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Choosing the right supply chain based on products and markets – A literature review

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Abstract

Due to the increasing market uncertainty, complexity, product variety and more and more challenging demand mostly because of globalization and technological advances, supply chains compete with others supply chains, rather than simply firms with other firms. Therefore, companies must select the best matching supply chain strategy regarding products and markets characteristics in order to get sustainable competitive advantage. This literature review compares and contrasts the most important perspectives seeking for enlightenment on the subject. Finishing with a brief analysis on possible research gaps identified. The key-findings are the similarity and compatibility of several different approaches, the lack of quantitative empirical research and service supply chains studies.

Keywords: supply chain management; supply chain strategy, literature review

1 Introduction

Supply chain (SC) management is becoming more and more critical to remain competitive in the market. Matching customer requirement with product characteristics and ensuring the delivery should be one of the greatest concerns for the management (Li & O'Brien, 2001); (Aitken, Childerhouse, & Towill, 2003); (Holweg, 2005); (Demeter, Gelei, & Jenei, 2006).

Therefore, it is important to align SC strategy and products classification variables accordingly to the target market. There is no such thing as a "one-size-fits-all" SC strategy (Shewchuck, 1998), thus strong market orientation is more and more necessary in order to identify classification variables (Fisher, 1997); (Frohlich & Westbrook, 2001); (Schnetzler, Sennheiser, & Schonsleben, 2007). Christopher and Towill (2000); (2002) and other authors created models by considering dominant classification variables using the combination of variables such as duration of life cycle, lead time, volume, variety and variability (Childerhouse, Aitken, & Towill, 2002); (Vitasek, Manrodt, & Kelly, 2003); (Cigolini, Cozzi, & Perona, 2004). Those five classification variables are also known as DWV^3 (Christopher & Towill, 2000). On the other hand, Lee (2004) defined three key dimensions of competitive and sustainable SCs: agility; alignment; and adaptability.

Many authors tried to develop a framework that could embrace the complexity of the topic leading the management to the right SC strategy. Two key perspectives arise, regarding SC configuration (supply networks) and SC management. The first, SC configuration, focuses on the number, role and locations of the various SC actors, as well as it is individual role in it (Nassimbeni, 1998); (Harland, Lamming, & Cousins, 1999). The second approach has been focused on the SC management, identifying the best practices that can lead to better SC and product alignment, as for example the use of information-sharing tools, quality management practices, co-design approaches, etc. (Lamming, Johnsen, Zheng, & Harland, 2000); (Giannakis & Croom, 2004); (Bruce, Daly, & Towers, 2004); (Harland, Zheng, Johnsen, & Lamming, 2004); (Christopher, Lowson, & Peck, 2004).

The dependence of product and market characteristics is clear. One way of distinguishing products is regarding its functional or innovative characteristic. This leads to different SC configurations: physically

efficient SCs for functional products and market-responsive SCs for the innovative ones (Fisher, 1997). Lamming (2000) expanded the Fisher's model (1997) considering the product uniqueness and complexity, while Lee (2002) focused the analysis on supply and demand uncertainty.

SCs have evolved, growing into networks, and broadening management scope beyond organization boundary, downstream into their customers and customers' customers, and upstream into suppliers, and then into suppliers' suppliers. Competitive reality changed too; the proposition is that networks compete with networks, rather than simply firms with firms (Cunningham, 1990).

Regarding the sustainability; social, environmental and economic dimensions, choosing the appropriate SC strategy is critical. First, concerning environmental dimension, lean SC means fewer wastes, less resource consumption, which consequently leads to the economic dimension through fewer costs. Second, in order to sustain competitive advantage the ability of choosing the right SC makes companies more competitive and more resilient to market and demand changes what by itself means increasing the probability of company survival and consequently local stability, development and employment what completes the third, social dimension of sustainability.

This literature review purpose is to highlight the key perspectives on the problem of matching the SC with product and market characteristics. This paper is organized in sections: After a brief research methodology explanation follows the classification of different contributions on the topic, following with an insight on relationship between product characteristics and customer requirements, a summary of classification variables that appeared in recent literature which can be used for SC segmentation and strategy development. Further, SC configuration and practices are described followed by the summary of literature contributions on product classification regarding three SC configurations: - Lean, agile and leagile. Finally, the paper closes with further research recommendations. The aim of this paper is to gather and organize some of the most influential developments on the question of choosing the right SC strategy in order to support further research.

