the descriptive insight articles appear more rigorous compared to the other two research outcome categories. Then, the situation is reversed for the remaining three categories—number of cases, data source triangulation and data analysis. Perhaps, this was to be expected given there are no explicit guidelines published for using case studies for deductive, theory-testing purposes. We also note that there are articles that unquestioningly apply an inductive logic to deductive case studies, for instance, using within-case and then cross-case analysis rather than treating each case as a separate entity for confirmation/falsification purposes.

4.2.2.1. Justified research

For theory-testing, a survey methodology is typically considered a preferred choice and it is clearly not intuitive to use case studies for such a purpose. Therefore, providing methodological justification for using case studies for deductive purposes would be even more important than it would be for inductive research. However, over 45% of the deductive articles did not offer any justification for using case-based research, compared to less than 40% for inductive articles.

When at least some justification is offered, the tendency is to use the inductive-based logic (e.g., the nature of their research questions).

4.2.2.2. Unit of analysis

Overall, 29 (82.9%) articles did not clearly state their unit of analysis, which represents a very significant opportunity for improvement. Despite overwhelming majority, the issue of whether articles clearly stated their unit of analysis does not seem to have impacted the research outcome.

4.2.2.3. Theory vs. phenomenon

Surprisingly, most studies (31 or 88.6%) used an emerging phenomenon derived from the extant literature. Existing theory was only used in four (11.4%) of deductive papers with none of them being able to provide confirmation or falsification of the selected theory, or even revision of the framework or hypotheses drawn from the theory. Instead they all derived only descriptive insights.

4.2.2.4. Sampling approach

For deductive case studies, the majority of articles (18 or 51.4%) used theoretical sampling (51.4%), followed by convenience sampling (8 or 22.9%) and no logic offered (8 or 22.9%) and random sampling (1 or 2.9%). No clear patterns emerged in terms of the sampling approach and the resulting research outcomes.

4.2.2.5. Number of cases, data sources and data analysis

For deductive case studies, 15 (42.9%) articles used a single case, in line with the notion of confirming or falsifying an existing theory. There are no distinctive patterns relating the number of cases used and the research outcomes for deductive case studies. Overall, deductive case studies appear to have adopted an *inductive* logic for the presentation of their data analysis. While only a single case is needed for confirmation/falsification purposes, additional cases can certainly add further plausibility to the conclusion. Of the 35 total deductive cases, 9 (25.7%) presented within-case combined with cross-case analysis, and 10 (28.6%) presented only their cross-case

analysis. As such, these articles employed an inductive logic based on replication, rather than treating each case as a separate "confirming/falsifying" entity.

4.2.2.6. Summary of deductive qualitative case study papers

Our research reveals a more troublesome picture in terms of deductive case-based research. Given the lack of specific guidelines in the literature, it is surprising to see 35 of 204 papers attempting to utilize case-based research for theory-testing purposes. At the same time, it is unfortunate to see that in many instances articles appear to have simply adopted an inductive logic for their deductive research. This apparent decision manifested itself into some serious "methodological" problems related to the justification of the research approach, unit of analysis, the use of theory vs. phenomenon, and data analysis.

5. Discussion and implications for future research

In response to the calls for more qualitative case studies, the OM field has seen a slowly but steadily increasing trend since 1992. The trend is especially notable in IJOPM and JOM, although the percentage of case articles compared to total articles still remains small. Based on our observations, we believe the OM field will continue to see increasing numbers of qualitative case studies, and if so, it becomes more imperative that the OM field takes stock of what we have done as a field and clearly delineate the areas of improvement.

We offer what we perceive to be the typical profiles of case studies using inductive and deductive approaches. We then conclude by making suggestions for future research. In particular, we propose a methodological model for conducting qualitative case studies for deductive, theory-testing purposes.

5.1. Typical profiles of inductive and deductive studies

The typical inductive paper is focused on describing a phenomenon, using theoretical sampling of multiple cases. There is evidence for some triangulation when conducting data analysis with within and cross-case comparisons. However, it only partially justifies

its research idea and may not clearly state its unit of analysis. It ends up offering some insights but falls short of advancing new propositions or theories.

The typical deductive paper is focused on revising existing frameworks/hypotheses or describing a phenomenon, using a single case with within-case analysis. However, it does not clearly articulate research questions and its unit of analysis. In the absence of clear research protocols, it adopts inductive logic for deductive purposes. For instance, the qualitative data that support hypotheses are compiled inductively and then are used for deductive means to claim support. It imparts a strong impression that the authors selectively chose evidence to justify confirmation of their hypotheses.

Overall, the typical profiles of both approaches lack some details in how the study is framed and how the analysis is conducted. If so, the basic scientific mode of inquiry that would call for transparency and repeatability could be compromised. Nonetheless, moving forward, we believe the OM field is in a good position to improve our research practices involving inductive approach as its protocols are well developed. However, the deductive case studies research protocols are still being developed and debated.

5.2. Moving forward with case study research

From our examination of 204 inductive and deductive case studies published during the period 1992–2007, we have found that the use of qualitative case studies has made some contributions to the OM field in terms of theory building in new areas and also from integrating existing theory with new contexts. However, despite these positive contributions there are some clear lessons that the OM field needs to heed for theory building and testing purposes, which would increase the rigor and perceived quality of our research, and possibly lessen some of the doubts about the use of this particular methodological approach.

Firstly, for inductive, theory building studies, researchers should follow, and academic journals should seek to encourage researchers to follow, the significant guidelines that have emerged for the use of qualitative case studies for theory building. Secondly, for theory

testing purposes, there needs to be a concerted effort within the OM field to develop some standards, or at least some degree of consensus beyond the thoughts of Yin (1989) over whether qualitative case can be used for theory testing, and if so, on what basis and how such case studies should be undertaken.

To begin this process, we recognize that the extant literature points toward two approaches for using qualitative case studies for theory-testing (Eisenhardt, 1989), based on the overarching form of confirmation of the appropriateness of a theory. Firstly authors could assess the appropriateness of *competing theories* (e.g. Eisenhardt, 1989; Pinfield, 1986 ; Keil, 1995), and secondly, authors could follow an approach based on the collection of *longitudinal data* (e.g. Bitektine, 2008). We offer Fig. 7 as a broad framework to take a step toward creating an approach for conducting qualitative case studies for deductive purposes.

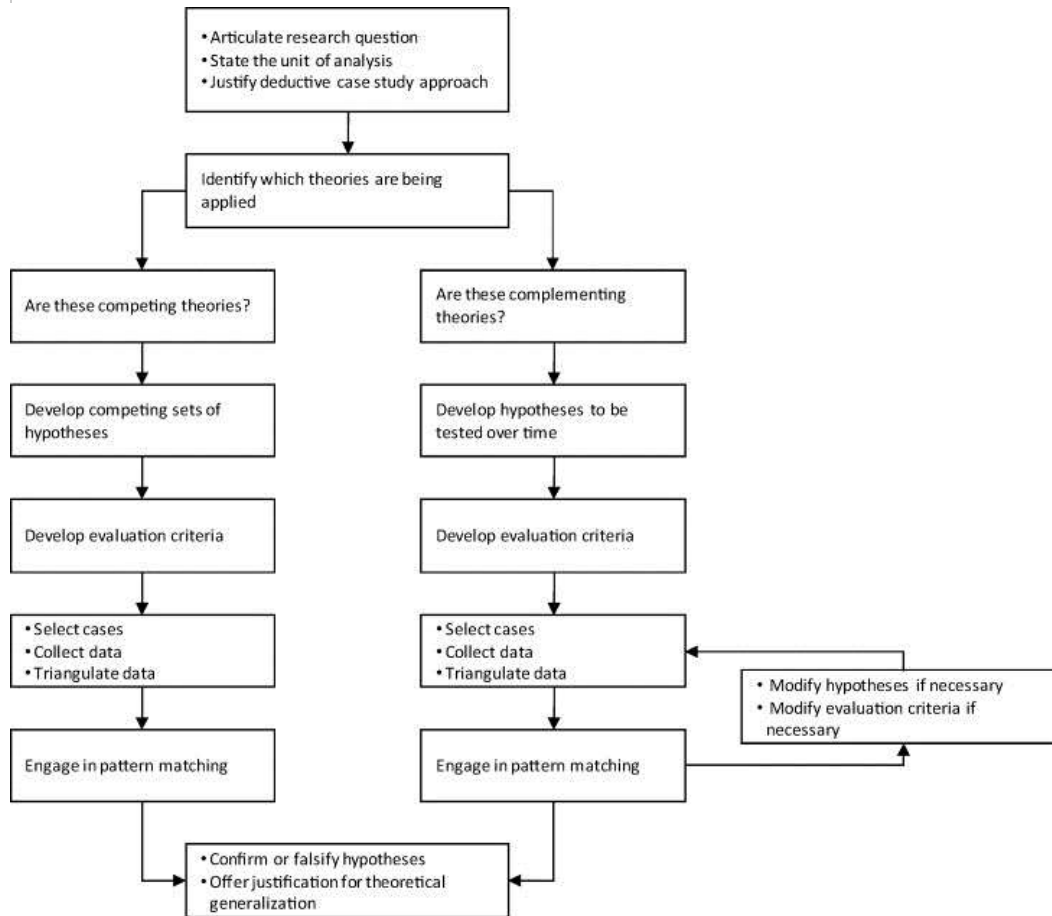


Fig. 7. Suggested approach to conducting deductive case studies.

Research questions first need to be stated clearly and the unit of analysis identified. Then, the logic of deductive mode of inquiry should be presented. Here, it should no longer be one that argues exploratory purposes, because the mode is theory testing and not theory building. Applicable existing theory or theories should be discussed. If competing theories, competing sets of hypotheses should be developed. If single theory or complementary theories, a longitudinal study should be planned.

The competing theories approach is based on the careful delineation of multiple dimensions drawn from at least two competing theories (Pinfield, 1986). These dimensions are then evaluated for their appropriateness against data derived from a case study. The evaluation criteria are identified before data collection, and case study

data is collected from multiple sources to avoid interpretive bias. The theoretically derived dimensions are the considered in the analysis through pattern matching (Yin, 1994) and qualified recommendations are made as to the most appropriate theory. When discussing the final results, theoretical generalization, as opposed to statistical generalization, should be addressed.

The underlying logic of the longitudinal approach is in essence similar to that of the competing theories approach in that the data collection and analysis in multiple points in time helps guard against interpretive bias. However, the longitudinal nature of the approach gives rise to some fundamental differences (Bitektine, 2008). After formulating research questions and selecting theories, an initial case study is identified and the data collection and analysis are conducted. Once the exercise of pattern matching reveals which hypotheses are supported and which are not, a set of modified hypotheses may be formulated. Key here is to keep in mind that the researchers are engaged in a deductive mode of inquiry, and modifying the hypotheses does not mean changing the research questions or constructs. A new set of evaluation criteria may be developed as well. These steps are repeated across different points in time until the outcomes have answered the research question. In this process, certain aspects of the theories may be confirmed while some other may be falsified.

Our study has examined the state of qualitative case studies in OM. The case studies will continue to explore new areas of the OM field (i.e. service operations or sustainable supply chains) but will also be used to integrate existing topics and theories (i.e. manufacturing strategy) with new theories and perspectives. Such approaches will lead to new and significant contributions to the OM field. The significantly higher number of inductive case studies published over the period 1992–2007 is reflective of the more advanced development of theory-building research protocols (Eisenhardt, 1989; Meredith et al., 1989; Stuart et al., 2002 ; Voss et al., 2002). At the same time, our study points out how researchers in the OM field need to improve on offering sufficient details in research design, data collection, and data analysis when they engage in qualitative case studies. In particular, it calls for a need to develop methodological protocols for deductive case studies.

Appendix A. Evaluation criteria, scales and rationale

Measured items for methodological issues	Rating scales and rationale
Justification for case research	"Yes"—A statement of why the case method was adopted appeared in the research together with a clear explanation of why the case research method is appropriate. For example, if "an exploratory study" was used as the justification of the case method, the research provided a clear explanation of the gaps in the literature to validate the "exploratory" claim
<i>Was the reasoning for using a case research method provided? If so, how well was the reasoning?</i>	"Partial"—A statement of why case method was used (for example, an exploratory study) appeared in the research but there was no or only limited explanation of the rationale to validate the initial "exploratory" claim "No"—No attempt of defending the choice of case method appeared in the research
Unit of analysis	"Clearly stated"—The research provided an explicit statement of the unit of analysis
<i>Was the unit of analysis explicitly stated?</i>	"Not clearly stated"—No explicit statement of the unit of analysis was provided in the research
Theory vs. phenomenon	"Theory"—The research was framed by existing theory such as Transaction Cost Economics, Resource-based View, etc.
<i>Was the research grounded in existing theory or phenomenon?</i>	"Phenomenon"—The research was framed by an existing stream of literature such as Inventory Management or Project Management "Neither"—The research was not framed by existing theory nor existing literature
Sampling strategy	"Theoretical"—Cases(s) were selected for theoretical purposes, for example, to select polar extremes where cases exhibited extremely high or extremely low value on the constructs of interests
<i>How did the researcher(s) decide on which case(s) to choose?</i>	"Convenience"—Case(s) were selected out of convenience of the researchers, for example, the case companies were located within close geographical proximity of the researchers "Random"—Case(s) were randomly chosen "No logic offered"—No discussion appeared in the research regarding how the case(s) was/were selected
Number of cases	
<i>How many cases were examined in the research?</i>	We noted the number of cases examined in each research article and then grouped them in 5 categories: 1, 2, 3, 4–10 and greater than 10. The range of 4–10 was drawn from the recommendation by Eisenhardt (1989)
Triangulated data sources	"Yes" – More than one source of data was collected and used to validate the findings, for example, company documentation was reviewed in addition to interviews with key informants
<i>Was there more than one source of data used to validate the research findings?</i>	"No"—Only one source of data was collected and used

Measured items for methodological issues	Rating scales and rationale
	"Not stated"—No discussion of the data sources appeared in the research
Data analysis	"Within & Cross-case"—Both within and cross-case analyses were provided
How were the research results presented?	"Within-case"—Only within case analysis was provided
	"Cross-case"—Only cross case comparison was provided
	"None"—No within or cross case analysis was provided

References

- Anderson, 1983. P. Anderson. Decision making by objection and the Cuban missile crisis. *Administrative Science Quarterly*, 28 (1983), pp. 201–222
- Barman et al., 2001. S. Barman, M.D. Hanna, R.L. LaForge. Perceived relevance and quality of OM journals: a decade later. *Journal of Operations Management*, 19 (3) (2001), pp. 367–385
- Barman et al., 1991. S. Barman, R.J. Tersine, M.R. Buckley. An empirical assessment of the perceived relevance and quality of POM-related journals by academicians. *Journal of Operations Management*, 10 (2) (1991), pp. 194–212
- Benbasat et al., 1987. I. Benbasat, D.K. Goldstein, M. Mead. The case research strategy in studies of information systems. *MIS Quarterly*, 11 (3) (1987), pp. 368–386
- Bitektine, 2008. A. Bitektine. Prospective case study design qualitative method for deductive theory testing. *Organizational Research Methods*, 11 (1) (2008), pp. 160–180
- Bititci et al., 2005. U.S. Bititci, K. Mendibil, V. Martinez, P. Albores. Measuring and managing performance in extended enterprises. *International Journal of Operations & Production Management*, 25 (3/4) (2005), pp. 333–353
- Bonoma, 1985. T.V. Bonoma. Case research in marketing: opportunities, problems and a process. *Journal of Marketing Research*, 22 (2) (1985), pp. 199–208
- Bourgeois and Eisenhardt, 1988. L. Bourgeois, K. Eisenhardt. Strategic decision processes in high velocity environments: four cases in the microcomputer industry. *Management Science*, 34 (7) (1988), pp. 816–835
- Boyer and McDermott, 1999. K.K. Boyer, C. McDermott. Strategic consensus in operations strategy. *Journal of Operations Management*, 17 (3) (1999), pp. 289–305

- Boyer et al., 2005. K.K. Boyer, M. Swink, E.D. Rosenzweig. Operations strategy research in the POMS Journal. *Production and Operations Management*, 14 (4) (2005), pp. 442–449
- Bryman, 1988. A. Bryman. *Quantity and Quality in Social Research*. Routledge, London (1988)
- Buffa, 1980. E.S. Buffa. Research in operations management. *Journal of Operations Management*, 1 (1) (1980), pp. 1–8
- Buhman et al., 2005. C. Buhman, S. Kekre, J. Singhal. Interdisciplinary and inter-organizational research: establishing the science of enterprise networks. *Production and Operations Management*, 14 (4) (2005), pp. 493–513
- Burgelman, 1983. R. Burgelman. A process model of internal corporate venturing in a major diversified firm. *Administrative Science Quarterly*, 28 (2) (1983), pp. 223–244
- Campbell, 1966. Campbell, D.T., 1966. Pattern matching as an essential in distal knowing. In: Hammond, K.R. (Ed.), *The Psychology of Egon Brunswik*. Holt, Rinehart & Winston, New York, pp. 81–106.
- Cavaye, 1996. A.L.M. Cavaye. Case study research: a multi-faceted research approach for IS. *Information Systems Journal*, 6 (3) (1996), pp. 227–242
- Chase, 1980. R.B. Chase. A classification and evaluation of research in operations management. *Journal of Operations Management*, 1 (1) (1980), pp. 9–14
- Choi and Hong, 2002. T.Y. Choi, Y. Hong. Unveiling the structure of supply networks: case studies in Honda, Acura and Daimler. *Chrysler Journal of Operations Management*, 20 (5) (2002), pp. 469–493
- Danese et al., 2006. P. Danese, P. Romano, A. Vinelli. Sequences of improvement in supply networks: case studies from the pharmaceutical industry. *International Journal of Operations & Production Management*, 26 (11) (2006), pp. 1199–1222
- Darke et al., 1998. P. Darke, G. Shanks, M. Broadbent. Successfully completing case study research: combining rigor, relevance and pragmatism. *Information Systems Journal*, 8 (4) (1998), pp. 273–289
- Dubé and Paré, 2003. L. Dubé, G. Paré. Rigor in information systems positivist case research: current practices, trends and recommendations. *MIS Quarterly*, 27 (4) (2003), pp. 597–635
- Dyer and Wilkins, 1991. W.G. Dyer, A.L. Wilkins. Better stories, not better constructs, to generate better theory: a rejoinder to Eisenhardt. *Academy of Management Review*, 16 (3) (1991), pp. 613–619
- Eisenhardt, 1989. K.M. Eisenhardt. Building theories from case study research. *Academy of Management Review*, 14 (4) (1989), pp. 532–550

