

# Practical relevance of theory-driven supply chain management research

## Evidence from China

Xiaohong Liu

*Business School, Central University of Finance and Economics,  
Beijing, China, and*

Alan C. McKinnon

*Department of Logistics, Kuehne Logistics University, Hamburg, Germany*

### Abstract

**Purpose** – The purpose of this paper is to examine the extent to which theory-driven supply chain management (SCM) research is of practical relevance. It does this on the basis of empirical research in China.

**Design/methodology/approach** – A two-pronged approach was adopted. First, 57 theory-driven SCM studies based in China published in ten leading journals between 2006 and 2015 were surveyed. Second, a questionnaire survey of Chinese managers identified their practical concerns and assessed their alignment with the content of the academic papers.

**Findings** – Some academic research on SCM does probe industry-relevant problems. From an academic perspective, this confirms that theory-driven SCM research can be of practical value. Overall, however, the survey found that much of the SCM research works do not translate into actionable knowledge for practitioners. Academic research in this field could pursue a more pragmatic path and enhance its practical utility. Two critical components of this path, “practical observation” and “practical verification,” are highlighted.

**Research limitations/implications** – As the literature review was confined to ten leading journals, relevant papers in other journals were possibly excluded. The research was confined to China and so the results are not necessarily generalizable to other countries.

**Practical implications** – Chinese academics and practitioners could collaborate in defining research agendas and directions. This would help researchers direct their theory building to issues of relevance to business.

**Originality/value** – To the best of the authors’ knowledge, this is the first study to investigate the relevance of theory-driven SCM research from academic and practitioner perspectives in China. It shows how this research might have greater impact on business practice.

**Keywords** China, Management research, Mixed method, Supply chain processes

**Paper type** Research paper

### 1. Introduction

Supply chain management (SCM) is an applied science. Thus, SCM research is usually intended to address practical supply chain problems in the real world by applying existing scientific knowledge. In order to explore diverse issues, problems and phenomena affecting real supply chains, multiple theories have proven useful in SCM research (Defee *et al.*, 2010; Halldórsson *et al.*, 2015; Kauppi, 2013; Ketchen and Hult, 2007; Miles and Snow, 2007; Stock, 2009; Walker *et al.*, 2015). The application of theory has not only improved the rigor of an SCM research, it has advanced the maturity of SCM as a scientific discipline (Carter, 2011; Fawcett and Waller, 2011; Mentzer, 2008; Stock, 2009). Nevertheless, despite the highly conceptualized theoretical relevance of SCM research and its significance to academics, the strengthening of SCM’s theoretical foundations has not necessarily increased its relevance

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to practitioners. For example, the nature of SCM phenomena is complex, and interrelated with multilevel nesting (Carter *et al.*, 2015). As recognized, the majority of an SCM research continues to conceptualize research questions at a single level; thus, a multilevel theorization and analysis of the SCM reality, to a large extent, is still lacking (Carter *et al.*, 2015). This situation makes it challenging for practitioners to understand the complexity of real-world SCM, since they are surrounded by a variety of multilevel phenomena daily.

Theory is “a coherent description, explanation and representation of observed or experienced phenomena” (Gioia and Pitre, 1990, p. 587). Its relevance to practice has been a longstanding theme in research (Hambrick, 1994; Thomas and Tymon, 1982). The theoretical principles of research, as MacKenzie *et al.* (2007) have reinforced, are not only intended to reveal the practical world but also to alter practices within it. This is also termed as the “performativity” of scientific theories (Kieser *et al.*, 2015; MacKenzie *et al.*, 2007). In this sense, when practical problems have not been effectively tackled by the application of theoretical approaches, the effects cannot be said to be actionable.

Therefore, this paper investigates the practical relevance of theory-driven SCM research by posing the following questions:

*RQ1.* To what extent is current theory-driven SCM research of practical relevance?

*RQ2.* How can the practical utility of theory-driven SCM research be strengthened?

In answering the above questions, this study makes several contributions to the body of SCM knowledge. First, unlike the majority of existing studies, which view practical relevance solely from an academic perspective, this study takes a dyadic view, i.e. offering both academic and industry perspectives concerning the value of theory-driven SCM research. Second, it provides a pragmatic path to enhance the practical utility of theory-driven SCM research. Third, China represents a unique research setting for this empirical examination. As the largest transitional economy in the world, China provides a quasi-experimental setting within which theories can be efficiently assessed for applicability (Peng *et al.*, 2001), which is crucial to the present study.

The remainder of this paper will be structured as follows. The next section will present a literature review of SCM research, addressing the main concepts influencing practical relevance and identifying the research gap. Then, a two-pronged approach will be described, including a literature survey and a questionnaire survey with an SCM practitioners addressing practical issues. The research results will then be presented, followed by a comprehensive discussion of the research and managerial implications. Finally, a conclusion will be offered.

## 2. Literature review

This section reviews two research areas, namely the practical relevance of SCM research, and theory-driven empirical SCM research. The purpose of exploring the existing literature is to understand the potential practical application of theory-driven SCM research, and the reasons for its failure to meet that potential. An initial literature review forms the basis of the current study.

### 2.1 Practical relevance of SCM research

In the field of management research, practical relevance is directed toward the influence of research results on management practice, such as change, modification or confirmation of how managers think, talk and act (Nicolai and Seidl, 2010). Specific to the SCM area, as specified by Carter (2008b), it is understood that the knowledge created by an SCM academics can benefit managers by providing suggestions that can positively affect their practices when managing supply chains. Given its practice-rooted nature, the practical relevance of an SCM research is of great importance within the SCM community. As Flynn (2008) asserted, if it were not for problems affecting real supply chains, there would be no

need for SCM research. Davis-Sramek and Fugate (2007) claimed that SCM research is valuable because “it is not up in the clouds” (p. 11). Discussions on this issue have also been presented in journal publications (e.g. special issues on “Supply chain management theory and practice” in 2006 *International Journal of Production and Operations Management* (Cousins *et al.*, 2006); “The gap between research and practice in SCM” in 2008 *Journal of Supply Chain Management* (Carter, 2008a); and “Inquiry and the practice of theoretical conversation: engaging in dialogue to elaborate hidden connections” in 2013 *Journal of Business Logistics* (Fawcett and Waller, 2013).