2 Methodology

This review does not tend to be comprehensive in spite of collecting all the literature regarding the topic, consequently the purpose is to gather key perspectives on the problem of matching the SC with the product and market characteristics.

The literature analyzed in this review has been collected through two major scientific research databases: SciVerse ScienceDirect and Emerald Group Publishing Limited. The terms "supply chain management"; "strategy"; "market specific"; "market segmentation"; "management techniques"; "product classification"; "product attributes"; "demand chain management"; "aligning supply chain"; "matching supply chain" were some of the key-words used to search the business and management research journals. However these keywords resulted in an excessive amount of papers so the initial triage requisite was the term "supply chain management" in combination with others, followed by abstract reading and classification. Two major groups were formed: Conceptual papers on SC strategy; and empirical case studies of quantitative or qualitative nature.

Most of the studies classify SC as being lean (also known as physically efficient) or agile (sometimes also entitled as responsive), with some minor deviations, third classification is suggested as the adaptable supply chain called leagile that takes the best of both worlds of lean/agile.

After complete paper reading, some were excluded as being too focused on some particular topic. One of the most frequent topics on the previous body of papers was "lean or agile" supply chains and the most common factor was the "uncertainty" also described as the variability of demand or supply as the key driver for strategy development.

3 Research papers categorization

Choosing the right SC based on products and markets has been an eminent topic trough the last decades. The literature review has shown that regarding the period between 1982 and 2012, most of the publications are conceptual. Both empirical research using case studies and exploratory surveys/interviews are qualitative and the lack of quantitative empirical research is obvious. (Table 1)

Table 1: Contribution classification and type of industry

Author	Year	Conceptual	Empirical (Quantitative)	Empirical (Qualitative)	Type of industry
Whitten *et al.*	(2012)		●		Mix
Qi et al.	(2011)	●	●		Mix
Godsell *et al.*	(2011)		●	●	FMCG
Qi et al.	(2009)		●		Mix
Christopher *et al.*	(2009)		●	●	Lighting/Electronics/ Healthcare/FMCG/Retail
Selldin & Olhager	(2007)		●		Mix
Schentzler *et al.*	(2007)	●		●	Electroacoustic
Demeter *et al.*	(2006)			●	Automotive
Holweg	(2005)	●		●	Automotive/Electronic
Cigolini *et al.*	(2004)	●			Mix
Lee	(2004)	●			Mix
Giannakis & Croom	(2004)	●			Mix
Bruce *et al.*	(2004)			●	Textile/Clothing
Harland *et al.*	(2004)	●		●	Mix
Christopher *et al.*	(2004)	●			Fashion
Aitken *et al.*	(2003)			●	Lighting
Vitasek *et al.*	(2003)		●		Mix
Christopher & Towill	(2002)	●		●	Clothing
Childerhouse *et al.*	(2002)	●		●	Lighting
Lee	(2002)	●			Mix
Li and O'Brien	(2001)		●		Mix
Frohlich & Westbrook	(2001)		●		Mix
Van Hoek	(2000)	●			Mix
Mason-Jones *et al.*	(2000)	●		●	Mix
Lamming *et al.*	(2000)	●		●	Mix
Harland *et al.*	(1999)	●			Mix
Nassimbeni	(1998)	●			Mix
Fisher	(1997)	●			Mix
Gattorna & Walters	(1996)	●			Mix
Oliver & Webber	(1982)	●		●	Mix

The dearth of quantitative empirical research can be logically explained by the inherit complexity of quantifying most of the SC related elements. Vitasek (2003) addressed the supply-demand mismatch by analysing both the volume and variability of demand for products enabling a statistical approach on the problem. Li and O'Brien (2001) analysed the relationship between product types and SC strategies in a quantitative approach, testing the conceptual model developed by Fisher (1997); three strategies: make to order, make from stock and make to stock (MTO; MFS; and MTS) were tested against two key factors, impact of demand uncertainty and value adding index. Still focused on Fisher's model Seldin and Olhager

(2007) successfully tested the relationship between products and SCs using an empirical survey. Frohlich and Westbrook (2001) conducted an empirical research on SC strategies characterizing each with a different "arc of integration", which represented the direction (towards suppliers and/or customers) and the degree of integration activity quantifying each element showing that the degree of integration was positively correlated with the performance improvement. Later in the same year of 2001, Frohlich and Dixon (2001) performed a cluster analysis on a large sample of codified qualitative data, seeking to validate manufacturing strategies. Christopher *et al.* (2009) successfully applied DWV[3] approach on several different industries in order to classify different value streams; here we find one of the rare applications of SC matching on healthcare. Whitten et al (2012) performed the performance measurement of Lee's model showing the positive correlation between SC strategy, SC performance and organizational performance with stronger relation between SC performance and marketing performance than with financial performance.