- Eisenhardt and Bourgeois, 1988. K.M. Eisenhardt, L. Bourgeois. Politics of strategic decision making in high velocity environments: towards a midrange theory. *Academy of Management Journal*, 31 (4) (1988), pp. 737–770
- Eisenhardt and Graebner, 2007. K.M. Eisenhardt, M.E. Graebner. Theory building from cases: opportunities and challenges. *Academy of Management Journal*, 50 (1) (2007), pp. 25–32
- Fisher, 2007. M.L. Fisher. Strengthening the empirical base of operations management. *Manufacturing and Service Operations Management*, 9 (4) (2007), pp. 368–382
- Flynn et al., 1990. B.B. Flynn, S. Sakakibara, R.G. Schroeder, K.E. Bates, E.J. Flynn. Empirical research methods in operations management. *Journal of Operations Management*, 9 (2) (1990), pp. 254–284
- Gersick, 1988. C. Gersick. Time and transition in work teams: toward a new model of group development. *Academy of Management Journal*, 31 (1) (1988), pp. 9–41
- Glaser and Strauss, 1967. B. Glaser, A. Strauss. *The Discovery of Grounded Theory: Strategies For Qualitative Research*. Wiedenfeld and Nicholson, London (1967)
- Grutter et al., 2002. A.W. Grutter, J.M. Field, N.H.B. Faull. Work team performance over time: three case studies of South African Manufacturers. *Journal of Operations Management*, 20 (5) (2002), pp. 641–657
- Gupta et al., 2006. S. Gupta, R. Verma, L. Victorino. Empirical research published in production and operations management (1992–2005): trends and future research directions. *Production and Operations Management*, 15 (3) (2006), pp. 432–448
- Harris and Sutton, 1986. S. Harris, R. Sutton. Functions of parting ceremonies in dying organizations. *Academy of Management*, 29 (1) (1986), pp. 5–30
- Hayes and Wheelwright, 1979. R.H. Hayes, S.C. Wheelwright. Link manufacturing process and product life cycles. *Harvard Business Review*, 57 (1) (1979), pp. 133–142
- Hillebrand et al., 2001. B. Hillebrand, R.A.W. Kok, W.G. Biemans. Theory-testing using case studies: a comment on Johnston, Leach, and Liu. *Industrial Marketing Management*, 30 (8) (2001), pp. 651–657
- Hines et al., 2002. P. Hines, R. Silvi, M. Bartolini. Demand chain management: an integrative approach in automotive retailing. *Journal of Operations Management*, 20 (6) (2002), pp. 707–728
- Hyer et al., 1999. N.L. Hyer, K.A. Brown, S. Zimmerman. A socio-technical systems approach to cell design: case study and analysis. *Journal of Operations Management*, 17 (2) (1999), pp. 179–203

- Jensen and Szulanski, 2007. R.J. Jensen, G. Szulanski. Template use and the effectiveness of knowledge transfer. *Management Science*, 53 (11) (2007), pp. 1716–1730
- Jick, 1979. T.D. Jick. Mixing qualitative and quantitative methods: triangulation in action. *Administrative Science Quarterly*, 24 (4) (1979), pp. 602–611
- Johnston et al., 1999. W.J. Johnston, M.P. Leach, A.H. Liu. Theory testing using case studies in business-to-business research. *Industrial Marketing Management*, 28 (3) (1999), pp. 201–213
- Kagan, 1978. R.A. Kagan. *Regulating Justice: Implementing A Wage-price Freeze*. Russell Sage, New York (1978)
- Keil, 1995. M. Keil. Escalation of commitment in information systems development: a comparison of three theories. *Academy of Management Journal*, 38 (2) (1995), pp. 348–352
- Kleindorfer et al., 2005. P.R. Kleindorfer, K. Singhal, L.N. Van Wassenhove. Sustainable operations management. *Production and Operations Management*, 14 (4) (2005), pp. 482–492
- Kouvelis et al., 2006. P. Kouvelis, L.N. Chambers, H. Wang. Supply chain management research and production and operations management: review, trends, and opportunities. *Production and Operations Management*, 15 (3) (2006), pp. 449–469
- Krajewski et al., 2005. L. Krajewski, J.C. Wei, L.L. Tang. Responding to schedule changes in build-to-order supply chains. *Journal of Operations Management*, 23 (5) (2005), pp. 452–469
- Krishnan and Loch, 2005. V. Krishnan, C.H. Loch. A retrospective look at production and operations management articles on new product development. *Production and Operations Management*, 14 (4) (2005), pp. 433–441
- Langley, 1999. A. Langley. Strategies for theorizing from process data. *The Academy of Management Review*, 24 (4) (1999), pp. 691–710
- Lee, 1989. A.S. Lee. A scientific methodology for MIS case studies. *MIS Quarterly*, 12 (4) (1989), pp. 33–50
- Lee et al., 1996. T.L. Lee, T.R. Mitchell, L. Wise, S. Fireman. An unfolding model of voluntary employee turnover. *Academy of Management Journal*, 39 (1) (1996), pp. 5–36
- Leonard-Barton, 1990. D. Leonard-Barton. A dual methodology for case studies: synergistic use of a longitudinal single site with replicated multiple sites. *Organizations Science*, 1 (1) (1990), pp. 248–266
- Lewis, 2000. M.A. Lewis. Lean production and sustainable competitive advantage. *International Journal of Operations & Production Management*, 20 (8) (2000), pp. 959–978

- Lewis, 1998. M.W. Lewis. Iterative triangulation: a theory development process using existing case studies. *Journal of Operations Management*, 16 (4) (1998), pp. 455–469
- McCutcheon and Meredith, 1993. D.M. McCutcheon, J.R. Meredith. Conducting case study research in operations management. *Journal of Operations Management*, 11 (3) (1993), pp. 239–256
- March and Olsen, 1976. March, J.G., Olsen, J.P., 1976. Ambiguity and Choice in Organizations. *Universitetsforlaget*, Bergen, Norway.
- Markus, 1989. Markus, M.L., 1989. Case selection in a disconfirmatory case study. In: Cash, J.I., Lawrence, P.R. (Eds.), *The Information Systems Research Challenge: Qualitative Research Methods*, vol. 1. Harvard Business School Press, Boston, pp. 20–26.
- Meredith et al., 1989. J.R. Meredith, A. Raturi, K. Amoako-Gyampah, B. Kaplan. Alternative research paradigms in operations. *Journal of Operations Management*, 8 (4) (1989), pp. 297–326
- Meredith, 1998. J.R. Meredith. Building operations management theory through case and field research. *Journal of Operations Management*, 16 (4) (1998), pp. 439–452
- Miles and Huberman, 1984. M. Miles, A.M. Huberman. *Qualitative Data Analysis*. Sage Publications, Beverly Hills, CA (1984)
- Miller and Roth, 1994. J.G. Miller, A.V. Roth. A taxonomy of manufacturing strategies. *Management Science*, 40 (3) (1994), pp. 285–304
- Mintzberg, 1979. H. Mintzberg. An emerging strategy of “direct” research. *Administrative Science Quarterly*, 24 (4) (1979), pp. 580–589
- Mosey, 2005. S. Mosey. Understanding new-to-market product development in SMEs. *International Journal of Operations & Production Management*, 25 (2) (2005), pp. 114–130
- Narasimhan and Jayaram, 1998. R. Narasimhan, J. Jayaram. Reengineering service operations: a longitudinal case study. *Journal of Operations Management*, 17 (1) (1998), pp. 7–22
- Nisbett and Ross, 1980. R. Nisbett, L. Ross. *Human Inference: Strategies and Shortcomings of Social Judgment*. Prentice-Hall, Englewood Cliffs, NJ (1980)
- Olson, 2005. J. Olson. Top-25-business school professors rate journals in operations management and related fields. *Interfaces*, 35 (4) (2005), pp. 323–338
- Pagell, 2004. M. Pagell. Understanding the factors that enable and inhibit the integration of operations, purchasing and logistics. *Journal of Operations Management*, 22 (5) (2004), pp. 459–487
- Pettigrew, 1990. A Pettigrew. Longitudinal field research on change: theory and practice. *Organization Science*, 1 (3) (1990), pp. 267–292

- Pinfield, 1986. L. Pinfield. A field evaluation of perspectives on organizational decision making. *Administrative Science Quarterly*, 31 (3) (1986), pp. 365–388
- Poole and Van de Ven, 1989. M.S. Poole, A.H. Van de Ven. Using a paradox to build management and organization theories. *Academy of Management Review*, 14 (4) (1989), pp. 562–578
- Popper, 1968. K. Popper. *The Logic of Scientific Discovery*. Harper Torchbooks, New York (1968)
- Ross and Staw, 1993. J. Ross, B.M. Staw. Organizational escalation and exit: lessons from the Shoreham Nuclear Power Plant. *Academy of Management Journal*, 36 (40) (1993), pp. 701–732
- Roth, 2007. A.V. Roth. Applications of empirical science in manufacturing and service operations. *Manufacturing and Service Operations Management*, 9 (4) (2007), pp. 353–367
- Rothlisberger, 1977. F.J. Rothlisberger. *The Elusive Phenomena*. Harvard Business School, Division of Research, Boston, MA (1977)
- Rungtusanatham et al., 2003. M.J. Rungtusanatham, T.Y. Choi, D.G. Hollingsworth, Z. Wu, C. Forza. Survey research in operations management: historical analyses. *Journal of Operations Management*, 21 (4) (2003), pp. 475–488
- Salvador et al., 2002. F. Salvador, C. Forza, M.J. Rungtusanatham. Modularity, product variety, production volume, and component sourcing: theorizing beyond generic prescriptions. *Journal of Operations Management*, 20 (5) (2002), pp. 549–575
- Schroeder et al., 2005. R.G. Schroeder, K. Linderman, D. Zhang. Evolution of quality: first fifty issues of production and operations management. *Production and Operations Management*, 14 (4) (2005), pp. 468–481
- Scudder and Hill, 1998. G.D. Scudder, C.A. Hill. A review and classification of empirical research in operations management. *Journal of Operations Management*, 16 (1) (1998), pp. 91–101
- Skinner, 1980. W. Skinner. Manufacturing and technological strategy. *The Journal of Business Strategy*, 1 (2) (1980), pp. 69–72
- Sousa, 2003. R. Sousa. Linking quality to manufacturing strategy: an empirical investigation of customer focus practices. *Journal of Operations Management*, 21 (1) (2003), pp. 1–18
- Sousa and Voss, 2001. R. Sousa, C.A. Voss. Quality management: universal or context dependent? *Production and Operations Management*, 10 (4) (2001), pp. 383–404
- Stuart et al., 2002. I. Stuart, D. McCutcheon, R. Handfield, R. McLachlin, D. Samson. Effective case research in operations management: a process perspective. *Journal of Operations Management*, 20 (5) (2002), pp. 419–433

- Sutton and Callahan, 1987. R. Sutton, A. Callahan. The stigma of bankruptcy: spoiled organizational image and its management. *Academy of Management Journal*, 30 (3) (1987), pp. 405–436
- Swamidass, 1991. P.M. Swamidass. Empirical science: the new frontier in operations management research. *Academy of Management Review*, 16 (4) (1991), pp. 793–814
- Trochim, 1989. W.M.K. Trochim. Outcome pattern matching and program theory. *Evaluation and Program Planning*, 12 (4) (1989), pp. 355–366
- Van de Ven, 1989. A.H. Van de Ven. Nothing is quite so practical as a good theory. *Academy of Management Review*, 14 (4) (1989), pp. 486–489
- Van Maanen, 1988. J. Van Maanen. *Tales of the Field: On Writing Ethnography*. University of Chicago Press, Chicago (1988)
- Voss and Winch, 1996. C.A. Voss, G.M. Winch. Including engineering in operations strategy. *Production and Operations Management*, 5 (1) (1996), pp. 78–90
- Voss et al., 2002. C.A. Voss, N. Tsikriktsis, M. Frohlich. Case research in operations management. *International Journal of Operations & Production Management*, 22 (2) (2002), pp. 195–219
- Wood and Britney, 1989. A.R. Wood, R.R. Britney. Production operations management: research and teaching opportunities in the 1990's. *Operations Management Review*, 8 (3/4) (1989), pp. 33–43
- Wu and Choi, 2005. Z. Wu, T.Y. Choi. Supplier-supplier relationships in the buyer-supplier triad: building theories from eight case studies. *Journal of Operations Management*, 24 (1) (2005), pp. 27–52
- Yan and Gray, 1994. A. Yan, B. Gray. Bargaining power, management control, and performance in Uni. *Academy of Management Journal*, 37 (6) (1994), pp. 1478–1517
- Yin, 1989. R.K. Yin. *Case Study Research: Design and Methods*. Sage Publications, Newbury Park, CA (1989)
- Yin, 1994. R.K. Yin. *Case Study Research: Design and Methods*. (2nd ed.) Sage Publications, Newbury Park, CA (1994)

Corresponding author. Tel.: +1 480 965 6135; fax: +1 480 965 8629.

¹We also considered *Manufacturing and Service Operations Management* (MSOM) as a sixth potential journal, but it had not, since its inception in 1999, published any qualitative case study papers that met our sampling criteria.

Appendix A. Supplementary data

Selected Qualitative Case Studies (for analysis)

- Akkermans, H. and Vos, B., 2003. Amplification in service supply chains: An exploratory case study. *Production and Operations Management* 12, 204-223.
- Akkermans, H., 1995. Developing a logistics strategy through participative business modeling. *International Journal of Operations and Production Management* 15, 100-112.
- Angell, L.C., 2001. Comparing the environmental and quality initiatives of Baldrige award winners. *Production and Operations Management* 10, 306-326.
- Aravindan, P., Devadasan, S.R., Dharmendra, B.V. and Selladurai, V., 1995, Continuous quality improvement through Taguchi's online quality control methods. *International Journal of Operations and Production Management* 15, 60-77.
- Artikis, G.P., 1993. Financial factors in plant location decisions: A case study in the Greek metal industry. *International Journal of Operations and Production Management* 13, 58-71.
- Azzone, G. and Noci, G., 1998. Identifying effective PMSs for the deployment of "green" manufacturing strategies. *International Journal of Operations and Production Management* 18, 308-335.
- Baines, T., 2004. An integrated process for forming manufacturing technology acquisition decisions. *International Journal of Operations and Production Management* 24, 447-467.
- Baines, T., Kay, G., Adesola, S. and Higson, M., 2005. Strategic positioning: An integrated decision process for manufacturers. *International Journal of Operations and Production Management* 25, 180-201.
- Barratt, M.A. and Choi, T.Y., 2007. Mandated RFID and institutional responses: Cases of decentralized business units. *Production and Operations Management*, 16, 569-585.
- Barratt, M.A. and Oke, A., 2007. Antecedents of supply chain visibility in retail supply chains: A resource-based theory perspective. *Journal of Operations Management* 25, 1217-1233.
- Baxter, L.F. and Hirschhauser, C., 2004. Reification and representation in the implementation of quality improvement programs. *International Journal of Operations and Production Management* 24, 207-224.
- Belmiro, T.R., Gardiner, P.D., Simmons, J.E.L. and Rentes, A.F., 2000. Are BPR practitioners really addressing business processes? *International Journal of Operations and Production Management* 20, 1183-1203.
- Bessant, J., Kaplinsky, R. and Lamming, R., 2003. Putting supply chain learning into practice. *International Journal of Operations and Production Management* 23, 167-184.

- Bititci, U.S. and Muir, D., 1997. Business process definition: A bottom-up approach. *International Journal of Operations and Production Management* 17, 365-374.
- Bititci, U.S., Mendibil, K., Martinez, V. and Albores, P., 2005. Measuring and managing performance in extended enterprises. *International Journal of Operations and Production Management* 25, 333-353.
- Boer, H. and Krabbendam, K., 1992. Organizing for manufacturing innovation: The case of flexible manufacturing systems. *International Journal of Operations and Production Management* 12, 41-56.
- Bolisani, E. and Scarso, E., 1996. International manufacturing strategies: Experiences from the clothing industry. *International Journal of Operations and Production Management* 16, 71-84.
- Bond, T.C., 1999. The role of performance measurement in continuous improvement. *International Journal of Operations and Production Management* 19, 1318-1334.
- Bourne, M., Neely, A., Platts, K. and Mills, J., 2002. The success and failure of performance measurement initiatives. *International Journal of Operations and Production Management* 22, 1288-1310.
- Boyer, K.K., Hallowell, R. and Roth, A.V., 2002. E-service: Operating strategy-a case study and a method for analyzing operational benefits. *Journal of Operations Management* 20, 175-188.
- Bozarth, C., 2006. ERP implementation efforts at three firms. *International Journal of Operations and Production Management* 26, 1223-1239.
- Brown, A.D., 1993. Understanding technological change: The case of MRPII. *International Journal of Operations and Production Management* 13, 35-58.
- Brown, S., 1998. Manufacturing strategy, manufacturing seniority and plant performance in quality. *International Journal of Operations and Production Management* 18, 565-587.
- Brown, S. and Bessant, J., 2003. The manufacturing strategic capabilities links in mass customization and agile manufacturing - an exploratory study. *International Journal of Operations and Production Management* 23, 707-730.
- Bruce, M., Daly, L. and Towers, N., 2004. Lean or agile: A solution for supply chain management in the textiles and clothing industry. *International Journal of Operations and Production Management* 24, 151-170.
- Burcher, P., Lee, G. and Sohal, A., 1999. Lessons for implementing and some case experiences with CNC in Australia, Britain and Canada. *International Journal of Operations and Production Management* 19, 515-527.