Despite the consensus on its practical relevance, there remains a substantial gap between SCM research and actual practices. For example, by comparing managerially identifiable high-impact supply chain issues associated with research topics in leading academic journals, Thomas *et al.* (2011) discovered that some SCM issues are well aligned with general research trends, whilst others have been discussed somewhat less by researchers. According to many scholars (e.g. Carter, 2008b; Fawcett and Waller, 2013; Flynn, 2008; Mentzer, 2008), the reason for this gap is the fact that research and practice take place in different “worlds,” in which different activities, objectives and motivations of the two are assumed.

To resolve this problem, and thereby increase the usefulness and relevance of SCM research, various approaches have been suggested. These include building dialogue with the industrial world (Fawcett and Waller, 2013), initiating collaborative research with supply chain practitioners (Mentzer, 2008), addressing managerial implications in academic papers (Carter, 2008b), involving practitioners when determining research directions (Goldsby and Zinn, 2016) and improving the academic journal ranking system (Lambert and Enz, 2015; McKinnon, 2013, 2017).

Of the various solutions, the use of theories in SCM studies is considered to be a useful way of solving the issue of relevance, as will be shown in the next section.

## 2.2 Theory-driven empirical SCM research and practical utility

Theory-driven empirical research is “an approach to research that is driven to provide better insight and understanding into these and other issues by using empirical data to build and develop better theories. That is, the researcher starts with a theory [...] The researcher then uses the data to further build, test and modify the theory” (Melnik and Handfield, 1998, p. 312). In the field of an SCM, it is evident that there is an increasing tendency toward theory-driven empirical research. In their comprehensive review of the literature on theory usage in SCM research, Defee *et al.* (2010) found that approximately 53 percent of the surveyed articles were concerned with theories. The insights generated from these theory-driven studies, as Defee *et al.* (2010) demonstrated, are particularly useful for furthering our understanding of the supply chain issues being researched. For example, transaction cost economics (TCE), the most commonly identified theory, is used to address a number of issues, such as supply chain process integration (Chen *et al.*, 2009), and interfirm collaboration (Richey and Autry, 2009), among others. As a result of the increasing trend toward sustainable SCM development, Touboulic and Walker (2015) investigated the theoretical perspectives of sustainable SCM research. They discovered that several popular imported macro theories (resource-based view (RBV), stakeholder theory and institutional theory) dominated; this has implications for the conceptualization of sustainable SCM. The application of these theories can help SCM researchers to identify contemporary thought, as embodied by current theories, thereby rendering the research more targeted and purposeful (Melnik and Handfield, 1998). Moreover, a theory increases our understanding and explains events and patterns that arise in SCM practices. In addition, the application of theories in empirical SCM studies is particularly important to the theoretical development of SCM discipline. Unlike many established disciplines, SCM is multidisciplinary, and lacks “home-grown” theories. This makes it possible for SCM researchers to borrow theories from

other disciplines for the purpose of research. As revealed by Defee *et al.* (2010), the theories used by researchers originate from several theoretical domains, such as strategic management (e.g. RBV), economics (e.g. TCE) and organizational behavior (contingency theory). To improve the maturity of the SCM discipline, academics in the field of SCM have been calling for SCM to have its own “theory” when advancing research into theory and practice (Craighead *et al.*, 2016; Carter, 2011; Cousins *et al.*, 2006; Stock, 2009).

However, although their theoretical significance is being addressed by academic SCM, the practical impact of theory-driven empirical SCM studies is ill-identified, particularly by the business world. A comprehensive review of the literature relating to SCM reveals that there is a lack of evidence in this regard, even though the practical utility of theory in SCM research is strongly advocated by SCM scholars (e.g. Craighead *et al.*, 2016; Fawcett and Waller, 2011; Sweeney *et al.*, 2015; Walker *et al.*, 2015).

As “the ultimate proof of the utility and power offered by theory-driven empirical research is to see it being applied in studying empirical problems” (Melnik and Handfield, 1998, p. 318), the theoretical contribution of scientific research should not only be scientifically useful, but should also be useful on a practical level, as suggested by Corley and Gioia (2011). In their view, scientific utility is “an advance that improves conceptual rigor or the specificity of an idea and/or enhances its potential to be operationalized and tested,” while practical utility is considered as “arising when theory can be directly applied to the problems practicing managers and other organizational practitioners face” (p. 18). For SCM research to achieve both scientific utility and practical utility, Craighead *et al.* (2016) stated that there is a need for more middle-range theorizing in supply chain studies. Fawcett and Waller (2011) also noted that the good theoretical SCM research should also influence the way in which we view the reality of SCM and should lead to better understanding and decision making.

### 3. Research design

As indicated at the outset of this paper, the empirical investigation described in this research was undertaken in China, an emerging economy. Driven by a favorable business environment, Chinese SCM has developed rapidly, in particular since 2001 when China joined the WTO. As reported by China Supply Chain Development Report (2017) (CFLP, 2017), many organizations and firms currently implement SCM practices advancing their progress in planning, business initiatives and technology innovation. As stated above, a two-pronged approach, including a literature survey of theory-driven SCM research based in China and a questionnaire survey collecting the views of Chinese SCM practitioners, was followed to examine current practices. The aim of literature survey was to identify academic concerns about SCM, whereas the questionnaire survey attempted to assess the extent to which SCM practitioners consider academic research on the subject is relevant to their needs.

