

An Empirical Study on the Patterns of Organizational Structure of Japanese Affiliates in Sri Lanka

(With Special Reference to the Paradigm of Loosely Structured Organization)

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Abstract

The Loosely Structured Organization (LSO) is presently regarded as a new management paradigm, which determines the structure and functions of organizations today. LSO evolved as a modern organizational form perfectly matching the multi-product, small-volume lean production system brought about by new technology in latter part of 1980s. LSO is currently considered as the dominant organizational form among Japanese enterprises and increasingly diffusing among Japanese affiliates even in abroad. This paper, which was based on an empirical research study focuses on clarifying the patterns of organization structure of Japanese affiliates in Sri Lanka, with special reference to the paradigm of LSO. The research framework conceptualized structural patterns on the basis of a typology consisting of two main components: work and management organizations of a firm. The study, which was carried out among five Japanese affiliates operating in Sri Lanka, has found the existence of LSO in those firms. The findings suggest that the LSO is diffusing across national borders and the Japanese style of organizational form has universal characteristics.

Keywords: Organizational Structure, new technology, teamworking, multi-skilling, Loosely Structured Organization, knowledge transfer.

Introduction

The innovation of information technology in business and micro-electronics in manufacturing led to great modifications in the structure and functions of organizations today. Traditional management practices of organizations in respect of production and human resource have considerably changed with the view to secure competitive advantage in the global market. Particularly, the mass production system is changed as multi-product, small-volume, and lean production system. Managing human resources has become a strategy with more emphasis on making employees multi-skilled.

The changes and modifications in management practices led to the development of modern organizational structures and forms. Japanese firms created a distinct style of organization coupled with team working and workers' knowledge utilization. The so-called Loosely Structured Organization (LSO) has proved itself as a good strategy for managing new technology, and workers' knowledge in competitive environment. The LSO is currently regarded as a new management

paradigm, which determines the structure and functions of firms today. This paper focuses on clarifying the patterns of organizational structure of Japanese affiliates in Sri Lanka, with special reference to the paradigm of LSO.

Technological Innovation and Emergence of LSO

The human resource management system of Japanese firms has undergone considerable changes during 1980s and 1990s due to the influence of new technology. Introduction of Information Technology in communication and Micro Electronics in manufacturing led to great modification of organizational structure of both work and management organizations in enterprises (Womack et al., 1990). At work organization level it was observed that the so-called Tayloristic machine principle of one-man, one-job got modified as teamwork in which workers became multi-skilled capable of performing various kinds of job. This modification was manifested in the shift of work organization from mechanistic to organic characteristics.

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At management organization level, the hierarchical organization structure is transformed into the so-called flat type or net work type organization where middle level managers assume new roles based on information sharing between top and lower levels within the organizational units. The technological innovation or micro electronics revolution as it is sometimes called, was considered as the driving force of these changes and transformations of organizational structure, job contents, duties of workers, and new roles of supervisors. Thus the diffusion of new technology which was thought as the perfect match to the small volume, multi-product, lean production system, has led to the development of loosely structured organization (Okubayashi, 1995).

The so-called LSO, which was brought about by the diffusion of new technology, includes organic work organization and flat management organization. Organic work organization implies a teamwork organization in which tasks are assigned to a work team of various forms. It also allows flexible job boundary and wide discretion to workers. Flat management organization means a flat management hierarchy with delegated responsibility of managerial decision-making. This kind of LSO is increasingly practiced by many Japanese companies at present time. The new Japanese management characteristics such as team work, visual management, single status between blue and white collar workers, job rotation, suggestion system etc. are the by-products of LSO.

The Uniqueness of Japanese Organizational Form

In a factory, it becomes absolutely necessary for management to maintain mechanical factory orders and production while at the same time utilizing with less limitation the organic ability of the people in the shop floor for more creative and qualitative functions of the system. This concept is in line with the modern thinking of fostering creativity and innovation at all levels in the hierarchy within organization. Teamwork, quality circles, task

groups and autonomous work groups emerged inevitably to tackle a tradeoff relationship between mechanistic and organic aspects of production system (Abo, 1994). The essential technological feature of Japanese production system and practices is to be found in the quest for perfection which emphasizes the combination of human organization which permits more flexible, and free mobilization, and exploitation of qualitative, creative abilities of human resources of all ranks as well as quantitative energies from them. The result is a sort of special unification of the so-called LSO.