- Burnes, B., 2004. Emergent change and planned change - competitors or allies? The case of XYZ construction. *International Journal of Operations and Production Management* 24, 886- 902.
- Burnes, B. and James, H., 1995. Culture, cognitive dissonance and the management of change. *International Journal of Operations and Production Management* 15, 14-33.
- Buxey, G., 2006. Reconstructing inventory management theory. *International Journal of Operations and Production Management* 26, 996-1012.
- Buxey, G., 2005. Globalization and manufacturing strategy in the TCF industry. *International Journal of Operations and Production Management* 25, 100-113.
- Buxey, G., 2000. Strategies in an era of global competition. *International Journal of Operations and Production Management* 20, 997-1016.
- Camuffo, A., Furlan, A., Romano, P. and Vinelli, A., 2007. Routes towards supplier and production network internationalization. *International Journal of Operations and Production Management* 27, 371-387.
- Canez, L.E., Platts, K.W. and Probert, D.R., 2000. Developing a framework for make-or-buy decisions. *International Journal of Operations and Production Management* 20, 1313-1330.
- Carlile, P.R. and Rebentisch, E.S., 2003. Into the black box: the knowledge transformation cycle. *Management Science*, 49, 1180-1195.
- Childerhouse, P., Aitken, J. and Towill, D.R., 2002. Analysis and design of focused demand chains. *Journal of Operations Management* 20, 675-689.
- Choi, T.Y. and Hong, Y., 2002. Unveiling the structure of supply networks: Case studies in Honda, Acura and Daimler Chrysler. *Journal of Operations Management* 20, 469-493.
- Corbett, L.M. and Campbell-Hunt, C., 2002. Grappling with a gusher! Manufacturing's response to business success in small and medium enterprises. *Journal of Operations Management* 20, 495-517.
- Corbett, L.M. and Cutler, D., 2000. Environmental management systems in the New Zealand plastics industry. *International Journal of Operations and Production Management* 20, 204-224.
- Coronado Mondragon, A.E., Lyons, A.C. and Kehoe, D.F., 2004. Assessing the value of information systems in supporting agility in high tech manufacturing enterprises. *International Journal of Operations and Production Management* 24, 1219-1246.
- Craighead, C.W., Blackhurst, J., Rungtusanatham, M.J. and Handfield, R.B., 2007. The severity of supply chain disruptions: Design characteristics and mitigation capabilities. *Decisions Sciences* 38, 131-156.

- Da Silveira, G., 1998. A framework for the management of product variety. *International Journal of Operations and Production Management* 18, 271-285.
- Da Silveira, G. and Slack, N., 2001. Exploring the trade-off concept. *International Journal of Operations and Production Management* 21, 949-964.
- Da Silveira, G.J.C., 2003. Towards a framework for operations management in e-commerce. *International Journal of Operations and Production Management* 23, 200-212.
- Dahlen, P., Ericsson, J. and Fujii, H., 1995. Labor stability and flexibility - conditions to reach just-in-time. *International Journal of Operations and Production Management* 15, 26-43.
- Danese, P., 2007. Designing CPFR collaborations: Insights from seven case studies. *International Journal of Operations and Production Management* 27, 181-204.
- Danese, P., Romano, P and Vinelli, A., 2006. Sequences of improvement in supply networks: Case studies from the pharmaceutical industry. *International Journal of Operations and Production Management* 26, 1199-1222.
- De Holan, P.M. and Phillips, N., 2004. Remembrance of things past? The dynamics of organizational forgetting. *Management Science* 50, 1603-1613.
- De Toni, A. and Nassimbeni, G., 1996. Strategic and operational choices for small subcontracting firms empirical results and an interpretative model. *International Journal of Operations and Production Management* 16, 41-55.
- Decoene, V. and Bruggeman, W., 2006. Strategic alignment and middle level manager's motivation in a balanced scorecard setting. *International Journal of Operations and Production Management* 26, 429-448.
- Dennis, D. and Meredith, J., 2000. An empirical analysis of process industry transformation systems. *Management Science* 46, 1085-1099.
- Dewhurst, F.W., Martinez-Lorente, A.R. and Sanchez-Rodriguez, C., 2003. An initial assessment of the influence of it on TQM: A multiple case study. *International Journal of Operations and Production Management* 23, 348-374.
- Doran, D., 2003. Supply chain implications of modularization. *International Journal of Operations and Production Management* 23, 316-326.
- Dostaler, I., 2001. Beyond practices: A qualitative inquiry into high performance electronics assembly. *Production and Operations Management* 10, 478-493.
- Dowlatsahi, S., 1998. Implementing early supplier involvement: A conceptual framework. *International Journal of Operations and Production Management* 18, 143-167.

- Duberley, J., Johnson, P., Cassell, C. and Close, P., 2000. Manufacturing change the role of performance evaluation and control systems. *International Journal of Operations and Production Management* 20, 421-447.
- Ford, M.W., Evans, J. and Matthews, C., 2004. Linking self-assessment to the external environment: An exploratory study. *International Journal of Operations and Production Management* 24, 1175-1187.
- Foster, S.T., Sampson, S.E. and Dunn, S.C., 2000. The impact of customer contact on environmental initiatives for service firms. *International Journal of Operations and Production Management* 20, 187-203.
- Fredriksson, P., 2006. Mechanisms and rationales for the coordination of a modular assembly system. *International Journal of Operations and Production Management* 26, 350-370.
- Furlan, A., Grandinetti, R. and Camuffo, A., 2007. How do subcontractors evolve? *International Journal of Operations and Production Management* 27, 69-89.
- Garengo, p. and Bititci, U., 2007. Towards a contingency approach to performance measurement: An empirical study in Scottish SMEs. *International Journal of Operations and Production Management* 27, 802-825.
- Geffen, C.A. and Rothenberg, S., 2000. Suppliers and environmental innovation the automotive paint process. *International Journal of Operations and Production Management* 20, 166-186.
- Ghobadian, A. and Ashworth, J., 1994. Performance measurement in local government - concept and practice. *International Journal of Operations and Production Management* 14, 35-51.
- Ghobadian, A. and Gallear, D., 1997. TQM and organization size. *International Journal of Operations and Production Management* 17, 121-163.
- Gianesi, I.G.N., 1998. Implementing manufacturing strategy through strategic production planning. *International Journal of Operations and Production Management* 18, 286-299.
- Giunipero, L., Handfield, R.B. and Eltantawy, R., 2006. Supply management's evolution: Key skill sets for the supply manager of the future. *International Journal of Operations and Production Management* 26, 822-844.
- Goffin, K. and New, C., 2001. Customer support and new product development - an exploratory study. *International Journal of Operations and Production Management* 21, 275-301.
- Graham, G., Burnes, B., Lewis, G.J. and Langer, J., 2004. The transformation of the music supply chain: A major label perspective. *International Journal of Operations and Production Management* 24, 1087-1103.

- Graman, G.A. and Magazine, M.J., 2006. Implementation issues influencing the decision to adopt postponement. *International Journal of Operations and Production Management* 26, 1068-1083.
- Grant, E.B. and Gregory, M.J., 1997. Adapting manufacturing processes for international transfer. *International Journal of Operations and Production Management* 17, 995-1005.
- Greasley, A., 2004. Process improvement within a hr division at a UK police force. *International Journal of Operations and Production Management* 24, 230-240.
- Grutter, A.W., Field, J.M. and Faull, N.H.B., 2002. Work team performance over time: three case studies of South African manufacturers. *Journal of Operations Management* 20, 641-657.
- Guide Jr., V.D.R., Jayaraman, V., and Linton, J.D., 2003. Building contingency planning for closed-loop supply chains with product recovery. *Journal of Operations Management* 21, 259-279.
- Guisinger, A. and Ghorashi, B., 2004. Agile manufacturing practices in the specialty chemical industry: An overview of the trends and results of a specific case study. *International Journal of Operations and Production Management* 24, 625-635.
- Gunasekaran, A., Forker, L. and Kobu, B., 2000. Improving operations performance in a small company: A case study. *International Journal of Operations and Production Management* 20, 316-336.
- Handfield, R.B., Walton, S.V., Seegers, L.K. and Melnyk, S.A., 1997. Green value chain practices in the furniture industry. *Journal of Operations Management* 15, 293-315.
- Harland, C.M., Caldwell, N.D., Powell, P and Zheng, J., 2007. Barriers to supply chain information integration: SMEs adrift of eLands. *Journal of Operations Management* 25, 1234-1254.
- Harrison, A., 1998. Manufacturing strategy and the concept of world class manufacturing. *International Journal of Operations and Production Management* 18, 397-408.
- Hart, H. and Berger, A., 1994. Using time to generate corporate renewal. *International Journal of Operations and Production Management* 14, 24-45.
- Henderson, R., Del Alamo, J., Becker, T., Lawton, J., Moran, P. and Shapiro, S., 1998. The perils of excellence: Barriers to effective process improvement in product driven firms. *Production and Operations Management* 7, 2-18.
- Heikkila, J., 2002. From supply to demand chain management: Efficiency and customer satisfaction. *Journal of Operations Management* 20, 747-767.
- Hill, A. and Brown, S., 2007. Strategic profiling: A visual representation of internal strategic fit in service organizations. *International Journal of Operations and Production Management* 27, 1333-1361.
- Holweg, M., 2005. The three dimensions of responsiveness. *International Journal of Operations and Production Management* 25, 603-622.

- Horte, S.A. and Ylinenpaa, H., 1997. The firm's and its customers' views on order-winning criteria. *International Journal of Operations and Production Management* 17, 1006-1019.
- Hudson, M., Smart, A. and Bourne, M., 2001. Theory and practice in SME performance measurement systems. *International Journal of Operations and Production Management* 21, 1096-1115.
- Hui, L.T., 2004. Business timeliness: The intersections of strategy and operations management. *International Journal of Operations and Production Management* 24, 605-624.
- Hutchison, J. and Das, S.R., 2007. Examining a firm's decisions with a contingency framework for manufacturing flexibility. *International Journal of Operations and Production Management* 27, 159-180.
- Jack, E.P. and Powers, T.L., 2004. Volume flexible strategies in health services: A research framework. *Production and Operations Management* 13, 230-244.
- Colyvas, J., Crow, M., Gelijns, A., Mazzoleni, R., Nelson, R., Rosenberg, N. and Sampat, B.N., 2002. How do university inventions get into practice? *Management Science* 48, 61-72.
- Jensen, R.J. and Szulanski, G., 2007. Template use and the effectiveness of knowledge transfer. *Management Science* 53, 1716-1730.
- Johansson, E and Johansson, M.I., 2006. Materials supply systems design in product development projects. *International Journal of Operations and Production Management* 26, 371-393.
- Johansson, E., 2007. Towards a design process for materials supply systems. *International Journal of Operations and Production Management* 27, 2261-2271.
- Johnston, R., Brignall, S. and Fitzgerald, L., 2002. The involvement of management accountants in operational process change: Results from field research. *International Journal of Operations and Production Management* 22, 1325-1338.
- Jones, O., 2005. Manufacturing regeneration through corporate entrepreneurship: Middle managers and organizational innovation. *International Journal of Operations and Production Management* 25, 491-511.
- Karlsson, C. and Ahlstrom, P., 1995. Change processes towards lean production: The role of the remuneration system. *International Journal of Operations and Production Management* 15, 80-99.
- Katayama, H. and Bennett, D., 1996. Lean production in a changing competitive world: A Japanese perspective. *International Journal of Operations and Production Management* 16, 8-23.
- Kennerley, M. and Neely, A., 2003. Measuring performance in a changing business environment. *International Journal of Operations and Production Management* 23, 213-229.

- Kennerley, M. and Neely, A., 2002. A framework of the factors affecting the evolution of performance measurement systems. *International Journal of Operations and Production Management* 22, 1222-1245.
- Ketokivi, M. and Jokinen, M., 2006. Strategy, uncertainty and the focused factory in international process manufacturing. *Journal of Operations Management* 24, 250-270.
- Kincade, D.H., Regan, C. and Gibson, F.Y., 2007. Concurrent engineering for product development in mass customization for the apparel industry. *International Journal of Operations and Production Management* 27, 627-649.
- Kitazawa, S and Sarkis, J., 2000. The relationship between ISO 14001 and continuous source reduction programs. *International Journal of Operations and Production Management* 20, 225-249.
- Koners, U. and Goffin, K., 2007. Managers' perceptions of learning in new product development. *International Journal of Operations and Production Management* 27, 49-68.
- Koulikoff-Souvion, M. and Harrison, A., 2007. The pervasive human resource picture in interdependent supply relationships. *International Journal of Operations and Production Management* 27, 8-27.
- Krajewski, L., Wei, J.C. and Tang, L., 2005. Responding to schedule changes in build-to-order supply chains. *Journal of Operations Management* 23, 452-469.
- Krishnamurthy, R. and Yauch, C.A., 2007. Leagile manufacturing: A proposed corporate infrastructure. *International Journal of Operations and Production Management* 27, 588-604.
- Lamming, R., Johnsen, T., Zheng, J. and Harland, C., 2000. An initial classification of supply networks. *International Journal of Operations and Production Management* 20, 675-691.
- Lee, G.L. and Oakes, I.K., 1996. Templates for change with supply chain rationalization. *International Journal of Operations and Production Management* 16, 197-209.
- Leonard, D. and McAdam, R., 2003. An evaluative framework for TQM dynamics in organizations. *International Journal of Operations and Production Management* 23, 652-677.
- Leschke, J.P., 1996. An empirical study of the set-up reduction process. *Production and Operations Management* 5, 121-131.
- Lewis, M.A., 2003. Analyzing organizational competence: Implications for the management of operations. *International Journal of Operations and Production Management* 23, 731-756.
- Lewis, M.A., 2000. Lean production and sustainable competitive advantage. *International Journal of Operations and Production Management* 20, 959-978.
- Lewis, M.A., 2003. Cause, consequence and control: towards a theoretical and practical model of operational risk. *Journal of Operations Management* 21, 205-224.

- Lindberg, P., 1993. Management of uncertainty in AMT implementation: the case of FMS. *International Journal of Operations and Production Management* 12, 57-75.
- Lockamy III, A., 1998. Quality-focused performance measurement systems: A normative model. *International Journal of Operations and Production Management* 18, 740-766.
- Lowson, R.H., 2005. Retail operations strategies: Empirical evidence of role, competitive contribution and life cycle. *International Journal of Operations and Production Management* 25, 642-680.
- Lu, Q. and Wood, L., 2006. The refinement of design for manufacture: inclusion of process design. *International Journal of Operations and Production Management* 26, 1123-1145.
- MacDuffie, J.P., 1997. The road to "root cause": shop-floor problem-solving at three auto assembly plants. *Management Science* 43, 210-221.
- Maddern, H., Maull, R., Smart, A. and Baker, P., 2007. Customer satisfaction and service quality in UK financial services. *International Journal of Operations and Production Management* 27, 998-1019.
- Maffei and Meredith, 1995. Infrastructure and flexible manufacturing technology: Theory development. *Journal of Operations Management* 13, 273-298.
- Majchrzak, A., Cooper, L.P. and Neece, O.E., 2004. Knowledge reuse for innovation. *Management Science* 50, 174-188.
- Matos, S and Hall, M., 2007. Integrating sustainable development in the supply chain: The case of life cycle assessment in oil and gas and agricultural biotechnology. *Journal of Operations Management* 25, 1083-1102.
- Mazany, P., 1995. A case study: Lessons from the progressive implementation of just-in-time in a small knitwear manufacturer. *International Journal of Operations and Production Management* 15, 271-288.
- McAdam, R. and Lafferty, B., 2004. A multi-level case study critique of six sigma: Statistical control or strategic change? *International Journal of Operations and Production Management* 24, 530-549.
- McDermott, 1999. Managing radical product development in large manufacturing firms: A longitudinal study. *Journal of Operations Management* 17, 631-644.
- McDermott, C.M., Greis, N.P. and Fischer, W.A., 1997. The diminishing utility of the product/process matrix a study of the us power tool industry. *International Journal of Operations and Production Management* 17, 65-84.
- McIvor, R. and Humphreys, P., 2004. The implications of electronic B2B intermediaries for the buyer-supplier interface. *International Journal of Operations and Production Management* 24, 241-269.