Purely conceptual models with no empirical validation or clear historical empiric evidence remain useless despite all the great ideas that it could encompass unless someone perform a practical validation. Thus, practical application of various already developed conceptual models should be the main concern of further research. Codification of qualitative data allows the use of statistical methods, enabling the quantitative analysis by decreasing the problem complexity increasing reliability and generalization of different frameworks.

Regarding the focus sector, most of the empirical studies are on manufacturing sector, e.g. automotive, textile, apparel, lighting or electro-acoustic, etc. There is an evident scarcity of SC studies for services, although some conceptual models mentioned above seem to be applicable on services.

4 Product and market orientated SCs

The concept of SC suggested by Brace (1989) and considered in this work as the ultimate SC purpose is: …"the whole manufacturing distribution process may be seen as a sequence of events with but one end in view: it exists to serve the ultimate customer."

Product characteristics are closely connected to customer requirements what makes the distinction sometimes difficult and confusing, although there are factors like product complexity, uniqueness or customer demand patterns for some functional or innovative product that can be used for this purpose. Thus one of the possible ways of matching the product characteristics with the customer requirements is by product segmentation based on products characteristics and only after focus on the SCs. Fisher (1997) distinguished between functional and innovative products based on six classification variables such as Product innovation; Demand volume stability; Product life cycle duration; Make-to-order lead-time; Product Variety and End-of-sale mark down. Lamming (2000) expands above exposed Fisher's (1997) ideas by distinguishing products also regarding its innovation, uniqueness and complexity. Lee (2002) makes a step further Fishers' (1997) model and introduces the demand and supply uncertainty, where on the demand side products can be either functional (low uncertainty) or innovative (high uncertainty) and on the supply side can be Stable Processes (low uncertainty) or Evolving Processes (high uncertainty). Albeit different, Vitasek (2003) uses just two key variables for product segmentation, volume and variability, developing a simple yet powerful profiling framework. This same approach on volume and variability can be observed in the work by Godsell *et al.* (2011) when SC segmentation is performed through demand profiling.

Segmentation of products is a dynamic process due the continuous customer requirements change. As the life cycle of a product evolves these requirements change, so SCs must change accordingly in order to maximize competitiveness (Aitken, Childerhouse, & Towill, 2003). That way, companies that seek blindly to achieve solely efficiency most likely will fall. Different product segments in different life cycle stage require different strategies, which require different SC practices and are based on different classification variables, reviewed further in the work.

4.1 Classification variables

Linking market segment considerations and product characteristics to enable SC segmentation can be accomplished through variables that do link marketing, manufacturing and product strategy.

Literature suggest us many particular case studies, hence it worth keeping in mind that the enablers for some specific successful example does not necessary lead other SCs to success. Consequently, it is likely to be general classification variables that apply to the most of case studies. It is probable that companies of the same sector present similar profiles, yet it all depends on the selection of the appropriate classification variables (Godsell, Diefenbach, Clemmow, Towill, & Christopher, 2011) (Christopher M. , Towill, Aitken, & Childerhouse, 2009) (Christopher & Towill, 2000).

Focusing on the relation between firms SCs or supply networks can either be seen as a set of upstream and downstream organizations from the original source of raw material to the end customer. Alternatively, the emphasis can be on a particular product, only analysing factors contributing someway to the manufacture, distribution and sale of that product (Harland, Zheng, Johnsen, & Lamming, 2004).

Regarding the relation within the firms and its classification variables, Harland *et al.* (2004) suggest that the success of supply networks creation and operation is enabled by factors such as the use of technology to transfer for example drawings and specifications during the new products development, information sharing and processing to support partner selection activity. The existing relationships in networks connect and commit different parties, easing conflict resolution. However, the same successful factors may be both "enablers" and "constraints" like the example of information sharing technologies: - electronic data interchange (EDI) enabling quicker order exchange between partners but requiring compatible information systems and common standards of data specification on both sides.

