

A Study on the Relationship between the Management Strategy and Business Performance

-Focus on Small and Medium Size Auto Parts Company-

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기업의 경영전략과 경영성과 간의 관계에 관한 연구

-자동차 분야 중소기업을 중심으로-

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Abstract

과거의 기업은 단순 생산과 관리만으로 기업을 유지시켜 왔다. 그러나 오늘날 제품 소비자들은 다양하고 복잡한 요구를 하고 있고 기업은 소비자들의 욕구를 충족시키지 못하면 존속할 수가 없다. 따라서 기업은 다양한 소비자의 요구에 대한 사회적, 경제적 환경변화에 대응 할 수 있는 최적의 기본 방침을 수립하고 그것을 실천하는 경영전략 수립이 필요하다. 경영전략 수립은 기업경영성과에 영향을 주는 가장 중요한 요인이라 할 수 있는데, 경영전략 수립과 기업경영성과라는 두 요인 사이에는 또 다른 복잡한 관리체계가 작용한다. 즉 생산시스템과 전사적 품질경영 활동, 구성원들에 대한 보상, 그리고 조직구성원간의 관계 등이 영향을 미치는 것이다. 본 연구는 기업의 경영전략과 관리체제인 생산시스템, TQM 활동과 종업원에 대한 보상이 경영성과에 어떠한 영향이 있는지를 파악하고 이것을 기반으로 실증적 자료를 수집하여 분석 검증함으로써 기업발전의 토대로 삼고자 한다. 자료 분석을 위하여 SPSS 통계 패키지를 이용하였고, 각 연구 가설과 연구 모형은 구조방정식을 이용하여 검증하였다.

Keyword : TQM(Total Quality Management), Eigenvalue, GFI(Goodness of Fit Index), CFI(Certain of Fit Index), AIC(Akaike Information Criterion), AMOS

1. Introduction

The modern business environment has become more complex, and as the infinite human desire grows, continuous innovation and process is needed in order for Companies to adapt. In 80s and 90s, South Korea gained a competitive edge, and made a lot of profit mainly through mass production.

However, since the late-90s Companies and Enterprises

reinforced their core competence investing in technology, and made a leap forward one more time.

However, Companies which have maintained their position as mass producers only, have some limits.

Companies are encouraged to bring their various manufacturing and management strategies together. Skinner (1985), claims that competitiveness makes up 20 percent of productivity, 40 percent of technology skills, and production strategy the other 40 percent. In

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order to raise the competitiveness of Companies, strategies in the production sector are considered necessary.

There are two major members in a Company.

These are referred to as, 'inside' and 'outside' customers.

Here, the "outside" customers are defined as 'the end-user' or 'purchaser' who consumes the goods, and the "inside" customers refer to the members who belong to the Company. The outside customers are considered important, however Companies must make sure that the inside customers, referring workers or employees, understand and express sympathy for the management policy, plan, and directions it pursues when establishing management strategy. Active and willing participation is encouraged from the employees, and shortening the cycle time, including smooth communication between employees are the essentials for manufacturing goods. Active participation of employees is caused by proper rewards, as well as job satisfaction which in the end lead to better management performance.

In general, when establishing management strategy, large Korean Companies consider level of quality activity, construction of the production system, financial rewards, job satisfaction, management performance, etc. Smaller enterprises face not only the financial reward system and construction, but the measuring other elements in the total performance indicator is weak due to constraints of capital.

A Company's management performance is equal to the total performance index, which is judged by integration of market share and profitability. Factors such as productivity improvement, cost reduction, decrease of faulty products, job satisfaction, etc. are inherent original factors that raise the performance index. Especially, Companies need to understand their roles, and how necessary such factors are to maximize their management performance.

2. The Main Subject

2.1 Theoretical background

Companies must realize that the first decision they have to make, among factors related to management

performance, is their management strategy. As Companies establish consistent policies, they cannot only also satisfy members employed inside the company, but also the customers' satisfaction.

