Analysis of the Effect of Supply Chain on Small and Medium Enterprises Performance in Medan (Case study on Leather Shoes SMEs)

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Abstract. Supply chain is important in business activities including for small and medium enterprises. The importance of all parties ranging from suppliers, manufacturers, distributors, retailers, and customers working together in the process of product creation to the distribution of products to end consumers produces the appearance of the concept of supply chain management. This study aims to analyze how the effect of supply chain management on enterprise performance. The supply chain management approach is carried out with four independent variables namely sharing information, trust, long-term relationship, and cooperation. This study aims to analyze the effect of supply chain management on corporate performance. The sampling method uses a random sampling method with a total sample of 75 people consisting of small and medium-sized leather shoes in Medan. The research method uses survey and data processing method using multiple linear regression SPSS program. The results of the research show that information sharing, trust, long term relationship, and cooperation variables have a positive and significant effect on the performance of supply chain management in the company.

Keyword : small and medium enterprise, supply chain performance, shoes industry

1. Introduction
Small and medium enterprises (SMEs) are businesses that contribute to the country's economic development. This is indicated by the number of SME units that dominate, with a composition of 99.99% of the total business units in Indonesia. In 2013, the Indonesian economy grew 5.78% where the manufacturing industry sector was the sector that contributed the most to the growth of Gross National Product. In addition to contributing to the formation of GDP, SMEs also play a role in reducing the number of unemployed in Indonesia through increasing employment each year (Stefani et al, 2014).
One industry group that needs supply chain management is small and medium industries (SMEs). The types of small and medium enterprises (SMEs) in developing countries occupy 30%-60% of the total type of business. In Indonesia, the total types of small and medium businesses are around 37%-43% in Java and 40%-50% outside Java (Sriyana, 2010). Businesses included in these small and medium businesses are food, handicrafts, furniture, to convection or textiles, with a maximum annual sales of 50 billions for medium businesses and 5 billions for small businesses. Besides being only established as a small business that only uses 60% of its total capacity, SMEs also encounter many hindrances and obstacles. The hindrances faced by businesses include problems in procurement of raw materials, business relations, marketing, business permits and others. The main problem of SMEs is financial instability and the difficulty of finding capital loans. Procurement of raw materials is also a problem because of the high price of raw materials. The high cost of these raw materials ranks the largest in the cost of expenses that must be incurred by SMEs, namely 32%, while labor and fuel are only 23% and 21% respectively (Sriyana, 2010).

This research was conducted on small and medium industries in Medan, especially those that process the skin into shoes. The problem that is often faced by SMEs, is generally the same as the problem that usually occurs in other processing industries, making it difficult to develop (Akmal, 2006 and Triajie, 2006), namely: lack of access to capital/limited capital, most of the capital used by small-scale entrepreneurs comes from their own capital. Employers do not dare to borrow capital from banks because they do not understand the procedure. Then the problem of procurement of raw materials, especially on raw materials that are difficult to obtain and is seasonal, for example for the manufacture of skin crackers, smoke catfish. This makes prices fluctuate on raw materials and can have a direct impact on the continuity of production. In addition, the uniformity of raw material quality is also difficult to obtain throughout the year. Partnership issues are important, because of the difficulty of meeting (raw material producers) and raw material processing companies in true partnerships, because they have different interests and willingness.

Labor (human resources) as labor productivity is one of the factors influencing industrial development, especially small industry. Low levels of education and low wages are the cause of the developing leather industry and affect labor productivity. Furthermore, the role of technology that is still less optimized, the courage to adopt and apply technology developed in the country is still lacking, this is due to the low quality of the workforce because the level of education and awareness for learning is still lacking. Lack of expertise in managing SMEs has also caused the hindrance to develop, this is also due to low educational factors, so that the thinking pattern is still narrow and cannot yet develop in line with technological progress and market demand.

Marketing/product distribution is still difficult, because the market for small food processing industries is still dominated by several large companies with large capital making it difficult for small companies to compete. Value added to the product that is still lacking, namely that there are still many SMEs that do not or do not have production permits regarding the established industry. Then it can be seen from the things that are not attractive, even though with a good and attractive packaging can attract consumers to buy it. Then the threat of newcomers, newcomers to an industry bring new capacity, the desire to seize the market, and often also a large resource. As a result, the price can go down and higher fees.