Increasing globalization points out that the differences in national production systems are about to disappear and the application of management methods become universal. However, Abo argues that the diffusion of technology becomes increasingly global, but the sources of technology remain distinctly national. Technological knowledge remains lodged in the people and organization that created it. It depends on various factors such as the particular know-how of workers, the institutions that train workers, the community, the market context etc. (Myers, 1996). This kind of local knowledge or "tacit knowledge" as illustrated by Lam in one of his research paper, can not be simply bought or sold. Such knowledge does not necessarily move between regions and countries. Thus industries in one nation may make innovations in technology and in other, management and production systems that are not readily transferable to others.

Japan has created a wealth of technological innovations and management methods, which reflect her own style (Nonaka and Takeuchi, 1995). Japanese firms predominantly have innovated around blue-collar work organization with deriving advantages from mechanics and electronics oriented technology or mechatronics as it is sometimes called. As mentioned at the beginning of this paper, the introduction of micro-electronics technology contributed a lot in developing the technical skills of the Japanese work force. The traditional view of Japanese technicians

suggests an orthodox theory of technology transfer, which was based upon the premise of acquiring basic technical training, mostly through on-the-job training methods (Hayashi, 1990). Continuous education development of employees is also an integral part of this skill and knowledge improvement strategy.

The LSO has proved itself as a good strategy for managing new technology and workers' knowledge in the competitive environment. It is considered as the Japanese style of modern organizational form. Research studies focused on analyzing the potentiality of LSO in Japanese affiliates abroad have attracted the attention of researchers at this juncture. This paper analyzes the diffusion of LSO in Sri Lanka, where a number of Japanese affiliates are making investments and operating factories. In particular, the paper seeks to answer the following research question : what is the pattern of organization structure of Japanese affiliates operating in Sri Lanka?. Answer to this question leads to clarify whether the LSO diffuses across national borders, or in other words, whether the LSO has universal characteristics or not.

International Transfer of Organizational Features – Some Points to Note

In the development process of a country, it has been recognized that the specific societal factors have major roles to play particularly in advancing that country to positions of economic world leadership. According to the multi national enterprise theory, a country's societal and cultural factors are interrelated with the factors, which determine the relative manufacturing superiority of particular country. In this background, some scholars argued that the strengths of Japanese management, especially the competitive superiority of Japanese firms, have found their roots from the unique characteristics of Japanese society such as group orientation and ethnic homogeneity of the work force (Yoshino, 1977). Much attention has been paid in earlier researches to the characteristics peculiar to the Japanese culture. It has been found that

the more emphasize cultural factors, the more limited the potential for international transfer becomes. Conversely, the less emphasis on cultural factors, the greater that potential (Abo, 1990).

However, consequently there has been great awareness among the researchers about avoiding such country specific factors in making international comparisons. Abo terms such country specific cultural factors as 'irrational' and states such factors should be avoided, and the attention should be focused on a 'scientific' method which isolates and focuses upon those elements considered to be 'universal'. The 'scientific' method means that the various elements, which constitute the organizational and technological systems should be carefully analysed both individually and as a whole. In analyzing the issue of how to effectively transplant the Japanese systems to different country contexts, it is important to place emphasis on those characteristics that Japan has in common with other countries, rather than considering the traditional socio cultural factors specific to Japan (Koike, 1987). Some scholars argue that the humanistic elements that underlie the competitive superiority of Japanese firms are both rational and universal (Morita 2001, Okubayashi 1995). The case of NUMMI, the joint venture project between Toyota and GM, succeeded in transplanting Japanese team working style in United States, thus clarifying the effectiveness as well as the universality of Japanese management methods and techniques (Koike, 1998).