Cooperation between firms is the key enabler of successful SCs, although ambiguous. Grandori *et al.* (1995) demonstrated the importance of consortia, franchises and other modes of inter-organizational cooperation mechanisms as an important coordination mechanism, this leads to the concept of motivation reflected in those business models, being sharing of property rights one of the strongest. Contemporary de Toni *et al.* (1995) highlighted the importance of the relationship management within SCs suggesting the development and use of adequate procedures for the selection, evaluation and monitoring of the suppliers, systems of incentives (alike the above cited), risk and reward sharing with suppliers as well as tools to control any possible opportunistic tendencies. For example, large customers pressuring typically smaller suppliers through "squeeze" policies looking out for maximum advantages only lead to a local and short-term benefits, mostly because these suppliers will naturally avoid serious investments in the relationship thanks to the customers' opportunistic behaviour. Harland *et al.* (2004) identified through an exploratory survey and literature review nine critical activities and five contextual factors applicable on the relational perspective. (Table 2)

Table 2: Critical activities and contextual factors (adapted from Harland *et al.*, (2004))

Critical activities and contextual factors (Supply networks)	
Activities	Contextual
Partner selection; **Resource integration;** **Information processing;** **Knowledge capture;** **Social coordination;** **Risk and benefit sharing;** **Decision-making;** **Conflict resolution and;** **Motivating.**	Market environment; Product/service package; Operations process; Supply network structure and; Focal firm SC strategy;

Finally, the market oriented perspective of classification variables rests on agile, aligned and adaptable SC proposed by Lee (2004) encompassing a large variety of product and market characteristics on a very high level approach. When companies move into new markets or new technologies, they must have its SCs

ready for the new business challenges and opportunities. Despite the high-level of this approach, it takes into account the uncertainty referring the concept of agility (responsiveness) and adaptability. Fishers' (1997) functional and innovative product differentiation focuses only on demand uncertainty. As follows, it is critical to take into account the uncertainty of demand and supply. Thus, being part of the previous focus on products perspective it embraces the time perspective.

Regarding the classification variables referred in different contributions, uncertainty is one of the major concerns expressed through variability, reliability of supply/delivery and customer expectations. Nature of demand can also be linked to customer expectations, volume, variability and frequency of delivery due its interconnected nature. Vitasek *et al.* (2003) and later Godsell *et al.* (2011) came up with an interesting framework for solving the supply-demand mismatch by analysing both the product volume and variability of demand, matching each cluster of products to different manufacturing and distribution strategies based on the demand profile in order to drive high service levels while minimizing inventory. Most of the contributions relied on duration of life cycle, lead-time, volume, variety and variability; so-called DWV[3] classification variables influenced both by lean and agile thinking (Christopher & Towill, 2000). (Table 3)

Classification variables \ Contribution	Oliver & Webber (1982)	Gattorna & Walters (1996)	Fisher (1997)	Mason-Jones *et al.* (2000)	Lamming (2000)	Li and O'Brien (2001)	Christopher & Towill (2002)	Lee (2002)	Childerhouse *et al.* (2002)	Vitasek (2003)	Aitken *et al.* (2003)	Bruce *et al.* (2004)	Christopher *et al.* (2004)	Cigolini *et al.* (2004)	Lee (2004)	Holweg (2005)	Christopher *et al.* (2009)	Godsell *et al.* (2011)
Product life cycle			●	●	●		●	●	●		●	●	●	●	●	●	●	●
Lead time	●	●	●	●	●		●	●	●		●			●	●	●	●	●
Volume			●	●	●		●	●	●	●	●			●	●		●	●
Product Variety	●		●		●		●	●	●		●					●	●	●
Variability			●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
Nature of demand	●		●	●	●		●	●		●		●	●	●	●	●	●	●
Point of product config.					●	●								●	●	●		
De-coupling point				●											●	●		
SC response time	●			●	●										●	●		
Customer expectations				●	●	●									●	●		
Demand pareto analysis										●						●		
Reliability of delivery	●	●			●										●			
Reliability of supply	●	●			●			●							●			
Flexibility	●	●			●									●	●			
Minimum run size	●														●			
Change over	●																	
Range	●				●													
Frequency of delivery		●													●			
Profit margin				●		●	●								●			
Product complexity				●	●									●	●			

Table 3 - Classification variables considered among literature contributions

5 Supply chain configurations and practices

Achieving the global optimum within a SC does not necessary lead to a win-win situation (Porter, 1985). To choose for a specific SC configuration we need to select the classification variables, segment our products and analyse the market in order to understand what kind of supply and demand the company or a particular product is facing. SCs are a joint effort of various players and management focus must transcend the organization boundaries.

