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Total Quality Management and Organization Structure among Small Pharma Manufacturing Firms: An Empirical Analysis.

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ABSTRACT

Recent advances in business and trade have radically augmented competition globally. In order to compete with global and local players, business firms needs to be in line with technology and quality along with competent skill set of employees. The philosophy of total quality management transpired to provide service to customers and gain competitive advantages among its competitors. It is an employee based approach and has many consequences on the design of the organization. The objective of the study is to identify the critical factors of quality management in small pharma manufacturing firms and to recognize the relationship between organization structure and TQM implementation. This study is limited to small pharma manufacturing industry in Tamil Nadu. The instrument used in this study is a survey questionnaire. The sample of 51 firms is selected for the study. Flexible and adaptive structure may lead to clear cut definition of job descriptions, roles and responsibilities, authority and communication patterns which in turn provides the successful implementation of TQM programs. Against the backdrop of development in manufacturing process, technology, regulatory compliances and distribution system, small pharma companies develop the ability to produce cost-effective and affordable medicines. All these factors are making SMEs to grow in the sector. Thus, the present study scrutinized the relationship between the organization structure and the implementation of TQM programs and practices. The result imparted that organization structure is one of the factor which relatively influences the success of implementation of TQM programs in small pharma manufacturing firms.

Keywords: Total Quality Management, organization structure, Tamil Nadu, Small Pharma Manufacturing firms, organization strategy, TQM practices

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INTRODUCTION

Recent advances in business and trade have radically augmented competition globally. In order to compete with global and local players, business firms synergize with technology and quality along with competent employees. The philosophy of total quality management emerged to provide service to customers and gain competitive advantages among its competitors. It is an employee based approach and has many consequences on the design of the organization structure. Business firms may overlay their quality management programmes on existing organization design and their success depends on the perfect fit between the strategy and structure of the organization. The existing hierarchy, team based approach, authority and responsibility relationship and communication pattern would affect the way the TQM is implemented in the organization. As cost competitiveness, customer orientation, lead time, are some key factors for the survival of manufacturing industries, the small scale segment is a manifestation of India's socio-economic development model and has met with the country's long-term expectations in terms of contribution to GDP, industrial base, employment and exports. Small, medium and large players, which comprise nearly 300 different companies, form an integral part of the Indian pharma industry [1]. According to India Micro, Small and Medium Enterprise report, the small and medium pharma companies play a crucial role in the growth story of the Indian pharma sector as they contribute 35 to 40 per cent to the industry in terms of production with the turnover of about Rs 35,000 crore. Against the backdrop of development in manufacturing process, technology, regulatory compliances and distribution system, small pharma companies develop the ability to produce cost-effective and affordable medicines. All these factors are making SMEs to grow in the sector. Earlier, pharmaceutical SMEs in India were less active in exports. But now, the whole scenario is changing with small pharmaceutical companies playing the role of active partners for the supply of active pharmaceutical ingredients (APIs) and finished dosages for Indian as well as foreign pharmaceutical firms. Based on this, the objective of the study is to identify the critical factors of quality management in small pharma manufacturing firms and to recognize the relationship between its implementation with organizational structure.

ORGANIZATION STRUCTURE AND TQM IN SMALL MANUFACTURING FIRMS-REVIEW OF LITERATURE

The various researchers pointed out that one-third to one-half of organizations have identified considerable progress in quality and people motive through quality management programs [2]. Other studies have also proved the relationship between quality management practices and organization design factors such as organization structure [3]. To implement the TQM programs successfully, compared to transactional leadership style, firms may go for transformational leadership style where leaders act as mentors and trainers, they pay attention to each individual's needs, form a quality teams and motivate followers by setting goals and promising rewards for desired performance[4]. Developing a quality team in the strand of existing organization structure helps to identify the talented employees among the workforce[5] and similar teams afford a well structured environment conditioned for implementing quality programs on a continual basis[6]. There are other factors would partially mediates the existing organization structure [7-8]. The classical organizational theory pinpointed two types of structures existing in the organization as mechanic and organic. The mechanic structure focused on efficiency where in high degree of centralization, existence of formal groups, one way communication pattern and exercised the authoritative leadership approach to its employees. On the other hand, the organic structure promoted balanced authority, open communication and encouraging employees with participative leadership style. The ultimate goal is to grow and survive rather than only efficiency in the context of mechanic structure. Case studies of organizations pinpointed that companies could improve TQM programs success by altering their existing top-down, mechanic structures [9] and several authors have emphasized the need of examining the impact of structure [10]. The inspirational attitude of people involvement strategy is essential for a sustained implementation of TQM programme which in turn promotes intrinsic values to achieve the desired results and intrinsic satisfaction of the employees [11].