Selecting the location of minimum cost and high flexibility, as well as the best quality and flexibility on a continuum basis is extremely essential part in achieving the management strategy. A Company would find it difficult to achieve competitiveness if one cannot tailor corporate strategy to production strategy. The major factors, which directly affect the management performance of a Company, are called the TQM(Total Quality Management) reward and production system. Production plans and production control, collaboration relationships between co-workers, relationships between superiors and workers, and the professional knowledge of the business by employees are related to productivity, quality, deadline for payment, and flexibility. Thus strategies must be designed to prioritize the production system as the production system is connected to the production management performance activities. Scholars have studied and written on the use of rewards to increase the efficiency of TQM(Bowen and Lawler, 1992; Harrington, 1998; Allen, 1998; Changseok & Jaehwan, 2002). Scholars such as Blackburn and Rosen (1993) and Knouse (1995) conducted an empirical study on prize-winning American enterprises, in the quality management field. The study demonstrated ways to use rewards for TQM to be successful.

Brown (1993) introduced a reward systems management system that is team oriented, and individual performance based. Brown suggested TQM reward methods are related to the following; managers, profit distribution of employees, the quality performance, proficiency and customer satisfaction.

Rust et al. (1996) claimed that when employee satisfaction is achieved customer satisfaction can be achieved, thus they emphasized employee satisfaction as a prerequisite to customer satisfaction. As a result of the empirical analysis on the relationship between the influence and employee satisfaction, the study revealed and proved Atkins (1994), that a reward system should be treated as the essential factor.

Hence, activity and education are not only quality, proper payment of salary given to an individual, and

pay satisfaction level also need to be considered, when considering management performance and job satisfaction.

2.2 Research Hypothesis

The current study is implemented to propose a practical measurement system for the development of a business/company, through understanding the relationship between the management performance of members, and awareness of management strategy.

135 employees from a small Automobile Production Company are involved in the study. Management performance and management strategy do not directly affect each other. It is important to find how the variables of multiple parameters affect the Company. Hence, parameter groups between management strategy and management performance make profit for a Company, through the TQM path of activity, reward, and production system TQM activity and reward factors are as follows; quality control techniques, activity conditions, quality education, proper payment of salary, and satisfaction of paid salary.

Parameter variables for production system factors are; production plan and control, collaboration relationship between co-workers, relationship between superiors and workers, and professional knowledge of the business related to employees. The study will explore how these factors affect the management groups performance.

There are various factors to the components of management performance group. The current study examines the influences of the parameters between the following elements; improvement of productivity, failure rate in production, cost reduction and job satisfaction of employee.

In this study, the research addresses the following four hypotheses;

Hypothesis 1: Management strategy will affect TQM activity and compensation.

Hypothesis 2: Management strategy will affect the productivity system.

Hypothesis 3: TQC activity and rewards will affect management performance.

Hypothesis 4: The productivity system will affect management performance.

3. Empirical study and Verification of hypothesis

The information shown in is used for the questionnaire survey to verify the hypotheses proposed and research model in this study. The questionnaire survey results were entered onto a spreadsheet and analyzed quantitatively, using the SPSS statistical program to check reliability and validity of the data. Analysis included structural equations using Amos of the SPSS, and is used to verify hypotheses and research model.

<Table 1> Topics by Category used in the Questionnaire Survey

Contents	Questionnaire Survey Category No.
Demographic variables	1. Gender 2. Age 3. No. of years worked 4. Position
Management strategy	Management policies, management plans, customer requirements, appropriateness of organizational structure
TQM activity and rewarding system	Quality control technique · activity condition, quality education, proper payment of salary, satisfaction of paid salary.
Productivity system	Production plan and control, collaboration relationship between co-workers, relationship between superior and inferior, professional knowledge of the business related to oneself of employee.
Management performance	Improvement of productivity, deduction of faulty product, cost deduction, job satisfaction of employee.

3.1 Analysis of Reliability and Validity of observed variables

The current study; set management policies, management plans, customer requirements and appropriateness of organizational structure as management strategy variables, and parameter variables for TQM activities, rewards, and production systems (production plan, production control, and collaboration relationship between co-workers, relationship between superior and worker, professional knowledge of the business related to oneself of employee). Through the above parameter variables, the research carried out factor analysis as shown in <Table 2>, in order to group the commonality of the 17 exogenous variables, and to explore what affects management performance; productivity improvement, reduction of faulty products, cost reduction, and job satisfaction of employee.