Christopher *et al.* (2002) took three basic variables such as "products" that can be either standard or special, "demand" that can be either stable or volatile (variability) and "lead times" as being long or short, quite similar to demand/supply uncertainty framework proposed by Lee (2002). Special products with volatile demand should have innovative and agile short SCs whether special products with stable demand have been recognized as a rare exception thus ignored. Standard products with volatile demand require a high capacity able to meet extreme demand short SCs while stable demand can be served through high volume, long and lean SCs so to take advantage of economies of scale. Short SCs should be able to react quickly to demand changes, relying normally on domestic suppliers while long SCs reach lower cost foreign suppliers, this "length" can be understood as logistic distance.

Split sourcing is one of the possible ways to achieve greater responsiveness, splitting the base and surge demand allows the firm to purchase components or materials in advance of demand from low-cost sources and manufacturing or assembling the final product locally. Such kind of strategy is one of the key reasons for the success of Zara and consequently applicable on other fashion retailers exhibiting leagile practices.

Nonetheless, Lee (2002) focused on uncertainty and considered that functional products (standard) demand uncertainty is low by default and high for the innovative ones (special). On the supply side, uncertainty can be either stable or evolving. SC configuration is determined by SC strategy and before setting up any SC strategy, it is indispensable to understand the sources of uncertainty (Simangunsong, Hendry, & Stevenson, 2011).

Although uncertainty (variability) is impossible to avoid, its reduction is possible by appropriate strategies and practices, e.g. it is crucial to share demand information and synchronized planning across the SC so to reduce the increasing fluctuations of orders placed upstream the SC, also known as Bullwhip effect, thus reducing supply and demand variability. Practices like engaging supplier replenishment programs as well as abolishing pushing strategy practices like rebates, quantity discounts or anything else that induce demand spikes does help to deal with uncertainty and equalize the demand.

5.1 Lean, leagile and agile supply chains

People often think that cost efficiency in SCs is the key driver towards success, although Lee (2004) made a perspicacious observation stating that organizations did not gained a sustainable advantage over competition by developing efficient and cost effective SCs, worse than that was the fact that those companies performance steadily deteriorated over time. Thus, high-speed, low-cost (lean) supply chains are unable to respond to unexpected changes of demand or supply. Although, this same idea has been dealt from different perspectives and some confusion may emerge.

Lee (2004) outlines agility, adaptability and alignment in order to achieve sustainable competitive advantage. Agile as being able to respond to short-term changes in demand or supply quickly and handling external disruptions smoothly while adjusting SC design to adapt to structural shift in markets and modify supply networks strategies, products and technologies aligning the interests of all stakeholders and involved organization in the SC with their own.

Bruce *et al.* (2004) described lean, agile and "leagile" (hybrid both lean and agile) SCs. Lean SCs are cost efficient with minimal waste. Agile SCs are the ones able to respond effectively to a constantly changing and highly competitive business environment focusing on minimal lead times. Finally, being the combination of both lean and agile configurations derives the leagile approach.

This review, seeking for some clarification of terminology will rely on the lean, agile and leagile SC classification further described.

Lean SC configuration, also known as physically efficient (Fisher, 1997), tend to minimize cost and maximize performance while holding lead times as short as possible as long as it doesn't increase cost; cost/quality are the key drivers for suppliers selection and inventory should be kept as low as possible maintaining high average utilization rate of the manufacturing process. The demand is normally stable and predictable what makes forecasting and production planning suitable in order to reduce production

costs. These SCs key characteristic is high capacity production and distribution, enabling scale economies and optimization techniques. Just-in-time systems, automation, facility layout optimization, workflow streamlining, direct shipping (i.e. intermediaries' reduction) are some of the best practices held in this kind of SCs.