- McLachlin, R., 1997. Management initiatives and just-in-time manufacturing. *Journal of Operations Management* 15, 271-292.
- Meijboom, B., 1999. Production-to-order and international operations a case study in the clothing industry. *International Journal of Operations and Production Management* 19, 602-619.
- Meijboom, B. and Houtepen, M., 2002. Structuring international service operations: A theoretical framework and a case study in the IT-sector. *International Journal of Operations and Production Management* 22, 824-842.
- Meijboom, B., Vos, B., 1997. International manufacturing and location decisions: Balancing configuration and co-ordination aspects. *International Journal of Operations and Production Management* 17, 790-805.
- Meredith, J. and Vineyard, M., 1993. A longitudinal study of the role of manufacturing technology in business strategy. *International Journal of Operations and Production Management* 13, 4-24.
- Mosey, S., 2005. Understanding new-to-market product development in SMEs. *International Journal of Operations and Production Management* 25, 114-130.
- Moxham, C. and Boaden, R., 2007. The impact of performance measurement in the voluntary sector: Identification of contextual and processual factors. *International Journal of Operations and Production Management* 27, 826-845.
- Muda, M.S. and Hendry, L., 2003. The Shen model for make-to-order SMEs: A performance improvement tool. *International Journal of Operations and Production Management* 23, 470-486.
- Muscattello, J.R., Small, M.H. and Chen, I., 2003. Implementing enterprise resource planning (ERP) systems in small and midsize manufacturing firms. *International Journal of Operations and Production Management* 23, 850-871.
- Narasimhan, R. and Jayaram, J., 1998. Re-engineering service operation: A longitudinal case study. *Journal of Operations Management* 17, 7-22.
- Ngai, E.W.T., Cheng, T.C.E., Lai, K-H., Chai, P.Y.F., Choi, Y.S. and Sin, R.K.Y., 2007. Development of an RFID-based traceability system: Experiences and lessons learned from an aircraft engineering company. *Production and Operations Management* 16, 554-568.
- Nichols, W. and Jones, O., 1994. The introduction of CIM: A strategic analysis. *International Journal of Operations and Production Management* 14, 4-16.
- Niepcz, W. and Molleman, E., 1996. Characteristics of work organization in lean production and socio-technical systems a case study. *International Journal of Operations and Production Management* 16, 78-91.

- Oke, A., 2005. A framework for analyzing manufacturing flexibility. *International Journal of Operations and Production Management* 25, 973-996.
- Pagel, M. and LePine, J.A., 2002. Multiple case studies of team effectiveness in manufacturing organizations. *Journal of Operations Management* 20, 619-639.
- Pagell, M., 2004. Understanding the factors that enable and inhibit the integration of operations, purchasing and logistics. *Journal of Operations Management* 22, 459-487.
- Pagell, M. and Krause, D. R., 1999. A multiple method study of environmental uncertainty and manufacturing flexibility. *Journal of Operations Management* 17, 307-325.
- Pandza, K., Horsburgh, S., Gorton, K. and Polajnar, A., 2003. A real options approach to managing resources and capabilities. *International Journal of Operations and Production Management* 23, 1010-1032.
- Pandza, K., Polajnar, A., Buchmeister, B. and Thorpe, R., 2003. Evolutionary perspectives on the capability accumulation process. *International Journal of Operations and Production Management* 23, 822-849.
- Parikh, M.A. and Joshi, K., 2005. Purchasing process transformation: Restructuring for small purchases. *International Journal of Operations and Production Management* 25, 1042-1061.
- Parker, G.G. and Anderson Jr., E.G., 2002. From buyer to integrator: The transformation of the supply chain manager in the vertically disintegrating firm. *Production and Operations Management* 11, 75-91.
- Persona, A., Regattieri, R., Pham, H. and Battini, D., 2007. Remote control and maintenance outsourcing networks and its applications in supply chain management. *Journal of Operations Management* 25, 1275-1291.
- Primo, M.A.M., Dooley, K., and Rungtusanatham, M.J., 2007. Manufacturing firm reaction to supplier failure and recovery. *International Journal of Operations and Production Management* 27, 323-341.
- Procter, S. and Brown, A.D., 1997. Computer-integrated operations: The introduction of a hospital information support system. *International Journal of Operations and Production Management* 17, 746-756.
- Radnor, Z.J. and Boaden, R., 2004. Developing an understanding of corporate anorexia. *International Journal of Operations and Production Management* 24, 424-440.

- Rivard-Rover, H., Landry, S. and Beaulieu, M., 2002. Hybrid stockless: A case study - lessons for healthcare supply chain integration. *International Journal of Operations and Production Management* 22, 412-423.
- Rohr, S.S. and Correa, H.L., 1998. Time-based competitiveness in Brazil: Why's and how's. *International Journal of Operations and Production Management* 18, 233-245.
- Rosander, K., 1992. Design of production systems for batch production in short series to reduce lead time. *International Journal of Operations and Production Management* 12, 53-60.
- Rothenberger, M.A., 2003. Project-level reuse factors: drivers for variation within software development environments. *Decisions Sciences* 34, 83-106.
- Salvador, F., Rungtusanatham, M.J., Forza, C. and Trentin, A., 2007. Mix flexibility and volume flexibility in a build-to-order environment: Synergies and trade-offs. *International Journal of Operations and Production Management* 27, 1173-1191.
- Salvador, Forza and Rungtusanatham, 2002. Modularity, product variety, production volume, and component sourcing: theorizing beyond generic prescriptions. *Journal of Operations Management* 20, 549-575.
- Schiele, J.J. and McCue, C.P., 2006. Professional service acquisition in public sector procurement. *International Journal of Operations and Production Management* 26, 300-325.
- Schuring, R.W., 1996. Operational autonomy explains the value of group work in both lean and reflective production. *International Journal of Operations and Production Management* 16, 171-182.
- Seuring, S.A., 2003. Outsourcing into service factories: An exploratory analysis of facility operators in the German chemical industry. *International Journal of Operations and Production Management* 23, 1207-1223.
- Sharif, A.M., Irani, Z and Lloyd, D., 2007. Information technology and performance management for build-to-order supply chains. *International Journal of Operations and Production Management* 27, 1235-1253.
- Shenhar, A.J., 2001. One size does not fit all projects: exploring classical contingency domains. *Management Science* 47, 394-414.
- Sheu, C., Yen, H.R. and Chae, B., 2006. Determinants of supplier-retailer collaboration: Evidence from an international study. *International Journal of Operations and Production Management* 26, 24-49.
- Simons, Jr., J.V. and Russell, G.R., 2002. A case study of batching in a mass service operation. *Journal of Operations Management* 20, 577-592.

- Smaros, J., 2007. Forecasting collaboration in the European grocery sector: observations from a case study. *Journal of Operations Management* 25, 702-716.
- Sousa, R. and Voss, C.A., 2001. Quality management: Universal or context dependent? *Production and Operations Management* 10, 383-404.
- Sousa, R., 2003. Linking quality to manufacturing strategy: An empirical investigation of customer focus practices. *Journal of Operations Management* 21, 1-18.
- Sousa, R. and Voss, C.A., 2007. Operational implications of manufacturing outsourcing for subcontractor plants: An empirical investigation. *International Journal of Operations and Production Management* 27, 974-997.
- Spring, M. and Dalrymple, J.F., 2000. Product customization and manufacturing strategy. *International Journal of Operations and Production Management* 20, 441-467.
- Sroufe, R., Curkovic, S., Montabon, F. and Melnyk, S.A., 2000. The new product design process and design for environment "crossing the chasm". *International Journal of Operations and Production Management* 20, 267-291.
- Staughton, R. and Johnston, R., 2005. Operational performance gaps in business relationships. *International Journal of Operations and Production Management* 25, 320-332.
- Stock, G.N. and Tatikonda, M.V., 2004. External technology integration in product and process development. *International Journal of Operations and Production Management* 24, 642-665.
- Storey, J., Emberson, C. and Reade, D., 2005. The barrier to customer responsive supply chain management. *International Journal of Operations and Production Management* 25, 242-260.
- Storey, J., Emberson, C., Godsell, J. and Harrison, A., 2006. Supply chain management: Theory, practice and future challenges. *International Journal of Operations and Production Management* 26, 754-774.
- Stuart, F.I. and Tax, S., 2004. Toward an integrative approach to designing service experiences lessons learned from the theatre. *Journal of Operations Management* 22, 609-627.
- T.I. Savolainen, 1999. Cycles of continuous improvement realizing competitive advantages through quality. *International Journal of Operations and Production Management* 19, 120-122.
- Tachizawa, E.M., and Thomsen, C.G., 2007. Drivers and sources of supply flexibility: An exploratory study. *International Journal of Operations and Production Management* 27, 1115-1136.
- Tassabehji, R., Taylor, W.A., Beach, R. and Wood, A., 2006. Reverse e-auctions and supplier-buyer relationships: An exploratory study. *International Journal of Operations and Production Management* 26, 166-184.

- Thilander, M., 1992. Flexible production in the chemical industry - a question of competence. *International Journal of Operations and Production Management* 12, 147-167.
- Thompson, P. and Wallace, T., 1996. Redesigning production through team-working case studies from the Volvo truck corporation. *International Journal of Operations and Production Management* 16, 103-118.
- Towers, N., Knibbs, A. and Panagiotopoulos, N., 2005. Implementing manufacturing resource planning in a Greek aerospace company. *International Journal of Operations and Production Management* 25, 277-289.
- Tranfield, D. and Smith, S., 2002. Organization design for team-working. *International Journal of Operations and Production Management* 22, 471-491.
- Uzzi, B. and Lancaster, R., 2003. Relational embeddedness and learning: The case of bank loan managers and their clients. *Management Science* 49, 383-399.
- Van der Meer, R. and Gudim, M., 1996. The role of group working in assembly organization. *International Journal of Operations and Production Management* 16, 119-140.
- Van Der Vaart, T. and Van Donk, D.P., 2006. Buyer-focused operations as a supply chain strategy. *International Journal of Operations and Production Management* 26, 8-23.
- Van Donk, D.P. and Van Dam, J. P., 1996. Structuring complexity in scheduling: A study in a food processing industry. *International Journal of Operations and Production Management* 16, 54-63.
- Van Donk, D.P., and Van der Vaart, T., 2007. Responsiveness through buyer-focused cells: Exploring a new supply strategy. *International Journal of Operations and Production Management* 27, 1362-1379.
- Vereecke, A. and Van Dierdonck, R., 2002. The strategic role of the plant: Testing Ferdows's model. *International Journal of Operations and Production Management* 22, 692-514.
- Vereecke, A., Pandelaere, E., Deschoolmeester, D. and Stevens, M., 2003. A classification of development programs and its consequences for program management. *International Journal of Operations and Production Management* 23, 1279-1290.
- Verma, D. and Sinha, K.K., 2002. Toward a theory of project interdependencies in high tech R&D environments. *Journal of Operations Management* 20, 451-468.
- Voordijk, H., 2000. The changing logistical system of the building materials supply chain. *International Journal of Operations and Production Management* 20, 823-841.
- Voordijk, H., 1999. Obstacles and preconditions for logistics and manufacturing improvements in Africa - a case study. *International Journal of Operations and Production Management* 19, 293-307.

- Voordijk, H., Meijboom, B. and Haan, J.D., 2006. Modularity in supply chains: A multiple case study in the construction industry. *International Journal of Operations and Production Management* 26, 600-618.
- Voss, C.A. and Winch, G.M., 1996. Including engineering in operations strategy. *Production and Operations Management* 5, 78-90.
- Wallin, C., Rungtusanatham, M.J. and Rabinovich, E., 2006. What is the "right" inventory management approach for a purchased item? *International Journal of Operations and Production Management* 26, 50-68.
- Webster, M., Alder, C. and Muhlemann, A.P., 1997. Subcontracting within the supply chain for electronics assembly manufacture. *International Journal of Operations and Production Management* 17, 827-841.
- Webster, M., Sugden, D.M. and Tayles, M.E., 2004. The measurement of manufacturing virtuality. *International Journal of Operations and Production Management* 24, 721-742.
- West, P. and Burnes, B., 2000. Applying organizational learning: Lessons from the automotive industry. *International Journal of Operations and Production Management* 20, 1236-1252.
- Wezel, W., Van Donk, D. and Gaalman, G., 2006. The planning flexibility bottleneck in food processing industries. *Journal of Operations Management* 24, 287-300.
- Williams, T., Maull, R. and Ellis, B., 2002. Demand chain management: Constraints and development from global aerospace supply webs. *Journal of Operations Management* 20, 691-706.
- Wu, Z. and Choi, T.Y., 2005. Supplier-supplier relationships in the buyer-supplier triad: Building theories from eight case studies. *Journal of Operations Management* 24, 27-52.
- Yauch, C.A. and Steudel, H.J., 2002. Cellular manufacturing for small businesses: Key cultural factors that impacts the conversion process. *Journal of Operations Management* 20, 593-617.
- Zhang, X. and Chen, R., 2006. Forecast driven or customer order driven? An empirical analysis of the Chinese automotive industry. *International Journal of Operations and Production Management* 26, 668-688.
- Zirpoli, F. and Caputo, M., 2002. The nature of buyer-supplier relationships in co-design activities: The Italian auto industry case. *International Journal of Operations and Production Management* 22, 1389-1410.
- Zomerdijk, L.G. and de Vries, J., 2007. Structuring front office and back office work in service delivery systems: An empirical study of three design decisions. *International Journal of Operations and Production Management* 27, 108-131.

Sample Data (461) Included in initial sample.

- Adan, I.J. B.F. and Vissers, J.M.H., 2002. Patient mix optimization in hospital admission planning: A case study. *International Journal of Operations and Production Management* 22, 445-61.
- Afzulpurkar, S., Faizul, H. and Mahesh, K., 1993. An alternative framework for the design and implementation of cellular manufacturing. *International Journal of Operations and Production Management* 13, 4-17.
- Agrawal, N., Smith, S.S. and Tsay, A.A., 2002. Multi-vendor sourcing in a retail supply chain. *Production and Operations Management* 11, 157-82.
- Akkermans, H. and Bertrand, W., 1997. On the usability of quantitative modeling in operations strategy decision making. *International Journal of Operations and Production Management* 17, 953-64.
- Akkermans, H. and Vos, B., 2003. Amplification in service supply chains: An exploratory case study. *Production and Operations Management* 12, 204-223.
- Akkermans, H., 1995. Developing a logistics strategy through participative business modeling. *International Journal of Operations and Production Management* 15, 100-112.
- Amaro, G., Henry, L. and Kingsman, B., 1999. Competitive advantage, customization and a new taxonomy for non make-to-stock companies. *International Journal of Operations and Production Management* 19, 349-71.
- Anderson, E.G., Fine, C.H. and Parker, G.G., 2000. Upstream volatility in the supply chain: The machine tool industry as a case study. *Production and Operations Management* 9, 239-61.
- Angell, L.C., 2001. Comparing the environmental and quality initiatives of Baldrige award winners. *Production and Operations Management* 10, 306-326.
- Antony, J., 2001. Improving the manufacturing process quality using design of experiments: A case study. *International Journal of Operations and Production Management* 21, 812-22.
- Aravindan, P., Devadasan, S.R., Dharmendra, B.V. and Selladurai, V., 1995, Continuous quality improvement through Taguchi's online quality control methods. *International Journal of Operations and Production Management* 15, 60-77.
- Artikis, G.P., 1993. Financial factors in plant location decisions: A case study in the Greek metal industry. *International Journal of Operations and Production Management* 13, 58-71.
- Ashayeri, J., Keij, R. and Broker, A., 1998. Global business process re-engineering: A system dynamics-based approach. *International Journal of Operations and Production Management* 18, 817-31.

- Athanassopoulos, A. and Iliakopoulos, A., 2003. Modeling customer satisfaction in telecommunications: Assessing the effects of multiple transaction points on the perceived overall performance of the provider. *Production and Operations Management* 12, 224-245.
- Azzone, G. and Noci, G., 1998. Identifying effective PMSs for the deployment of "green" manufacturing strategies. *International Journal of Operations and Production Management* 18, 308-36.
- Baines, T., 2004. An integrated process for forming manufacturing technology acquisition decisions. *International Journal of Operations and Production Management* 24, 447-467.
- Baines, T., Kay, G., Adesola, S. and Higson, M., 2005. Strategic positioning: An integrated decision process for manufacturers. *International Journal of Operations and Production Management* 25, 180-201.
- Bajaj, A. Kekre, S. and Srinivasan, K., 2004. Managing NPD: Cost and schedule performance in design and manufacturing. *Management Science* 50, 527-36.
- Banker, R.D. and Slaughter, S.A., 1997. A field study of scale economies in software maintenance. *Management Science* 43, 1709-25.
- Barker, B., 1993. Value-adding performance measurement: A time-based approach. *International Journal of Operations and Production Management* 13, 33-40.
- Barnes, D., 2002. The complexities of the manufacturing strategy formation process in practice. *International Journal of Operations and Production Management* 22, 1090-1111.
- Barratt, M.A. and Choi, T.Y., 2007. Mandated RFID and institutional responses: Cases of decentralized business units. *Production and Operations Management*, 16, 569-585.
- Barratt, M.A. and Oke, A., 2007. Antecedents of supply chain visibility in retail supply chains: A resource-based theory perspective. *Journal of Operations Management* 25, 1217-1233.
- Baxter, L.F. and Hirschhauser, C., 2004. Reification and representation in the implementation of quality improvement programs. *International Journal of Operations and Production Management* 24, 207-224.
- Beckman, S. and Sinha, K.K., 2005. Conducting academic research with an industry focus: Production and operations management in the high tech industry. *Production and Operations Management* 14, 115-24.
- Bellandi, G., Dulmin, R. and Mininno, V., 1998. Failure rate neural analysis in the transport sector. *International Journal of Operations and Production Management* 18, 778-93.

