

# ANALYSIS OF FACTORS AFFECTING SUPPLY CHAIN PERFORMANCE IN SME TEMPE CHIPS IN SANAN VILLAGE MALANG

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**Abstract:** Small Medium Enterprise (SME) that has good supply chain performance can help its ability to solve business problems. In fact, there are still a lot of SMEs that fail in supply chain management due to many factors influencing their implementation. This research aims to analysis relation between factors influencing supply chain and the performance of supply chain management in Tempe Chips Industries in Sanan Village Malang. Data collections were done through questionnaire deployed to 200 owners or manager of Tempe Chips SME in Sanan Village, Malang. Data were analyzed using Structural Equation Modeling (SEM). Analysis result shows that information sharing and customer service give the most dominant influence to supply chain management's performance in Sanan's Tempe Chips industries.

**Keywords:** supply chain management, SME, Tempe Chips



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Small and medium enterprises (SMEs) have become the backbone of a country's economic growth. The development of SMEs can be a foundation in fighting against the economic power of large companies. Overall, development of SMEs can be seen as an accelerator of a country's economic performance and as an action to reduce poverty. Since SMEs are very important for the country, encouraging governments of all countries to take an action in promoting the growth of SMEs is necessary (Aris, 2007). One of SMEs

which is considered potential by the government of Indonesia for improvement of the regional economy and community welfare is SME Tempe Chips in Sanan Village Malang (Mariana, 2009). In Tempe chips industry in Sanan village, there is cooperation in business activities and involvement of other parties in their economic activity process, i.e. with the presence of workers, partners, and consumers (Hapiz, 2012). Collaboration with various parties in business operations in SME Tempe chips in Sanan Village Malang needs to be done continuously, so as not to disturb the business performance. One way that can be done is through the implementation of good supply chain management.

Supply chain management can be said to be a continuous integration process of customer needs, internal process, and supplier performance (Kumar, et al., 2015). Initially, supply chain management was known through the collaboration of supplier and

buyer, then it is developed into an integration of logistics and transportation distribution activities, and eventually, it is developed into a comprehensive approach to operational, material, and logistics management (Vaart, et al., 2008). The implementation of supply chain management in one SME cannot be generalized to others because a perfect relationship between supply chain management strategy and product characteristic is required; therefore, evaluation of supply chain management measurement system also cannot be generalized in every business sector (Gopal and Takkar, 2012). The implementation of different supply chain management in each business leads to differences in the composition of performance measurement system of supply chain management (Alfonso and Cabrita, 2015).

Some researchers have not yet agreed on the best focus of measurement on supply chain man-

agement performance in SMEs (Abdallah, 2014). According to Azfar, et al. (2014), shipping flexibility and responding to the customer are very important and critical variables in measuring the effectiveness of supply chain management in SMEs. Measurement of shipping flexibility is important in estimating the responsiveness of supply chain. Shipping flexibility is related to delivering products to customers as quickly as possible. The higher the flexibility, the more responsive the supply chain will be. (Flynn, et al., 2010; Azfar, et al., 2014). Variable of responding to the customer is related to the shipping date and order date. This dimension is applied to the ability of supply chain in responding to changes in customer demand and timeliness of the order date (Flynn, et al., 2010; Cooil, et al., 2007). The following are some studies that describe aspects of performance measurement of supply chain management:

**Table 1 Aspects of Supply Chain Management Performance Measurement**

Aspects of Supply Chain Management Performance Measurement	Researcher	Explanation
Flexibility of shipping	Desphande (2012), Flynn, <i>et al.</i> (2010), Azfar, <i>et al.</i> (2014)	Flexibility in delivering products to the customers reflects the performance of supply chain management. Fast shipping of products to customers shows a responsive business supply chain.
Responding to Customers	Desphande (2012), Flynn, <i>et al.</i> (2010); Cooil, <i>et al.</i> (2007)	Responding to customers reflects the performance of supply chain management. The speed of business in responding to customer demand and orders demonstrates the ability of a supply chain management in adjusting to customer demand.

