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ANTECEDENTS AND CONSEQUENCES OF INTERNAL QUALITY OF PRODUCTS IN THE MANUFACTURING COMPANIES HOLDING SNI IN EAST JAVA

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ABSTRACT

This study is a confirmatory study that was carried out by testing several hypotheses in order to figure out the causal relationship of all the stated variables. In attempt to such efforts, the study took the population of 205 manufacturing companies in East Java. All of them hold SNI (standard recognision of product). This study employed complete enumeration or census method; for that reason, the sample and sampling technique were not required. The technical analysis applied to test the research hypothesis was Structural Equation Modeling (SEM) with the support of Amos 5 program. The results of this research show that there are positive and significant relationship between communication level of objectives, frequency of feedback, effectiveness of incentive system of the quality on product internal and external quality and on change of financial performance. The benefit of this research is for scientific information regarding the variables of communication level of objectives, frequency of feedback, and effectiveness of incentive system of the quality on internal and external quality of product and on change of financial performance of the manufacturing companies in East java.

Key words : *communication level of objectives, frequency of feedback, the effectiveness of incentive of quality, internal quality and external quality of product, change of financial performance.*

INTRODUCTION

The business competition in each industry at the era of globalization is increasing so sharply currently. This condition can motivate businessmen for paying full attention to quality. This is because full attention to quality can give impact on industrial world in winning business competition. The product quality is then considered as one of major competitive priorities for attaining a sustainable competitive advantage (Hill, 1997). It is assumed tha failures the product quality of some firms may have been caused by inability of their control systems to influence production workers to focus their efforts on accomplishing the unit's product-quality goals (Goold and Quinn, 1993; Young and Selto, 1991). Furthermore, Anthony and Govindarajan (1998) argue that control system of management aim to create field goal congruence which means compatibility creation between perceived self-interest with interest of the organization.

To incrreas the quality of product and product competitiveness, manufacturing companies in Indonesia in general and in East Java especially, needs to focus on the quality. The focus on the quality should be implemented by the company to access the market both of national, international or regional and give protection to customers. Some products are related to security, healthy, safety, and continuity of environment and they are exported or circulated in domestic market. Thus, this needs to observe their quality through product certification process by using of Standar Nasional Indonesia (SNI) or other standar admitted by the Institute of Product Certification (Lembaga Sertifikasi Produk) which have been accredited by National Accreditation Committee (Komite Akreditasi Nasion-

al). This certification means that the company or producer is entitled to use sign SNI for certain produced products, and guarantee that the products have fulfilled specified standard. .

Beside the quality of product, the other purpose of the company is both of short-term or long-term programs, that is to increase financial performance. The increasing financial performance is considered an effort to keep up continuity and extend the company going concern concept. A good change of financial performance can be shown by the existence of increasing growth in sales, return on sales and return on assets (ROA). Financial performance increase can be achieved when the company is able to act effectively and efficiently.

The increasing quality can in turn increase earnings of company. In that case, the performance of quality product should affect the external quality indicator of customer satisfaction i.e. complaints, warranty, litigation. A lower percentage of defective products should help a firm to reinforce positive customer experience (Crosby, 1979; Hardie, 1998). Product-quality performance is in term of reduction in scrap, rework and defects. So, fewer warranty claims decreases the material and labor required to repair defective products, and a low-cost producer can use its cost advantage to increase profit margin or to lower prices for improved sales (Shetty, 1988). High external product of quality implies high loyalty of current customers. Through improvement of loyalty, customers' satisfaction will guarantee earnings in the future (Fornell, 1992; Rush et al., 1995). Some previous studies have found a relation which is positive between external quality of product which is proxy by customer satisfaction and change of financial performance (Ittner and Larcker, 1998a and 1997; Shetty, 1998; Jacobs et al., 1998; Banker et al., 2000; Sedatole, 2003; Behn and Riley, 1999).