Agile SCs focus on holding the minimal lead times being able to meet constantly changing demand dealing at the same time with manufacturing, supply complexity and uncertainty. Highly innovative companies face both great opportunities and risks what makes this kind of SCs the most challenging to manage. Decoupling point strategy can be rewarding as it creates inventory buffers to minimize the mismatch of sales forecast and actual demand in other words, the manufacturing process should deploy excess buffers capacity and buffer stocks of parts or finished goods in order to handle demand spikes. As well as any means of shortening new product development times reduce response times and uncertainty, thus practices like sharing among SC partners detailed prototype plans, production plans, shipping schedules and test results reduce not only response times but also minimize supply and demand mismatch (Vitasek, Manrodt, & Kelly, 2003). Consequently, these kinds of SCs require tight strategic partnerships in order to share information and resources remaining competitive in the market. Postponement and modular design are the best product-design strategies. Suppliers should be selected based on flexibility, speed and quality. Lead times should be kept as short as possible even if it that means investment or cost increase. This kind of configurations is oriented towards stable supply processes of innovative, low complexity products with highly variable low volume demand.

Leagile configuration is the combination of both lean and agile combined at a decoupling point being agile on downstream enabling high service levels and lean upstream for cost effectiveness from the decoupling point in the SC (Mason-Jones, Naylor, & Towill, 2000) (Naylor, Naim, & Derry, 1999).

All above encompasses the ability to respond quickly to market demands maintaining competitive advantage or in simple words it is the balance between effective and efficient service level adjusting the SC design and practices based on product and market characteristics. Comparing the SC configuration description in different contributions, we classified the products into four distinct categories accordingly to what is described above, ignoring the originally given classifications and focusing mainly in its characteristics. (Table 4)

Table 4 - Supply chain configurations and literature contributions

Contribution	**Supply chain configuration**		
	Lean	**Leagile**	**Agile**
Godsell *et al.* (2010)	High volume /Low variability		Low volume /High variability
Cigolini *et al.* (2004)	Mature phase Simple products	Mature phase Complex products	Introduction/Growth/Decline phases Simple & Complex products
Lee (2004)			Triple-A SC's
Bruce *et al.* (2004)	Raw textile materials	High street fashion products	Fashion goods
Christopher *et al.* (2004)			Fashion goods
Vitasek *et al.* (2003)	"A" High volume / Low variability products	"B" Medium Volume / Low-med variability	"D" Med-High volume / High variability "C" Low-volume products low-high variability
Christopher and Towill (2002)	Standard Products with stable demand	Standard Products with volatile demand (Top-up agile)	Special Products with volatile demand
Lee (2002)	Stable supply process/functional products	Stable supply process/Innovative products	Evolving supply process Innovative & functional products
Manson-Jones *et al.* (2000)	Commodities (mechanical precision products)	Electronic products	Fashion goods (Carpet manufacture)
Lamming *et al.* (2000)	Low complexity functional products	High complexity Functional products	High & Low complexity Innovative/Unique products
Fisher (1997)	Functional Products		Innovative Products

6 Conclusion

This paper review meant to align, compare and contrast some of the latest developments on choosing the right SC based on products and markets. There are some obvious similarities and few outliers of the mainstream of researchers on the topic.

Matching product characteristic with customer requirements relies on product segmentation accordingly to different classification variables with the main concern: serve the ultimate customer. Segmenting products is a dynamic process due the continuous customer requirements change. As the life cycle of a product evolves these requirements change, so SCs must change accordingly in order to maximize competitiveness.

Classification variables depend on the company sector, products, markets and client characteristics, although there are universally applicable classification variables such as DWV[3] (Christopher & Towill, 2000). Variability expresses the demand uncertainty which efficient management is one of the main concerns in the SC literature (Simangunsong, Hendry, & Stevenson, 2011).

Following practice three basic kinds of SCs can be identified: Lean, leagile and agile SCs. Triple-A SCs (Lee, 2004): Agility, Adaptability and Alignment were proposed as a way of achieving sustainable competitive advantage. Agile as being able to respond to short-term changes in demand or supply quickly and handling external disruptions smoothly while adjusting SCs design to adapt to structural shift in markets and modify supply networks strategies, products and technologies aligning the interests of all stakeholders and participating organization in the SC with their own what embraces almost all identified classification variables.

Fishers (1997) model seem to be the most popular among most of the posterior research works, thus many contributions have been developed in order to improve it.

About research gaps, the lack of empirical quantitative research is obvious, few researchers carried on quantitative analysis. Many conceptual models are available, although not all of them were properly validated. Cross application is possible of some models empirically created through case studies on some particular sector, thus enabling the development of generic frameworks for proper SC selection. All considered researches focus on goods SCs and only one about healthcare services. Therefore, the above-mentioned gaps should be the concerns of further research.

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