Well-scaled supply chain management performance is able to overcome uncertainty and variations in business such as uncertainty of customer demand, fluctuation of raw material price, shipping delays, and seasonal demand in small to medium-sized businesses (Kumar, et al., 2013). In contrast, a research which was conducted by Koh, et al. (2007) states that there are many SMEs which succeed in developing a cooperative relationship between suppliers and buyers and adapting customer

relationship strategies. However, only a few companies succeed in doing all these things simultaneously and continuously. This is because there are many SMEs which have not paid attention to the factors that affect the implementation of supply chain management (Husey, et al., 2013). Factors influencing the implementation process of supply chain management can occur either from SMEs themselves or from related organizations (Jayaram, et al., 2014). Several previous studies as stated in Table 1

suggest that there are several common factors affecting the implementation of supply chain management in SMEs, such as information dissemination

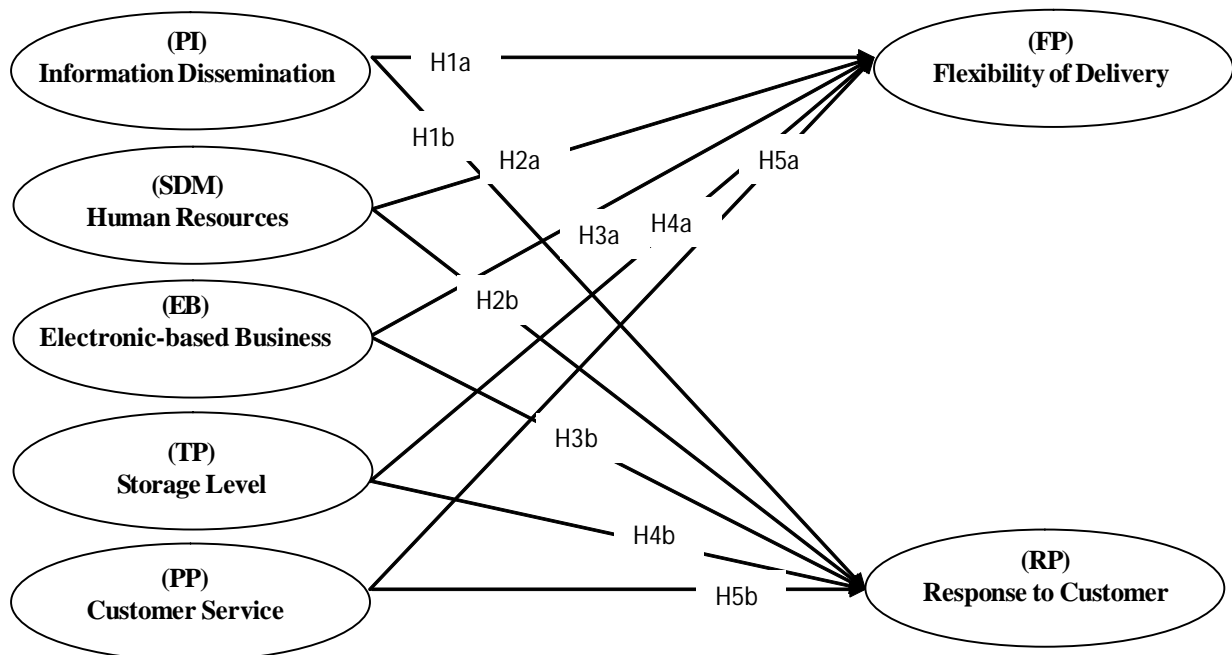
systems, human resources, electronic-based business, storage level, and customer service.

**Table 2 Factors Affecting Supply Chain Management**

<b>Factors Affecting Supply Chain Management</b>	<b>Researcher</b>	<b>Explanation</b>
Information Dissemination	Jayaram, <i>et al.</i> (2014); Kumar, <i>et al.</i> (2015); Cao, <i>et al.</i> (2011); Fawceet, <i>et al.</i> (2008); Forslund, <i>et al.</i> (2007)	Information dissemination has a positive effect on supply chain management performance of SMEs.
Human resources	Koh, <i>et al.</i> (2007); Kumar, <i>et al.</i> (2015); Zhu, <i>et al.</i> (2008); Gowen dan Tallon (2003); Ellinger, <i>et al.</i> (2013)	Human resources positively impact the implementation of supply chain management through trustworthy built among the members of supply chain elements.
Electronic-based Business	Thoo, <i>et al.</i> (2012); Wagner and Sweeney (2010)	The use of electronic-based business has a positive effect on the implementation of supply chain management. Utilization of electronic-based business can increase competition and operational cost savings.
Storage Level	Koh, <i>et al.</i> (2007); Hamisi (2011); Natarajan (2014);	Good and controlled storage level has a significant positive effect on supply chain management performance.
Customer Service	Hamisi (2011); Khan, <i>et al.</i> (2007) Madu (2000), Grover, <i>et al.</i> (2007); Rahman <i>et al.</i> (2008)	Good customer service can have a significant effect on supply chain management performance.

