

A Work Project, presented as part of the requirements for the Award of a Master Degree in Management from the NOVA – School of Business and Economics.

Supply Chain Management and Performance in the Portuguese furniture industry

Pedro Miguel Rodrigues Patrício

Student Number 2420

A Project carried out on the Master in Management Program, under the supervision of:

Guido Maretto

02/06/2016

Abstract

The purpose of the thesis is to investigate whether companies that implement supply chain management (SCM) practices and the impact on performance. This thesis adds to the existing literature by investigating the influence of implementing SCM practices, having the focus on the company and its practices rather than on the external interveners. The study was conducted by surveying a questionnaire to the Portuguese furniture manufacturing companies and comparing that information with financial data to assess the impact of these practices on the companies' performance. With this thesis it was possible to conclude that the impact on companies' performance by having SCM practices is positive.

Keywords: Supply Chain Management, Performance, Manufacturing, Logistics

Legend of tables:

Table. 1 Set of questions to determine Performance.....15

Table 2 – Answer rates to question 13.....16

Table. 3 Results for: Performance, SCM practices17

Table.4 Results for: Performance, Log SCM practices17

Table.5 – Descriptive statistics for the respondents.....19

Table.6 – Descriptive statistics for the total sample.....19

Introduction

According to the council of supply chain management professionals (CSCMP), SCM “*encompasses all the planning and management of all activities involved in sourcing and procurement, conversion, and all management activities*”. It also includes the management of relations between all channel partners, supply chain management integrates the practices of the supply and demand actors within and across companies (CSCMP,2010).

The aforementioned integration plus the coordination of activities across the supply chain have been identified as key strategies in order to improve firm performance. (Mackelprang, Robinson, Bernardes, & Webb, 2014) It is key to identify if this integration alongside with aligning practices, not only across the company but also with external intervenient (e.g, suppliers, clients), actually leads to an increase in performance

This raises as an important issue since, in today’s environment with a greater level of uncertainty and global competitiveness, the effective use of the available resources is imperative, and companies need to invest in what brings a competitive advantage.

When looking at manufacturing companies, the integration of a structured supply chain management into the organizations processes is essential in order to guarantee the customer service level, once that with the increase of customers’ demands (e.g higher customization, shorter delivery times) associated with an increase on the competition, internally and externally, the details will make the difference between success or not.

This thesis will focus on investigating the studied companies are in fact already implementing supply chain management practices, and if they do is it leading to a better performance than those who do not.

In order to gain insights, a questionnaire was distributed to the companies on the furniture manufacturing sector, with a focus on the importance that companies attribute to the SCM and if they implement the basic SCM practices. It was organized having into consideration the supply chain integration, covering issues related to the integration of core processes and the strategy and planning required to implement those processes successfully..(Power, 2005) Due to previous practical experience working on the field, the questionnaire was focused on the issues that were previously identified as being crucial to the performance of furniture manufacturing companies in Portugal.

Literature Review:

This thesis was written with the purpose of answering the question if would including company supply chain management practices lead to a better performance. It focuses on the Portuguese furniture manufacturing companies, and the need to answer this question rose after a practical experience that made me face some real issues from the lack of implementation of said practices.

Firstly, in order to discuss supply chain management, we should start by defining ta more consensual term across existent literature, *Supply Chain*. According to the authors a simple way of defining supply chain is as being a set of firms that pass materials forward, starting from the raw material and component producers till it reaches the final costumers (La Londe & Masters, 1994). Furthermore, it is possible to state that all the interveners involved directly or indirectly on fulfilling a customer request are part of the supply chain(Chopra & Meindl, 2010).

Regarding the *Supply Chain Management* the current literature is not as consensual as for Supply Chain, so when looking for SCM, the existing definitions can be divided into three categories: a

management philosophy, the implementation of said philosophy and a set of management processes.(Mentzer et al., 2001)

When conducting this research, the main focus was on identifying the activities that can possibly be implemented by the organizations in order to increase performance. This being said the definition that better fits supply chain management is as a “*systemic, strategic coordination of the traditional business functions and tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole*”(Mentzer et al., 2001). Although the aforementioned definition is the one that better fits the way the study was conducted, it is important to state that the questions were directed to the companies and their own practices and procedures and not to the way their external interveners act. This choice was made in order to have more accurate responses and to avoid misinterpretation of the questions, with this questions directed to companies’ day-to-day procedures it is expected that the responses are more reliable.