As a result, the initial Eigen values of each factor are 5.549, 2.309, 1.724, and 1.184 in which those of Eigen value is above 1. Exogenous variables are put into groups using Varimax, as shown in <Table 3>, and the four groups are formed as in <Table 3>.

The first group is named 'production system', the second group is named 'TQM and reward', the third group is named 'management performance' and the fourth group is named 'management strategy' These

four groups are set as endogenous variable of the structure model.

Varimax is used in this study to eliminate problems caused by multicollinearity, which can occur by individual predictors among factors, by rotating factors of descriptive axes of variables. To check the validity of management strategy, TQM and rewarding, production system and management performance, 17 questions used in the survey were analyzed and the results are shown in <Table 2>, with the total accumulated percentage of 63.329. On the whole, the result of the analysis proves that these factors satisfy convergent validity and discriminate validity of the exogenous variables.

In order to check the reliability of variables in groups, Cronbach's alpha coefficient of the observed variables was examined, and the specific information, including the reliability coefficient of the observed variables, and is demonstrated in <Table 3>. There are various means to assess reliability of the items, in this study relevant items, of the questions, shall be calculated and split in half for reliability, and then the total average value will be calculated using Cronbach's alpha coefficient. The resulting values are shown in <Table 3>. The reliability for all items in each group, as measured by the Cronbach's alpha value, was 0.6~0.8, which on the scale had a fairly high reliability.[2]

<Table 2> Total distribution of the exogenous variables

Ingredients	Initial Eigen value			Extraction/ Sum of squares/ Factor loading			Rotated Sum of squares/ Factor loading		
	Total	% distribut ion	% accumul ation	Total	% distribut ion	% accumul ation	Total	% distribut ion	% accumul ation
1	5.549	32.641	32.641	5.549	32.641	32.641	3.137	18.453	18.453
2	2.309	13.581	46.222	2.309	13.581	46.222	2.917	17.161	35.614
3	1.724	10.141	56.363	1.724	10.141	56.363	2.603	15.312	50.925
4	1.184	6.965	63.329	1.184	6.965	63.329	2.109	12.403	63.329
.	.	.	.						
14	.324	1.907	95.378						
15	.297	1.748	97.126						
16	.262	1.541	98.667						
17	.227	1.333	100.000						

<Table 3> Rotated Component Matrix of Exogenous variables and Cronbach's Alpha

Items		Component and Cronbach's Alpha Coefficient				Cronbach's alpha coeff.
		Production System	TQM and Rewarding	Performance Management	Management strategy	
Management Strategy	Management Policy	-.030	-.022	.094	.730	0.686
	Management Plan	.210	.013	-.245	.745	
	Customers Requirement	.093	-.001	.258	.631	
	Appropriateness of Organization	.035	.006	.014	.750	
TQM and Rewarding	QC Technique & Activity	-.009	.843	.143	.016	0.817
	Quality Education	-.083	.688	.383	.035	
	Proper payment of Salary	.359	.740	.003	-.059	
	Satisfaction of paid Salary	.186	.821	.179	-.025	
Production System	Professional Knowledge	.806	-.024	.104	.072	0.836
	Relationship between Workers	.775	.108	.180	.017	
	Relationship between superior and inferior	.782	.253	.104	.100	
	Production Plan	.630	.104	.389	.158	
	Production Control	.592	.059	.418	.049	
Performance Management	Decrease of Faulty Product	.165	.474	.644	.054	0.828
	Improvement of Productivity	.340	.235	.590	.078	
	Cost reduction	.235	.074	.862	.027	
	Job satisfaction of employee	.324	.365	.618	.044	

<Table 4> Path-coefficient and Goodness-of-fit of Structural Equation Modeling

Classification and Path			Estimate	Goodness-of-Fit Test
Production system	←	Management strategy	.262	Chi-square = 182.481 P= 0.000 GFI = 0.863 CFI = 0.921 AIC = 258.481 HOELTER=113
Production system	←	TQC activity and reward	.400	
Management performance	←	Production system	.498	
Management performance	←	TQC activity and reward	.442	
Management plan	←	Management strategy	.671	
Management policy	←	Management strategy	.571	
Customers requirement	←	Management strategy	.519	
Appropriateness of organization	←	Management strategy	.640	
Proper payment of salary	←	TQC activity and reward	.677	
Satisfaction of paid salary	←	TQC activity and reward	.839	
Quality control activity	←	TQC activity and reward	.765	
Quality education	←	TQC activity and reward	.666	
Decrease of faulty product	←	Management performance	.763	
Improvement of Productivity	←	Management performance	.663	
Cost reduction	←	Management performance	.752	
Job satisfaction of employee	←	Management performance	.792	
Production plan	←	Production system	.727	
Professional knowledge	←	Production system	.684	
Relationship between workers	←	Production system	.716	
Relationship between superior and inferior	←	Production system	.747	
Production control	←	Production system	.684	