Based on the research gap and previous research above, this research is conducted to analyze the factors that affect the performance of supply chain management of SMEs. Based on this, a conceptual framework of research can be established. The conceptual framework of research is an outline of research that becomes the basic element of a thinking process. Conceptual framework is built comprehensively by basing on the facts of the existing problems, theoreticallinkage between variables,

review previous studies, methodology, analysis methods, and the concordance of research objectives, so that systematic research in a good research flow and in accordance with the formula and research objectives to be achieved will be achieved. Based on this, the illustration of the relationship between variables is presented in the following figure:



**Figure 1 Research Conceptual Framework**

There are several independent variables that form the conceptual framework of this research, namely dissemination of information, human resources, electronic-based business, storage level, and customer service. Information dissemination factor is defined as the successor or extension of important information related to all business operations to all other supply chain partners (Cao, et al., 2011). Information dissemination can solve problems in terms of data processing related to logistics and can take business decisions. Good information dissemination processes across all elements of the supply chain will make it easy to process, analyze, and display intricate data, primarily data related to warehousing. In addition, good information dissemination will make it easier for managers and all employees to make decisions regarding ordering or delivering goods to customers (Fawcett, et al., 2008). Based on this, the hypothesis that can be taken is:

H1 a: Information dissemination has a significant and positive effect on the flexibility of shipping

Research which was conducted by Cao, et al. (2011) also states that good information dissemination process will help update the data owned by the marketing team, which will increase the speed in responding to customer demand. Based on this, the hypothesis that can be taken is:

H1 b: Information dissemination has a significant and positive effect on responding to customer

Human resource and internal environment are very influential in the implementation of supply chain management. A good strategy of human resource management will focus on service efficiency and emphasize service volume and speed of shipping. In order to achieve this, human resources need to be trained and given clear and focused assignments (Ellinger, et al., 2013). Based on the explanation above, the hypothesis that can be taken is:

H2 a: Human resources have a significant and positive effect on the flexibility of shipping.

In addition, human resources that have a unique strategy for customer service and strive to meet consumer needs by creating a profitable cooperative relationship will help the company achieve consistent business goals (Ellinger, et al., 2013). Therefore, it can be concluded that the support and commitment of top management combined with training, integration between departments within a business, and various suppliers, is essential for the implementation of supply chain management (Sandberg and Abrahamsson, 2010). Based on the explanation above, the hypothesis that can be taken is:

H2 b: Human resources have a significant and positive effect on responding to the customer.

Electronic-based business is potential to transform and integrate various functional elements across different industries (Wagner and Sweeney, 2010). Small and medium enterprises that utilize technology are potential to achieve profits and succeed in competing with other small and medium enterprises. The use of electronics in a business will facilitate the tracking of shipping through internet media, in terms of shipping status checks, timeliness of shipping, and expedition team's ability to reach customer locations and choose what mode of transportation to use (Oliveira, et al., 2011). Based on the explanation above, the hypothesis that can be taken is:

H3 a: The use of electronic-based business has a significant and positive effect on the flexibility of shipping.

In general, the use of good electronic technology can improve the efficiency and effectiveness of supply chain management, order and shipping automation, as well as logistics management (Wagner and Sweeney, 2010). Based on the explanation above, the hypothesis that can be taken is:

H3 b: The use of electronic-based business has a positive effect on responding to the customer.