According to Liedholm (in Saputra and Akmal, 2006), generally small industries are more developed in rural areas and small cities which are often in suburb or it is as part-time pattern of other economic activities. This indication is very positive in supporting development in the area as a driving force for the economy. The criteria for Small and Medium Industries are regulated in accordance with the regulation of the Minister of Industry of the Republic of Indonesia Number 64/M-IND/PER/7/2011, concerning the types of industries in the development of the Directorate General and Environmental Agency of the Ministry of Industry, Article 3 states that Small and Medium Industries are who has an industrial
company investment up to Rp. 10,000,000,000 (ten billion rupiah) excluding land and buildings of business premises, except for certain types of industry the authority to foster, is entirely in the Directorate General of SMI without limitation of the amount of investment.

Based on Law Number 20 of 2008 concerning Micro and Medium Enterprises, the definition of small and medium industries is defined: Small industries are productive, independent economic activities carried out by individuals or business entities that are not subsidiaries or non-branch companies owned, controlled, or become part of either directly or indirectly from Medium Enterprises or Large Businesses that have a net worth of more than IDR. 50,000,000.00 (fifty millions rupiah) up to a maximum of IDR. 500,000,000.00 (five hundred million rupiah) not including land and building of business premises or having annual sales results of more than IDR 300,000,000.00 (three hundred million rupiah) up to a maximum of IDR 2,500,000,000.00 (two billion five hundred million rupiah).

Medium industries are independent, productive economic activities carried out by individuals or business entities that are not as subsidiaries or not as branches of companies owned, controlled, or directly or indirectly part of Small Businesses or Large Enterprises that have net assets more than IDR. 500,000,000.00 (five 6 hundred million rupiah) up to a maximum of IDR 2,500,000,000.00 (ten billions rupiah) excluding land and buildings for business, or having annual sales of more than IDR 2,500,000,000. 00 (two billion five hundred million rupiah) with a maximum of IDR.50,000,000,000.00 (fifty billion rupiah).

Company performance can be improved both through internal and external companies by observing and identifying what things can affect the company's performance and things that can improve the company's performance. Internal factors are influenced by all lines related to the company, while external factors are influenced by the supply chain.

Organizational performance is the actual result or output produced by an organization which is then measured and compared with the expected results or output (Jahanshahi, et al, 2012). The rapid development of information technology, communication, and manufacturing processes results in short product life cycles. Therefore, every company will make every effort to increase productivity, efficiency, fast, easy service, and continue to create new innovations to remain superior and survive in the market. In addition to productivity and efficiency that need to be improved, companies must also understand and know what is needed by consumers.

Pujawan (2010) explained that the importance of the role of all parties ranging from suppliers, manufacturers, distributors, retailers, and customers in creating products that are cheap, quality, and fast is leading to a new concept of Supply Chain Management. According to Indrajit and Djokopranoto (2005) the term supply chain was first used by several logistical consultants around the 1980s, then by academics further analyzed in the 1990s, the concept of supply chain management was born. Furthermore Indrajit and Djokopranoto (2005) explained, essentially supply chain management is the expansion and development of concepts and meanings of logistics management, logistics management plays a role in regulating the flow of goods and supply chain also includes between companies that are related to the flow of goods and increasingly developing with regard to things that customers need.

According to Heyzer and Render (2011) companies need to consider supply chain issues to ensure that the supply chain supports the company's strategy. If the operations management function supports the company's overall strategy, the supply chain is designed to support the operations management strategy. Facilities and costs needed to meet consumer needs, with the aim of achieving maximum minimum and service costs are all considered in supply chain management.