Reserch Design and Methodology

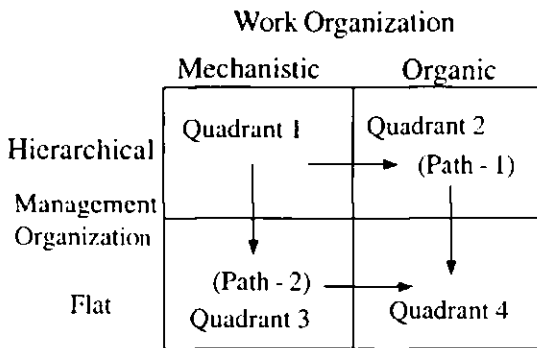
Analytical Framework

In order to investigate the research question – whether the LSO has universal characteristics and diffuses across national borders – it is necessary to collect comparable information on work and management organization systems of Japanese affiliates in overseas. The need for an analytical framework becomes apparent at this juncture for collecting and analyzing relevant data in a coherent manner. A careful review of literature

provided a sound base for formulating analytical framework of this research study. Theoretical concepts which were derived mainly from the works of Okubayashi (1994), Morita (2001), and Abo (1995) contributed to a great extent in building up the analytical framework for this research study.

The analytical framework called Organization Structure Typology shown in Figure – 1, with findings from previous research studies of other scholars, proposes that work organization consists of two types as mechanistic and organic, and management organization as hierarchical and flat. Also, it put forwards three patterns of organization structures such as tightly organized, semi-loosely organized, and loosely organized structures. The combinations of hierarchical–organic, and flat–mechanistic, both are semi-loosely structured organizations. The prudence of this argument is based on the patterns of movement of organizations toward LSO.

Figure 1 Organization Structure Typology



The Organization Structure Typology provides the conceptualization of various combinations of work and management organizations. According to the figure, the combination creates four quadrants. Quadrant 1 reflects the hierarchical–mechanistic combination, identified as tightly structured organization. On the other hand, Quadrant 4 consists of flat–organic combination, and identified as loosely structured organization. Quadrant 2 with hierarchical–organic combination, and Quadrant 3 with flat–mechanistic combination reflect the same property of moving towards LSO, and hence be termed as semi-loosely structured organizations.

It has been assumed that organizations, in their early life, adopt tightly organized structure, and then move towards loosely organized structure. As shown in the figure, there are two paths for organizations to move towards LSO. Path 1 suggests that changing work organization at first from mechanistic to organic form, while keeping the hierarchical management organization, and then try to move to flat management organization, with the objective to reach LSO. Path 2 suggests that changing management organization at first from hierarchical to flat, while keeping the mechanistic work organization, and then try to introduce organic work organization. This will also help to reach LSO. Therefore Quadrants 2 and 3 are considered semi-loosely organized structures. The question of selecting a suitable path depending on the circumstances of each particular firm.

Operationalization of Work Organization

This section discusses how to approach and operationalize work organization and its influences on pattern of organization structure. Work organization constitutes the shop–floor level in a factory. The following six dimensions of work organization are selected from careful review of literature for this purpose: Basis of Job Assignment, Job Contents of Workers, Job Boundary, Discretion of Employees, Way of Working, and Role of Supervisor. The operationalization of work organization by analyzing the above six of its dimensions is given in Table 1.

Operationalization of Management Organization

Management organization constitutes the managerial and/or office level activities in a firm. The following five dimensions are identified for operationalizing management organization: Hierarchical Ladder, Decision–making Authority, Speed of Decision–making, Job of Middle Level Managers, and Way of Functioning of Sections. The framework of operationalization formulated on the basis of the above five dimensions is given in Table 2.

Table – 1 Dimensions of Work Organization

No	Dimensions	Mechanistic	Organic
1	Whether basis of job assignment is on:	Individual	Team work
2	Whether job contents of workers are :	Simple	Complex
3	Whether job boundary is:	Specific	Ambiguous
4	Whether discretion of employees is:	Narrow	Wide
5	Whether employees work:	In isolation	In cooperation
6	Whether role of supervisor is:	Controller	Facilitator

Table – 2 Dimensions of Management Organization

No	Dimensions	Hierarchical	Flat
1	Whether hierarchical ladder is:	Tall	Short
2	Whether decision-making is:	Concentrated on top level	Delegated to lower levels
3	Whether speed of decision-making is:	Faster	Slower
4	Whether job of middle level managers is:	Narrow	Wide
5	Whether sections within the organization are functioning:	Independently	Closely

Methods of Data Collection

Interviewing managerial people was the main data collection method used in this research study. Each interview consisted of two parts: one structured and one unstructured. A questionnaire was used to record responses of structured interviews with the view to Two companies did not allow factory visits for some policy reasons.