It is shown by previous research that integration of SCM practices have a direct and positive impact on performance(Mackelprang et al., 2014

cit in German and Iyer 2006; Flynn et al.2010; Wong et al. 2011). Since SCM integration, according to the existent literature presents different focus, and different drivers for success (for example according to (Chopra & Meindl, 2010) those drivers Facilities, Inventory, Transportation, Information, Sourcing and Pricing the focus was to assess internal integration efforts, combined with some of the affore mentioned drives). This choice was done in order

not to weaken the practical value of results by combining all the scopes and different drivers on one analysis.(Mackelprang et al., 2014)

So with this thesis I pretend to add relevant information, providing insights on the Portuguese manufacturing sector, and how does the implementation of supply chain management practices affect those companies.

Methodology

The research methodology relied on the survey done to the companies targeted in the study, and by the comparison of this results with data from *sabi* regarding the historical results of said companies. The chosen method to collect data data like mentioned previously was through a web based survey which was distributed to a selected number of companies that met the following requirements: having as primary or secondary activity the manufacturing of furniture, acting and producing in the Portuguese market and having financial data available. Manufacturing sector was chosen due to previous professional experience, and to the issues faced and identified during that time. The questions were asked in order for the respondents to answer based on the practices that occur in their own companies and also on their personal experience. The email was sent to 1127 companies, 214 started the survey, 187 partially or completely responded. However for the final analysis only full responses were considered, making the final sample size of respondents to be 81.

From the literature review, it was possible to identify that SCM can have a positive impact on performance. So in order to assess that impact the research questions will focus on the following main areas: Supply Chain Management; Aggregate planning in Supply Chain Management;

Formulation and Control of the Supply Chain; Purchasing in Supply Chain; Evaluation and selection of suppliers.

The study focuses in these main areas of the supply chain, and on whether companies include supply chain management practices on the organization processes or not. The questions were formulated in order to identify those where the respondents clearly give a right or wrong answer, and others where the objective is simply to understand how companies behave and perform on different situations relevant for the SCM.

Regarding the financial data that was gathered through the data base the variables used to perform the analysis were the EBITDA as dependent variable, and indicator for performance, the number of employees representing the size of the company, at the age as controls, district to perform the regression taking into consideration the fixed effect that the location of the companies can have. In order to mitigate the risks of the companies having a bad year or an extraordinary one and those results being the ones analyzed, an average of the last 5 years was computed and that value was the one used to calculate the EBITDA margin, this was the ratio that was used to evaluate regarding the performance, and it will be explained more in depth later on.

Study of Implemented SCM practices

1. Supply Chain Management

The supply chain management involves the coordination and the search of chain partners (suppliers, intermediaries, logistic service providers and clients). According to the council of supply chain management, it integrates the components of supply and demand inside and amongst companies. In order to assess how important the supply chain management is for the companies,

with this study it was asked if the aforementioned activities are the exclusive functions of one person, the supply chain manager, or if they accumulate it with other functions..

2. Aggregate planning in Supply Chain Management

Aggregate planning amounts to deciding when and where to produce, when and how much, which products to store and where, which transportations to use, and which systems of technologies of information to select. This having into consideration that the companies are not isolated but instead are an integrated part of all the intervenient of the supply chain (Carvalho, 2012) In essence aggregate planning is a process that allows companies to define the ideal levels of capacity, production, inventory, stockouts and subcontracting for a a specified time horizon with the goal of satisfying demand and maximizing profit. (Chopra & Meindl, 2010a)

The focus was on the type of planning done, and how far companies think ahead, allowing to understand to what extend companies integrate and think as the supply chain and all the intervenient as participants of their own activities.

Accordingly different time horizons represent the following types of planning: Strategic, Tactical and Operational. (Carvalho, 2012)

Firstly the strategic planning, with a time horizon ranging from 4 to 5 years, being considered the long term planning. The economic and financial resources invested on this time of planning are of a substantial amount once that it is expected that, the impact of the long term strategies on the competitive position of the organizations, to be high. ((Hamel & Prahalad, 1996)) More specifically when talking about the strategic planning of the supply chain, it is included the decisions based on the conception (R&D) of products, what is produced internally and what should be externalized, the selection of suppliers and the creation of strategic long-term partnerships, as

well as the location of the facilities and infrastructures. (Simchi-Levi et al., 2008) All the previous mentioned decisions have a deep impact on the organizations and on future performance, it is important to highlight the role of suppliers when talking about supply chain management and how crucial it is for the companies to choose correctly, this issue will be analyzed more in depth ahead.