Storage level has an important role in business decision making (Kaynak, 2008; Habib, 2010). Through the integration of innovation in storage, the business can achieve competitive advantage through the ability to maintain the adequacy and availability of products and maintain the quality of shipping to customers (Natarajan, 2014: 89). Based on the explanation above, the hypothesis that can be taken is:

H4 a: Storage level has a positive effect on shipping flexibility

Research which was conducted by Khan, et al. (2007) state that good storage can integrate all processes; control the movement of materials/ goods from suppliers to customers, so that customer satisfaction is achieved. Based on the explanation above, the hypothesis that can be taken is:

H4 b: Good storage level has a positive effect on responding to the customer.

Customer service provided continuously by the business with high quality will have a significant and positive impact on the performance of business (Madu, 2000). In addition, SME managers who try to avoid errors in shipping can be beneficial for the reputation of SMEs (Hamisi, 2011). Based on the explanation above, the hypothesis that can be taken is:

H5 a: Customer service positively affects flexibility of shipping

Good customer service forces business to understand their customers' needs, respond to them, and strive to meet customer demand as agreed or expected previously (Habets, 2008). Research which was conducted by Zemithaml, et al. (2008) states that customer satisfaction is influenced by several factors that are related to service outside trading activities, such as respect for customers. Good customer service and responding to customers will provide a positive experience for customers, build a

strong relationship with customers, and benefit the company (Hamisi, 2011). Based on the explanation above, the hypothesis that can be taken is:

H5 b: Customer service positively influences manager's ability to responding to customers.

Many factors that influence the success of supply chain management in SMEs have the potential to influence the success of supply chain management performance in SMEs Tempe Chips in Sanan Village Malang. This is because SMEs Tempe Chips in Sanan Village Malang also show cooperation in its business activities involving various elements of supply chain, such as workers, partners, suppliers, distributors, and consumers (Hapiz, 2012). Research which was conducted by Irjayanti and Anto (2012) states that SMEs are deemed to have limited resources so it is considered to have a big risk to the failure of supply chain management implementation, which will result in loss and bankruptcy. Great potential risks and lack of research related to supply chain management in SMEs Tempe Chips in Sanan Village Malang encourage the authors to conduct a research on the influencing factors in the success of supply chain management performance in SMEs Tempe Chips in Sanan Village Malang.

This study aims to provide an overview, identify, and analyze important factors that affect the implementation of supply chain management and their impact on the performance of SMEs. In addition, this research is also expected to contribute to research related to activities associated with supply chain management as well as provide direction for the implementation of supply chain management in SMEs, especially in SMEs Tempe Chips in Sanan Village Malang.

## METHODOLOGY

This research used quantitative research design collected data through questionnaire distribution. Quantitative research method aims to test the theoretical object by testing the relationship between variables (Creswell, 2009: 18). Deeper, this study will test and prove the influence of implementation

of supply chain management on supply chain management performance in SMEs Tempe Chips in Sanan Village Malang.

In accordance with research objectives and research problems, the target population of this study is SMEs Tempe Chips in Sanan Village Malang. SME Tempe Chips in Sanan Village Malang was chosen because Tempe chips industry show a cooperation among supply chain elements in its business activities (Hapiz, 2012), so it is interesting to conduct a research on how the implementation of supply chain in SMEs Tempe Chips in order to maintain cooperation between suppliers, production process, and shipping of the products (Tempe chips) to consumers. Based on the data of the Regional Development Planning Board Malang (2016), there are 319 Tempe chip producers in Sanan Village Malang. Determination of the number of sample in quantitative research is based on Slovin's formula (Sekaran, 2016: 52), so the questionnaire was distributed to 200 respondents managing SMEs Tempe Chips in Sanan Village Malang.

In this research, data collection was done through field research method (Field Research). Data was collected by distributing questionnaires directly to the respondents, who are the managers or owners of SMEs Tempe Chips in Sanan Village Malang. The research questionnaire was developed based on literature and previous research studies. Through research questionnaire, respondents are asked to give a response, whether agree or disagree with the event or phenomenon that occurs based on *Likert* scale. By using *Likert* scale, each item of question is measured within 5 scores, ranging from 1, indicating strongly disagree, to 5, which indicates strongly agree to an object or event (Now, 2016: 68)

In order to explore the existing information, respondents were asked to answer questions related to factors affecting the implementation of supply chain management. These factors are measured by requesting responses from the owners or managers of SMEs regarding information dissemination systems in SMEs, human resources' level of understanding of supply chain management, level of electronic technology use in their business processes,

warehouse regulation systems, and how managers respond to responses or complaints from customers. Meanwhile, variable of supply chain management performance is conceptualized through the dimension of shipping flexibility and responding to the customer. Shipping flexibility is measured by requesting a response from the managers or owners of the SMEs regarding the ability to deliver the product to the customer. Customerservice factor is measured by requesting a response to the owners or managers of the SMEs regarding the level of timeliness in order and responding to the customer.