In all firms, the interview lasted for about one and a half to two hours. In two Japanese affiliates, Japanese nationals who hold top managerial positions also participated in the interview with local managers. In this paper,

Japanese Affiliates are identified as JA 1, JA 2, JA 3, JA 4 and JA 5 for the analytical purposes.

Analysis and Findings

Characteristics of Work Organization

This section presents the data collected on the characteristics of work organization of surveyed firms. Characteristics are measured and analysed on six dimensions of work organization. Table 3 summarizes the position of Japanese affiliates participated in this research project on the dimensions of work organization. This summary would provide a sound base for judging each firm along the

Table – 3 Position of Firms on the Dimensions of Work Organization

Dimensions	Mechanistic	Position of Firms	Organic	Position of Firms
Basis of Job Assignment	Individual	JA 3, JA 5	Team work	JA 1, JA 2, JA 4
Job Contents of Workers	Simple	JA 1, JA 2, JA 3	Complex	JA 4, JA 5
Job Boundary	Specific	JA 1, JA 2, JA 3,	Ambiguous	JA 4, JA 5
Discretion of Employees	Narrow	JA 2, JA 3	Wide	JA 1, JA 4, JA 5
Way of Working	Isolation	JA 3	Cooperation	JA 1, JA 2, JA 4, JA 5
Role of Supervisors	Controller	JA 3	Facilitator	JA 1, JA 2, JA 4, JA 5

specific characteristics of work organization; i.e. whether a particular firm belongs to mechanistic or organic type.

Overall Position of Each Individual Firm on the Type of Work Organization

As far as the dimensions of job contents of workers and job boundary are concerned, JA 1 has been identified 'mechanistic'. However, JA 1 is 'organic' in rest of the four dimensions. Hence, it could be concluded that JA 1 belongs to organic type of work organization. The case of JA 2 is somewhat interesting. Out of six dimensions, JA 2 has been identified 'mechanistic' in three, and 'organic' in another three dimensions. This leads to the conclusion that the work organization of JA 2 is neither pure mechanistic nor pure organic. The explanation of this phenomenon is given latter.

The mechanistic type of work organization of JA 3 is very clear because it has been identified 'mechanistic' on all six dimensions. On the contrary, JA 4 belongs to organic type because it has been identified 'organic' on all six dimensions. In case of JA 5, it is 'mechanistic' in only one dimension, and 'organic' in rest of the five dimensions. It is therefore assumed that JA 5 falls under the type of organic work organization.

Summary of Overall Position of Each Individual Firm on the Type of Work Organization

Mechanistic Work Organization	Organic Work Organization
JA 3	JA 1, JA 4, JA 5

As shown above, JA 3 belongs to mechanistic type of work organization, while rest of the firms adapt organic style in shop floor management. JA 2 is neither mechanistic nor organic type.

Characteristics of Management Organization

The five dimensions of management organization could serve as a base for

differentiating flat type organizational form from hierarchical one. According to the data collected on these five dimensions, attempts were made to identify the firms with specific type of management organization. Table 4 gives a complete view of the positions of all firms on the dimensions of management organization.

Overall Position of Each Individual Firm on the Type of Management Organization

JA 1 and JA 2 have been identified 'hierarchical' in three dimensions, and 'flat' in two dimensions, hence lead to the conclusion that these firms also belong to hierarchical type of management organization.

Summary of Overall Position of Each Individual Firm on the Type of Management Organization

In the case of JA 3, JA 4, and JA 5, on the other hand, they have been identified as 'hierarchical' in two dimensions, and 'flat' in three dimensions. It could therefore be assumed that these firms belong to flat type of management organization.

Hierarchical Management Organization	Flat Management Organization
JA 1, JA 2	JA 3, JA 4, JA 5

As shown above, JA 1 and JA2 are practicing the type of hierarchical management organization. Rest of the Japanese affiliates adapt flat style of management organization.