#### 3.1 Literature survey

The first phase was a literature survey of articles written in ten leading journals in the fields of SCM, operations management and logistics during the period of 2006–2015. The ten journals are: *International Journal of Logistics Management (IJLM)*, *International Journal of Logistics Research and Applications (IJLRA)*, *International Journal of Physical Distribution & Logistics Management (IJPDLM)*, *International Journal of Operations & Production Management (IJOPM)*, *Journal of Business Logistics (JBL)*, *Journal of Operations Management (JOM)*, *Journal of Purchasing & Supply Management (JPSM)*, *Journal of Supply Chain Management (JSCM)*, *Production and Operations Management (POM)*, *Supply Chain Management: An International Journal (SCMIJ)*. As the selected journals are well-known as high-quality sources of empirical SCM research, they provide an ideal basis upon which to establish current concerns, and so, will be instrumental to the present study.

To identify suitable articles, the screening process was undertaken twice. In the first stage, selected keywords, such as “supply chain,” “SCM” and other variations; “China” or “Chinese,” were applied to the title, abstract and keywords for all the papers in the journals. In total, 127 papers pertaining to SCM research in the Chinese context were identified. A further review of paper type resulted in two papers being excluded because they were solely literature reviews rather than empirical research. In the second stage, a close examination of the content of the 125 empirical papers was performed. In total, 57 articles were grounded in existing theories, and these were ultimately selected as the literature survey sample.

A content analysis approach was used to evaluate the sampled articles. In the present study, the content analysis involved first identifying the key research issues in the surveyed articles and then closely examining those articles to reveal the topics covered. For efficiency, the topics were categorized into 14 groups for analysis and to serve as the basis of the practitioner survey. Second, four other research attributes were examined, namely, theory usage, unit of analysis, sources of data and research methods. The aim of this examination was to identify the way researchers framed their investigations. As the nature of SCM phenomena is complex, a careful inspection of research attributes could provide a deeper understanding of the complexity of the real-world SCM setting and potential utility of theory. In this study, theory usage is concerned with the theoretical groundings of research; unit of analysis and sources of data refer to the level of the supply chain that is researched and the unit/level of data collected, respectively, research methods relates to the methodological approach used by researchers to investigate the issues posed and the theories applied. Third, the content categories classified were evaluated.

### 3.2 Questionnaire survey

Based upon the 14 categories identified from the literature survey, a questionnaire survey was designed to capture a practical view on the 14 categories and further establish a practical focus for the SCM activities. The items in the questionnaire were based on the findings of the literature survey, which was conducted during the first stage of the research. Both closed- and open-ended questions were included. The questionnaire was pre-tested with five SCM professionals. The aim of the pre-test was to detect possible shortcomings, such as ambiguous wording and inapplicable questions, and also to assess its appropriateness for companies. After pre-testing and further minimal revisions, the final version of the questionnaire was prepared and distributed.

The questionnaire survey was carried out in Guangdong province, a coastal area situated in the southeastern region of China. According to the national statistical report, Guangdong province has had the highest GDP in China for the past 27 years. Primarily because of this higher degree of economic development, SCM thinking and practices are now widely applied in industry. This therefore ensures the quality of the data. Three SCM associations, which are influential in the industrial and SCM community in Guangdong province, participated in this survey. A list of 1,118 members of these three associations was used to construct the sampling frame, and the online questionnaire was distributed to these members. Included was a cover letter that outlined the purposes of the survey and provided assurances of confidentiality and anonymity, as well as a promise that a report of survey results would be sent to the respondents after completion of the study. Respondents were given two weeks to complete and return the questionnaire. In total, 152 responses were received, giving a response rate of 13.6 percent. After screening, all of the questionnaires returned were considered usable and thus were included in the data analysis.

To ensure the accuracy of research, non-response bias was tested. Based on the recommendation of Armstrong and Overton (1977), the non-response bias in this study was examined for early response ( $n = 50$ ) and late response ( $n = 30$ ) in terms of surveyed variables. Given the non-parametric nature of the variables, the Mann-Whitney test was

used to assess the difference between two groups in both samples. The test results showed that, at the 0.05 level, there were no significant differences between the mean scores of the early and late responses in both samples. This suggests that the non-response bias is not a problem in this study.

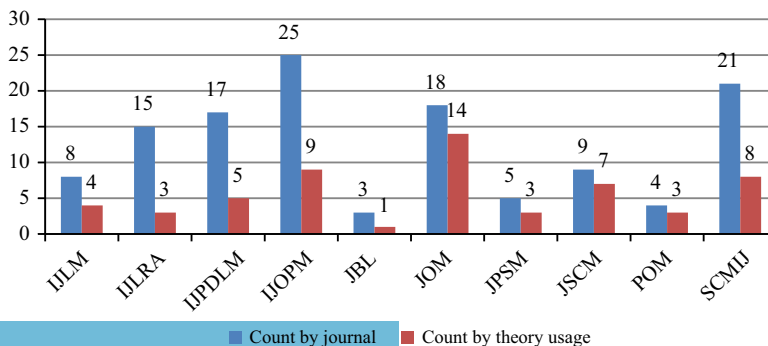
#### 4. Research results

This section will report the findings from the two sequential surveys, i.e. a literature survey with academics and a questionnaire survey with practitioners. To address the research questions proposed and provide an enlightening discussion on the practical relevance of theory-driven SCM research, the results of the two surveys were carefully examined with a dyadic view from both academics and practitioners in relation to the issues under study.

##### 4.1 Literature survey with academics

**4.1.1 Distribution of the surveyed articles by theory usage.** The distribution of the 125 articles by journal, and by theory usage, respectively, is presented in Figure 1. Of the ten journals (as shown in the diagram), during the period of 2006–2015, *IJOPM* published the most articles, with 25 relating to China-based SCM, followed by *SCMIJ* and *JOM* with 21 and 18 articles, respectively. Of the 125 articles, 57(45.6 percent) explicitly apply theories to their studies. *JOM* has the highest frequency at 14 articles; *IJOPM* is the second with 9 articles, followed by *SCMIJ* with 8. To some extent, this result, i.e. less than half frequency, shows theory usage in China-based SCM research is infrequent.