Based on the description above, this research peeps out some of the problems which are of vital importance to be studied especially for the manufacturing companies which have SNI product in East Java related with the problems of management control system consists of communication level of objectives, frequency of feedback, effectiveness of incentive system of the quality which can affect internal quality of product. Internal quality of product can affect external quality of product and change of financial performance and external quality of product can effect change of financial performance.

THEORITICAL FRAMEWORK AND HYPOTHESIS

Communication Level of Objectives of the Quality

Objectives which have been specified will affect the workers to make strategy to point them to goal achievement. For that reason, the company must settle objectives clearly and challenges which should be faced so that they can make the workers trust on the objectives which are reachable. They also have to make the workers to behave in line with the aims at specific performance objectives as specified by company.

It is stated by Harrel and Tuttle (2001) that compatibility of individual activity in information system and organizational strategic objectives are required so as to comprehend the factors to produce the behavior of the information system professionals. What is specified by organization is assumed to affect the behavior through objectives, feedback and economic incentive. So by providing the information of the objectives specified by the company, the workers will be directed toward the behavior specifed in the company's objectives.

Like Harrel and Tuttle (2001), Locke et al. (1981) and Eresz M. and F.H. Kanfer (1983) also stated that goal setting will affect the workers' performance. In addition, goal setting can also affect the workers to work hard to reach the objectives or targets.it is argued that such goal setting will heighten motivation. This means that the targets received will strengthen and motivate the workers in

aiming to the goal achievement.

Practice of manufacture has just based on the process activity of improvement of quality for the workers that is by guiding the business and communicating their quality targets. By doing so, communication of improvement targets of business unit product quality is also expected to affect the workers' effort direction to improve the quality of their unit product. TQM as new manufacture practice, developed as philosophy can emphasize that process of manufacture with continuous improvement will eliminate waste and improvement to quality. In this case, the responsibility of quality of product is often passed to the department of quality control.

In TQM, the workers have responsibility to perform improvement of manufacture and execute some activites. The responsibility for investigating inappropriate items will change over from department of control of quality to each personnel. For that reason, continuous improvement philosophy requires each worker to have responsibility for quality and stopping the production when defecets are found.

Shim and Killough (1998), Daniel and Reitsperger (1992) described that manufacture practice of TQM should communicate the quality target for continuous improvemet. This is intended to affect the internal quality of company product. By communicating quality targets such as cost of scrap, rework, defect, the company can motivate the workers to reach the target. Consequently, the low cost level of scrap, rework, and defect will make internal quality of high product.

Specific performance objectives will motivates and pont out the strategy, guide the behavior of the workers to reach quality targets which are specified by manufacturing companies. Such targets must be communicated in explicitly in term of numeric so that the workers can be motivated to attain the target. With this attainment of the target, it means that the low cost of scrap, rework and defect will increase the internal quality of product.

Quality targets which are communicated to the workers will motivate the workers in their attainment to process improvement of quality continuously as specified in TQM. Goal setting of the performance sizes which explicit without any communications will make quality targets and it will not be able to increase internal quality of product. The quality targets consist of cost of scrap, rework, defect which are communicated to the workers will motivate them to reach low cost of scrap, rework. Finally, the low of cost of scrap, rework and defect will make quality of internal product high.

H1: Communication level of objectives of the quality has a positive effect on internal qualities of product

Frequency of Feedbacks of the Qualites

Frequencies of feedbacks of the qualities are the frequency the company evaluates, analyzes, and distributes, such as the data of qualities (scrap, rework, and defect) to all factories. This is intended to provide direction to motivate the workers and detect errors for process activity of improvement of product quality. So increasingly, often a company performs evaluation, analysis, and distribution of data of qualities to all factories. Then, the company will be able to improve the process of quality improvement and finally obtain internal quality of the product.