Secondly, the tactical planning, is a medium term planning with a time horizon between one and two years (Ballou, 2004). At this level of planning the organizations seek the alignment between what is defined at a strategic level and what is the operational planning, by making sure that the necessary resources are available.

Lastly, operational planning includes questions and decisions in the short run. Its focus are the management of the day-to-day operations that are decided and implemented in order to make sure that what was decided at a strategic level occurs. (Simchi-Levi et al.2008). Focusing on the supply chain activities, it includes the optimization, monitoring and control of the actions carried out by the company.

As a part of the supply chain planning, companies need to have special attention to issues such as: demanding the forecast, stocks, dimensioning of the infrastructures, supply needs and the location of said infrastructure. The importance of management of the stocks has increased due to decreasing product life-cycles, higher level of customization, demand for shorter delivery times and increase level of competition as well as the increase of the rate and complexity of change, moreover when talking to manufacturing companies this gains even more importance.(Power, 2005)

The survey was conducted to analyze the type of planning that companies make regarding the stocks (for example), the importance of stock control was already explained above, and for a

company to have *security stock*, this knowledge allows the draw of conclusions on whether there is a real concern on preparing the companies for some changes that can occur on the surrounding environment or not, and if does the company take measures to mitigate and reduce the risks associated to those possible changes. Those details are the difference between a company that looks as the supply chain as an opportunity to have a competitive advantage that will lead to a better performance, and others that still have an old fashioned way to look at logistics intervenient as separate/individual non communicative parts. (Carvalho, 2012)

3. Formulation and Control of the Supply Chain

When formulating the supply chain it is crucial to take into consideration the length, the type of supply chain, what should be done internally and what should be outsourced, and finally companies should have an effective way of evaluating and controlling the activities that are being performed not only by the suppliers but also internally.

The length of a supply chain is related to the number of interveners that are part of it, it represents the layers/steps that the products go by from the supplier to the final costumer. The bigger the length of the supply chain, the greater the costs, the time it takes to supply and also stiffer and less adaptable they turn. Moreover, as the supply chain grows, the more complex it gets to control and monitor all the activities (Carvalho, 2012). Of course, the type of market where the company acts is determinant to the length of the supply chain, in furniture manufacturing for example, it all depends on how customized the products are. Highly customized products that required a high customer service level, imposes the supply chain to be shorter in order to be adaptable to the specific demands of the costumers.

When formulating the supply chain, defining KPI helps the company to have a clear idea on the performance, by implementing a performance measurement indicator not only for the company processes but also for the interveners, that will later allow the necessary changes in the continuous process of improving the performance . In order for the KPI's to be effective continuous planning, monitoring and execution are necessary so that companies can adapt to the changes in the environment they are in (Cai, Liu, Xiao, & Liu, 2009).

Regarding the formulation and control, I studied whether the companies have a clear notion on how large/small their supply chain is, and if they have any defined KPI's that allow a clear evaluation and control of the interveners.

4. Purchasing in supply chain

Purchasing management includes all the activities that are necessary to ensure an effective management of the relation between the company and the suppliers. (Carvalho, 2012)

The purchasing department is divided into two different functions: The sourcing also known as strategic procurement, and purchasing/ordering also known as operational procurement. When conducting a purchase, purchasing manager or managers need have into account the full range of offers available first and only then with the information gathered proceed to make an official ordering. The sourcing department is responsible for defining the specs needed, selection of suppliers that are able to meet those specifications (will be developed more in debt later), and the formal preparation of the order. The procurement department on it's hand it is responsible for leading the negotiation, filling the order and monitoring it, afterwards it must conduct an evaluation that will allow decision to repeat the order and maintaining the supplier or if necessary repeat the entire process.

Nevertheless, the role and responsibilities go further from what is described previously. In order to an effective management of the relations with suppliers, it is imperative the collaboration and flow of quality information between the different departments (Monczka et al.,2005). The responsibility of the purchasing can be divided in two different ways. Companies can choose to centralize the function on a single department, or it can be from the responsibility of each department to do their own purchasing, as expected each of the strategies whether centralized or decentralized bares their own pros and cons.