## RESULTS

In order to obtain valid and reliable research results, the validity and reliability of research instruments are tested. Validity testing is done by correlating each item score with the total score using Pearson Correlation technique (Product Moment). Reliability testing was conducted by using *Cronbach's Alpha* technique. The following summarizes the results of validity and reliability testing in this research.

The results of instrument validity testing, it is known that all the coefficient of item correlation

**Table 3** Summary of validity and reliability testing

Variable	Item	Validity Coefficient	r table	Reliability Coefficient	Cut off
Information Dissemination	1	0.814	0.361	0.615	0.6
	2	0.827	0.361		
	3	0.705	0.361		
Human Resources	4	0.986	0.361	0.959	0.6
	5	0.964	0.361		
	6	0.937	0.361		
Electronic-based Business	7	0.979	0.361	0.953	0.6
	8	0.976	0.361		
Storage Level	9	0.894	0.361	0.678	0.6
	10	0.931	0.361		
	11	0.415	0.361		
Customer Service	12	0.465	0.361	0.660	0.6
	13	0.904	0.361		
	14	0.868	0.361		

Source: Data Analysis of SPSS (2017)

with the total score ( $r_{it}$ ) > table correlation value ( $R_{table}$ ). Thus, the question items on those five variables are declared valid or able to measure those variables, so it can be used as a data collection tool in this study. Based on the results of the research instrument reliability test, it is known that all values of *Cronbach's Alpha* > 0.6. Thus, the question items are declared to be reliable or consistent in measuring those five variables, so it can be used in collecting data in this research

After testing validity and reliability of the instrument and collecting data, then the assumption

was tested so that the resulting model is valid. There are three assumption tests in SEM analysis, namely linearity test, normality test, and the outlier test. From the test results, it is found that the relationship between variables is linear, normal-distributed, and research data does not contain outlier data.

Hypothesis testing method used in this research is Structural Equation Modeling (SEM) method. This study used SEM path analysis with AMOS version 22. Based on the model of the theory that has been built, it is illustrated a path diagram to explain the causal relationship to be tested. The following

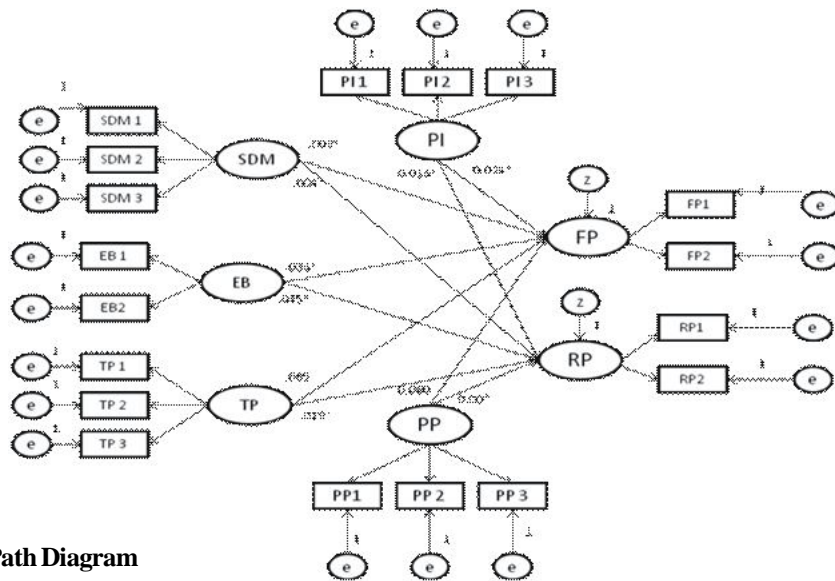


Figure 2 SEM Path Diagram

illustrates the path diagram of the relationship between the factors that affect the performance of supply chain management and supply chain management performance in SMEs Tempe Chips in Sanan Village Malang.