- Belmiro, T.R., Gardiner, P.D., Simmons, J.E.L. and Rentes, A.F., 2000. Are BPR practitioners really addressing business processes? *International Journal of Operations and Production Management* 20, 1183-1203.
- Benders, J. and Verlaar, S. 2003. Lifting parts: Putting conceptual insights into practice. *International Journal of Operations and Production Management* 23, 757-75.
- Bennet, D., Vaidya, K. and Hongyu, Z., 1999. Valuing transferred machine tool technology: Relating value to product attributes and preferences of acquirers. *International Journal of Operations and Production Management* 19, 491-514.
- Benningson, L.A., 1996. Changing manufacturing strategy. *Production and Operations Management* 5, 91-102.
- Berger, A., 1992. Towards a framework for aligning implementation change strategies to a situation-specific context. *International Journal of Operations and Production Management* 12, 32-44.
- Berry, W.L. and Mabert, V.A., 1992. ITEC: An integrated manufacturing instructional exercise. *International Journal of Operations and Production Management* 12, 3-19.
- Bessant, J., Kaplinsky, R. and Lamming, R., 2003. Putting supply chain learning into practice. *International Journal of Operations and Production Management* 23, 167-184.
- Bhattacharya, A.K., Jina, J. and Walton, A.D., 1996. Product market, turbulence and time compression: Three dimensions of an integrated approach to manufacturing system design. *International Journal of Operations and Production Management* 16, 34-47.
- Bititci, U.S. and Muir, D., 1997. Business process definition: A bottom-up approach. *International Journal of Operations and Production Management* 17, 365-374.
- Bititci, U.S., Mendibil, K., Martinez, V. and Albores, P., 2005. Measuring and managing performance in extended enterprises. *International Journal of Operations and Production Management* 25, 333-353.
- Bititci, U.S., Turner, T. and Begemann, C., 2000. Dynamics of performance measurement systems. *International Journal of Operations and Production Management* 20, 692-704.
- Bititci, U.S., Nudurupati, S.S., Turner, T.J. and Creighton, S., 2002. Web-enabled performance measurement systems: Management implications. *International Journal of Operations and Production Management* 22, 1273-87.
- Boardman, J.T. and Clegg, B.T., 2001. Structured engagement in the extended enterprise. *International Journal of Operations and Production Management* 21, 795-812.

- Boer, H. and Krabbendam, K., 1992. Organizing for manufacturing innovation: The case of flexible manufacturing systems. *International Journal of Operations and Production Management* 12, 41-56.
- Boer, H., Caffyn, S., Corso, M. and Coughlan, P., 2001. Knowledge and continuous innovation: The CIMA methodology. *International Journal of Operations and Production Management* 21, 490-504.
- Bohlmann, J.D. Golder, P.N. and Mitra, D., 2002. Deconstructing the pioneer's advantage: Examining vintage effects and consumer valuations of quality and variety. *Management Science* 48, 1175-95.
- Bolisani, E. and Scarso, E., 1996. International manufacturing strategies: Experiences from the clothing industry. *International Journal of Operations and Production Management* 16, 71-84.
- Bond, T.C., 1999. The role of performance measurement in continuous improvement. *International Journal of Operations and Production Management* 19, 1318-1334.
- Botter, R. and Fortuin, L., 2000. Stocking strategy for service parts: A case study. *International Journal of Operations and Production Management* 20, 656-74.
- Bourne, M., Neely, A., Platts, K. and Mills, J., 2002. The success and failure of performance measurement initiatives. *International Journal of Operations and Production Management* 22, 1288-1310.
- Boyer, K.K. and Hult, G.T.M., 2005. Extending the supply chain: Integrating operations and marketing in the online grocery industry. *Journal of Operations Management* 23, 642-61.
- Boyer, K.K. and McDermott, C., 1999. Strategic consensus in operations strategy. *Journal of Operations Management* 17, 289-305.
- Boyer, K.K., Hallowell, R. and Roth, A.V., 2002. E-service: Operating strategy-a case study and a method for analyzing operational benefits. *Journal of Operations Management* 20, 175-188.
- Bozarth, C., 2006. ERP implementation efforts at three firms. *International Journal of Operations and Production Management* 26, 1223-1239.
- Brimberg, J., Mehrez, A., Oron, G., 1994. Economic development of groundwater in arid zones with applications to the Negev Desert, Israel. *Management Science* 40, 353-63.
- Brown, A.D., 1993. Understanding technological change: The case of MRPII. *International Journal of Operations and Production Management* 13, 35-58.
- Brown, C.L. and Lattin, J.M., 1994. Investigating the relationship between time in market and pioneering advantage. *Management Science* 40, 1361-69.

- Brown, S. and Bessant, J., 2003. The manufacturing strategic capabilities links in mass customization and agile manufacturing - an exploratory study. *International Journal of Operations and Production Management* 23, 707-730.
- Brown, S. Squire, B. and Blackmon, K., 2007. The contribution of manufacturing strategy involvement and alignment to world-class manufacturing performance. *International Journal of Operations and Production Management* 27, 282-302.
- Brown, S., 1998. Manufacturing strategy, manufacturing seniority and plant performance in quality. *International Journal of Operations and Production Management* 18, 565-87.
- Bruce, M., Daly, L. and Towers, N., 2004. Lean or agile: A solution for supply chain management in the textiles and clothing industry. *International Journal of Operations and Production Management* 24, 151-170.
- Buchanan, D., 1998. Representing process: The contribution of a re-engineering frame. *International Journal of Operations and Production Management* 18, 1163-88.
- Burcher, P., Lee, G. and Sohal, A., 1999. Lessons for implementing AMT: Some case experiences with CNC in Australia, Britain and Canada. *International Journal of Operations and Production Management* 19, 515-27.
- Burnes, B. and James, H., 1995. Culture, cognitive dissonance and the management of change. *International Journal of Operations and Production Management* 15, 14-33.
- Burnes, B., 2004. Emergent change and planned change - competitors or allies? The case of XYZ construction. *International Journal of Operations and Production Management* 24, 886- 902.
- Busby, J.S. and Williamson, A., 2000. The appropriate use of performance measurement in non-production activity: The case of engineering design. *International Journal of Operations and Production Management* 20, 336-58.
- Buxey, G., 2000. Strategies in an era of global competition. *International Journal of Operations and Production Management* 20, 997-1016.
- Buxey, G., 2005. Globalization and manufacturing strategy in the TCF industry. *International Journal of Operations and Production Management* 25, 100-113.
- Buxey, G., 2006. Reconstructing inventory management theory. *International Journal of Operations and Production Management* 26, 996-1012.
- Cagliano, R., Spina, G., Verganti, R. and Zotteri, G., 1998. Designing BPR support services for small firms. *International Journal of Operations and Production Management* 18, 865-85.

- Camuffo, A., Furlan, A., Romano, P. and Vinelli, A., 2007. Routes towards supplier and production network internationalization. *International Journal of Operations and Production Management* 27, 371-387.
- Canez, L.E., Platts, K.W. and Probert, D.R., 2000. Developing a framework for make-or-buy decisions. *International Journal of Operations and Production Management* 20, 1313-1330.
- Carlile, P.R. and Rebentisch, E.S., 2003. Into the black box: the knowledge transformation cycle. *Management Science*, 49, 1180-1195.
- Caro, F. Andalaft, R. Silva, X. and Weintraub, A., 2003. Evaluating the economic cost of environmental measures in plantation harvesting through the use of mathematical models. *Production and Operations Management* 12, 290-306.
- Case, R.H. and Shane, S., 1998. Fostering risk taking in research and development: The importance of a project. *Decision Sciences* 29, 765-84.
- Chan, F.T.S. and Smith, A.M., 1993. Simulation aids JIT assembly line manufacture: A case study. *International Journal of Operations and Production Management* 13, 50-74.
- Chen, C.Y., Zhao, Z. and Ball, M.O., 2002. A model for batch advanced available to promise. *Production and Operations Management* 11, 424-40.
- Chevalier, P.B. and Wein, L.M., 1997. Inspection for circuit board assembly. *Management Science* 43, 1198-1213.
- Chi, T. and Fan, D., 1997. Cognitive limitations and investment "myopia". *Decision Sciences* 28, 27-57.
- Chiesa, V., Manzini, R. and Tecilla, F., 2000. Selecting sourcing strategies for technological innovation: An empirical case study. *International Journal of Operations and Production Management* 20, 1017-37.
- Childerhouse, P., Aitken, J. and Towill, D.R., 2002. Analysis and design of focused demand chains. *Journal of Operations Management* 20, 675-689.
- Chinander, K.R., 2001. Aligning accountability and awareness for environmental performance in operations. *Production and Operations Management* 10, 276-291.
- Choi, T.Y. and Hong, Y., 2002. Unveiling the structure of supply networks: Case studies in Honda, Acura and Daimler Chrysler. *Journal of Operations Management* 20, 469-493.
- Cigolini, C., Cozzi, M. and Perona, M., 2004. A new framework for supply chain management: Conceptual model and empirical test. *International Journal of Operations and Production Management* 24, 7-41.

- Clarke, R.L., 1992. Evaluating USAF vehicle maintenance productivity over time. *Decision Sciences* 23, 376-384.
- Collins, R.S. and Schmenner, R.W., 2007. Understanding persistently variable performance in plants. *International Journal of Operations and Production Management* 27, 254-81.
- Colyvas, J., Crow, M., Gelijns, A., Mazzoleni, R., Nelson, R., Rosenberg, N. and Sampat, B.N., 2002. How do university inventions get into practice? *Management Science* 48, 61-72.
- Cooney, R., 2002. Is "Lean" a universal production system? Batch production in the automotive industry. *International Journal of Operations and Production Management* 22, 1130-47.
- Corbett, L.M. and Campbell-Hunt, C., 2002. Grappling with a gusher! Manufacturing's response to business success in small and medium enterprises. *Journal of Operations Management* 20, 495-517.
- Corbett, L.M. and Cutler, D., 2000. Environmental management systems in the New Zealand plastics industry. *International Journal of Operations and Production Management* 20, 204-224.
- Coronado Mondragon, A.E., Lyons, A.C. and Kehoe, D.F., 2004. Assessing the value of information systems in supporting agility in high tech manufacturing enterprises. *International Journal of Operations and Production Management* 24, 1219-1246.
- Correa, H.L., Ellram, L.M. and Scavarda, A.J., 2007. An operations management view of the services and goods offering mix. *International Journal of Operations and Production Management* 27, 444-63.
- Craighead, C.W., Blackhurst, J., Rungtusanatham, M.J. and Handfield, R.B., 2007. The severity of supply chain disruptions: Design characteristics and mitigation capabilities. *Decisions Sciences* 38, 131-156.
- Croom, S.R., 2001. Restructuring supply chains through information channel innovation. *International Journal of Operations and Production Management* 21, 504-15.
- Crowe, T.J., Chao-Chun, C., 1996. Using quality function deployment in manufacturing strategic planning. *International Journal of Operations and Production Management* 16, 35-48.
- Cullen, A.J. and Webster, M., 2007. A model of B2B e-commerce, based on connectivity and purpose. *International Journal of Operations and Production Management* 27, 205-25.
- Da Silveira, G. and Slack, N., 2001. Exploring the trade-off concept. *International Journal of Operations and Production Management* 21, 949-964.
- Da Silveira, G., 1998. A framework for the management of product variety. *International Journal of Operations and Production Management* 18, 271-85.

- Da Silveira, G.J.C., 2003. Towards a framework for operations management in e-commerce. *International Journal of Operations and Production Management* 23, 200-212.
- Dahlen, P., Ericsson, J. and Fujii, H., 1995. Labor stability and flexibility - conditions to reach just-in-time. *International Journal of Operations and Production Management* 15, 26-43.
- Dal, B., Tugwell, P. and Greatbanks, R., 2000. Overall equipment effectiveness as a measure of operational improvement: A practical analysis. *International Journal of Operations and Production Management* 20, 1488-1502.
- Danese, P., 2007. Designing CPFR collaborations: Insights from seven case studies. *International Journal of Operations and Production Management* 27, 181-204.
- Danese, P., Romano, P and Vinelli, A., 2006. Sequences of improvement in supply networks: Case studies from the pharmaceutical industry. *International Journal of Operations and Production Management* 26, 1199-1222.
- Das, C. and Tyagi, R., 1999. Manufacturer selection and price negotiation for competitive wholesale distribution operations. *International Journal of Operations and Production Management* 19, 977-993.
- Datar, S., Jordan, C., Kekre, S., Rajiv, S. and Srinivasan, K., 1997. New product development structures and time-to-market. *Management Science* 43, 452-64.
- Davies, A.J. and Kochhar, A.K., 2000. A framework for the selection of best practices. *International Journal of Operations and Production Management* 20, 1203-17.
- De Haan, J. and Van Mol, K., 1999. Soft-investments appraisal: Cost-benefit analysis of the implementation of work groups as an example. *International Journal of Operations and Production Management* 19, 38-54.
- De Holan, P.M. and Phillips, N., 2004. Remembrance of things past? The dynamics of organizational forgetting. *Management Science* 50, 1603-1613.
- de Koster, R.M.B.M., Le-Anha, T. and van der Meer, J.R., 2004. Testing and classifying vehicle dispatching rules in three real-world settings. *Journal of Operations Management* 22, 369-86.
- De Leede, J. and Looise, J.K., 1999. Continuous improvement and the mini-company concept. *International Journal of Operations and Production Management* 19, 1188-202.
- De Toni, A. and Nassimbeni, G., 1996. Strategic and operational choices for small subcontracting firms empirical results and an interpretative model. *International Journal of Operations and Production Management* 16, 41-55.

- De toni, A. and Nassimbeni, G., 2003. Small and medium district enterprises and the new product challenge: Evidence from Italian eyewear district. *International Journal of Operations and Production Management* 23, 678-97.
- Decoene, V. and Bruggeman, W., 2006. Strategic alignment and middle level manager's motivation in a balanced scorecard setting. *International Journal of Operations and Production Management* 26, 429-448.
- Delano, G., Parnell, G.S., Smith, C. and Vance, M., 2000. Quality function deployment and decision analysis: An R&D case study. *International Journal of Operations and Production Management* 20, 591-609.
- Dellarocas, C., 2003. The digitization of word of mouth: Promise and challenges of online feedback. *Management Science* 49, 1407-24.
- Dennis, D. and Meredith, J., 2000. An empirical analysis of process industry transformation systems. *Management Science* 46, 1085-1099.
- Dennis, D.R. and Meredith, J.R., 2000. An analysis of process industry production and inventory management systems. *Journal of Operations Management* 18, 683-99.
- Devaraj, S. and Kohli, R., 2003. Performance impacts of information technology: Is actual usage the missing link. *Management Science* 49, 273-89.
- Dewhurst, F.W., Martinez-Lorente, A.R. and Sanchez-Rodriguez, C., 2003. An initial assessment of the influence of it on TQM: A multiple case study. *International Journal of Operations and Production Management* 23, 348-374.
- Dey, P.K., Hariharan, S. and Clegg, B.T., 2006. Measuring the operational performance of intensive care units using the analytic hierarchy process approach. *International Journal of Operations and Production Management* 26, 849-65.
- Doran, D., 2003. Supply chain implications of modularization. *International Journal of Operations and Production Management* 23, 316-326.
- Dostaler, I., 2001. Beyond practices: A qualitative inquiry into high performance electronics assembly. *Production and Operations Management* 10, 478-493.
- Dowlatshahi, S., 1998. Implementing early supplier involvement: A conceptual framework. *International Journal of Operations and Production Management* 18, 143-67.
- Dowlatshahi, S., 2001. Managing a labor strike at a Maquiladora industry. *International Journal of Operations and Production Management* 21, 728-48.

- Duberley, J., Johnson, P., Cassell, C. and Close, P., 2000. Manufacturing change the role of performance evaluation and control systems. *International Journal of Operations and Production Management* 20, 421-447.
- Ellegard, K., Jonsson, D., Engstrom, T. and Johansson, M.I., 1992. Reflective production in the final assembly of motor vehicles: An emerging Swedish challenge. *International Journal of Operations and Production Management* 12, 117-33.
- Engstrom, T., Jonsson, D. and Medbo, L., 1996. Production model discourse and experiences from the Swedish automotive industry. *International Journal of Operations and Production Management* 16, 141-58.
- Field, J.M. and Sinha, K.K., 2005. Applying process knowledge for yield variation reduction: A longitudinal field study. *Decision Sciences* 36, 159-86.
- Fleischmann, M., Beullens, P., Bloemhof-Ruwaard, J.M. and Wassenhove, L.N., 2001. The impact of product recovery on logistics network design. *Production and Operations Management* 10, 156-73.
- Fleury, A., 1999. The changing pattern of operations management in developing countries: The case of Brazil. *International Journal of Operations and Production Management* 19, 552-64.
- Flowers, A.D. and Linderman, K., 2003. Hazardous waste disposal: A waste-fuel blending approach. *Production and Operations Management* 12, 307-19.
- Ford, M.W., Evans, J. and Matthews, C., 2004. Linking self-assessment to the external environment: An exploratory study. *International Journal of Operations and Production Management* 24, 1175-1187.
- Fortuin, L. and Martin, H., 1999. Control of service parts. *International Journal of Operations and Production Management* 19, 950-71.
- Foster, S.T., Sampson, S.E. and Dunn, S.C., 2000. The impact of customer contact on environmental initiatives for service firms. *International Journal of Operations and Production Management* 20, 187-203.
- Francis, A. and MacIntosh, R., 1997. The market, technological and industry context of business process re-engineering in the UK. *International Journal of Operations and Production Management* 17, 344-64.
- Fredriksson, P., 2006. Mechanisms and rationales for the coordination of a modular assembly system. *International Journal of Operations and Production Management* 26, 350-370.