RESEARCH METHODOLOGY

From the literature review, it is identified that the holistic view of the relationship between TQM and organization structure dimension is lacking. The questionnaire used in this research consists of three parts. The first part is connected with TQM profile of the organization. The second part is concerned with TQM practices. It includes seven dimensions, namely top management commitment, customer focus, organization culture, continuous improvement, empowerment, supplier quality and strategic planning. Respondents were asked to indicate their level of agreement with the items of this part based on 5 point Likert Scale. The third part is

based on the organization structure. Respondents were asked to indicate their level of agreement with the items of this part based on 5 point Likert Scale. The researcher used the list of members of Confederation of Indian Industries as its sampling frame. A list of small pharma manufacturing firms in Tamil Nadu registered with Confederation of Indian Industry (CII) was obtained from CII. CII is a non government, industry led organization with a direct membership of over 7800 organizations covering wide spectrum of private, public sectors including SMEs and MNCs. In India, the quality practices were initiated by Confederation Indian Industry which encouraged the researcher to choose members from CII for the present study. The questionnaire was provided to the general managers, quality managers, operation managers and other functional managers in small pharma manufacturing firms. Out of 100 questionnaires distributed, 51 responses were collected, making the response rate of 51%. Due to time and resource constraints the researcher has restricted the area of the study to Tamil Nadu.

RESULTS AND DISCUSSION

TQM practices in Tamil Nadu small pharma manufacturing firms

In order to assess the extent to which these dimensions of TQM have been used and, a 't' test was conducted. Small pharma manufacturing firms are classified in to public and private firms based on their ownership.

Hypothesis: H0: There is no significant difference between the practices of TQM among small pharma manufacturing firms

The't' result explained the difference between the mean scores of all the TQM factors identified by the public and private are statistically insignificant. From the analysis, it is found that the continuous improvement, top management commitment and customer focus are perceived high for both public and private firms. In addition to that the factor "continuous improvement" was identified as consistent among the respondents in private firms. It is continued by the "supplier quality management and customer focus". The factors Quality information system' followed by "human resource management' were identified as highly fluctuated in perception. In public firms 'Human resource management' factor and organization culture was identified as consistent in perception among the respondents. High level of fluctuation in perception was shown in the factor 'top management commitment' followed by "continuous improvement'.

Organization structure in small pharma manufacturing firm

The researcher used't' test to identify the extent to which the mechanic and organic structure have been used in small pharma manufacturing firms.

Table 1: Comparison of TQM components between Private and Public small manufacturing firms

Sl. No	Components of TQM	Private firm			Public firm			Difference Mean score	't' value
		Mean	SD	C.V(%)	Mean	SD	C.V(%)		
1.	Top Management Commitment	4.66	0.474	10.17	4.60	0.483	10.5	0.06	0.737
2.	Organization Culture	4.65	0.498	10.70	4.59	0.49	10.67	0.06	0.681
3.	Strategic Planning	4.64	0.502	10.81	4.59	0.489	10.65	0.05	0.639
4.	Customer Focus	4.66	0.473	10.15	4.6	0.485	10.54	0.06	0.774
5.	Human Resource Management	4.62	0.521	11.27	4.58	0.49	10.69	0.04	0.529
6.	Continuous Improvement	4.67	0.46	9.85	4.61	0.482	10.45	0.06	0.900
7.	Process Management	4.64	0.497	10.71	4.59	0.487	10.65	0.05	0.651

Source: computed data

Table 2: Comparison of organization structure types between Public and Private small manufacturing firms

Sl. No.	Components of organization structure	Mean Score of TQM Components		Standard Deviation		't' value
		Private	Public firms	Private firms	Public firms	

		firms				
1.	Mechanic structure	4.23	4.01	0.483	0.476	0.572*
2.	Organic structure	4.57	4.63	0.512	0.471	0.821*

Source: computed data

Note:* indicates at one per cent level of significance

Table 3: Correlation between Organization structure and TQM with Public and Private small manufacturing firms

Firm Type	Organization Structure		Relationship
	Mechanic	Organic	
	Significant value		
Private	0.236	0.765	Positive
Public	0238	0.563	Positive

Table 4: Regression between organization structure and TQM Public and Private small manufacturing firms

Sl.No.	Firm type	Size (N)	Organization structure		R^2 Value	F Value
			organic	mechanic		
1	Private	34	-6.86 (-1.097)	1.150** (1.818)	.792	12.141*
2.	Public	17	0.095 (0.200)	1.644** (1.293)	.430	39.607*

Note: * indicates one per cent of level of significant
Figures in the brackets are't' values.