Hypothesis testing was done by Direct Effect Hypothesis Testing. Direct Effect Hypothesis Testing is intended to test whether there is a direct influ-

ence of exogenous variables on endogenous variables or not. The significance test can be known through probability value. The test criteria state that if probability < level of significance ( $\alpha = 5\%$ ), thus there is a significant effect of the exogenous variable on the endogenous variable. The results of the analysis can be seen in the summary in the following table:

Table 4 Results of *Direct Effect* Hypothesis Testing

Exogenous	Endogenous	Path Coefficient	CR	Probability
Information Dissemination	Shipping Flexibility	0.302	2.262	0.024
Human Resources	Shipping Flexibility	0.205	2.982	0.003
Electronic-based Business	Shipping Flexibility	0.195	2.101	0.036
Storage Level	Shipping Flexibility	0.184	1.722	0.085
Customer Service	Shipping Flexibility	0.246	1.752	0.080
Information Dissemination	Responding to Customer	0.258	2.418	0.016
Human Resources	Responding to Customer	0.144	2.891	0.004
Electronic-based Business	Responding to Customer	0.132	2.009	0.045
Storage Level	Responding to Customer	0.120	2.353	0.019
Customer Service	Responding to Customer	0.406	3.408	0.000

Source: SEM Analysis Results (2017)

Based on the result of direct effect hypothesis testing, it is found that variable of information dissemination has a significant and positive effect on shipping flexibility ( $p = 0.024 < \alpha = 0.05$ ) and re-

sponding to the customer ( $p = 0.018 < \alpha = 0.05$ ), so hypothesis 1a and hypothesis 1b are accepted. Variable of human resources has a significant and positive effect on the shipping flexibility ( $p = 0.03 <$

$\alpha = 0.05$ ) and responding to the customer ( $p = 0.04 < \alpha = 0.05$ ), so it can be said that hypothesis 2a and hypothesis 2b are accepted. Variable of electronic-based business has a significant and positive effect on shipping flexibility ( $p = 0.036 < \alpha = 0.05$ ) and responding to the customer ( $p = 0.045 < \alpha = 0.05$ ), so it can be stated that hypothesis 3a and 3b are accepted. Variable of storage level gives a significant and positive effect on responding to customers ( $p = 0.019 < \alpha = 0.05$ ), so it can be stated that hypothesis 4b is accepted. Variable of customer service gives a significant and positive effect on responding to the customer ( $p = 0.0 < \alpha = 0.05$ ), so hypothesis 5b is accepted.

In general, the model formed in this study was declared feasible through RMSE, GFI, AGFI, TLI

and CFI testing. Construct feasibility test (model) is intended to determine whether the constructed construct is appropriate/ feasible or not. The results of construct feasibility test that have been summarized are presented in the following table.

Based on the summary of the goodness of fit, it can be seen that the six indexes, namely chi-square, RMSEA, GFI, AGFI, TLI, and CFI, have criteria corresponding to the cut off value, so those six indexes have been met. Therefore, the constructed construct is declared appropriate/ feasible. The corresponding construct is then converted into measurement model through Direct Effect testing in order to find out how the influence of the construct described in the equation model which is presented below:

**Table 5 Results of Construct Feasibility Testing**

Index	Goodness Of Fit	Cut Off Value	Note
Chi-Square	336.579		
Probability	(0.993)	$\geq 0.05$	Good Fit
CMIN/DF	0.835	$\leq 2.00$	Good Fit
RMSEA	0.000	$\leq 0.08$	Good Fit
GFI	0.909	$\geq 0.90$	Good Fit
AGFI	0.908	$\geq 0.90$	Good Fit
TLI	1.049	$\geq 0.95$	Good Fit
CFI	1.000	$\geq 0.95$	Good Fit

Source: SEM Analysis Results (2017)

Equation 1

$$FP = 0.302 PI + 0.205 SDM + 0.195 EB + 0.184 TP + 0.246 PP$$

Equation 2

$$RP = 0.258 PI + 0.144 SDM + 0.132 EB + 0.120 TP + 0.406 PP$$

Based on those equations, it can be stated that information dissemination has the biggest coefficient, so information dissemination gives dominant influence to the flexibility of product delivery to the customer. In the second equation, the largest coefficient is owned by customer service, so that customer service gives dominant influence to manager's ability to respond to the customer.