Patterns of Organization Structure and Diffusion of LSO

Patterns of Organization Structure of Japanese Affiliates

The analytical results from previous sections can be fed into the research framework to identify the patterns of organization structure each firm belongs. In Figure-2, the patterns are shown by combining work and management organization types in respective quadrants of organization structure typology.

Figure 2: Position of Japanese Affiliates in the Organization Structure Typology

	Work Organization	
	Mechanistic	Organic
Hierarchical Management Organization	JA 2	JA 1
Flat	JA 3	JA 4
		JA 5

As shown in the above figure, JA 1 and JA 3 are in the quadrants of semi loosely structured organization. JA 4 and JA 5 are in the quadrants of loosely structured organization. JA 2 consists of hierarchical management organization, but is in transition from mechanistic to organic work organization. In short, the case of JA 2 could be explained that it is in transition from tightly structured to semi loosely structured organization type, thus took the Path 1 for this purpose.

Discussion of Findings

Analytical results and findings of this research study lead to some important conclusions with respect to the diffusion of LSO. Firstly, findings show that two Japanese affiliates have already adapted LSO. Another two in the type of semi loosely structured organization, thus exhibiting the potentiality for moving into the paradigm of LSO soon. Only one affiliate is in the transition period to semi loosely structured organization. Therefore, the

findings suggest that LSO is spreading among the Japanese affiliates operating in Sri Lanka.

The study, in general, has confirmed the changing process of organizational structure over time. There is an active movement path of organization structure from tightly organized to semi-loosely organized to loosely organized structure. It could therefore be assumed that if we learn more about the way in which the structural change takes place and the dynamics behind such a change, this would help us to plan for, implement and manage change activities more effectively. The findings suggested that elements of human resource mainly underlie the movement path. That is, managing human resource in a flexible organic way receives increased emphasis along the movement path.

This research is a limited one in its scope and cannot therefore provide data attesting to the universal validity of LSO. However, together with other previous studies on the same research subjects, this study puts forward certain general implications. Firstly, the Japanese affiliates are in the active process of transplanting the structural elements and work systems developed in the home country into different business and cultural environments. Such kind of transplantation is believed to be necessary in the light of preventing deterioration in quality and efficiency (Hiromichi, 1999). Secondly, those affiliates focus on a model of the Japanese management system based on fairly universal elements suitable for human resource

Table – 4 Position of Firms in the Dimensions of Management Organization

Dimensions	Hierarchical	Position of Firms	Flat	Position of Firms
Hierarchical Ladder	Tall	JA 4	Short	JA 1, JA 2, JA 3, JA 5
Decision – making Authority	Concentration on Top Level	JA 1, JA 2, JA 3, JA 5	Delegation to Lower Levels	JA 4
Speed of Decision – making	Faster	JA 1, JA 2,	Slower JA 3, JA 5	JA 4
Job of Middle Level Managers	Narrow	JA 1, JA 2, JA 4	Wide	JA 3, JA 5
Way of Functioning of Sections	Independently		Closely	JA 1, JA 2, JA 3, JA 4, JA 5

management (Kazuhiko, 2000). From this point, the validity of universal characteristic of LSO has been confirmed in this research study.

The overall finding of this research study suggests the potentiality of LSO to diffuse across national borders. This aspect strengthens the scientific application of management methods across national borders. Although the country specific cultural factors play a role in application process, they could not limit such a process (Nakagawa, 1997). Therefore the potential for international transfer of management systems and methods becomes increasingly high.

Conclusion

The research study, which was based on the paradigm of LSO, attempted to clarify the patterns of organizational structure of Japanese affiliates in Sri Lanka. The analytical framework was built up on a typology called Organization Structure Typology. The typology conceptualized the structural patterns emerge from the combination of work and management organizations in enterprises. Operationalization of work as well as management organizations was carried out through careful review of relevant literature.

Data were collected from five Japanese affiliates through interviews on such aspects as characteristics of work organization, and characteristics of management organization. Analyses were carried out on all aspects and findings were reported according to the analytical framework. Findings suggest that the LSO is diffusing among the Japanese affiliates in Sri Lanka.