Whatever the decision regarding the centralization or decentralization of the purchasing role, all the companies must have a purchasing strategy. When talking of purchasing strategies that adapt a company that implements SCM practices there are three that are referred on the existent literature. According to (Carvalho,2012) the strategies are the following: *Optimization of suppliers*, that is a process that has the objective of determine how many and which suppliers an organization must have. It is a continuous process that involves the elimination of the suppliers that are not able to guarantee the desired levels of performance. *Global Sourcing* basically is assuming that the potential suppliers can be for every corner of the world, very associated to the immediate reduction of the acquisition costs. And finally the *Development of partnerships*, which is based on the selection and integration of a reduced number of suppliers that are considered crucial to the company and that have an outstanding performance. This strategies where presented on the existing literature as the ones more connected to the supply chain management integration. All of the three show a great concern for the integration of the suppliers as active part and also show that the *Sourcing* one of the main drivers for improvement of performance is an active part of the company practices according to (Chopra & Meindl, 2010). Ultimately companies com use the three strategies, looking at all the world when looking for suppliers (Global Sourcing),

combine it with the Optimization of Suppliers and finally create some partnerships with the ones that are indicated for the company.

5. Evaluation and selection of suppliers:

In supply chain management, collaboration is key, and in order to achieve optimal performance, it is necessary to understand the current constraints of suppliers, once that, are an important part of the company operations (Horvath, 2001) So the selection of suppliers by the company is a crucial decision and a bad evaluation can lead to enormous setbacks. To analyze how companies select its suppliers, it was asked if from the following steps, that ensure a good selection of supplier did they go through on their companies (Carvalho, 2012)

1. Acknowledgement of the need
2. Identification of purchase specifications
3. Definition of the sourcing strategy
4. Identification of potential suppliers
5. Limit the number of suppliers
6. Determine the method of evaluating suppliers
7. Select the supplier

By going through all the steps companies reduce the risk of having a supplier that does not fit the strategy and the needs of the company. When concentrating the distribution on a smaller number of more qualified players, that are aligned and give reassurance to the companies that will have a good performance will lead to a “channel consolidation” that will lead to a better performance (Power, 2005).

Main limitations

Before presenting the results I would like to present for the main limitations of the thesis. Mainly the number of respondent when comparing to the total sample size that was significantly low, from the total 1127 companies only 80 completed the all survey providing valid responses.

Also the questionnaire focuses on the internal part of the companies and not on the external elements like the suppliers for example, this focus has the objective of getting more reliable results from the questionnaires, and on the same time while presenting the results they will be more easily understood, and if necessary the measures needed, implemented by the companies.

Results:

The main objective of this thesis was to understand the effects of implementing supply chain management practices, and if do these practices have a positive impact on performance or not. To do so a model was created to test the relation between the implementation of said practices and the effects on performance. Having the financial data from the companies available the EBITDA was chosen as a performance indicator, this choice was based on the fact that it offers a more realistic idea on how the companies are really performing by stripping out some expenses that can mislead the analysis. Furthermore, and in order to eliminate factors that can influence the EBITDA (e.g size) a ratio was defined, since the companies are all from the same industry the EBITDA margin is the best indicator for comparing the performance of the respondent companies.

From the total set of questions distributed, a few were selected to generate a variable that included the “right answers”. The questions selected were those which had clearly a right or wrong answer, and from which was possible to draw a more precise conclusion whether or not supply chain management practices were being implemented. The selected questions to be part of this set can be seen of the following table:

Table. 1 Set of questions to determine Performance

Questionnaire:
Q1 - Is there any budget that is only meant for the control and management of the supply chain?
Q2- Is the management of the supply chain entirely responsibility of a single person?
Q5- From the following utilities of planning of the supply chains, which one/ones best fit your organization?
Q7 -Is the safety stock a measure used by the organization?
Q8- Does the organization use one of the following production and/or stock optimization system?
Q9- Is there any diagram/flowchart that represents the organizations' logistic chain?
Q13- During the suppliers' selection process, the organization goes through the following phases: (choose the options that best fit your organization)

After analyzing the results for each individual question, the decision to drop Q13 from the set of questions was taken, since the results show that the question was not well answered by the respondents, for example when assessing the different phases that a company goes through on the choice of a supplier, the last phase (Selection of Supplier) should have a response rate of 100% and that did not happened, furthermore it’s possible to see on table 2 more than half of

the respondents only selected one option, when the idea was to select the different phases and not only one.