## DISCUSSIONS

Based on the result of SEM analysis, it is found that variable of information dissemination has a significant and positive effect on shipping flexibility and responding to the customer. Based on observation in the field, the respondent who is managers of SMEs Tempe Chips in Sanan Village Malang mostly stated that they have simple and updated data of materials and goods, information related to order and shipment; that information is quite easy to understand by both managers and employees.

Data owned by the managers of SMEs Tempe Chips in Sanan Village Malang provide various benefits, both from shipping flexibility and responding to the customer. From the aspect of shipping flex-

ibility, well-managed data will make it easier to get information on whether the products available can be sent to customers who demand the products at any time. This is in line with the research which was conducted by Fawcett, et al. (2008), stating that well-managed information dissemination process such as warehousing data can easily gather the information needed for the production process and the estimation of shipping process to customers. In addition, a study which was conducted by Cao, et al. (2011) state that good information dissemination process will help update the data of speed in responding to customers owned by the marketing team.

Based on the analysis results, it is obtained that human resources have a significant and positive effect on shipping flexibility and responding to the customer. A research which was conducted by Ganesan and Saumen (2005) found that the support of management team is important in integrating various departments within an organization and various suppliers who are responsible for supply chain management. Respondents who are managers of SMEs Tempe Chips in Sanan Village Malang mostly stated that they understand the importance of supply chain management are ready to commit to supporting smooth supply chain management and are ready to make continuous improvement so that the supply of raw materials and product delivery to customers becomes more smoothly.

A good understanding of SME Tempe Chips managers on supply chain management will increase shipping flexibility and respond to customers. Managers who understand supply chain management will be able to control production and storage process, so as to overcome customer demand at any time and inform customers whether the product can be sent at any time (depending on product availability). This is in accordance with a research which was conducted by Ellinger, et al. (2013) stating that a good human resource management strategy will focus on service efficiency and emphasize shipping volume and speed. In addition, Ellinger, et al. (2013) also state that human resources that have a unique strategy of customer service and strive to respond to consumer desire will create a profitable

cooperative relationship and achieve consistent business goals, so it can be concluded that support and commitment of top management combined with training, integration of departments in business, and various suppliers, is very important for the implementation of supply chain management (Sandberg and Abrahamsson, 2010). In order to achieve this, human resources need to be trained and given clear and focused task.

The result of SEM analysis also states that electronic-based business gives a significant and positive effect on shipping flexibility and responding to customers. Some respondents (managers of SMEs Tempe Chips in Sanan Village Malang) said that they take advantage of electronic-based business in terms of payment transactions and product marketing through internet media such as social media and websites. But others claim to use electronic-based businesses in terms of payment transactions only, or not at all. SMEs managers said that they do not market their products because customers come to their store to get the product directly and all transactions are also done directly. Although there are SME managers who have not utilized electronic technology optimally yet, they are aware of the benefits of using electronic technology for shipping flexibility and responding to the customer.

The use of electronic technology will provide a significant and positive effect on shipping flexibility and responding to the customer. Utilization of electronic technology will facilitate the managers in the shipping process. For example, by using electronic technology, payment can be done anytime and from anywhere. In addition, managers will be able to see shipment through Internet easier, regarding the type of mode of transportation which is appropriate to reach the location of customers. This is in line with the research which was conducted by Oliveira, et al. (2011), stating that the utilization of electronic technology facilitates the tracking of shipment through internet media, regarding shipment status checking, timely shipping, expedition team's ability to reach customers' location, and mode of transportation to be used. In addition, Oliveira et al. (2011) state that the use of electronic technology such as online catalog makes it easy for customers to find,

select, order items, and contact the managers directly. Managers will respond to customer demand within 24 hours more easily.