**4.1.2 Research issues, theory usage and methodological approach.** Table I presents the results of the literature survey analyzed using content analysis, in which the research issues, theory usage, unit of analysis, sources of data and research methods are outlined. As shown in Table I, the 14 categories identified include not only some typical SCM questions, such as supplier management and supply chain relationship management, but also additional new tendencies, such as green SCM, environmental sustainability and supply chain risk management. To a great extent, this reflects the fact that the academic concerns emerging from theory-driven SCM studies based in China correspond with the general trend of contemporary SCM research. Of the 14 categories, supply chain relationship management and logistics outsourcing/third-party logistics were the subjects of greatest interest. Relationship management in China is termed *Guanxi* in Chinese and attracted the attention of many researchers. This research finding, to some extent, indicates that SCM researchers have sought to explain the impact of Chinese attributes on SCM by embracing extant theories. In recent years, the logistics service market in China has undergone rapid development. As service suppliers, Chinese logistics service providers (LSPs) are evolving



**Figure 1.** Distribution of the surveyed papers by theory

**Table I.**  
Research attributes of  
14 categories

S.No.	Category	Theory	Unit of analysis	Sources of data	Research method
1	Supply chain relationship management	Information overload theory; institutional theory; loose coupling theory; justice theory; Porter's view; RBV; RDT; relational view; social exchange theory; social network theory; TCE; the co-operation perspective	Supply chain	One entity; two entities	Case studies; questionnaire survey
2	Logistics outsourcing/third-party logistics	Customer value theory; evolutionary theory; network theory; Porter's competitive advantage; RBV; RDT; TCE	Organization; supply chain	Organization level (one entity; two entities); supply chain level (one entity)	Questionnaire survey; focus group; in-depth interviews
3	Green SCM	Contingency theory; institutional theory; NRBV; Porter's view; stakeholder theory; TCE, theory of planned behavior; theory of perceived risk	Organization; supply chain	Organization level (one entity; multiple entities); supply chain level (one entity)	In-depth interviews; questionnaire survey
4	Supply chain integration/collaboration	Contingency theory; evolutionary view; institutional theory; Porter's view; RBV; social exchange theory; TCE	Supply chain	Supply chain level (one entity)	In-depth interviews, questionnaire survey; case studies
5	Purchasing and supplier management	Agency theory; interorganisational view; RBV; social capital theory; organizational; systems perspectives; TCE, TVP (TCE and value theory)	Function; organization	Function (one entity); organization level (one entity; two entities)	Questionnaire survey
6	Supply chain network configuration/organization/governance	Contingency theory; institutional theory; organization ownership theory; RBV, social network perspective	Organization; supply chain	Organization level (one entity); supply chain level (three entities)	Multiple case studies; questionnaire survey; face-to-face interviews and telephone interviews
7	IT	RBV; social network theory	Function	One entity	Questionnaire survey

(continued)

S.No.	Category	Theory	Unit of analysis	Sources of data	Research method
8	Operational capability and production efficiency	Absorptive capacity theory; institutional theory	Function	One entity	Questionnaire survey
9	Distribution service network design	Contingency theory; social exchange theory; TCE	Function; supply chain	One entity	Multiple case studies; in-depth interviews, survey
10	Information sharing	Communication theory; social capital theory	Function	One entity	Questionnaire survey
11	Risk management and control	Justice theory; RBV; TCE	Organization	One entity	Face-to-face interviews; case study
12	Strategic planning and competitive advantage	Dynamic capability; organizational learning; organizational theory; RBV; red queen effect	Organization	One entity	Survey questionnaire; case study
13	Quality management/service quality/customer services	Organizational behavior	Individual	One entity	Survey
14	Customer demand, planning and forecasting	System dynamics theory	Supply chain	Multiple entities	Second hand data

Table I.



into supply chain orchestrators. The role that LSPs play has not only been coordinated with other chain members in terms of customer supply chains, but has also proactively informed strategic planning, and initiated value-added services for supply chains. This finding indicates that SCM researchers consider it most important to explore the rationale behind logistics services, drawing on the extant theories. The 14 categories outlined will be examined further in view of practitioners' responses to the questionnaire survey.

The literature survey also shows the application of a diverse range of theories to resolve a wide variety of research issues concerning Chinese SCM practices. These theories are "borrowed" from different domains, such as microeconomics (e.g. agency theory and TCE), strategic management (e.g. RBV), organization and organizational behavior (e.g. contingency theory and stakeholder theory) and sociology/anthropology (e.g. social capital theory and social exchange theory). This result indicates that the study of China-based SCM is an interdisciplinary endeavor, as is true of general SCM research. In respect to the form of the theory usage, sometimes a single theory and at others multiple theories were employed to explain the various substantive issues raised. In addition, as presented in Table I, various theories were applied to explain the same phenomenon. To some extent, the usage of multiple theoretical groundings indicates that the Chinese SCM phenomenon is complex, with the consequence that a single theoretical approach might not adequately illuminate the context; thus, an approach embracing theoretical heterogeneity is essential. The findings corroborate the study taken by Liu and McKinnon (2016), in which a multi-theory basis of research on Chinese SCM practices was explored. In general, an examination of theory usage reveals the emergence of theory-driven SCM research based in China is not only conducive to furthering knowledge creation regarding China-based SCM, but also seeks to test and refine the applicability of "borrowed" theories in the Chinese context.