Table 2 – Answer rates to question 13

Answer	%	Count
Reconhecimento antecipado da necessidade	52.87%	46
Identificação dos requisitos de compra	44.83%	39
Definição da estratégia de identificação de potenciais fornecedores (Sourcing)	20.69%	18
Identificação de potenciais fornecedores	14.94%	13
Limitação do número de fornecedores	10.34%	9
Determinar o método de avaliação de fornecedores	4.60%	4
Seleção do fornecedor	56.32%	49

After dropping Q.13 the sum of positive answers to the selected questions was called the SCM.practices. Like it is common when handling with situations where a non-linear relationship exists between the independent and dependent, a logarithmical transformation was performed in order to make the effective relationship non-linear, while still preserving the linear model. (Benoit, 2011)

On the following table. 3, it is possible to see the results for the variable without the logarithm being computed and on the table 4 with the log already computed.

Table. 3 Results for: Performance, SCM practices

Performance	1	2	3	4
SCM.practices	0.0089	0.0091	0.0092*	0.0094*
Size			0.0006	0.0006**
Age			0.0009	0.0009
Observations	80	80	80	80
R ²	0.0283	0.2148	0.052	0.2688
District (F.E)	No	Yes	No	Yes

Significance: *p<0.10, **p<0.05, ***p<0.01

Table.4 Results for: Performance, Log SCM practices

Performance	1	2	3	4
Log SCM.practices	0.0868	0.0892	0.0889*	0.0921*
			0.0006	0.0006**
Age			0.0009	0.0009
Observations	80	80	80	80
R ²	0.0295	0.2159	0.0562	0.2702
District (F.E)	No	Yes	No	Yes

Significance: *p<0.10, **p<0.05, ***p<0.01

The results of the table are divided into four columns, the first where the regression only takes into consideration the EBITDA margin and the results on the set of selected questions as the variables. On the second, the same but introducing the District variable to test for fixed effects, the third one, introducing new variables as control (Age and Size of the company) and finally

on the fourth, the same that was done on the second column by adding district. The size of the company was measured by the number of employees working directly for the company.

From the results it is possible to conclude that companies that actually include supply chain management practices in their activities perform better, also linked with the size of the company. The performance of the company had a positive impact by the SCM.practices, the coefficient is 0.086, $p < 0.10$, that can be considered significant. The necessity of adding firm controls to the models urges from the fact that different characteristics of said companies can affect the results, for example as it is possible to identify on the tables above, only when introducing the variable size of the company as a control the effects turned significant, this indicates that the size of the companies have a direct effect, leading to the conclusion that as expected larger companies are more organized than the smaller ones.

From the results we can also conclude that the age of the company does not affect the results, meaning that older more established companies do not have the advantage of being more organized. This can be explained by the early adoption and higher flexibility to accept and incorporate new processes on younger companies that in older more established companies. By new processes I mean using new technologies (e.g software) that help organize and utilize in a more efficient way crucial performance drives such as inventory, production and warehousing planning.

Table.5 – Descriptive statistics for the respondents

Variable	Obs	Mean	Std. Dev.	Min	Max
Size	80	13.95	17.82041	1	90
EBITDA Margin	81	.0531084	.0938365	-.2914921	.3179719

Table.6 – Descriptive statistics for the total sample

Variable	Obs	Mean	Std. Dev.	Min	Max
Size	1,809	15.21946	50.29771	1	1405
EBITDA Margin	1,844	.0334566	.1685792	-2.958914	2.515809

The tables 5 and 6 compare the main results showing the respective descriptive statistics for the sample to respondents that actually replied to the questionnaire and to the universe of companies that fulfilled the requisites and to which the questionnaire was sent.

From the results it is possible to say that the difference in size from those who actually responded to the questionnaire to total universe of companies is not significant, representing less than 1,5 employees per company. The larger difference on the std. dev, results from the fact that included in the universe of companies to which the questionnaire was sent there are multinational companies like IKEA with 1405 employees or Aquinos one of the largest furniture manufacturer with 987 employees that are exceptions to the rule and that by not

responding to the questionnaire cause such a big difference. Regarding the ratio EBITDA Margin, the differences are larger than when looking for the size of the company, showing that the companies that replied to the survey have a worst performance generally than the mean of the total universe of companies. The std. dev. Is also larger on the total population, showing that the companies that replied to the survey are more similar to each other regarding the performance indicator. So even if the sample size is small, the characteristics that define it are somehow similar to the ones of the entire population. Giving more strength to the possible conclusions.