The frequency of feedbacks of the qualities can provide information about worker performance, in which in the end will increase the clarity of the role or duty which must be executed by the workers (Kluger and Denisi, 1996; Early et al., 1990; Bandura, 1986, pp 50-51). Some research of behavior of organizational has indicated that feedback assisted can increase the behavior with duty orientation (Ashford and Cumming, 1983; Hgen et al. 1979). Kaplan (1983), Howell and Soucy (1987) explained that operating the feedback correctly an on time as well as relevant requires the company to have management quality everyday. Information of qualities like cost of scrap, rework, and defect can provide

the signals of error detection and guidance for improvement (Otley and Berry, 1980; Ashford and Tsui 1991).

H2: The frequency of feedbacks of the qualities has a positive effect on internal qualities of the product

The effectiveness of Incentive System of Quality

Classical Utility Theory tells that value to a goods is measued by the level of satisfaction (utility) which is given by the goods to its user (Jevons in Medema and Samuels, 2003, pp. 418-419). Goal setting theory also states that every worker ought to have specific performance target in order that he can mobilize the business by the workers. It also affects the strategy used by the workers to finalize their duty (Desimone, Werner and Harris 2002, pp. 51-55; Locke in Gomez-Mejia, Balkin and Cardy 1995, pp. 92-93).

In this case, the effectiveness of incentive systems of quality is a reward system and recognition both of individual and group in attainment of the target which consists of scrap, rework and defect as well as for process activity of improvement of product quality. Incentive covers both of finance dimension and non finance where which finance there referred reward while which non finance there referred recognition. Govindarajan and Gupta (1985) expressed that when reward and recognition packed into specific performance can be measured so that the behavior of the workers can lead to the desire to optimize the performance measure.

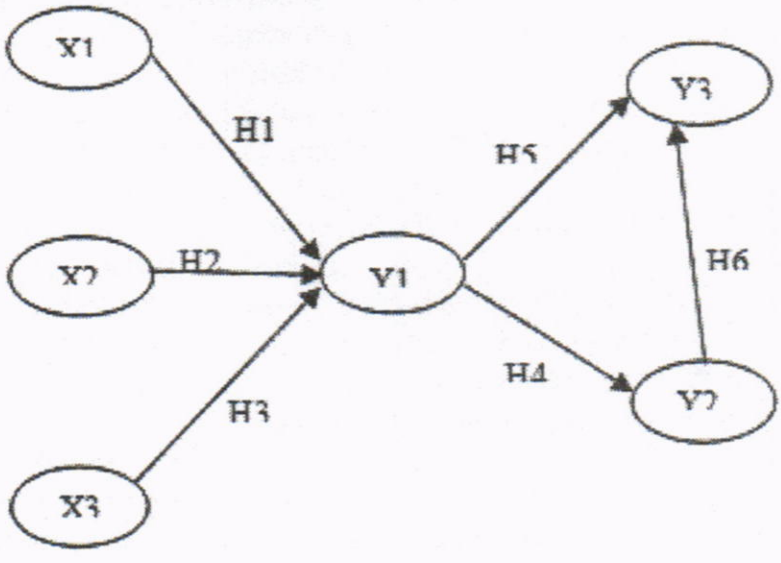
H3: Effectiveness of incentive systems of quality has a positive effect on internal qualities of the product.

Internal Qualities of Product

Internal qualities of product are quality of finishing the goods the assessing them as prior to delivery in relation to the quality of process (Crosby 1979; Garvin 1987; Juran and Gyrna 1993). These can be seen through the existence of decrease in the internal failure to get the quality, such as scrap rate, rework rate, defect rate and improvement of product reliability level before shipping. These internal qualities of product are collected and distributed to the factory for determining what must be taken into account first by the workers (Ilgen, Fisher and Taylor 1979). Dawson and Patrickson (1991), Ahire (1996), Ahire and Dreyfus (2000) used indicator of improvement of quality during three years in measuring performance quality of the company.