Given the different foci of research issues and theory usage, the unit of analysis adopted by researchers was understandably different, and included the individual, function, organization and supply chain, as shown in Table I. As stated previously, Carter *et al.* (2015) illustrated an SCM phenomena as a hierarchical nesting, in which different levels, including individuals, groups/teams, functions, organizations and supply chains, are interrelated, forming multilevel phenomena. This finding provided further evidence of this reality. With respect to the sources of data collection, the cases are also different. As shown in Table I, a majority of surveyed articles collected data from one entity, several from two entities and a few from multiple entities. For instance, out of ten articles investigating supply chain relationship management at the supply chain level, six studies relied on data from one entity, while the other four used two entities for the research. Likewise, in the category of supply chain integration/collection, all seven articles relied on one entity, though, and the unit of analysis was the supply chain. It should be noted that collecting units of data that reflect only a part of the units of analysis might not fully illustrate the phenomena being study. As such, biased research results might occur.

With regard to the research methods employed, a questionnaire survey was the most commonly used, accounting for 82.5 percent of the surveyed articles. Furthermore, 10.5 percent adopted a case study method, 5.2 percent of studies used interviews, such as in-depth interviews, telephone interviews and focus group interviews and 1.8 percent used financial statement data listed on stock exchanges. For quantitative analysis, multivariate statistical analysis tools, such as exploratory factor analysis, confirmatory factor analysis, structural equation modeling and hierarchical multivariate regression, were used. An interpretive approach was used in qualitative analysis, such as case studies. The findings indicated that both qualitative and quantitative analyses were used to examine the research inquires and applied theories, taking predominantly a quantitative approach.

#### 4.2 Questionnaire survey with SCM practitioners in China

4.2.1 *Profile of responding companies.* The 152 respondents were drawn from different types of organizations, i.e. manufacturers (45 percent), retailers (23 percent), LSPs (15 percent), assemblers (8 percent), wholesalers (5 percent) and others (4 percent). The respondents currently hold a variety of managerial and operational positions and are engaged in various activities across the supply chain, as illustrated in Table II.

4.2.2 *Practical concerns.* The respondents were asked about issues that currently concerned them when engaging in SCM activities. The 14 categories obtained from the literature survey formed the basis of this enquiry. As presented in Table III, purchasing and supplier management and customer planning and forecasting were the two issues drawing the greatest concern, as perceived by practitioners. This finding suggests that supply management and demand management are two key components Chinese practitioners consider when managing supply chains. In addition, as a typical issue in SCM, supply chain relationship management triggered a considerable response in view of its third position in the survey. In any case, this finding indicates that the element of "relation" or "*Guanxi*" termed in China is highly concerned by Chinese practitioners in managing supply chains.

Supply chain activities	Count (%)
Manufacturing	37/24.3
Marketing and sales	31/20.4
Logistics (including warehousing/transport/packaging)	18/11.8
R&D	13/8.6
Purchasing and supplier management	12/7.9
Finance and accounting management	12/7.9
Strategy and planning	8/5.3
HRM	7/4.6
Administration	5/3.3
Business operations	3/2.0
Customer service	2/1.3
IT	2/1.3
Others	2/1.3

**Table II.**  
Supply chain  
activities performed  
by respondents

14 Categories	Practical concern (ranking by response)	Academic concern (ranking by count)
Purchasing and supplier management	1 (63.8%)	4 (8.8%)
Customer demand, planning and forecasting	2 (61.8%)	8 (1.8%)
Supply chain relationship management	3 (55.9%)	1 (17.5%)
Operational capability and production efficiency	4 (48.0%)	7 (3.5%)
Quality management/service quality and customer services	5 (44.1%)	8 (1.8%)
Supply chain collaboration and integration	6 (42.1%)	3 (12.3%)
Strategic planning and competitive advantage	7 (34.2%)	7 (3.5%)
Risk management and control	7 (34.2%)	7 (3.5%)
Logistics outsourcing/third-party logistics	8 (32.2%)	2 (15.8%)
Information sharing	9 (30.9%)	7 (3.5%)
Supply chain network configuration/organization/ governance	9 (30.9%)	5 (7.0%)
Distribution service network design	10 (28.9%)	7 (3.5%)
IT	11 (25.7%)	6 (5.3%)
Green SCM and environmental sustainability	12 (23.0%)	3 (12.3%)

**Table III.**  
Academic concern and  
practical concern  
in theory-driven  
China-based  
SCM studies

The least amount of concern was directed toward green SCM and environmental sustainability. Green SCM associated with the environmental sustainability has recently begun to emerge in China. Primarily as a result of its novelty, this issue is yet to garner much attention. In addition, IT is the second least mentioned concern. This finding probably indicates that the use of IT is not a problem given its widespread use. In addition, Table III also shows that, despite the extent of the academic interest, the 14 categories identified in the literature differ from those of practitioners, in general recognition of the 14 categories achieved on both sides.

*4.2.3 The effect of academic research on SCM practices.* The respondents were further asked if their companies drew on academic research, and if so which ones and for what purpose. In total, 74.3 percent of respondents expressed concerns about academic studies. The drivers behind this were varied also, e.g. "The aim is to know about the latest progress of the academic world on SCM," "To some extent, the research result is helpful for our company to improve business" and "It is expected that academic research could bring us some fresh ideas for our firm's development." A fourth expressed views, such as "The academic research is inapplicable to the practice," "The research results cannot resolve practical problems" and "Academic research is not timely." The finding shows that the views perceived of Chinese SCM practitioners regarding the impact of academic research on practical real-world application are diverse, and in some cases conflicting. Although 74.3 percent of respondents expressed an interest in academic research, 78.3 percent said that they would adopt benchmarking, and 62.5 percent of respondents claimed that they would draw on past experience in order to resolve problems. To some extent, this finding implies that academic research does not have a significant effect on problem solving.