Conclusions:

This thesis main objective was to evaluate the effect that implementing SCM practices have on company's performance. A questionnaire was created and distributed having into consideration the most important SCM practices for the sector, and then the outcome was compared with the financial data to assess performance. The results provide the evidence that companies do perform better when applying SCM practices.

With the results it is possible do say that the hypothesis that was being tested can be confirmed, for the Portuguese furniture manufacturing sector. Since the focus of the study was the internal practices of the companies, it is possible to say that companies more organized and prepared internally perform better than those who do not have the same attention to planning and strategizing. Practices like security stocks, inventory and production optimization, and the formulation and control of the logistic chain are key to a better performance, the thing that they have in common is that to implement companies only depend on themselves and are not

influenced by any external factors. Also having someone responsible, a supply chain manager and a defined budget lead to a better performance.

As already stated above, one of the main limitation of the study is that when analyzing the supply chain that is influenced by various external factors it focus only on the practices that are done by the company. Not having into consideration external factors like the performance of the suppliers or the transportation for example is a weakness, but it was weighted in order to receive the most reliable information possible from the respondents. Also the size of the sample is very limited, thus constituting another limitation for the model, nevertheless the results of the descriptive statistics from the entire population and the sample of respondents are similar. It is also difficult to generalize the results to other industries once that each industry as is own specifications, and the fact that the focus is solely on the furniture manufacturers in Portugal presents as another limitation. Hence, future papers may extend the include an external analysis regarding the Portuguese furniture manufacturing or may use the same methods to test other industries. Moreover, other type of performance measures may be included, not focusing that much on the financial performance, but instead on the level of service to the client for example.

This thesis, even with the aforementioned limitations contributes to a better understanding of the Portuguese furniture manufacturing industry and the impact that SCM has on the performance. It can still drive some companies to start implementing the tested practices.

Bibliography:

- Ballou, R. H. (2004). *Business Logistics/supply Chain Management: Planning, Organizing, and Controlling the Supply Chain* (5th ed.). Pearson Prentice Hall.
- Benoit, K. (2011). Linear Regression Models with Logarithmic Transformations. *ReCALL*, 1–8.
- Cai, J., Liu, X., Xiao, Z., & Liu, J. (2009). Improving supply chain performance management: A systematic approach to analyzing iterative KPI accomplishment. *Decision Support Systems*, 46(2), 512–521. <http://doi.org/10.1016/j.dss.2008.09.004>
- Chopra, S. (Northwestern U., & Meindl, P. (B. C. G. (2010a). Aggregate Planing in a Supply Chain. In Pearson (Ed.), *Supply Chain Management - Strategy, Planing and Operation* (pp. 227–245).
- Chopra, S. (Northwestern U., & Meindl, P. (B. C. G. (2010b). *Supply Chain Management - Strategy, Planing and Operation* (4th ed.). Pearson.
- Hamel, G., & Prahalad, C. K. (1996). Competing in the new economy. *Strategic Management Journal*, 17, 237–242. [http://doi.org/doi: 10.1002/\(SICI\)1097-0266\(199603\)17:3<237::AID-SMJ829>3.0.CO;2-G](http://doi.org/doi: 10.1002/(SICI)1097-0266(199603)17:3<237::AID-SMJ829>3.0.CO;2-G)
- Horvath, L. (2001). Collaboration: the key to value creation in supply chain management. *Supply Chain Management: An International Journal*, 6(5), 205–207. <http://doi.org/10.1108/EUM0000000006039>
- La Londe, B. J., & Masters, J. M. (1994). Emerging Logistics Strategies: Blueprints for the Next Century. *International Journal of Physical Distribution & Logistics Management*, 24(7), 35–47.

Mackelprang, A. W., Robinson, J. L., Bernardes, E., & Webb, G. S. (2014). The relationship between strategic supply chain integration and performance: A meta-analytic evaluation and implications for supply chain management research. *Journal of Business Logistics*, 35(1), 71–96.

<http://doi.org/10.1111/jbl.12023>

Mentzer, J. T., Dewitt, W., Keebler, J. S., Min, S., Nix, N. W., Smith, C. D., & Zacharia, Z. G. (2001). Defining supply chain management. *Journal of Business Logistics*, 22(2), 1–25.

<http://doi.org/10.1002/j.2158-1592.2001.tb00001.x>

Power, D. (2005). Supply chain management integration and implementation: a literature review. *Supply Chain Management: An International Journal*, 10(4), 252–263.

<http://doi.org/10.1108/13598540510612721>