3.2 Analysis of Model and Hypothesis Tests

3.2.1 Analysis of model

Structural equation modeling using the variance-covariance matrix of the observed variables, and maximum likelihood methods, are used to examine the research hypotheses and model addressed in this study. To get a proper and appropriate evaluation for this kind of structural equation modeling, many Fit Index factors can be applied. As for means testing, the Chi-square test is commonly used. Whereas the GFI (Goodness of Fit Index), CFI (Certain of Fit Index) and AIC (Akaike Information Criterion) are mainly used for goodness of Fit test. Overall, from the p-value of the chi-square test, and the index of goodness of fit test is shown in <Table 4>. The results of several tests suggested that the fit of the model was satisfactory. Final version of the model for the collected empirical data is presented in <figure 1>. Several other models were designed and tested to verify its reliability. However the scale of both the GFI (Goodness of Fit Index) and discrimination index [or ‘measure’] of AIC (Akaike’s Information Criterion) had a fairly low reliability. Thus, the research set figure 1 as the final model. More specifically, GFI is an indicator which explains how well the model explains the variance/covariance of the data. As it does not follow a regular distribution, statistical test criterion is not presented. In general, the model fit is considered good, with

GFI statistics above 0.9. In the model, GFI = 0.863 can be said that there is a good fit. The AIC measurement was used to find out the best model among the various models. The AIC methodology is used when finding the best model among a candidate set of models. The AIC measurement indicates a better fit when it is smaller. The current study reviewed several models, and the AIC measure of the model shown in <figure 1> showed the lowest measure. (AIC = 258.481)

3.2.2 Hypothesis Tests

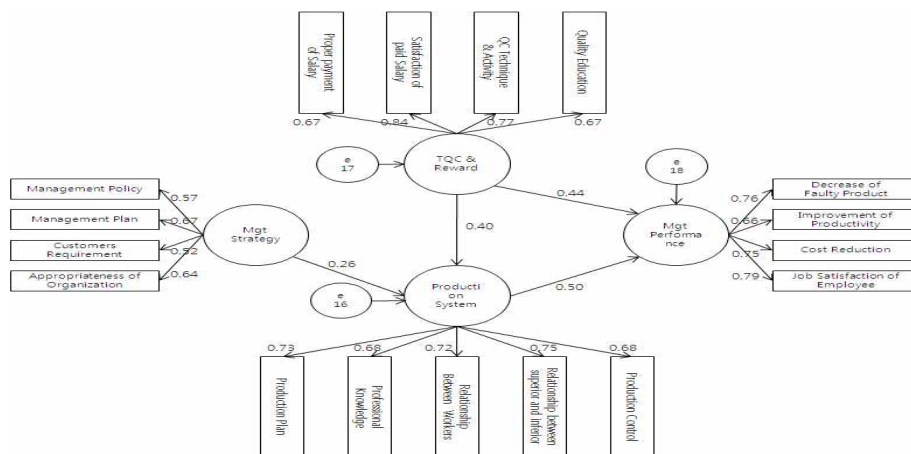
In order to verify the research hypotheses, a standard path coefficient and t-value (CR=t) was applied, the results of the structural equation modeling was examined using Amos, of the SPSS program. The significance of the analysis is shown in <table 5>.

First, for Hypothesis 1, we can adopt a null hypothesis, since t value ≥ 1.96 , which shows that the management strategy did affect TQM activity and reward.

Second, for Hypothesis 2, we can adopt a null hypothesis, since t value ≥ 1.96 , which shows that the management strategy did affect productivity system.

Third, for Hypothesis 3, we can adopt a null hypothesis, since t value ≥ 1.96 , which shows that the TQC activity and rewards did affect management performance.