- Fry, T.D., Steele, D.C. and Saladin, B.A., 1994. A service-oriented manufacturing strategy. *International Journal of Operations and Production Management* 14, 17-29.
- Furlan, A., Grandinetti, R. and Camuffo, A., 2007. How do subcontractors evolve? *International Journal of Operations and Production Management* 27, 69-89.
- Garcia, R., Calantone, R. and Levine, R., 2003. The role of knowledge in resource allocation to exploration versus exploitation. *Decision Sciences* 34, 323-49.
- Garengo, p. and Bititci, U., 2007. Towards a contingency approach to performance measurement: An empirical study in Scottish SMEs. *International Journal of Operations and Production Management* 27, 802-825.
- Garg, S., Vrat, P. and Kanda, A., 2002. Trade-offs between multi-skilling and inventory in assembly line operations under demand variability. *International Journal of Operations and Production Management* 22, 565-83.
- Geffen, C.A. and Rothenberg, S., 2000. Suppliers and environmental innovation the automotive paint process. *International Journal of Operations and Production Management* 20, 166-186.
- Ghobadian, A. and Ashworth, J., 1994. Performance measurement in local government - concept and practice. *International Journal of Operations and Production Management* 14, 35-51.
- Ghobadian, A. and Gallea, D., 1997. TQM and organization size. *International Journal of Operations and Production Management* 17, 121-163.
- Gianesi, I.G.N., 1998. Implementing manufacturing strategy through strategic production planning. *International Journal of Operations and Production Management* 18, 286-99.
- Giunipero, L., Handfield, R.B. and Eltantawy, R., 2006. Supply management's evolution: Key skill sets for the supply manager of the future. *International Journal of Operations and Production Management* 26, 822-844.
- Goffin, K. and New, C., 2001. Customer support and new product development - an exploratory study. *International Journal of Operations and Production Management* 21, 275-301.
- Gordon, J. and Sohal, A.S., 2001. Assessing manufacturing plant competitiveness: An empirical field study. *International Journal of Operations and Production Management* 21, 233-53.
- Grabowski, M. and Sanborn, S., 1992. Knowledge representation and reasoning in a real-time operational control system: the Shipboard Piloting Expert System (SPES). *Decision Sciences* 23, 1277-96.
- Grabowski, M. and Sanborn, S., 2001. Evaluation of embedded intelligent real-time systems. *Decision Sciences* 32, 95-124.

- Graham, G., Burnes, B., Lewis, G.J. and Langer, J., 2004. The transformation of the music supply chain: A major label perspective. *International Journal of Operations and Production Management* 24, 1087-1103.
- Graman, G.A. and Magazine, M.J., 2006. Implementation issues influencing the decision to adopt postponement. *International Journal of Operations and Production Management* 26, 1068-1083.
- Grant, E.B. and Gregory, M.J., 1997. Adapting manufacturing processes for international transfer. *International Journal of Operations and Production Management* 17, 995-1005.
- Graves, S.C. and Willems, S.P., 2005. Optimizing the supply chain configuration for new products. *Management Science* 51, 1165-80.
- Greasley, A. and Barlow, S., 1998. Using simulation modeling for BPR: Resource allocation in a police custody process. *International Journal of Operations and Production Management* 18, 978-88.
- Greasley, A., 2004. Process improvement within a HR division at a UK police force. *International Journal of Operations and Production Management* 24, 230-240.
- Greasley, A., 2005. Using system dynamics in a discrete event simulation of a manufacturing plant. *International Journal of Operations and Production Management* 25, 534-48.
- Grutter, A.W., Field, J.M. and Faull, N.H.B., 2002. Work team performance over time: three case studies of South African manufacturers. *Journal of Operations Management* 20, 641-657.
- Guide Jr., V.D.R., Jayaraman, V., and Linton, J.D., 2003. Building contingency planning for closed-loop supply chains with product recovery. *Journal of Operations Management* 21, 259-279.
- Guimaraes, T., Igarria, M. and Lu, M.T. 1992. The determinants of DSS success: An integrated model. *Decision Sciences* 23, 409-30.
- Guisinger, A. and Ghorashi, B., 2004. Agile manufacturing practices in the specialty chemical industry: An overview of the trends and results of a specific case study. *International Journal of Operations and Production Management* 24, 625-635.
- Gunasekaran, A., Forker, L. and Kobu, B., 2000. Improving operations performance in a small company: A case study. *International Journal of Operations and Production Management* 20, 316-336.
- Gupta, S.M., Al-turki, Y.A.Y. and Perry, R.F., 1999. Flexible Kan-ban system. *International Journal of Operations and Production Management* 19, 1065-93.
- Gupta, T. and Dutta, S., 1994. Analyzing materials handling needs in concurrent/simultaneous engineering. *International Journal of Operations and Production Management* 14, 68-82.
- Gupta, Y.P. and Ash, D., 1994. Excellence at Rhom and Haas Kentucky: A case study of work team introduction in manufacturing. *Production and Operations Management* 3, 186-200.

- Halldorsson, A. and Skjott-Larsen, T., 2004. Developing logistics competencies through third party logistics relationships. *International Journal of Operations and Production Management* 24, 192-206.
- Handfield, R.B., Walton, S.V., Seegers, L.K. and Melnyk, S.A., 1997. Green value chain practices in the furniture industry. *Journal of Operations Management* 15, 293-315.
- Hanna, V., Burns, N.D. and Blackhouse, C.J., 2000. Realigning organizational variables to support workplace behavior. *International Journal of Operations and Production Management* 20, 1380-91.
- Harland, C.M. and Knight, L.A., 2001. Supply network strategy: Role and competence requirements. *International Journal of Operations and Production Management* 21, 476-89.
- Harland, C.M., Caldwell, N.D., Powell, P and Zheng, J., 2007. Barriers to supply chain information integration: SMEs adrift of eLands. *Journal of Operations Management* 25, 1234-1254.
- Harrison, A., 1998. Manufacturing strategy and the concept of world class manufacturing. *International Journal of Operations and Production Management* 18, 397-408.
- Hart, H. and Berger, A., 1994. Using time to generate corporate renewal. *International Journal of Operations and Production Management* 14, 24-45.
- Hartwick, J. and Barti, H., 1994. Explaining the role of user participation in information system use. *Management Science* 40, 440-65.
- Hegde, V.G., Kekre, S., Rajiv, S. and Tadikamalla, P.R., 2005. Customization: Impact on product and process performance. *Production and Operations Management* 14, 388-99.
- Heikkila, J., 2002. From supply to demand chain management: Efficiency and customer satisfaction. *Journal of Operations Management* 20, 747-767.
- Heikkinen, V.P., 2003. Timber harvesting as a part of the portfolio management: A multi-period stochastic optimization approach. *Management Science* 49, 131-42.
- Henderson, R., Del Alamo, J., Becker, T., Lawton, J., Moran, P. and Shapiro, S., 1998. The perils of excellence: Barriers to effective process improvement in product driven firms. *Production and Operations Management* 7, 2-18.
- Hendry, L., 1998. Applying world class manufacturing to make-to-order companies: Problems and solutions. *International Journal of Operations and Production Management* 18, 1086-1100.
- Hill, A. and Brown, S., 2007. Strategic profiling: A visual representation of internal strategic fit in service organizations. *International Journal of Operations and Production Management* 27, 1333-1361.

- Hines, P., Silvi, R. and Bartolini, M., 2002. Demand chain management: An integrative approach in automotive retailing. *Journal of Operations Management* 20, 707-28.
- Hipkin, I., 2001. Knowledge and IS implementation: Case studies in physical asset management. *International Journal of Operations and Production Management* 21, 1358-80.
- Hitt, L.M. and Frei, F.X., 2002. Do better customers utilize electronic distribution channels? The case of PC Banking. *Management Science* 48, 732-48.
- Holmstrom, J. and Hameri, A.P., 1999. The dynamics of consumer response: A quest for the attractors of supply chain demand. *International Journal of Operations and Production Management* 19, 993-1010.
- Holweg, M., 2005. The three dimensions of responsiveness. *International Journal of Operations and Production Management* 25, 603-622.
- Hooper, M.J., Steeple, D. and Winters, C.N., 2001. Costing customer value: An approach for the agile enterprise. *International Journal of Operations and Production Management* 21, 630-44.
- Hopp, W.J., Tekin, E. and Van Oyen, M.P., 2004. Benefits of skill chaining in serial production lines with cross-trained Workers. *Management Science* 50, 83-98.
- Horte, S.A. and Ylinenpaa, H., 1997. The firm's and its customers' views on order-winning criteria. *International Journal of Operations and Production Management* 17, 1006-1019.
- Houghton, E. and Portougal, V., 2001. Optimum production planning: An analytic framework. *International Journal of Operations and Production Management* 21, 1205-21.
- Howard, A., Kochhar, A. and Dilworth, J., 1998. An objective approach for generating the functional specification of manufacturing planning and control systems. *International Journal of Operations and Production Management* 18, 710-26.
- Howard, M. Lewis, M. Miemczyk, J. and Brandon-Jones, A., 2007. Implementing supply practice at Bridgend engine plant: The influence of institutional and strategic choice perspectives. *International Journal of Operations and Production Management* 27, 754-76.
- Hudson, M., Smart, A. and Bourne, M., 2001. Theory and practice in SME performance measurement systems. *International Journal of Operations and Production Management* 21, 1096-1115.
- Hui, L.T., 2004. Business timeliness: The intersections of strategy and operations management. *International Journal of Operations and Production Management* 24, 605-624.
- Humphrey, A.S., Taylor, G.D. and Landers, T.L., 1998. Stock level determination and sensitivity analysis in repair/rework operations. *International Journal of Operations and Production Management* 18, 612-30.

- Hutchison, J. and Das, S.R., 2007. Examining a firm's decisions with a contingency framework for manufacturing flexibility. *International Journal of Operations and Production Management* 27, 159-180.
- Iansiti, M., 1995. Science-based product development: An empirical study of the mainframe computer industry. *Production and Operations Management* 4, 335-59.
- Ikhwan, M.A.H. and Burney, F.A., 1994. Maintenance in Saudi industry. *International Journal of Operations and Production Management* 14, 70-80.
- Ittner, C.D., 1994. An examination of the indirect productivity gains from quality improvement. *Production and Operations Management* 3, 153-70.
- Jack, E.P. and Powers, T.L., 2004. Volume flexible strategies in health services: A research framework. *Production and Operations Management* 13, 230-244.
- Jack, E.P. and Raturi, A., 2002. Sources of volume flexibility and their impact on performance. *Journal of Operations Management* 20, 519-48.
- James-Moore, S.M. and Gibbons, A., 1997. Is lean manufacture universally relevant? An investigative methodology. *International Journal of Operations and Production Management* 17, 899-911.
- Jensen, R.J. and Szulanski, G., 2007. Template use and the effectiveness of knowledge transfer. *Management Science* 53, 1716-1730.
- Jiao, J. and Tseng, M.M., 1999. A pragmatic approach to product costing based on standard time estimation. *International Journal of Operations and Production Management* 19, 738-55.
- Jin, B., 2004. Achieving an optimal global versus domestic sourcing balance under demand uncertainty. *International Journal of Operations and Production Management* 24, 1292-1305.
- Johansson, E and Johansson, M.I., 2006. Materials supply systems design in product development projects. *International Journal of Operations and Production Management* 26, 371-393.
- Johansson, E., 2007. Towards a design process for materials supply systems. *International Journal of Operations and Production Management* 27, 2261-2271.
- Johnson, P., Duberley, J., Close, P. and Cassell, C., 1999. Negotiating field roles in manufacturing management research: The need for reflexivity. *International Journal of Operations and Production Management* 19, 1234-53.
- Johnston, R., Brignall, S. and Fitzgerald, L., 2002. The involvement of management accountants in operational process change: Results from field research. *International Journal of Operations and Production Management* 22, 1325-1338.

- Jones, O., 2005. Manufacturing regeneration through corporate entrepreneurship: Middle managers and organizational innovation. *International Journal of Operations and Production Management* 25, 491-511.
- Jonsson, P. and Lesshammar, M., 1999. Evaluation and improvement of manufacturing performance measurement systems: The role of OEE. *International Journal of Operations and Production Management* 19, 55-78.
- Kamps, J. and Masuch, M., 1997. Partial deductive closure: Logical simulation and management science. *Management Science* 43, 1229-45.
- Karlsson, C. and Ahlstrom, P., 1995. Change processes towards lean production: The role of the remuneration system. *International Journal of Operations and Production Management* 15, 80-99.
- Karlsson, C., 2003. The development of industrial networks: Challenges to operations management in an Extraprise. *International Journal of Operations and Production Management* 23, 44-61.
- Katayama, H. and Bennett, D., 1996. Lean production in a changing competitive world: A Japanese perspective. *International Journal of Operations and Production Management* 16, 8-23.
- Keizers, J.M., Bertrand, J.W.M. and Wessels, J., 2003. Diagnosing order planning performance at a navy maintenance repair organization, using logistic regression. *Production and Operations Management* 12, 445-63.
- Kennerley, M. and Neely, A., 2002. A framework of the factors affecting the evolution of performance measurement systems. *International Journal of Operations and Production Management* 22, 1222-1245.
- Kennerley, M. and Neely, A., 2003. Measuring performance in a changing business environment. *International Journal of Operations and Production Management* 23, 213-229.
- Ketokivi, M. and Jokinen, M., 2006. Strategy, uncertainty and the focused factory in international process manufacturing. *Journal of Operations Management* 24, 250-270.
- Ketokivi, M. and Schroeder, R., 2004. Manufacturing practices, strategic fit and performance: A routine-based view. *International Journal of Operations and Production Management* 24, 171-91.
- Kimes, S.E. and Thompson, G.M., 2004. Restaurant revenue management at Chevys: Determining the best table Mix. *Decision Sciences* 35, 371-92.
- Kincade, D.H., Regan, C. and Gibson, F.Y., 2007. Concurrent engineering for product development in mass customization for the apparel industry. *International Journal of Operations and Production Management* 27, 627-649.

- Kitazawa, S and Sarkis, J., 2000. The relationship between ISO 14001 and continuous source reduction programs. *International Journal of Operations and Production Management* 20, 225-249.
- Kolay, M.K. and Sahu, K.C., 1995. Performance measurement as a surrogate value of organizational human resource. *International Journal of Operations and Production Management* 15, 40-59.
- Kolay, M.K., 1993. Suppliers asset base: Appreciating or depreciating? *International Journal of Operations and Production Management* 13, 72-86.
- Koners, U. and Goffin, K., 2007. Managers' perceptions of learning in new product development. *International Journal of Operations and Production Management* 27, 49-68.
- Kotnour, T., 2001. Building knowledge for and about large scale organizational transformations. *International Journal of Operations and Production Management* 21, 1053-75.
- Koulikoff-Souvion, M. and Harrison, A., 2007. The pervasive human resource picture in interdependent supply relationships. *International Journal of Operations and Production Management* 27, 8-27.
- Krajewski, L., Wei, J.C. and Tang, L., 2005. Responding to schedule changes in build-to-order supply chains. *Journal of Operations Management* 23, 452-469.
- Krishnamurthy, R. and Yauch, C.A., 2007. Leagile manufacturing: A proposed corporate infrastructure. *International Journal of Operations and Production Management* 27, 588-604.
- Krishnan, M.S., Kriebel, C.H., Kekre, S. and Mukhopadhyay, T., 2000. An empirical analysis of productivity and quality in software products. *Management Science* 46, 745-59.
- Kumar, A. and Zhao, J.L., 1999. Dynamic routing and operational controls in workflow management systems. *Management Science* 45, 253-72.
- Kumar, K.R. and Hadjinicola, G.C., 1993. Cellular manufacturing at Champion Irrigation Products. *International Journal of Operations and Production Management* 13, 53-61.
- Kutucuoglu, K.Y., Hamali, J., Irani, Z. and Sharp, J.M., 2001. A framework for managing maintenance using performance measurement systems. *International Journal of Operations and Production Management* 21, 173-95.
- Lambrecht, M.R., Ivens, P.L. and Vandale, N.J., 1998. ACLIPS: A capacity and lead time integrated procedure for scheduling. *Management Science* 44, 1548-61.
- Lamming, R., Johnsen, T., Zheng, J. and Harland, C., 2000. An initial classification of supply networks. *International Journal of Operations and Production Management* 20, 675-691.
- Lawrence, J.J. and Lewis, H.S., 1996. Understanding the use of just-in-time purchasing in a developing country: The case of Mexico. *International Journal of Operations and Production Management* 16, 68-90.

- Leary, D.E., 1996. Verification of uncertain knowledge-based systems: An empirical verification approach. *Management Science* 42, 1663-75.
- Lee, G., Bennet, D. and Oakes, I., 2000. Technological and organizational change in small- to medium-sized manufacturing companies: A learning organization perspective. *International Journal of Operations and Production Management* 20, 549-72.
- Lee, G.L. and Oakes, I.K., 1996. Templates for change with supply chain rationalization. *International Journal of Operations and Production Management* 16, 197-209.
- Lee, K.T. and Chauh, K.B., 2001. A SUPER methodology for business process improvement: An industrial case study in Hong Kong/China. *International Journal of Operations and Production Management* 21, 687-706.
- Leonard, D. and McAdam, R., 2003. An evaluative framework for TQM dynamics in organizations. *International Journal of Operations and Production Management* 23, 652-677.
- Leschke, J.P., 1996. An empirical study of the set-up reduction process. *Production and Operations Management* 5, 121-131.
- Leseure, M.J., 2000. Manufacturing strategies in the hand tool industry. *International Journal of Operations and Production Management* 20, 1475-87.
- Lewis, M.A., 2000. Lean production and sustainable competitive advantage. *International Journal of Operations and Production Management* 20, 959-978.
- Lewis, M.A., 2003. Analyzing organizational competence: Implications for the management of operations. *International Journal of Operations and Production Management* 23, 731-756.
- Lewis, M.A., 2003. Cause, consequence and control: towards a theoretical and practical model of operational risk. *Journal of Operations Management* 21, 205-224.
- Lin, C., Tan, B. and Hsieh, P.J., 2005. Application of the fuzzy weighted average in strategic portfolio management. *Decision Sciences* 36, 489-511.
- Lindberg, P., 1993. Management of uncertainty in AMT implementation: the case of FMS. *International Journal of Operations and Production Management* 12, 57-75.
- Lockamy III, A., 1998. Quality-focused performance measurement systems: a normative model. *International Journal of Operations and Production Management* 18, 740-66.
- Lofsten, H., 1999. Management of industrial maintenance: Economic evaluation of maintenance policies. *International Journal of Operations and Production Management* 19, 716-37.
- Lowson, R.H., 2005. Retail operations strategies: Empirical evidence of role, competitive contribution and life cycle. *International Journal of Operations and Production Management* 25, 642-680.