Internal qualities include the ability of a manufacturing plant to produce the products conforming to their designed quality at an economic production cost. So, it can be viewed as the "conformance to requirement"

RESEARCH MODEL



dimension of quality as specified by Crosby (1979, 1996). Ahire and Dreyfus (2000) consider five measurements of internal quality: scrap rate, rework rate, defect rate, internal reliability test performance before shipping, and manufacturing productivity. The Performance of finished products in the final tests and the proportion of defective units of production are widely used as indicators of conformance quality at the end of the production

Table 1
SEM Results: Measurement Model

Regression Weights

			Estimate	S.E.	C.R.	P
X1.3	<—	CLOQ 3	1.000			
X1.2	<—	CLOQ 2	1.135	.120	9.466	***
X1.1	<—	CLOQ 1	.897	.100	8.965	***
X2.3	<—	FFQ 3	1.001	0.064	15.575	***
X2.8	<—	FFQ 8	.971	.043	22.514	***
X2.7	<—	FFQ 7	1.075	.047	22.742	***
X2.6	<—	FFQ 6	1.046	.056	18.722	***
X2.5	<—	FFQ 5	1.049	.063	16.598	***
X2.4	<—	FFQ 4	1.152	.056	20.398	***
X2.3	<—	FFQ 3	1.000			
X2.2	<—	FFQ 2	1.050	.048	21.860	***
X2.1	<—	FFQ 1	.722	.095	7.570	***
X3.8	<—	EISQ 8	.850	.113	7.514	***
X3.7	<—	EISQ 7	.994	.112	8.854	***
X3.6	<—	EISQ 6	1.139	.125	9.087	***
X3.5	<—	EISQ 5	.917	.122	7.512	***
X3.4	<—	EISQ 4	1.027	.123	8.341	***
X3.3	<—	EISQ 3	1.000			
X3.2	<—	EISQ 2	.784	.095	8.233	***
X3.1	<—	EISQ 1	.758	.121	6.272	***
Y1.4	<—	IQP 4	.866	.059	14.728	***
Y1.3	<—	IQP 3	.519	.058	8.947	***
Y1.2	<—	IQP 2	.882	.044	19.831	***
Y1.1	<—	IQP 1	1.000			
Y2.3	<—	EQP 3	.633	.111	5.708	***
Y2.2	<—	EQP 2	1.186	.166	7.143	***
Y2.1	<—	EQP 1	1.000			
Y3.3	<—	CFP 3	1.915	.183	10.478	***
Y3.2	<—	CFP 2	1.953	.192	10.153	***
Y3.1	<—	CFP 1	1.000			

process (Crosby 1979, 1996). The Cost efficiency of a production process is reflected in the scrap and rework generated during production. They represent internal quality failure costs (Juran and Gyrna 1993). Like Juran and Gyna, Flynn et al. (1995) also use Scrap and rework for an appropriate indicator of internal quality.

H4 : Internal qualities of product has a positive effect on external qualities of the product

H5 : Internal qualities of product has a positive effect on Changes of Financial Performance

External Qualities of Product

Customers form their impression about a firm's products based on upon their current and past experience with these products (Garvin 1987). A satisfactory field performance of the products is accompanied by lower customer dissatisfaction, it can cause greater customer loyalty, and improved market share (Crosby 1979, pp. 70-71; Buzzle and Gale 1987, pp. 54-56; Hardie 1998). Ahire and Dreyfus (2000) pay attention to four long-range indicators of external quality: warranty works, litigation claims, customer complaints, market share. Warranty, litigation claims, customer complaints refers to the external quality failure costs (Juran 1993). Market share also has been directly associated with customer perception of a firm's product of based on recent and past usage (Flynn et al. 1995; Hardie 1998). Based on support from literature TQM, Dawson and Patrickson (1991), Ahire (1996), Ahire and Dreyfus (2000), They used improvement in these indicators over a 3-years time frame to measure firms' performance along external quality outcomes. So, external qualities are related to the customer's perspective of the products upon field usage.