Supply chain management is the integration of material and service procurement activities, conversion into semi-finished goods and end products, and delivery to customers (Heizer and Render, 2010).
In order for organizations to be able to compete and have good organizational performance, it can be supported by implementing supply chain management. According to (Christopher, 1998) supply chain management (SCM) is an organizational network that involves upstream and downstream relationships in different processes and activities that value products and services to consumers. Supply chain management is a set of approaches to streamline the integration of suppliers, manufacturing, warehouses, and storage, so that goods are produced and distributed in the right amount, the right location, the right time to minimize costs and provide service satisfaction to consumers. Research on SCM was carried out by Li, et.al (2006) who developed five dimensions of SCM practice (Strategic Supplier Partnership, Customer Relationship, Information Sharing, Level of information quality and Postponement) and examined the relationship between SCM practices and competitive advantage and company performance. The results of the study show that the better SCM practices have a positive effect on increasing competitive advantage and improving company performance. In addition, competitive advantage directly affects the Company's performance.

2. Research Overview Framework
   1. Information Sharing
      Information sharing is the intensity and capacity of a company in its interactions to share information with partners regarding joint business strategies. Information sharing also allows supply chain members to obtain, maintain, and deliver information needed to ensure that decision making is effective, and is a factor that is able to strengthen elements of collaboration as a whole, therefore industrial congestion can be reduced by information sharing (Simatupang & Sridharan in Yaqoub, 2012). Information sharing can assist companies in improving the efficiency and effectiveness of supply chains and is the most important factor for achieving effective coordination in the supply chain and controlling the supply chain, this was stated by Anatan (2008), in his research using antecedent variables (facilitator intra-organizational, and inter-organizational relations) have a significant influence on information sharing and information quality. 
      H1: Information sharing has a positive effect on the performance of supply chain management

   2. Trust
      Sridharan & Sridharan (2013) say that when trust is present, SC members will work together to overcome differences for the benefit of all members. SCM is built on trust (Anbanandam et al., 2011). Lack of mutual trust is a fatal factor that can dissolve partnerships in the supply chain (Liu et al. In Kim et al., 2009). Mamad & Chahdi's (2013) study confirms that trust is a major factor in collaboration between SC members. Similar results are also shown by Ryu et al (2009) who argue that in addition to increasing collaboration, trust is very important in building commitment. Companies that believe in the integrity of their partners will have a higher intention to continue working with these partners (Wu et al., 2012; Cambra & Polo, 2011). From the literature above, the second research hypothesis is prepared as follows: 
      H2: Trust has a significant positive effect on supply chain management performance

   3. Long-term Relationship
      Ganesan in Indriani (2006), defines a long-term relationship as a perception of buyers' interdependence with suppliers both in the context of products or relationships that are expected to bring benefits to
buyers in the long run. The company's relationship with suppliers is the strongest collaboration in the context of the value chain or supply chain. In this case, suppliers play a role in providing IPUT materials or materials used by the company. Material quality and ability in material distribution depend on supplier performance, which in turn affects the overall performance of the company. (Kanter in Lestari, 2009).

H3: Long term relationship has a positive effect on supply chain management performance.

4. Cooperation
Cooperation is a situation that is marked when several parties work together to achieve a mutually beneficial goal. Effective cooperation is a desire to develop relationships that will produce trust and commitment (Bujang, 2007). The existence of cooperation with reliable suppliers will result in a good understanding and understanding of the needs and needs of each party so as to increase the company's income (Cempakasari and Yoestini, 2003).

H4: Cooperation has a positive effect on the performance of supply chain management.

This research framework can be illustrated in Figure 1 below.

![Research overview Framework](image)

**Figure 1. Research overview Framework**

3. Research Method
3.1 Research Variable
Research variable consists of two types, namely the dependent variable that is affected or which is a result of the independent variable (Sugiyono, 2012). Supply chain management performance in leather shoes SMEs is as the dependent variable. While the independent variables (independent variables) can be interpreted as variables that influence or cause changes or the emergence of the dependent variable (Sugiyono, 2012). Information sharing, trust, long term relationship, and cooperation are the independent variables of this study.