Fourth, for Hypothesis 4, we can adopt a null hypothesis, since t value ≥ 1.96 , which shows that the productivity system did affect management performance.



<Figure 1> Path-coefficient and Goodness-of-fit of Structural Equation Modeling

<Table 5> Result of Structural Equation Modeling Analysis

To	Path	From	Estimate	S.E.	C.R.	P
production system	←	Management strategy	.256	.110	2.316	.021
Production system	←	TQC activity and reward	.355	.095	3.722	***
Management performance	←	Production system	.562	.115	4.890	***
Management performance	←	TQC activity and reward	.443	.101	4.383	***
Management plan	←	Management strategy	.983	.210	4.670	***
Management policy	←	Management strategy	1.000			
Customers' requirement	←	Management strategy	.781	.188	4.145	***
Proper payment of salary	←	TQC activity and reward	1.000			
Satisfaction of paid salary	←	TQC activity and reward	1.163	.147	7.914	***
Quality control activity	←	TQC activity and reward	.982	.131	7.483	***
Quality education	←	TQC activity and reward	1.084	.162	6.677	***
Decrease of faulty products	←	Management performance	1.000			
Improvement of Productivity	←	Management performance	.880	.119	7.377	***
Cost reduction	←	Management performance	.889	.106	8.415	***
Job satisfaction of employee	←	Management performance	1.080	.122	8.853	***
Production plan	←	Production system	1.000			
Professional knowledge	←	Production system	1.035	.143	7.246	***
Relationship between co-worker	←	Production system	1.177	.156	7.567	***
Relationship between superior and inferior	←	Production system	1.100	.140	7.868	***
Production control	←	Production system	.948	.131	7.252	***
Appropriateness of the organization	←	Management strategy	.865	.187	4.618	***

4. Conclusion

There are many profit-related factors for company management performance. The first factors that need to be carefully considered, among many, are; production improvement and related factors, whether it is direct or indirect; decrease of faulty product, cost reduction, and job satisfaction of employee.

Management strategy is considered to be the starting point which affects management performance. These factors are considered the foundation for the potential growth and competitiveness of the company in the future, over other companies. Additionally, the representative factors are the production system, TQC activity, and reward system among many other factors to achieve good management strategy and performance.

The survey participants of the study were mainly recruited from site related employees. The result of the analysis revealed that management strategy, TQC activity, and reward system had a small influence on the other. Factors of management strategies and production systems such as; production planning and control, collaboration relationships between co-workers, relationship between superior and workers, professional

business knowledge of employees, are strongly related to each other. The findings in this study showed that there is a direct link between TQC activity and a reward system group such as; quality control technology, activity control, quality education, proper payment of salary, and satisfaction of paid salary, and the management performance group which includes; production improvement, decrease of faulty product, cost reduction, and job satisfaction of employees.

The study found that there was a close connection between the groups of TQC activity, rewards, and production system. Additionally, factors such as; production improvement, decrease of faulty product, cost reduction, and job satisfaction of employees, of the production system and management performance groups were also affected. In conclusion, factors which affect management performance are also considered to affect management strategy, effective organization control, production system, quality control, and rewarding system for employees.

This study is limited by the small sample, as the only site workers from small and medium automobile parts production Companies were mainly involved in the survey. The approach in this study may well

have implications beyond small and medium Auto Companies, and may have potential for use with a wide range of Businesses in order to establish cause-and-effect relationships.

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인하대학교 석사학위, 건국대학교 산업공학에서 공학박사학위를 취득하였고, 한국산업개발연구원에서 선임연구원을 거쳐 현재는 남서울대학교 산업공학과 부교수로 재직 중이며, 주요관심분야는 경영과학, 경제성공학, 생산성공학 분야이다.

주소: 충남 천안시 성환읍 매주리 남서울대학교 산업 경영공학과

구 일 섭



인하대학교 산업공학에서 학사, 석사학위, 박사학위를 취득하였고, 현재는 남서울대학교 산업공학과 교수로 재직 중이며, 주요관심분야는 생산관리, 물류관리, Single-PPM분야이다.

주소: 충남 천안시 성환읍 매주리 남서울대학교 산업 경영공학과