Changes of financial performance can be identified by the ability of the company in increasing growth of sale, profitability (return on sales), return on assets (ROA). Growth is divided into three major performance aspects that are growth in return on asset, growth in sale, growth in return on sale. Usage of growth as performance measure has fascination in research. In the beginning of the year 1982 when data were collected for research of Swamidass and Newell (1987), industries which were used in this research given on to recession condition and so do at the height of competition of overseas. ROA not used in research of Swamidass and Newell (1987) related to following reason: industries which were included at their research in general were matured. Many companies which participate in research of Swamidass and Newell (1987) tend to delay new invesment in their facilities and prefer to operate with asset basis. For companies with very small will have higher ROA compared to companies with modern facility and larger fixed asset. This can become a consideration in measuring performance. Though objective performance measures are preferred as performance measure, growth in return at sale has been used and recommended in the place the objective measures are not made available.

H6 : External qualities of product have a positive effect on changes of financial performance

RESEARCH METHOD

Manufacturing business with SNI (Indonesia National Standard) product in East Java are the subjects of this study. The survey method is used to gather the data. Therefore, questionnaires are distruibuted directly to the subjects through census sampling technique. The validity of the instruments used in this study is assessed through building measurement model. Next, the reliability is assessed through *composite (contruct) reliability by cut off value* are minimum 0,7. Finally, to test the hypothesis, this study performs structural equation modelling.

DATA ANALYSIS AND DISCUSSION

Manufacturing companies which has SNI product located in East Java up to 2007 are

205 manufacturing companies. Of the 205 questionaires disseminated, 126 returned but 19 questionaires were incomplete. Therefore, only 107 (52, 20%) of them were changeable and analysed.

To assess validity, this study built measurement model with the result as shown Tabel 1. Most of the goodness-of- fit statistics has good fit.

Constructs	CR
CLOQ	0,872954
FFQ	0,973813
EISQ	0,906791
IQP	0,921477
EQP	0,817989
CFP	0,913969

	Estimate	S.E.	C.R.	P
Y1<---X1	.225	.077	2.927	.003
Y1<---X2	.137	.063	2.173	.030
Y1<---X3	1.054	.122	8.651	***
Y2<---Y1	.603	.066	9.198	***
Y3<---Y1	.193	.089	2.158	.031
Y3<---Y2	.372	.143	2.596	.009

Goodness-of-fit	
Chi – Square	411,369
Degrees of freedom	399
Significance Probability	0,052
RMSEA	0,072
GFI	0,942
AGFI	0,908
CMIN/DF	1,031
TLI	0,957

Based on the result of examination of direct effect line coefficient, it indicates that the effect of communication level of objectives of the quality on internal qualities of product has line coefficient of 0,225 with probability 0,003. This can be interpreted that communication level of objectives of the quality has an effect significantly on internal qualities of product.

Target which has been specified will affect the workers to make strategy to point it to goal achievement. Company must settle target clearly and challenges which are faced and gives trust to the workers that the target can be achieved. Thereby will make the workers have behavior of which aims at specific performance targets which are specified by company.

Harrel and Tuttle (2001) expressed that compatibility of individual activities in information system with organizational strategic target are required to comprehend the factors which impacts to behavior the information system professionals. What specified by organization will affect behavior of through target, feedback and economic incentive. So by giving information of target will affect effort direction of the information system professional.

Locke et al. (1981) argue that goal setting will affects performance. Goal setting will points business of the workers at hard effort to reach the target. Eresz M. and F.H. Kanfer (1983) told that goal setting will heightens motivation. This means the target received will strengthens or weakens determined target and will motivate the workers in aiming to the goal achievement.

Communication level of objectives of the quality which is performed by manufacturing business through manager quality or factory manager will affects the workers to have behavior of which its pointing to the strategy specified by company in goal achievement. When company settles clearly targets of scrap, rework, defect will make the workers have behavior of aimed at targets which have been specified by company. So by communicating targets of scrap, rework, defect will affect effort direction of the factory workers to improve product quality of their units and eliminate waste.