3.2 Operational definition
1. Supply chain management performance is a performance about the quality of activities related to the flow and movement of goods, from raw materials to end consumers, including those related to information and funds. (Levi, Kaminsky, Levi in Bernard2011).
2. Information sharing is a continuous flow of communication between formal and informal work partners and contributes to a better planning and supervision in a series (Miguel and Brito, 2011).
3. Long term relationship is the company's ability to establish long-term relationships with suppliers because the company considers that the relationship will bring cost advantages (Indriani, 2006).
4. Cooperation are actions that are coordinated or complementary carried out by the company in collaborative and interdependent relationships to achieve mutual results or a single outcome in the expected reciprocation (Aderson and Narus in Bujang, 2007).
5. Trust is the foundation in a relationship. In today's business competition, trust plays a very important role, especially in maintaining a relationship. Trust is defined by Lin and Lu (2010) as a relationship between a company and a consumer which is indicated by consumer confidence in the ability to reflect the products and services offered by the company professionally. Trust is the relationship between the company and consumers where consumers believe that their needs will be fulfilled as expected.

3.3. Population and Sample
The population in this study is small and medium industries (SMEs) in Medan city running in the production of leather shoes totaling 75 SMEs. The sampling technique in this study using probability sampling with the method used is simple random sampling, which is taking members of the sample randomly without regard to the strata (Sugiyono, 2012). The sample in this study are some small and medium-sized industries produce leather shoes in Medan City.

3.4. Data analysis method
Data collection is done using questionnaires and interviews. The form of multiple regression analysis in this study is:

\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \]

Remarks:
- \( Y \) = Supply Chain Management Performance on enterprises (SMEs)
- \( \alpha \) = Constant
- \( X_1 \) = Information Sharing
- \( X_2 \) = Trust
- \( X_3 \) : Long Term Relationship
- \( X_4 \) = Cooperation
- \( b_1 \) = Regression Variable Coefficient Information sharing
- \( b_2 \) = Trust Regression Variable Coefficient
- \( b_3 \) = Long Term Relationship Regression Variable Coefficient
- \( b_4 \) = Cooperation Regression Variable Coefficient
- \( e \) = Standard Error

4. Research Results and Discussion
A. Reliability Test
According to Nunnaly in Ghozali (2006), reliability is a tool to measure a questionnaire which is an indicator of variables or constructs. Reliability testing in this study was measured by One Shot or just one measurement. A questionnaire is said to be reliable or reliable if someone's answer to the statement is consistent or stable over time. A variable is said to be reliable if it gives the value of Cronbach Alpha (\( \alpha \)) > 0.60. Based on calculations that have been carried out all variables have Cronbach Alpha (\( \alpha \)) > 0.60, thus the questionnaire in this study is reliable.
B. Validity Test
Validity test is used to measure whether a questionnaire is valid or not. A questionnaire is said to be valid if the question in the questionnaire is able to reveal something that will be measured by the questionnaire (Ghozali, 2006). Validity test is done by comparing the value \( r \) count with \( r \) table by looking for degree of freedom (df) = \( n - 2 \), in this case \( n \) is the number of samples. If \( r \) counts \( > \) \( r \) table. From the results of the validity test, it shows the significance value that is below 0.05 and the \( r \) count of each indicator of each variable is greater than the value of \( r \) table. Then all indicators of each variable are said to be valid.

C. Multiple Linear Regression Test
Based on the calculation, the multiple linear regression equation can be presented as follows:

\[
Y = 12.474 + 0.137 X_1 + 0.221 X_2 + 0.354 X_3 + 0.241 X_4.
\]

The multiple linear regression equation shows that all independent variables have a positive and significant effect on the dependent variable. Based on the results of the research conducted, all variables in this study are information sharing, trust, long term relationships, and cooperation have a positive and significant effect on the implementation of supply chain management on company performance. This supports from the data that is processed using multiple linear regression tests, with the value of the standardized coefficients positive value results in the conclusion that supply chain management has a positive and significant effect on the company's operational performance.

5. Conclusion
1. Variable information sharing, trust, long term relationship, and cooperation have a positive and significant effect on the performance of supply chain management in the company.
2. Trust has the greatest significance value, then information sharing, then long-term relationship and cooperation.
3. All hypotheses are accepted because the significance value is below 0.05. The result of the coefficient of determination is 0.318, this indicates that the ability of the independent variable in explaining the dependent variable is 31.8%.