- Lu, Q. and Wood, L., 2006. The refinement of design for manufacture: inclusion of process design. *International Journal of Operations and Production Management* 26, 1123-1145.
- Mabin, V.J. and Balderstone, S.J., 2003. The performance of the theory of constraints methodology: Analysis and discussion of successful TOC applications. *International Journal of Operations and Production Management* 23, 568-95.
- Macbeth, D.K., 2002. Emergent strategy in managing cooperative supply chain change. *International Journal of Operations and Production Management* 22, 728-40.
- Macdonald, F., Rosenfield, D.B., Staelin, D.H. and Knauss, K., 1998. An integrative approach to process parameter selection. *Production and Operations Management* 7, 53-66.
- MacDuffie, J.P., 1997. The road to "root cause": shop-floor problem-solving at three auto assembly plants. *Management Science* 43, 210-221.
- MacIntosh, R and MacLean, D., 2001. Conditioned emergence: Researching change and changing research. *International Journal of Operations and Production Management* 21, 1343-57.
- Maddern, H., Maull, R., Smart, A. and Baker, P., 2007. Customer satisfaction and service quality in UK financial services. *International Journal of Operations and Production Management* 27, 998-1019.
- Maffei and Meredith, 1995. Infrastructure and flexible manufacturing technology: Theory development. *Journal of Operations Management* 13, 273-298.
- Majchrzak, A., Cooper, L.P. and Neece, O.E., 2004. Knowledge reuse for innovation. *Management Science* 50, 174-188.
- Mak, K.L. and Lau, H.Y.K., 2000. An object-oriented specification of a flexible manufacturing cell. *International Journal of Operations and Production Management* 20, 534-48.
- Malhotra, M.K. and Ritzman, L.P., 1994. Scheduling flexibility in the service sector: a postal case study. *Production and Operations Management* 3, 100-17.
- Malone, T.W., Crowston, K., Lee, J., Pentland, B., Dellarocas, C., Wyner, G., Quimby, J., Osborn, C.S., Bernstein, A., Herman, G., Klein, M., O'Donnell, E., 1999. Tools for inventing organizations: Toward a handbook of organizational processes. *Management Science* 45, 425-43.
- Mandal, P. and Baliga, B., 2000. MIS-user interface design for job shop manufacturing environment. *International Journal of Operations and Production Management* 20, 468-80.
- Matos, S and Hall, M., 2007. Integrating sustainable development in the supply chain: The case of life cycle assessment in oil and gas and agricultural biotechnology. *Journal of Operations Management* 25, 1083-1102.

- Matson, J.B. and McFarlane, D., 1999. Assessing the responsiveness of existing production operations. *International Journal of Operations and Production Management* 19, 765-84.
- Maull, R., Brown, P. and Cliffe, R., 2001. Organizational culture and quality improvement. *International Journal of Operations and Production Management* 21, 302-26.
- Maull, R.S., Tranfield, D.R., and Maull, W., 2003. Factors characterizing the maturity of BPR programs. *International Journal of Operations and Production Management* 23, 596-624.
- Mazany, P., 1995. A case study: Lessons from the progressive implementation of just-in-time in a small knitwear manufacturer. *International Journal of Operations and Production Management* 15, 271-288.
- McAdam, R. and Bailie, B., 2002. Business performance measures and alignment impact on strategy. *International Journal of Operations and Production Management* 22, 972-96.
- McAdam, R. and Bannister, A., 2001. Business performance measurement and change management within a TQM framework. *International Journal of Operations and Production Management* 21, 88-108.
- McAdam, R. and Lafferty, B., 2004. A multi-level case study critique of six sigma: Statistical control or strategic change? *International Journal of Operations and Production Management* 24, 530-549.
- McAfee, A., 2002. The impact of enterprise information technology adoption on operational performance: an empirical investigation. *Production and Operations Management* 11, 33-53.
- McDermott, 1999. Managing radical product development in large manufacturing firms: A longitudinal study. *Journal of Operations Management* 17, 631-644.
- McDermott, C.M., Greis, N.P. and Fischer, W.A., 1997. The diminishing utility of the product/process matrix a study of the us power tool industry. *International Journal of Operations and Production Management* 17, 65-84.
- McIvor, R. and Humphreys, P., 2004. The implications of electronic B2B intermediaries for the buyer-supplier interface. *International Journal of Operations and Production Management* 24, 241-269.
- McKay, A. and Radnor, Z., 1998. A characterization of a business process. *International Journal of Operations and Production Management* 18, 924-36.
- McKay, K., Pinedo, M. and Webster, S., 2002. Practice focused research issues for scheduling systems. *Production and Operations Management* 11, 249-58.
- McLachlin, R., 1997. Management initiatives and just-in-time manufacturing. *Journal of Operations Management* 15, 271-292.

- Medori, D. and Steeple, D., 2000. A framework for auditing and enhancing performance measurement systems. *International Journal of Operations and Production Management* 20, 520-33.
- Mehrotra, A., Johnson, E.L. and Nemhauser, G.L., 1998. An optimization bases heuristic for political districting. *Management Science* 44, 1100-14.
- Meijboom, B. and Houtepen, M., 2002. Structuring international service operations: A theoretical framework and a case study in the IT-sector. *International Journal of Operations and Production Management* 22, 824-842.
- Meijboom, B., 1999. Production-to-order and international operations: A case study in the clothing industry. *International Journal of Operations and Production Management* 19, 602-19.
- Meijboom, B., Vos, B., 1997. International manufacturing and location decisions: Balancing configuration and co-ordination aspects. *International Journal of Operations and Production Management* 17, 790-805.
- Menon, T. and Pfeffer, J., 2003. Valuing internal vs. external knowledge: Explaining the preference for outsiders. *Management Science* 49, 497-513.
- Meredith, J. and Vineyard, M., 1993. A longitudinal study of the role of manufacturing technology in business strategy. *International Journal of Operations and Production Management* 13, 4-24.
- Mileham, A.R., Culley, S.J., Owen, G.W. and McIntosh, R.I., 1999. Rapid changeover - a pre-requisite for responsive manufacture. *International Journal of Operations and Production Management* 19, 785-96.
- Millington, A.I., Millington, C.E.S. and Cowburn, M., 1998. Local assembly units in the motor components industry A case study of exhaust manufacture. *International Journal of Operations and Production Management* 18, 180-94.
- Mills, J. Platts, K. and Bourne, M., 2003. Competence and resource architectures. *International Journal of Operations and Production Management* 23, 977-94.
- Mills, J., Neely, A., Platts, K. and Gregory, M., 1998. Manufacturing strategy: a pictorial representation. *International Journal of Operations and Production Management* 18, 1067-85.
- Mohanty, R.P. and Deshmakh, S.G., 1999. Evaluating manufacturing strategy for a learning organization: a case. *International Journal of Operations and Production Management* 19, 308-28.
- Mosey, S., 2005. Understanding new-to-market product development in SMEs. *International Journal of Operations and Production Management* 25, 114-130.

- Moxham, C. and Boaden, R., 2007. The impact of performance measurement in the voluntary sector: Identification of contextual and processual factors. *International Journal of Operations and Production Management* 27, 826-845.
- Muda, M.S. and Hendry, L., 2003. The Shen model for make-to-order SMEs: A performance improvement tool. *International Journal of Operations and Production Management* 23, 470-486.
- Mukherjee, A., Mitchell, W. and Talbot, F.B., 2000. The impact of new manufacturing requirements on production line productivity and quality at a focused factory. *Journal of Operations Management* 18, 139-68.
- Mukhopadhyay, T., Rajiv, S. and Srinivasan, K., 1997. Information technology impact on process output and quality. *Management Science* 43, 1645-59.
- Muruges, R., Devadasan, S.R., Aravindan, P., Natarajan, R., 1997. The adoption and modeling of the strategic productivity management approach in manufacturing systems. *International Journal of Operations and Production Management* 17, 239-55.
- Muscatello, J.R., Small, M.H. and Chen, I., 2003. Implementing enterprise resource planning (ERP) systems in small and midsize manufacturing firms. *International Journal of Operations and Production Management* 23, 850-871.
- Nagaraj, P. and Selladurai, V., 2003. Function approximation of total system cost for a continuous manufacturing system: A case study. *International Journal of Operations and Production Management* 23, 430-39.
- Narasimhan, R. and Jayaram, J., 1998. Re-engineering service operation: A longitudinal case study. *Journal of Operations Management* 17, 7-22.
- Nassimbeni, G., 2003. Local manufacturing systems and global economy: Are they compatible? The case of the Italian Eyewear District. *Journal of Operations Management* 21, 151-71.
- Nathan, J. and Venkataraman, R., 1998. Determination of master production schedule re-planning frequency for various forecast window intervals. *International Journal of Operations and Production Management* 18, 767-77.
- Naylor, J.B., Griffiths, J. and Naim, M.N., 2001. Knowledge-based system for estimating steel plant performance. *International Journal of Operations and Production Management* 21, 1000-19.
- New, C., 1992. World-class manufacturing versus strategic trade-Offs. *International Journal of Operations and Production Management* 12, 19-31.
- New, S., 2003. Multimedia for international operations: A case study. *International Journal of Operations and Production Management* 23, 125-37.

- Newell, S., Swan, J., Clark, P., 1993. The importance of user design in the adoption of new information technologies: The example of production and inventory control systems (PICS). *International Journal of Operations and Production Management* 13, 4-22.
- Ngai, E.W.T., Cheng, T.C.E., Lai, K-H., Chai, P.Y.F., Choi, Y.S. and Sin, R.K.Y., 2007. Development of an RFID-based traceability system: Experiences and lessons learned from an aircraft engineering company. *Production and Operations Management* 16, 554-568.
- Nichols, W. and Jones, O., 1994. The introduction of CIM: A strategic analysis. *International Journal of Operations and Production Management* 14, 4-16.
- Niepce, W. and Molleman, E., 1996. Characteristics of work organization in lean production and socio-technical systems a case study. *International Journal of Operations and Production Management* 16, 78-91.
- Noori, H. and Chen, C., 2003. Applying scenario driven strategy to integrate environmental management and product design. *Production and Operations Management* 12, 353-68.
- O'Donnell, F.J. and Duffy, A.H.B., 2002. Modeling design development performance. *International Journal of Operations and Production Management* 22, 1198-1221.
- Oke, A., 2005. A framework for analyzing manufacturing flexibility. *International Journal of Operations and Production Management* 25, 973-996.
- Olhager, J. and West, B.M., 2002. The house of flexibility: Using the QFD approach to deploy manufacturing flexibility. *International Journal of Operations and Production Management* 22, 50-79.
- Pagel, M. and LePine, J.A., 2002. Multiple case studies of team effectiveness in manufacturing organizations. *Journal of Operations Management* 20, 619-639.
- Pagell, M. and Krause, D. R., 1999. A multiple method study of environmental uncertainty and manufacturing flexibility. *Journal of Operations Management* 17, 307-325.
- Pagell, M., 2004. Understanding the factors that enable and inhibit the integration of operations, purchasing and logistics. *Journal of Operations Management* 22, 459-487.
- Pandza, K., Horsburgh, S., Gorton, K. and Polajnar, A., 2003. A real options approach to managing resources and capabilities. *International Journal of Operations and Production Management* 23, 1010-1032.
- Pandza, K., Polajnar, A., Buchmeister, B. and Thorpe, R., 2003. Evolutionary perspectives on the capability accumulation process. *International Journal of Operations and Production Management* 23, 822-849.

- Pant, S., Rattner, L., Hsu, C., 1994. Manufacturing information integration using a reference model. *International Journal of Operations and Production Management* 14, 52-72.
- Parikh, M.A. and Joshi, K., 2005. Purchasing process transformation: Restructuring for small purchases. *International Journal of Operations and Production Management* 25, 1042-1061.
- Parker, G.G. and Anderson Jr., E.G., 2002. From buyer to integrator: The transformation of the supply chain manager in the vertically disintegrating firm. *Production and Operations Management* 11, 75-91.
- Partovi, F.Y., 1994. Determining what to benchmark: An analytic hierarchy process approach. *International Journal of Operations and Production Management* 14, 25-39.
- Perry, M. and Sohal, A.S., 2001. Effective quick response practices in a supply chain partnership. *International Journal of Operations and Production Management* 21, 840-84.
- Persona, A., Regattieri, R., Pham, H. and Battini, D., 2007. Remote control and maintenance outsourcing networks and its applications in supply chain management. *Journal of Operations Management* 25, 1275-1291.
- Piccoli, G., Brohman, M.K., Watson, R.T. and Parasuraman, A., 2004. Net-based customer service systems: Evolution and revolution in web-site functionality. *Decision Sciences* 35, 423-55.
- Pilkington, A., 1999. Strategic alliance and dependency in design and manufacture The Rover-Honda case. *International Journal of Operations and Production Management* 19, 460-78.
- Platts, K.W., 1993. A process approach to researching manufacturing strategy. *International Journal of Operations and Production Management* 13, 4-17.
- Prasad, S. and Tata, J., 2003. The role of socio-cultural, political-legal, economic, and educational dimensions in quality management. *International Journal of Operations and Production Management* 23, 487-521.
- Prater, E., Biehl, M. and Smith, M.A., 2001. International supply chain agility: Trade-offs between flexibility and uncertainty. *International Journal of Operations and Production Management* 21, 823-39.
- Primo, M.A.M., Dooley, K., and Rungtusanatham, M.J., 2007. Manufacturing firm reaction to supplier failure and recovery. *International Journal of Operations and Production Management* 27, 323-341.
- Procter, S. and Brown, A.D., 1997. Computer-integrated operations: The introduction of a hospital information support system. *International Journal of Operations and Production Management* 17, 746-756.

- Quak, H.J. and De Koster, M.B.M., 2007. Exploring retailers' sensitivity to local sustainability policies. *Journal of Operations Management* 25, 1103-22.
- Quintana, R., 1998. A production methodology for agile manufacturing in a high turnover environment. *International Journal of Operations and Production Management* 18, 452-69.
- Radnor, Z.J. and Boaden, R., 2004. Developing an understanding of corporate anorexia. *International Journal of Operations and Production Management* 24, 424-440.
- Raman, A. and Kim, B., 2002. Quantifying the impact of inventory holding cost and reactive capacity on an apparel manufacturer's profitability. *Production and Operations Management* 11, 358-373.
- Rawabdeh, I.A., 2005. A model for the assessment of waste in job shop environments. *International Journal of Operations and Production Management* 25, 800-22.
- Ritchie, B. and Brindley, C., 2007. Supply chain risk management and performance: A guiding framework for future development. *International Journal of Operations and Production Management* 27, 303-21.
- Rivard-Rover, H., Landry, S. and Beaulieu, M., 2002. Hybrid stockless: A case study - lessons for healthcare supply chain integration. *International Journal of Operations and Production Management* 22, 412-423.
- Rogers, K.W., Purdy, L., Safayeni, F. and Duimering, P.R., 2007. A supplier development program: Rational process or institutional image construction? *Journal of Operations Management* 25, 556-572.
- Rohr, S.S. and Correa, H.L., 1998. Time-based competitiveness in Brazil: Why's and how's. *International Journal of Operations and Production Management* 18, 233-245.
- Romano, P. and Vinelli, A., 2001. Quality management in a supply chain perspective strategic and operative choices in a textile-apparel network. *International Journal of Operations and Production Management* 21, 446-53.
- Rosander, K., 1992. Design of production systems for batch production in short series to reduce lead time. *International Journal of Operations and Production Management* 12, 53-60.
- Ross, A., Venkataramanan, M.A. and Ernstberger, K.W., 1998. Reconfiguring the supply network using current performance data. *Decision Sciences* 29, 707-28.
- Rothenberger, M.A., 2003. Project-level reuse factors: drivers for variation within software development environments. *Decisions Sciences* 34, 83-106.
- Ruffini, F.A.J., Boer, H. and Van Riemsdijk, M.J., 2000. Organization design in operations management. *International Journal of Operations and Production Management* 20, 860-73.