As stated by Shim and Killough (1998), Daniel and Reitsperger (1992) that communicating target quality for continuous improvement will affect internal quality of product of the company. This means that if quality target communicated in targets of cost of scrap, rework, defect either in monetary term (rupiah) or unit will reach quality targets that the company expected.

Based on the result of examination of direct effect line coefficient indicates that the effect of frequency of feedbacks of the quality on internal quality of product has line coefficient of 0,137 with probability 0,030. This produces a finding that frequency of feedbacks of the quality has a significant effect on internal qualities of product. Based on result of the examination then can be concluded that Hypothesis 2 (two) in this study expresses that frequency of feedbacks of the quality has a significant effect on internal qualities of product is proven or supported by fact. This study finding indicates support to the theory which expresses existence of significant effect of frequency of feedbacks of the quality on internal qualities of product.

Specific feedbacks will increase performance than feedback which generally, because by giving the feedback which has the character of specific will give clarity of role of a duty. Specific feedback also gives workers the opportunity to use any good strategy to execute the duty (Early et al., 1990). Ashford and Cumming (1983) expressed research behavior of organizational has indicated that feedback assisted increases duty orientated behavior. It means that by giving feedback to the workers about what have been reached will make the workers have behavior to finalize duty which have been specified by company. Information of qualities like scrap, rework, and defect can give a base to error detecting and as a guidance to see improvement areas (Otley and Berry 1980; Ashford and Tsui 1991).

Kaplan (1983), Howell and Soucy (1987) told that operating of feedback correctly time and relevant are required to management daily quality. Information of qualities like scrap, rework, and defect can give a base to error detecting. Banker et al., (1993) provided empirical proof that increasingly often manufacture performance measures informed to the workers will correlate positively with practice TQM. So with frequently company gives feedback to the workers then practice TQM will more can increases company performance.

The result of this study supports the research performed by Daniel and Reitsperger (1991), and provides empiric proof showing that the Japanese car and electronic companies use improvement strategy continuously and more regularly provides feedback to heighten performance. From the perspective of analysis, often measures of manufacture performance reported to the workers often quicken the effectiveness of duty strategy which can improve performance. So, the more regular existence of performance feedback, the more the level of workers increase when receiving nonfinancial performance measures.

Based on the result of examination of direct effect line coefficient, it indicates that the effect of effectiveness of quality incentive system on internal qualities of product has line coefficient of 1,054 with probability 0,000. This produces a finding that effectiveness of quality incentive system has an significant effect on internal qualities of product. Based on the result of the examination then can be summarized that Hypothesis 3 (three) in this study expresses that effectiveness of quality incentive system has an significant effect on internal qualities of product is proven or supported by fact. This study finding indicates support to the theory which expresses existence of significant effect of effectiveness of quality incentive system on internal qualities of product.

This finding is consistent with the survey from KPMG Peat Marwick in 1991, in which it found that 60% organization which have five years or more experience of TQM in

explicit gave reward to the workers for attainment of performance quality of (The Economist, 1992). Blackburn and Rosen (1993) indicated that the winners of Baldrige Award perform re-orientation of their reward scheme emphasizes at improvement and teamwork with continuously. The organizations generally use financial and nonfinancial measures to motivate the managers reach quality targets (Eccles, 1991). Incentives cover both of financial and nonfinancial dimensions.

Empirical study expressed there is a positive relation between TQM and usage of nonfinancial measures in reward system (Itnerr and Larcker 1995 and 1997; Daniel et al. 1995; Ittner and Larcker 1998a). Symons and Jacobs (1995) found that reward system based on TQM in production has a positively significant effect on operational performance. This means when measures of finance and nonfinancial (reward and recognition) are packed into by compensation contract; the workers harmonize their business more at the measures, whether it finally produces improvement in performance (Banker et al. 2000). Spreitzer and Mishra (1999), Ittner and Larcker (1995), expressed that effectiveness of quality incentive system is the effectiveness of reward and recognition system which are passed to the workers for improvement, not just for goal achievement and target. So, reward and recognition system which are passed to the workers are effective if the incentive made the workers does not only pursue attainment of target of scrap, rework and defect but also to process continuously improvement.