Suggestions
1. To improve company performance, there is a need for a supply chain management strategy to be implemented.
2. Information sharing, trust, long term relationship, and cooperation are part of the factors that influence the performance of supply chain management. Then, the company must pay attention to information sharing as a basis for the implementation of supply chain management, then a long term relationship that can provide competitive advantages to companies that implement it, then cooperation which is the best alternative in carrying out optimal supply chain management, and the level of consumer confidence in the company as long as the supply chain is absolutely maintained.
6. References

[1] Bujang. 2007. “Pengujian Faktor-Faktor Yang Mempengaruhi Trust Dan Komitmen Dalam Hubungan Antara Pemasok Dan Perusahaan”. Jurnal Optimal. Vol 1, No.1.

[2] Cambra, J. J. & Polo, Y. (2011). Post-satisfaction factors affecting the long-term orientation of supply relationships. Journal of Business & Industrial Marketing, 26/6, 395 – 405.

[3] Ghozali, Imam. 2006. Aplikasi Analisis Multivariate Dengan Program SPSS. Semarang : Badan Penerbit Universitas Diponegoro.

[4] Heizer, Jay dan Barry Render. 2010. Manajemen Operasi. Edisi 9. Jakarta : Salemba 4

[5] Indrajit, Richardus dan Richardus Djokopranoto. 2002. Konsep Manajemen Supply Chain.

[6] Kementerian Koperasi dan Usaha Kecil dan Menengah Republik Indonesia. Depkop. Homepage online. Available from http://www.depkop.go.id/index.php?option=co m_m p o c a d o w n l o a d &view=sections&Itemid=93; Internet; accessed 18 M March 2014.

[7] Kim, D., Kumar, V. & Kumar, U. (2010), “Performance assessment framework for supply chain partnership”, Supply Chain Management: An International Journal, 15 (3), 187 – 195.

[8] Long-Yi Lin, Ching-Yuh Lu,(2010) "The influence of corporate image, relationship marketing, and trust on purchase intention: the moderating effects of word-of-mouth", Tourism Review, Vol. 65 Issue: 3, pp.1634,https://doi.org/10.1108/1660537101 1083503.

[9] Mamad, M. & Chahdi, F.O. (2013), “The Factors of the Collaboration between the Upstream Supply Chain Actors: Case of the Automotive Sector in Morocco.International Business Research, 6 (11), 15 –28.

[10] Miguel, P.L.S., dan Ledur Brito, L.A. 2011. “Supply Chain Management measurement and its influence on Operational Performance”. Journal of operations and supply chain management . Vol 4, No.2.

[11] Pujawan, I Nyoman dan Mahendrawathi ER. 2010. Supply Chain Management.edisi 2. Surabaya: Guna Widya.

[12] Ryu, I., So, S. & Koo, C. (2009). The role of partnership in supply chain performance”, Industrial Management & Data Systems, 109 (4), 496 –514.

[13] Simatupang T. M. & Sridharan, R. (2005). The collaboration index: a measure for supply chain collaboration”, International Journal of Physical Distribution & Logistics Management, 35(1), 44 – 62.

[14] Sridharan, R. & Simatupang T. M. (2013). Power and trust in supply chain collaboration. Int. J. of Value Chain Management, 7 (1), 76 – 96.

[15] Simchi-levi D, Kaminsky P. Simchi-Levi E. 2003. Designing and Managing The Supply Chain: Concepts, Strategies and Case Studies. New York : McGraw- Hill.

[16] Sugiyono. 2012. Metode Penelitian Kuantitatif Kualitatif Dan R&D. Bandung: CV. Alfabeta. Triajie, Muhammad Iqbal. 2006. “Sumber-Sumber Pertumbuhan Industri Pengolahan Makanan Di Indonesia (Analisis Total Factor Productivity)”. Skripsi. Bogor: IPB.

[17] Wu, M., Weng, Y. & Huang, I. (2012). A study of supply chain partnership based on commitment-trust theory. Asia Pacific Journal of Marketing and Logistics, 24 (4),690 – 707.