*4.2.4 The effect of theory on SCM practices.* The respondents were also asked whether or not their companies drew on theories and, if so, which theories were used and for what purpose. In total, 80.3 percent respondents expressed their interest in learning about theories when performing SCM practice. For example, some stated that, in order to outperform rivals, the guidelines in Porter's competitive strategy could be used by companies to launch SCM initiatives. Several respondents indicated the usefulness of organizing learning theory, as this would help companies to adapt successfully to the changing business environment by acquiring knowledge relating to SCM activities. Porter's competitive strategy is a well-known theory that enables firms to achieve a competitive advantage by adopting three generic strategies. These strategies are: overall cost leadership, differentiation and focus (cost focus and differentiation focus) (Porter, 1980, 1985). Organizational learning theory focuses on the process of creating, retaining and transferring knowledge within an organization (Argyris and Schon, 1978). This theory suggests that the generated knowledge is useful for solving practical problems and allows the organization to remain competitive in an ever-changing environment. In the SCM field, organizational learning has been identified as a strategic resource for improving business performance in supply management (Hult *et al.*, 2003). The findings show that practitioners have an awareness of how existing theories can be used in practice.

The motivations to engage in learning theory are various, as stated. For example, "Theories informs practices," "Theory is instrumental to management improvement and efficiency" and "A sustainable development of a firm requires theory learning." One-fifth of respondents showed no interest in theories, offering different perceptions, such as "Practice is more important," "Theory is unable to catch up with the practical development" and "There is a discrepancy between theory and practice." To some extent, the findings indicate the differing perceptions of Chinese SCM practitioners in relation to the role theories play in influencing practice.

All the respondents were further asked about the effect of theory on SCM practices. The aim of doing so was to examine whether companies can acquire benefit from the

application of theories. The scale used to assess benefit was from 1 to 4, denoting “no help,” “slight help,” “moderate help” and “great help.” A mean value of 2.7 suggests companies can achieve benefit from the application of theory, but that few do so. This finding reveals that the help from the application of theory practitioners have obtained thus far is limited. In addition, despite a large quantity of respondents (80.3 percent) expressing an interest in theories, as presented above, the effect of theories on SCM practices is understood to be limited. This implies that theories do not play as substantial role among Chinese companies.

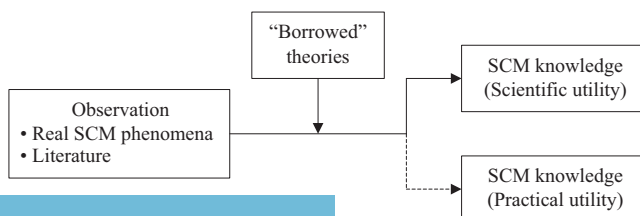
#### 4.3 The extent of practical utility in theory-driven SCM research based in China

As revealed by the literature survey, to provide a better understanding of Chinese SCM phenomena and the problems practitioners confront, SCM researchers have utilized different theories in the extant literature. With the “borrowed” theories, 47.4 percent (27/57) of surveyed papers addressed theoretical contributions/implications, presenting the scientific utility of studies. This not only improves the rigor of China-based SCM research, but also advances the maturity of this research stream. In addition, many researchers have delivered practical contributions. A close examination of the surveyed articles reveals that 73.7 percent (42/57) of surveyed papers provide managerial/practical implications for practitioners. As Corley and Gioia (2011) pointed out, “theory directed at practical importance would focus on prescriptions for structuring and organizing around a phenomenon and less on how science can further delineate or understand the phenomenon” (p. 18). In this regard, the findings reveal that SCM researchers have attempted to address the practical utility of their theoretical works.

However, although academics have made significant efforts toward achieving practical utility by leveraging theoretical principles, this aim cannot be said to have been achieved. As the questionnaire survey revealed, at least initially, practitioners would prefer to resolve problems and implement changes based on practice, even though they are aware of academic studies and theories. Figure 2 shows the current status of Chinese theory-driven SCM research. According to Corley and Gioia (2011), these findings represent a challenge for SCM scholars hoping to influence current and future SCM practice.

## 5. Discussions and implications

As indicated above, two sequential surveys, i.e. a literature review of theory-driven SCM research based in China and a questionnaire survey of Chinese SCM practitioners, have produced a number of interesting findings. Given that it is a discipline which is rooted in business practice, there is no doubt that SCM research needs to display practical relevance and demonstrate its applicability to problem solving in real-world SCM. However, as this is a discipline that is still evolving and lacks a unifying theory, the development of discipline-specific theories is an urgent priority (Carter, 2011; Stock, 2009). Thus, practical utility and SCM theory development are a key to ensuring the practical relevance of theory-driven SCM research. Figure 3 proposes a pragmatic path for strengthening the connection between academia and practice and, as a result, ensuring the practical utility of theory-driven SCM research; this path has been created on the basis of the evidence garnered from foregoing analysis.



**Figure 2.** Current status of theory-driven China-based SCM research

The implications of this path, and suggestions for future research, are discussed accordingly. Particular attention must be focused on two critical components of the path, namely “practical observation” and “practical verification.”

### 5.1 Research implications

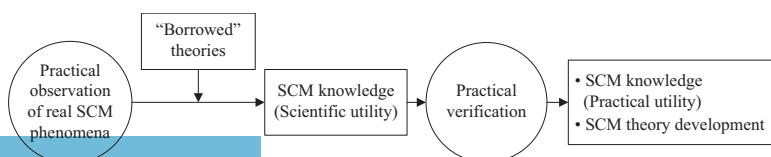
**5.1.1 Practical problem focus.** Given that this is an applied science, and the importance of the practical usefulness of theories, it is necessary to reiterate that theory-driven SCM research should be problem-oriented. To this end, SCM researchers should address problems that are, in any way, of some relevance to practice. Not only does this include identifying problems from practical reality (“practical observation”), it also, and more importantly, involves verifying that the empirical results of theory-driven SCM research are useful in practice (“practical verification”), as is shown in Figure 3.

**5.1.2 Practical observation.** Management scholars have already recognized the insufficiency of identifying practical problems only from the literature and have suggested that more interaction with the real world is required. For example, Hambrick (2005) claimed that “a practical problem focus, namely, through the observation of real-life phenomena, not from scholars struggling to find holes in the literature” is a useful approach when formulating theory (p. 124). Pursuing a similar approach, Kilduff (2006) expressed the view that “the route to good theory leads not through gaps in the literature but through an engagement with problems in the world” (p. 252). In the SCM field, SCM scholars (e.g. Carter, 2008b; Fawcett and Waller, 2011) have also emphasized the importance of incorporating academic research into real-world practice. This suggests that, in order to ensure the practical relevance of theory-driven SCM research, researchers must undertake a practical observation of real SCM phenomena.