Hypothesis: H0: There is no significant difference between the types of organization structure among small pharma manufacturing firms

It is evidenced from the Table 2 that significant difference was found between mean scores of organization structure followed by public and private firms. The analysis pinpointed that the mean score of organic structure is slightly high compared to mechanic among public and private firms.

Relationship between organization structure and TQM practices

In order to identify the relationship between the implementation of TQM and the organization structure, correlation was used.

Hypothesis: H0: There is no relationship between organization structure and TQM practices among small pharma manufacturing firms

The correlation between organization structure and implemented TQM practices were positive and significant for both private and public firms. Interestingly, the r value is higher for organic structures compared to mechanic among both firms which signified the strong relationship of organic organization structure existing among the TQM practised organization.

Analysis of Impact of organizational structure on implemented TQM practices in small pharma manufacturing firms

Multiple regression analysis was carried out to study the effects of both mechanic and organic factors on TQM in small pharma manufacturing firms. The results are presented in Table 4.

The regression analysis for studying the impact of organic and mechanic structure factors on implemented TQM practices of small pharma manufacturing firms is shown in Table 4. The F value is 12.14 and R^2 value is 0.792. The F value indicates that the overall regression model is fit for discussion. The R^2 value shows that around 79 per cent of variations in the implemented TQM practices have been explained by the independent variables included in the model. The computed value of't' for the regression coefficient of the hard factor brings out the fact that the organic factors of organization structure exert the significant impact on implemented TQM practices. It is inferred from the analysis of data that most of the private firms consider flexible structure, aligned strategy, integrated system of an organization as the important components. The mechanic factor of organization structure influences TQM of small firms insignificantly. The same analysis was performed for public firms. F value is 39.6. The R^2 value is 0.430 which explains 43 per cent variations

explained by both independent variables. It was also found that the computed values of 't' for the regression coefficient of the independent variable organic structure were statistically significant at 5% level and for the mechanic structure were insignificant.

IMPLICATIONS AND CONCLUSION

The 't' test implies that the continuous improvement, top management commitment and customer focus are identified as important dimensions of TQM components. Without this, the implementation TQM programme cannot succeed and organization culture needs to be created for an effective functioning of other TQM components. The top management commitment could bring out empowered employees. Correlation analysis explained a positive relationship between structures of an organization related to the TQM practices in small pharma manufacturing firms. Regression analysis also supports this by giving a value, (beta=0.58, 0.55, F value 12.141, 39.607 and $p<0.01$) for public and private firms. Flexible and adaptive structure may lead to clear cut definition of job descriptions, roles and responsibilities, authority and communication patterns which in turn provides the successful implementation of TQM programs. Thus, the present study scrutinised the relationship between the organization structure and the implementation of TQM programs and practices. The result imparted that organization structure is one of the factor which relatively manipulates the success of implementation of TQM programs. Organizations having flexible organic structures tend to have higher continuous improvement, top management commitment and customer focus than those of mechanic structure. Thus initiating and implementing TQM programs and practices depends on the team coordination, individual attention to quality details and responsibility, interest on customer and continuous improvement which are likely to be present more in organic structure based companies. "Robust and focussed business models are helping pharma SMEs in their growth momentum. High level of entrepreneurial zeal and low operational costs across various pharmaceutical business help pharma SMEs grow and prosper," says Narang. [12].On SMEs' contribution, PK Gupta, President, Confederation of Indian Pharmaceutical Industry (CIPI), says, "In about Rs 72,000-crore domestic market, the direct contribution of SME segment to the domestic market is around Rs 20,000 crore. The export turnover of our members is around Rs 15,000 crore. The contribution of SMEs in terms of volume is around 40 per cent. This is a well known fact that a large number of MNCs and top Indian companies get their products manufactured from SME units under loan licenses and this is an indirect contribution of SMEs to the overall market." Thus, the results of the study provide a diverse perspective related to organization structure and its alignment with TQM programs in small pharma manufacturing firms which would bring the right business model for growth and collaborative approach and enhance the Pharma SME sector in India. Further, future studies may be conducted for identifying the relationship of other organization factors with the success of TQM programs in small business firms.

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