The result of SEM analysis states that variable of storage level gives positive influence to respond to the customer. From the observation, it is obtained that respondents of SME Tempe Chips in Sanan Village Malang answered hesitantly and disagreed with an item asking whether they keep their products in warehouse excessively and whether they need additional warehouse because managers of SMEs Tempe Chips understand that storing too many products in a long period of time raises the risk of loss. In addition, respondents also stated that most of them answered hesitantly and disagreed with an item asking whether they keep the products in the warehouse and whether they need an additional warehouse. They were also hesitant that the raw materials and products keep a good quality. Most of the managers of SMEs Tempe Chips understand that storing too many products and in a long period of time lead to various risks of loss. Managers also understand that ingredients such as *Tempe*, eggs and other foodstuffs cannot be kept for too long, so most of them do not need additional warehouse because they doubt that materials or products which are stored for too long will still be good.

Storage level which is managed well by SME managers provides several benefits, especially on the ability to respond to customers. Storage level has a significant and positive effect on responding to the customer. Clear, controlled and sufficient storage will further enhance managers' ability to respond to customers quickly. The research which was conducted by Khan, et al. (2007) states that well-managed storage can integrate all processes and control the movement of materials/ products from suppliers to customers so that customers are satisfied. Good storage level cannot always be sure that products can be sent at any time because there are many orders from customers. Managers still need time to produce *Tempe* chips and order the raw material (*Tempe*). So the storage level is not significantly correlated with shipping flexibility.

The analysis results also state that variable of customer service provides a significant and positive

impact on responding to customers. The results of the survey indicate that most of the respondents of SME Tempe Chips in Sanan Village Malang always provide services besides the main service they provide, such as information service, delivery services, and post-purchase services. In addition, most managers also stated that they agree to respond and follow up customers' complaints.

Optimal customer service will increase the business responsiveness to customers. Good services, such as an explanation of various product variants, post-purchase service, and other services that benefit consumers will further increase the awareness of managers to be more responsive in responding to customer demands, especially changing customer demands. This will lead to customer satisfaction and increase in business profits. Good customer service forces SMEs to understand customer needs and strive to meet customer demand as agreed or expected by customers (Habets, 2008). However, good service does not give a significant influence on shipping flexibility because the delivery of large quantities of products cannot be performed at any time; depending on production process and availability of raw material (*Tempe*).

Overall, based on the model equation, it can be said that information dissemination and customer service are the most dominant factors giving influence to the supply chain management performance of SME Tempe Chips in Sanan Village Malang. Information dissemination provides important information related to supply chain operations to suppliers connected with other supply chains (Li, et al., 2004). A research which was conducted by Madu (2000) states that company which is capable of continuously providing products and services to customers with high quality will have a significant and positive impact on business performance.

## CONCLUSIONS

This study was conducted to look at the factors that influence the implementation of supply chain management in SMEs. SMEs Tempe chips in Sanan Village Malang are chosen because Tempe chips industry shows mutual cooperation in their business activities, involving parties such as workers, suppli-

ers, and consumers; therefore, it is interesting to conduct a research on how the application of supply chain in SMEs Tempe Chips in Sanan Village Malang in order to apply supply chain management, maintain mutual cooperation among suppliers, maintain the smooth production process, until products are delivered.

This study focuses on factors affecting supply chain management performance in SMEs Tempe Chips in Sanan Village Malang, such as the aspect of information dissemination, human resources, electronic-based business, storage level, and customer service. In order to achieve good supply chain management performance, managers of SMEs Tempe Chips in Sanan Village Malang are required to maintain business capability in information dissemination, human resources, storage level, and customer service. In addition, to improve the performance of supply chain management, all managers of SMEs Tempe Chips in Sanan Village Malang have to optimize electronic-based business, so as to find new customers and improve efficiency in buy and sell transactions. From the analysis, it is also found that information dissemination and customer service are the most dominant factors in influencing the performance of supply chain management.

## SUGGESTIONS

Some developmental actions can be done for future research based on the findings obtained in this research, namely studying greater number of respondents, studying various types of SMEs in order to get more comprehensive research results, conducting interview with wider aspects and scope in order to enrich information and insights of supply chain management study, as well as comparing factors affecting the implementation of supply chain management in small-scale enterprises with factors affecting the implementation of supply chain management in large-scale enterprises; therefore, it can give more contribution to the development of study.

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