Liu (2014) reaffirmed the necessity of researchers possessing knowledge of both the subject matter and the research context of China-based logistics research. This also applies to theory-driven SCM research, since theoretical explanations can inform either SCM issues or the context underlying those issues. In particular, as SCM problems are embedded in social, economic and environmental development, a deep understanding of the theoretical context in which that knowledge is embedded is required, as has been highlighted by Nicolai and Seidl (2010). This suggests that SCM researchers should understand the business environment from which problems originate. Thus, the implementation of a “practical observation” should take into account both practical SCM problems and the business context in which problems are embedded.

As is the case with the present study, in order to conduct a theory-driven study of SCM in the Chinese context, an in-depth observation of practical SCM problems (e.g. the top 14 categories identified by practitioners) is suggested. Furthermore, enhanced knowledge of the research context, i.e. China, would be extremely beneficial for theory-driven SCM research based in China. It is widely recognized that, due to its peculiar culture and transitional economy, China offers a unique opportunity for scholars conducting business research. Without an intimate understanding of the context, it is difficult to explain some of the phenomena that emerge from the research context.

In general, the close connection with the practical world could, according to Sandberg and Tsoukas (2011), improve the relevance of theories that rely on “practical rationality”



**Figure 3.**  
Toward a practical  
relevance for theory-  
driven SCM research

rather than on the more traditional notion of “scientific rationality.” This is, however, conducive to advancing the practical relevance of theory-driven SCM studies.

*5.1.3 Practical verification.* In terms of Corley and Gioia (2011), the focal problems in the field of SCM should be made more directly relevant to SCM practice by drawing more from the world of SCM practice and experience of real practitioners, rather than addressing problems from abstract derivations of hypothetical formulations. As has been revealed by our empirical analysis, the practical relevance of theory-driven SCM research is assumed by researchers, who tend to address practical/managerial implications on the basis of the empirical results in the literature survey. Nevertheless, from a problem-solving perspective, the industry survey does not provide relevant evidence of direct use for problem solving. However, such theory-driven SCM studies, according to Corley and Gioia (2011), can lead to advancing theory for theory’s sake, rather than for utility’s sake. In addition, the literature survey also revealed that the research design typically adopted for investigating theory-driven SCM research based in China cannot be said to be sufficient in respect to the unit of analysis employed and the sources of data relied upon. Thus, to ensure the usefulness of theory-driven SCM research for problem solving, an immediate “practical verification” of the empirical results is also important, in particular, for research that develops hypotheses based solely upon the literature, without any prior observation of SCM practices.

From a research perspective, a “practical verification” would enable researchers to give a better explanation of the findings of their empirical investigations. Moreover, a “practical verification” process would provide an opportunity for researchers to share the theories that they have used with SCM practitioners. As evidenced by the survey of SCM practitioners, the effect of theories on practice is limited. In addition, this process would eliminate the incorrect usage of both theories and methods in empirical research. Kieser *et al.* (2015) stressed that, in the context of management studies, the barrier to relevance could be caused by dominant theories or paradigms. More specifically, Donaldson (2002) pointed out the conflict that exists between the assumptions underlying the theories used in management studies and the aim of improving managerial practices. With respect to methods, Kieser *et al.* (2015) stated that the relevance problem is also caused by the methodologies used in management studies. As for practitioners, a “return to practice” would, in the very early stages, help them to interpret research results, thereby providing practitioners with the opportunity to access scientific results from academic research.

This “practical verification” of the empirical results can take many forms, and focus on various areas, as follows:

- (1) Research issues: the SCM business world is facing unprecedented challenges from disruptive technologies and innovative business models (Goldsby and Zinn, 2016). In such circumstances, the verification could aim to determine whether the issues and problems studied by researchers represent what practitioners actually need? In other words, can the research results enlighten and lead practices?
- (2) The rationality of theory usage: as Amundson (1998) notes, importing theories from other disciplines entails certain challenges, such as the verification of a match between the phenomena studied, the concept examined and the underlying assumption of the theory and the domain focused on. In this regard, there is a question regarding how to resolve these challenges in the SCM domain, in which theory-driven SCM research is built upon borrowed theories.
- (3) Unit of analysis: given the hierarchical nesting of SCM phenomena, is it appropriate to investigate a supply chain by using a unit of analysis at the level of the individual/function/organization? If not, how can this problem be overcome?

- (4) Sources of data: when the unit of analysis is adopted at the supply chain level, are data collected from only part of the unit of analysis, for example, is one entity of the supply chain sufficient to allow the investigation to deliver unbiased results? If not, how can this be remedied?
- (5) Research methods: theory-driven empirical research has certain methodological limitations. In order to produce credible research findings, how can the methodology employed in theory-driven SCM research be further improved?

In general, by taking “practical observation” and “practical verification” actions in theory-driven SCM research, a “recursive dialogue” (Corley and Gioia, 2011) between academic SCM cognition and practical SCM can be established. SCM scholars might be in a position not only to substantiate the applicability of the “borrowed” theories to SCM as used by practitioners, directly, but also to verify the usability of theoretical assumptions in different business contexts. More importantly, a “practical verification” process could provide researchers with the opportunity to identify unique issues that could not otherwise be resolved using existing theories. This may drive the investigation to shift from theory application to SCM discipline-specific theory building.