- Salvador, F., Rungtusanatham, M.J., Forza, C. and Trentin, A., 2007. Mix flexibility and volume flexibility in a build-to-order environment: Synergies and trade-offs. *International Journal of Operations and Production Management* 27, 1173-1191.
- Salvador, Forza and Rungtusanatham, 2002. Modularity, product variety, production volume, and component sourcing: theorizing beyond generic prescriptions. *Journal of Operations Management* 20, 549-575.
- Samaranayake, P., Lewis, G.S., Woxvold, E.R.A. and Toncich, D., 2002. Development of engineering structures for scheduling and control of aircraft maintenance. *International Journal of Operations and Production Management* 22, 843-67.
- Sambasiva, R. K.V. and Deskmukh, S.G., 1994. Strategic framework for implementing flexible manufacturing systems in India. *International Journal of Operations and Production Management* 14, 50-63.
- Sankaran, J.K. and Luxton, P., 2003. Logistics in relation to strategy in dairying: The case of New Zealand Dairy. *International Journal of Operations and Production Management* 23, 522-45.
- Saraiva, P.M. and Stephanopoulos, G., 1998. Process improvement: An exploratory data analysis approach within an interval based optimization framework. *Production and Operations Management* 7, 19-37.
- Savolainen, T.I., 1999. Cycles of continuous improvement realizing competitive advantages through quality. *International Journal of Operations and Production Management* 19, 120-122.
- Sawhney, R. and Piper, C., 2002. Value creation through enriched marketing-operations interfaces: an empirical study in the oriented circuit board industry. *Journal of Operations Management* 20, 259-74.
- Schiele, J.J. and McCue, C.P., 2006. Professional service acquisition in public sector procurement. *International Journal of Operations and Production Management* 26, 300-325.
- Schuman, C.A. and Brent, A.C., 2005. Asset life cycle management: Towards improving physical asset performance in the process industry. *International Journal of Operations and Production Management* 25, 566-79.
- Schuring, R.W., 1996. Operational autonomy explains the value of group work in both lean and reflective production. *International Journal of Operations and Production Management* 16, 171-182.
- Seuring, S.A., 2003. Outsourcing into service factories: An exploratory analysis of facility operators in the German chemical industry. *International Journal of Operations and Production Management* 23, 1207-1223.

- Sharif, A.M., Irani, Z and Lloyd, D., 2007. Information technology and performance management for build-to-order supply chains. *International Journal of Operations and Production Management* 27, 1235-1253.
- Sharifi, H. and Zhang, Z., 2001. Agile manufacturing in practice. *International Journal of Operations and Production Management* 21, 772-94.
- Sharifi, S. and Pawar, K.S., 2002. Virtually co-located product design teams: Sharing teaming experiences after the event? *International Journal of Operations and Production Management* 22, 656-79.
- Shaw, N.E., Burgess, T.F., Hwang, H.B. and De Mattos, C., 2001. Revitalizing new process development in the UK fine chemicals industry. *International Journal of Operations and Production Management* 21, 1133-51.
- Shenhar, A.J., 2001. One size does not fit all projects: exploring classical contingency domains. *Management Science* 47, 394-414.
- Sheu, C., McHaney, R. and Babbar, S., 2003. Service process design flexibility and customer waiting time. *International Journal of Operations and Production Management* 23, 901-17.
- Sheu, C., Yen, H.R. and Chae, B., 2006. Determinants of supplier-retailer collaboration: Evidence from an international study. *International Journal of Operations and Production Management* 26, 24-49.
- Siemieniuch, C.E. and Sinclair, M.A., 2004. CLEVER: A process framework for knowledge lifecycle management. *International Journal of Operations and Production Management* 24, 1104-25.
- Silverman, B.G., 1992. Evaluating and refining expert critiquing systems: A methodology. *Decision Sciences* 23, 86-110.
- Silvestro, R. and Silvestro, C., 2003. New service design in the NHS: An evaluation of the strategic alignment of NHS Direct. *International Journal of Operations and Production Management* 23, 401-417.
- Simons, Jr., J.V. and Russell, G.R., 2002. A case study of batching in a mass service operation. *Journal of Operations Management* 20, 577-592.
- Singer, M. and Donoso, P., 2007. Internal supply chain management in the Chilean sawmill industry. *International Journal of Operations and Production Management* 27, 524-37.
- Smaros, J., 2007. Forecasting collaboration in the European grocery sector: observations from a case study. *Journal of Operations Management* 25, 702-716.

- Sousa, R. and Voss, C.A., 2001. Quality management: Universal or context dependent? *Production and Operations Management* 10, 383-404.
- Sousa, R. and Voss, C.A., 2007. Operational implications of manufacturing outsourcing for subcontractor plants: An empirical investigation. *International Journal of Operations and Production Management* 27, 974-997.
- Sousa, R., 2003. Linking quality to manufacturing strategy: An empirical investigation of customer focus practices. *Journal of Operations Management* 21, 1-18.
- Spencer, M.S. and Guide, V.D., 1995. An exploration of the components of JIT: Case study and survey results. *International Journal of Operations and Production Management* 15, 72-83.
- Spina, G. and Zotteri, G., 2000. The implementation process of customer-supplier partnership: Lessons from a clinical perspective. *International Journal of Operations and Production Management* 20, 1164-77.
- Spring, M. and Dalrymple, J.F., 2000. Product customization and manufacturing strategy. *International Journal of Operations and Production Management* 20, 441-467.
- Sroufe, R., Curkovic, S., Montabon, F. and Melnyk, S.A., 2000. The new product design process and design for environment "crossing the chasm". *International Journal of Operations and Production Management* 20, 267-291.
- Staughton, R. and Johnston, R., 2005. Operational performance gaps in business relationships. *International Journal of Operations and Production Management* 25, 320-332.
- Stock, G.N. and Tatikonda, M.V., 2004. External technology integration in product and process development. *International Journal of Operations and Production Management* 24, 642-665.
- Stoop, P.P.M. and Wiers, V.C.S., 1996. The complexity of scheduling in practice. *International Journal of Operations and Production Management* 16, 37-49.
- Storey, J., Emberson, C. and Reade, D., 2005. The barrier to customer responsive supply chain management. *International Journal of Operations and Production Management* 25, 242-260.
- Storey, J., Emberson, C., Godsell, J. and Harrison, A., 2006. Supply chain management: Theory, practice and future challenges. *International Journal of Operations and Production Management* 26, 754-774.
- Stratman, J.K., Roth, A.V. and Gilland, W.G., 2004. The deployment of temporary production workers in assembly operations: a case study of the hidden costs of learning and forgetting. *Journal of Operations Management* 21, 689-703.

- Strijbosch, L.W.G., Heuts, R.M.J. and Luijten, M.L.J., 2002. Cyclical packaging planning at a pharmaceutical company. *International Journal of Operations and Production Management* 22, 549-74.
- Stuart, F.I. and Tax, S., 2004. Toward an integrative approach to designing service experiences lessons learned from the theatre. *Journal of Operations Management* 22, 609-627.
- Sueyoshi, T., 1997. Measuring efficiencies and returns to scale of Nippon Telegraph & Telephone in production and cost analyses. *Management Science* 43, 779-96.
- Swamidass, P.M., Baines, T. and Darlow, N., 2001. The role of manufacturing and marketing managers in strategy development: Lessons from three companies. *International Journal of Operations and Production Management* 21, 933-49.
- Swamidass, P.M., Darlow, N. and Baines, T., 2001. Evolving forms of manufacturing strategy development. *International Journal of Operations and Production Management* 21, 1289-304.
- Swink, M. and Hegarty, W.H., 1998. Core manufacturing capabilities and their links to product differentiation. *International Journal of Operations and Production Management* 18, 374-90.
- Swink, M. and Robinson, E.P., 1997. Complexity factors and intuition-based methods for facility network design. *Decision Sciences* 28, 583-614.
- Tachizawa, E.M., and Thomsen, C.G., 2007. Drivers and sources of supply flexibility: An exploratory study. *International Journal of Operations and Production Management* 27, 1115-1136.
- Tan, K.H. and Platts, K., 2003. Linking objectives to actions: A decision support approach based on cause and effect. *Decision Sciences* 34, 569-93.
- Taskinen, T and Smeds, R., 1999. Measuring change project management in manufacturing. *International Journal of Operations and Production Management* 19, 1168-82.
- Tassabehji, R., Taylor, W.A., Beach, R. and Wood, A., 2006. Reverse e-auctions and supplier-buyer relationships: An exploratory study. *International Journal of Operations and Production Management* 26, 166-184.
- Tatsiopoulos, I.P., Ponis, S.T., Hadziliadis, E.A. and Panayiotou, N.A., 2002. Realization of the virtual enterprise paradigm in the clothing industry through E-Business Technology. *Production and Operations Management* 11, 516-30.
- Thilander, M., 1992. Flexible production in the chemical industry - a question of competence. *International Journal of Operations and Production Management* 12, 147-167.
- Thomke, S.H., 1998. Managing experimentation in the design of new products. *Management Science* 44, 743-62.

- Thompson, P. and Wallace, T., 1996. Redesigning production through team-working case studies from the Volvo truck corporation. *International Journal of Operations and Production Management* 16, 103-118.
- Tontini, G. Silveira, A., 2007. Identification of satisfaction attributes using competitive analysis of the improvement gap. *International Journal of Operations and Production Management* 27, 482-98.
- Towers, N., Knibbs, A. and Panagiotopoulos, N., 2005. Implementing manufacturing resource planning in a Greek aerospace company. *International Journal of Operations and Production Management* 25, 277-289.
- Tranfield, D. and Smith, S., 1998. The strategic regeneration of manufacturing by changing routines. *International Journal of Operations and Production Management* 18, 114-31.
- Tranfield, D. and Smith, S., 2002. Organization design for team-working. *International Journal of Operations and Production Management* 22, 471-491.
- Tukana, S. and Weber, R., 1996. An empirical test of the strategic-grid model of information systems planning. *Decision Sciences* 27, 735-64.
- Twigg, D., 1998. Managing product development within a design chain. *International Journal of Operations and Production Management* 18, 508-20.
- Ulrich, K., Sartorius, D., Pearson, S. and Jakiela, M., 1993. Including the value of time in design-for-manufacturing decision making. *Management Science* 39, 429-47.
- Uzumeri, M. and Nembhard, D., 1998. A population of new learners: a new way to measure organizational learning. *Journal of Operations Management* 16, 515-28.
- Uzzi, B. and Lancaster, R., 2003. Relational embeddedness and learning: The case of bank loan managers and their clients. *Management Science* 49, 383-399.
- Van Der Bij, H. and Van Ekert, J.H.W., 1999. Interaction between production control and quality control. *International Journal of Operations and Production Management* 19, 674-92.
- Van der Meer, R. and Gudim, M., 1996. The role of group working in assembly organization. *International Journal of Operations and Production Management* 16, 119-140.
- Van Der Vaart, T. and Van Donk, D.P., 2006. Buyer-focused operations as a supply chain strategy. *International Journal of Operations and Production Management* 26, 8-23.
- Van Donk, D.P. and Van Dam, J. P., 1996. Structuring complexity in scheduling: A study in a food processing industry. *International Journal of Operations and Production Management* 16, 54-63.

- Van Donk, D.P., and Van der Vaart, T., 2007. Responsiveness through buyer-focused cells: Exploring a new supply strategy. *International Journal of Operations and Production Management* 27, 1362-1379.
- Van Hoek, R.I., 2001. The contribution of performance measurement to the expansion of third party logistics alliances in the supply chain. *International Journal of Operations and Production Management* 21, 15-30.
- Van Hootegem, G., Huys, R. and Delarue, A., 2004. The sustainability of teamwork under changing circumstances. *International Journal of Operations and Production Management* 24, 773-91.
- Van Witteloostuijn, A., 1998. Bridging behavioral and economic theories of decline: Organizational inertia. *Management Science* 44, 501-19.
- Venkataraman, R., 1996. Frequency of re-planning in a rolling horizon master production schedule for a process industry environment: A case study. *Production and Operations Management* 5, 255-65.
- Vereecke, A. and Van Dierdonck, R., 2002. The strategic role of the plant: Testing Ferdows's model. *International Journal of Operations and Production Management* 22, 692-514.
- Vereecke, A., Pandelaere, E., Deschoolmeester, D. and Stevens, M., 2003. A classification of development programs and its consequences for program management. *International Journal of Operations and Production Management* 23, 1279-1290.
- Verma, D. and Sinha, K.K., 2002. Toward a theory of project interdependencies in high tech R&D environments. *Journal of Operations Management* 20, 451-468.
- Vineyard, M., Amoako-Gyampah, K. and Meredith, J.R., 2000. An evaluation of maintenance policies for flexible manufacturing systems: A case study. *International Journal of Operations and Production Management* 20, 409-26.
- Von Hippel, E., 1998. Economics of product development by users: The impact of "sticky" local information. *Management Science* 44, 629-44.
- Voordijk, H., 1999. Obstacles and preconditions for logistics and manufacturing improvements in Africa - a case study. *International Journal of Operations and Production Management* 19, 293-307.
- Voordijk, H., 1999. Obstacles and preconditions for logistics and manufacturing improvements in Africa - a case study. *International Journal of Operations and Production Management* 19, 293-307.
- Voordijk, H., 2000. The changing logistical system of the building materials supply chain. *International Journal of Operations and Production Management* 20, 823-841.

- Voordijk, H., Meijboom, B. and Haan, J.D., 2006. Modularity in supply chains: A multiple case study in the construction industry. *International Journal of Operations and Production Management* 26, 600-618.
- Voss, C.A. and Winch, G.M., 1996. Including engineering in operations strategy. *Production and Operations Management* 5, 78-90.
- Voss, C.A., 2003. Rethinking paradigms of service: Service in a virtual environment. *International Journal of Operations and Production Management* 23, 88-104.
- Wafa, M.A. and Yasin, M.M., 1998. A conceptual framework for effective implementation of JIT: An empirical investigation. *International Journal of Operations and Production Management* 18, 1111-27.
- Waller, M.J., Gupta, N. and Giambastista, R.C., 2005. Effects of adaptive behaviors and shared mental models on control crew performance. *Management Science* 50, 1534-44.
- Wallin, C., Rungtusanatham, M.J. and Rabinovich, E., 2006. What is the "right" inventory management approach for a purchased item? *International Journal of Operations and Production Management* 26, 50-68.
- Watson, E.F., Chawda, P.P. McCathy, B., Drevna, M.J. and Sadowski, R.P., 1998. A simulation metamodel for response-time planning. *Decision Sciences* 29, 217-41.
- Webster, M., Alder, C. and Muhlemann, A.P., 1997. Subcontracting within the supply chain for electronics assembly manufacture. *International Journal of Operations and Production Management* 17, 827-841.
- Webster, M., Muhlemann, A.P. and Alder, C., 2000. Decision support for the scheduling of subcontract manufacture. *International Journal of Operations and Production Management* 20, 1218-31.
- Webster, M., Sugden, D.M. and Tayles, M.E., 2004. The measurement of manufacturing virtuality. *International Journal of Operations and Production Management* 24, 721-742.
- West, P. and Burnes, B., 2000. Applying organizational learning: Lessons from the automotive industry. *International Journal of Operations and Production Management* 20, 1236-1252.
- Weston, R., 1999. Model-driven, component-based approach to reconfiguring manufacturing software systems. *International Journal of Operations and Production Management* 19, 834-48.
- Wezel, W., Van Donk, D. and Gaalman, G., 2006. The planning flexibility bottleneck in food processing industries. *Journal of Operations Management* 24, 287-300.
- Wilk, E.D.O and Fensterseifer, J.E., 2003. Use of resource-based view in industrial cluster strategic analysis. *International Journal of Operations and Production Management* 23, 995-1009.

- Williams, T., Maull, R. and Ellis, B., 2002. Demand chain management: Constraints and development from global aerospace supply webs. *Journal of Operations Management* 20, 691-706.
- Wu, Z. and Choi, T.Y., 2005. Supplier-supplier relationships in the buyer-supplier triad: Building theories from eight case studies. *Journal of Operations Management* 24, 27-52.
- Xie, J., Song, X.M., Stringfellow, A., 1998. Inter-funtional conflict, conflict resolution styles, and new product success: A four culture comparison. *Management Science* 44, S192-220.
- Yang, T., Su, C.T. and Hsu, Y.R., 2000. Systematic layout planning: a study on semiconductor wafer fabrication facilities. *International Journal of Operations and Production Management* 20, 1360-75.
- Yang, Z., Jun, M. and Peterson, R.T., 2004. Measuring customer perceived online service quality. *International Journal of Operations and Production Management* 24, 1149-62.
- Yasin, M.M., Wafa, M.A. and Small, M.H., 2001. Just-in-time implementation in the public sector. *International Journal of Operations and Production Management* 21, 1195-1204.
- Yasin, M.M., Wafa, M.A., 1996. An empirical examination of factors influencing JIT success. *International Journal of Operations and Production Management* 16, 19-35.
- Yauch, C.A. and Steudel, H.J., 2002. Cellular manufacturing for small businesses: Key cultural factors that impacts the conversion process. *Journal of Operations Management* 20, 593-617.
- Yu, B., Harding, J.A. and Popplewell, K., 2000. A reusable enterprise model. *International Journal of Operations and Production Management* 20, 50-66.
- Yung, W.K and Chan, D.T., 2003. Application of value delivery system (VDS) and performance benchmarking in flexible process reengineering. *International Journal of Operations and Production Management* 23, 300-15.
- Yusof, S.M. and Aspinwall, E., 2000. TQM implementation issues: review and case study. *International Journal of Operations and Production Management* 20, 634-50.
- Zantinga, J.T., 1993. Improvements in Spanish factories: Towards a JIT philosophy? *International Journal of Operations and Production Management* 13, 40-49.
- Zellmer-Bruhn, M.E., 2003. Interruptive events and team knowledge acquisition. *Management Science* 49, 514-28.
- Zhang, X. and Chen, R., 2006. Forecast driven or customer order driven? An empirical analysis of the Chinese automotive industry. *International Journal of Operations and Production Management* 26, 668-688.

- Zhang, Z. and Sharifi, H., 2000. A methodology for achieving agility in manufacturing organizations. *International Journal of Operations and Production Management* 20, 496-514.
- Zirpoli, F. and Caputo, M., 2002. The nature of buyer-supplier relationships in co-design activities: The Italian auto industry case. *International Journal of Operations and Production Management* 22, 1389-1410.
- Zomerdijk, L.G. and de Vries, J., 2007. Structuring front office and back office work in service delivery systems: An empirical study of three design decisions. *International Journal of Operations and Production Management* 27, 108-131.
- Zopounidis, C. and Doumpos, M., 1999. Stock evaluation using a preference disaggregation methodology. *Decision Sciences* 30, 313-36.