References

Abo T., (1994) *'Hybrid Factory-The Japanese Production System in the United States'*, Oxford University Press.

Dunning J.H, (1998) *'Globalization and FDI in Asian Developing Countries'*, in Richard Thorp and Stephen Little (ed), *Global Change – The impact of Asia in the 21st century*, Palgrave Publication, pp 42–65.

Hayashi, T. (1990) *'Japanese Experience in Technology : From Transfer to Self – Reliance'*, Tokyo: United Nations University Press.

Hinomichi, S. (1999) *'A Comparison of American and Japanese Work Practices : Skill Formation, Communications, and Conflict Resolution'*, *Industrial Relations*, Vol.38, No.2, pp. 192–214.

Kazuhiko K., (2000) *'The Origin and Development of Japanese Style Organization'*, Nichibunken Monograph Series–No.3, International Research Centre For Japanese Studies, Kyoto.

Koike, K. (1984) *'Skill Formation System in the US and Japan : A Comparative Study'*, in M. Aoki (ed). *The Economic Analysis of the Japanese Firm*, Amsterdam, North Holland, pp 47–75.

Koike, K. (1998) *'NUMMI and Its Prototype Plant in Japan : A Comparative Study of Human Resource Development at the Workshop Level'*, *Journal of the Japanese and International Economics*, 12, pp.49–74.

Lam A., (1997) *'Embedded Firms, Embedded Knowledge: Problems of Collaboration and Knowledge Transfer in Global Cooperative Ventures'*, *Organization Studies*, 18/6, pp.973–996.

Lam A., (1996) *'Engineers, Management and Work Organization: A comparative Analysis of Engineers' Work Roles in British and Japanese Electronics Firms'*, *Journal of Management Studies* 33.2, pp. 183–212.

Morita M., (2001) *'Have the seeds of Japanese team working taken root abroad?'*, *New Technology, Work and Employment*, Blackwell Publishers, pp. 178–190.

Nakagawa, S. (1997) *'Scientific Management and Japanese Style Management'*, in Spender, J. C. and Kijne, H. (Eds) *Scientific Management : Frederic Winslow Taylor's Gift to the World?* Boston, Mass: Kluwer Academic Publishers, pp. 163–179.

Nonaka, I. And Takeuchi, H. (1995) *'The Knowledge Creating Company : How Japanese Companies Create the Dynamics of Innovation'*, Oxford : Oxford University Press.

Okubayashi Koji. (1995), *'Small Headquarters and the Reorganization of Management'* in Hasegawa Harukiyo and Glenn D. Hook (ed). *Japanese Business Management–Restructuring for Low Growth and Globalization*. Routledge Series, pp 143–161.

Okubayashi Koji, (1998) *'The Japanese Style of Management of Japanese affiliates in Germany and the UK'* in Richard Thorp and Stephen little (ed), *Global Change–The Impact of Asia in the 21st Century*, Palgrave Publication, pp 146–168.

Okubayashi Koji, (2000) '*New Trends of Human Resource Management in Japan*', Discussion Paper, Graduate School of Business Administration, Kobe University, 2000.28.

Okubayashi Koji, (2001) '*Japanese Manufacturers Without Factories _ Cases of Sony, Matsushita, Misumi and People*', Presentation Paper at LVMH Conference, INSEAD Euro Asia Centre.

Paul S. Myers ed. (1996) '*Knowledge Management and Organizational Design*', Butterworth – Heinemann.

Stewart, G., C. Manz and H. Sims Jr. (1999). *Team Work and Group Dynamics* (New York: John Wiley).

Womack, J.P., Jones, D.T. and Ross, D. (1990) '*The Machine That Changed the World*', Rawson Associates, Macmillan Publishing Company.

Yamashita. S., (1995) '*Japanese Investment Strategy and Technology Transfer in East Asia*' in Hasegawa Harukiyo and Glenn D.Hook (ed), *Japanese Business Management–Restructuring for Low Growth and Globalization*, Routledge Series, pp61–79.

Yoshino. M. Y. (1976). *Japan's Multinational Enterprises*, Cambridge, Mass: Harvard University Press.