Reward and recognition system to the workers will make them have high involvement at decision making, point their business to duty and motivates to reach performance. Reward and recognition system passed to the workers are not merely for attainment of target but to process continuously improvement.

Based on result of the examination of effect line coefficient directly indicates that influence of internal qualities of product on external qualities of product has line coefficient of 0,603 with probability 0,000. This shows that internal qualities of product have an significant effect on external qualities of product. Based on result of the examination then can be concluded that Hypothesis 4 (four) in this study expresses that internal qualities of product has a significant effect on external qualities of product is proven or supported by fact. This finding indicates support to the theory which expresses existence of significant effect of internal qualities of product on external qualities of product.

The result of this study supports the research which is performed by Cronin and Taylor (1992) what found causal relation which are positive and strong between quality performance which is proxy with internal qualities of product and customer satisfaction which is proxy with external qualities of product. Fornel (1992) found in a research, existence of correlation between quality performances which is proxy with internal qualities of product with the customer satisfaction which is proxy with external qualities of product. Internal qualities of product mean of reduction of scrap, rework, and defect will affect external quality of product. This means there is improvement of customer realization, what represents positive difference between total usefulness which is received with "sacrifice" of customer to receive the usefulness.

Improvement of product quality represents elementary of contemporary quality revolution which can increase business performance (George and Weirsmerskirch 1994, pp. 66-68). Quality of product with internal reliability test will affects experience of customers which use the products in two ways. First, the customers perceive product quality in terms of their net value, defined as ratio of performance to cost (Artz 1992) and/or, in terms of "customer realization" the difference between sacrifice of customer and benefit of customer. So for products with the same performance levels, lower price will drive customer choice and satisfaction because the

customer's "net value" and customer realization will improve. Second, customers willing to spend a limited amount of money due to a budget constraint will choose the products that offer maximum performance for that money or sacrifice (Ahire and Dreyfus 2000).

The customers form their impression to a company product based on at experience with the product (Garvin 1987). Performances of product should affect indicators of external qualities of customer satisfaction (for example, customer complains, warranty, litigation). Lower percentage at defect ought to assist company strengthens positive experience of customer (Crosby 1979, pp. 35-37; Hardie 1998). The customers use measures of external qualities in formatting of complacence or unsatisfied.

Internal qualities include the ability of a manufacturing plant to produce product conforming to their designed quality at an economic production cost. So, it can be viewed as the "conformance to requirement" dimension of quality as specified by Crosby (1979, 1996). Ahire and Dreyfus (2000) consider five measures of internal quality: scrap rate, rework rate, defect rate, internal reliability test performance before shipping, and manufacturing productivity. The Performance of finished products in final tests and the proportion of defective units of production are widely used indicators of conformance quality at the end of the production process (Crosby 1979, 1996). The Cost efficiency of a production process is reflected in the scrap and rework generated during production. They represent internal quality failure costs (Juran and Gyrna 1993). Scrap and rework have been used as appropriate indicator of internal quality (Flynn et al. 1995).

Based on the result of the examination of effect line coefficient directly, it indicates that efect of internal qualities of product on change of financial performance has line coefficient of 0,193 with probability 0,031. This shows that internal qualities of product have a significant effect on change of financial performance. Based on result of the examination then can be concluded that Hypothesis 5 (five) in this study expresses that internal qualities of product has an significant effect on change of financial performance is proven or supported by fact. This shows support to the theory which expresses existence of significant effect of internal qualities of product on change of financial performance.

Empirical finding expressed that there is relation between sale of a period of the coming with currently nonfinancial criteria (defect goods and timely delivery) and financial (expense of failure and external) of quality for manufacturing business. They found that both of financial or nonfinancial measures significantly predict sale of (one-quarter-ahead) (Nagar and Rajan, 2001). Criticisms to financial measures are cannot directly catch influence of defect product to things which have the character of intangible like customer goodwill that is tendency of customer buys product a period of the coming (Deming 1982).