*5.1.4 Theory development of SCM.* Theory application is an important feature of the development of SCM theory, since theorizing SCM relies on borrowing theories from other many fields (Halldórsson *et al.*, 2015). Given the nature of the application, however, this alone is not sufficient for developing SCM-specific theory. As with theory-driven empirical research, theories are essentially, often viewed as a “work-in-process” and are subject to constant refinement and mutability in real-world situations (Melyk and Handfield, 1998). The result of this ongoing interaction is an “improved” theory (Melyk and Handfield, 1998). This is, however, the case for theory-driven SCM research, in which theories are borrowed from other disciplines and there is an urgent need to develop theory-building capabilities.

As noted in the analysis above, SCM is a discipline that lacks “home-grown” theories. The theories currently used to explore SCM phenomena have been borrowed from other domains, such as economics, strategy and organizational behavior, among others. Although a connection has been suggested between these fields and SCM (Ketchen and Hult, 2007; Miles and Snow, 2007), it is necessary to adapt these theories to the nuances of the supply chain context (Halldórsson *et al.*, 2015). Moreover, the influence of the business context on theory usage should not be underestimated. Tsui (2006) highlighted the influence of context on theory development, noting the effect of government, business systems, institutions, and culture in emerging economies. As Meyer and Peng (2005) discovered, some well-cited theories, such as TCE and agency theory, are inappropriate in the context of international business and management research in emerging economies, as their theoretical assumptions have not been applied in practice. Taking the present study as an example, the theories used in the surveyed papers were borrowed from other disciplines to explore China-based SCM phenomena and resolve practical problems. These theories, which were developed in a western business context, were then applied by the authors to an emerging economic context, i.e. China. Given the discrepancy in the research context for theory assumption, it is debatable whether the research results and recommendations are of practical value in meeting the needs of Chinese SCM practitioners (Liu and McKinnon, 2016).

In order to overcome this limitation, the proposed pragmatic path would contribute to SCM theory development by adopting a problem-oriented approach. As Lawrence (1992) suggested, “problems are a powerful way of identifying gaps in our theory, or, at least, gaps in our ability to apply available knowledge [...] starting with a problem is the surest way to end up making an important contribution to theory” (p. 142). In addition, fostering a

recursive dialogue between academic SCM cognition and practical SCM would make it possible to produce an “improved” theory, even theory building; this process would be facilitated by the adoption of “practical observation” and “practical verification.”

### 5.2 Managerial implications

From a managerial perspective, this study may benefit SCM practitioners. The major concern of the practitioners will be to resolve problems and take action that will contribute to a firm’s growth and profits. In order to resolve problems effectively and efficiently, based on a shared recognition of concerns identified by both academics and practitioners, the latter may compare the outcomes of academic research with their own practical actions, testing the prescriptions provided by academics. Indeed, “nothing is so practical as a good theory” (Lewin, 1945). As Van de Ven (1989) suggested, “good theory is practical precisely because it advances knowledge in a scientific discipline, guides research toward crucial questions, and enlightens the profession of management” (p. 486). On the one hand, leveraging theory-driven SCM research would assist practitioners to embrace the role that theory plays in problem resolution. On the other hand, practitioners might suggest topics for investigation by academics to improve the business relevance of their research.

In addition, not only should researchers interact with practical examples, but they can also benefit from communicating regularly with practitioners, and vice versa. As an applied science, SCM is developing rapidly, and many new phenomena have emerged, such as supply chain security management, supply chain risk management, supply chain sustainability and supply chain finance. In particular, in today’s dynamic business environment, SCM practitioners are facing greater managerial challenges (Fawcett *et al.*, 2011; Goldsby and Zinn, 2016). Benchmarking is certainly an effective approach, but in many cases there is no best practice that companies can use as a model. Given this circumstance, interaction with academics could provide practitioners with more advanced theoretical guidance. In addition, if a collaborative engagement could be established, this would then prove highly beneficial to problem resolution (Amabile *et al.*, 2001; Van De Ven, 2007).

## 6. Conclusion and limitations

The purpose of this study is to investigate the extent to which current theory-driven SCM research is of practical relevance. To address this research question, a two-pronged approach, including a literature survey with SCM academics and a questionnaire survey with SCM practitioners, was applied within the unique setting of China. The research results reveal that the scientific utility of theory-driven SCM research can then, presumably, be achieved. Nevertheless, the evidence from the business world shows that neither the findings of the research, nor the solutions proposed in the research, constitute actionable knowledge that practitioners can use to resolve real-world problems. To enhance the practical utility of theory-driven SCM research, a pragmatic approach with a focus on “practical observation” and “practical verification” is proposed. However, given that the theories employed for resolving SCM problems are borrowed from other disciplines, an immediate “practical verification” of empirical results is of particular importance to this process.

This study contributes to the body of the knowledge about the practical relevance of theory-driven empirical SCM research. Nevertheless, as with any research, the study cannot avoid certain limitations. In the literature survey, although ten leading journals were consulted, information from other journals might have been omitted. Apart from this, the sample of the questionnaire survey was derived from three professional SCM organizations; the perceptions of more professionals are expected in future studies. In addition, this exploratory work is confined to China. Future studies, however, could examine the situation in other countries to test the applicability and generalizability of the research results.



As regards the industry survey, although it was confined to Chinese supply chain managers based in China, some of them may have experience of managing supply chains in other countries. They may also be responsible for managing international supply chains or supply chains operating within China but controlled by foreign companies. It would be wrong, therefore, to regard the survey responses as applying solely to the management of internal Chinese supply chains by Chinese nationals with a little exposure to the wider world of SCM. As a result of globalization, the results of the survey may, therefore, be more widely applicable, though to test their generalizability it would be desirable for similar surveys to be conducted in other parts of the world.

To summarize, the study provides fresh insights into the practical relevance of theory-driven SCM research for both academics and practitioners. It is anticipated that it will inspire greater efforts toward the generation of SCM discipline-specific theories attributed with both scientific utility and practical utility.

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**Further reading**

57 theory-driven SCM studies based in China available upon request.

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**Corresponding author**

Xiaohong Liu can be contacted at: [xliu@cufe.edu.cn](mailto:xliu@cufe.edu.cn)

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