Nonfinancial measures provide better indication to loss of customer goodwill related to quality. Research to the argument is important because one of major role of product quality is to interest and keeps up customer. Defect product, will lessen customer goodwill which in turn will lessen earnings in the future because dissatisfaction of customer will take their business to other place or customer will pay less for the company product. External failure of product comes from customer complain which means that the customer have visited company to have recourse. This customer complain, usually require time for company to provide service to improve any failure. And so do customers need time to evaluate service and makes decision purchasing in the future. There is a gap (lag) before external failure affects sale.

The result of this study supports the research which is performed by Maiga and Jacobs (2005) expressing that company starts improvement in internal qualities of product if they expected internal qualities of product

will increase earnings is bigger than improvements of expense. So, degradation level of scrap, level of rework, level of defect and improvement of product reliability level will reduce product cost therefore price becomes competitive. Competitive price will increase sale. Growth of sale will increase earnings.

Based on the result of the examination of effect line coefficient directly, it indicates that effect of external qualities of product on change of financial performance has line coefficient of 0,372 with probability 0,009. This shows that external qualities of product have a significant effect on change of financial performance. Based on result of the examination then can be concluded that Hypothesis 6 (six) in this study expresses that external qualities of product has an significant effect on change of financial performance is proven or supported by fact. This study finding indicates support to the theory which expresses existence of effect of external qualities of product on change of financial performance.

Customer satisfaction is customer perception of product quality of usage in field so-called with external quality. External qualities happened with lowering of the warranty claimed, litigation, and customer complaint. Quality of external is used as proxy for customer satisfaction because lower of external failure, then customer satisfaction of excelsior (Ahire and Dreyfus 2000; Shims and Killough 1998). Customer satisfactions are customer perception to product quality in condition from their net value so-called with performance to cost (Artz 1992). So customer will choose product with lower price for product with the same performance level or customer will release a number of certain moneys to choose the product which offers maximum performance (Flynn et al. 1995; Hardie 1998).

The customers form their impression about a product by virtue of current and past experience about the product (Garvin, 1987). Satisfactory performances of the product will be achieved if there is high customer satisfaction, big customer loyalty, and improvement on market share (Crosby 1979, pp. 70-71; Hardie 1998). Ahire and Dreyfus (2000) gave attention focus on four long-range indicators of external quality: claimed warranty, litigation, customer complaint, market share. Claimed warranty, litigation, customer complaint refers to failure cost of external quality (Juran 1993). Market share is also directly related to customer perception of company product based on usage which is just or has past (Flynn et al. 1995; Hardie 1998). Ahire and Dreyfus (2000) used indicator of improvement during three years in measuring external quality of product.

Many studies have found that higher level customer satisfaction will push customer loyalty (Anderson and Sullivan 1993; Bearden and Teel 1983; Fornell, 1992). Through improvement of loyalty, will assists to guarantee earnings in the future (Fornell, 1992), lessen expense of transaction in the future (Reichheld and Sasser, 1990), reduce price elasticity (Anderson 1996), and minimize possibility customer leaved product if "quality falters" (Anderson and Sullivan 1993). Internally, improve the quality and satisfied customer will lessen the cost which related to defect product like warranty cost, replacement of defect product, handling of complain (Crosby 1979; Fornell and Wernerfelt 1988; Garvin 1988).

CONCLUSION

Based on the result of this research and discussion, it can be concluded as the following. Communication level of the company's objectives of the quality has an effect on internal qualities of product of manufacturing companies. The frequency of quality feedbacks has an effect on internal qualities of product of manufacturing companies. Furthuremore, the effectiveness of quality incentive system has an effect on internal qualities of product of manufacturing companies, Internal qualities of product has an effect on external qualities of product of manufacturing companies. Beside, internal qualities of product has an effect on the change of finance performance of

manufacturing companies,. Finally, external quality of product has an effect on the change of financial performance of manufacturing companies

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