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**International transfer of kaizen: an empirical study of Japanese
manufacturers in the Netherlands**

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1. Introduction

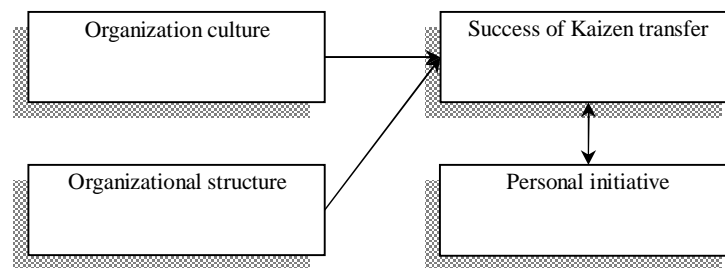
In the past few decades, a number of studies have been published that have identified specific Japanese approaches to management as being superior to other types of approaches (e.g. Toyota Production System). Recently, one of the specific issues that received attention is the concept of kaizen. Kaizen is generally defined as continuous improvement. It has been viewed as a key element in Japanese management and has been presented as one of the sources of the competitiveness of Japanese manufacturers (Imai, 1986: xxix). The transfer of kaizen overseas has been studied as part of studies on international transfer of Japanese management practices as well as in studies on best practices. Several authors concluded that Japanese management practices were embedded in the Japanese culture and difficult to transfer abroad (Fukuda, 1988; White & Trevor, 1983), while others asserted that only the rational aspects of those practices were transferable overseas (W. G. Ouchi, 1982). Recent studies show that transferred management systems are often hybridized with locally practiced systems (Abo, 1994; Kumon & Abo, 2004). The degree of hybridization is determined by the situational factors during the transfer process. They concluded that the many Japanese management approaches were not easily adopted by their overseas counterparts due to the environmental factors such as difference in national culture and working ethics. Despite this complexity, Yokozawa, Steenhuis and de Bruijn (2008) showed that Japanese companies are still considering transferring kaizen to foreign subsidiaries as a key factor and that difficulties exist with implementing kaizen outside of Japan.

Although there are a number of publication studying the international transfer of the Japanese management practices in general, studies specifically looking at kaizen are limited. When looking at the literature on transfer of kaizen overseas, a first hurdle is the ambiguousness of the term kaizen. This means that although studies exist that explicitly look at the transfer of kaizen, they may actually be dealing with different things. Therefore, the first research objective of this study is to clarify the definition of Kaizen by proposing personal initiative as a proxy of Kaizen.

Additionally, another research objective for this study is to investigate why difficulties with transferring kaizen exist. Our literature study shows that there are two important factors that lead to successful kaizen transfer abroad. Those are 1) organizational structure, and 3) organizational culture. These two factors have not been previously combined in qualitative oriented single study. The results of this study contribute to companies to develop strategies regarding which factor they need to determine before they transfer Kaizen abroad.

The study concept is presented in Figure 1.

Figure 1: Study concept



2. Conceptual research framework and hypotheses

2.1. Proxy of Kaizen

Defining kaizen in exact terms, in particular in terms that can be operationalized, is difficult. Kaizen has been associated with continuous improvement. For example Imai defines it as “ongoing improvement involving everyone – top management, managers, and workers” (Imai, 1986: xxix). Other authors share this view of equating kaizen with continuous improvement explicitly (K. Aoki, 2008; Malloch, 1997; Styhre, 2001) or implicitly (John Bessant, Caffyn, & Gallagher, 2001; Dobosz-Bourne & Jankowicz, 2006 ; Jørgensen, Boer, & Geretsen, 2003). Brunet and New (2003) discuss the ambiguity and inconsistency in the way the concept is described in the literature. They define kaizen as “consist of pervasive and continual activities, outside the contributor’s explicit contractual roles, to

identify and achieve outcomes he believes contribute to the organizational goals” (Brunet and New, 2003: 1428). Brunet and New’s (2003) definition includes that kaizen involves activities that are outside of the contributor’s explicit roles. A similar idea has been mentioned by Hayashi (1994). According to Hayashi (1994) in Japanese organization a person’s job description is not clearly defined and often overlaps. This vagueness weakens the notion of individual responsibility and promotes the notion of group responsibility. As a result, one becomes easier to go beyond his/her responsibility to tackle the problems together with group members.

Personal initiative

Adapting the definition for kaizen as provided by Brunet and New (2003), we propose that this can be interpreted as employees showing their personal initiative. Personal initiative at work has received considerable scholarly research attention over past two decades. Personal initiative is defined as a behavioral pattern whereby individuals take an active, self-starting approach to work and go beyond formal job requirements (Frese et al., 1996, 1997). The general actions for people with personal initiative includes, indentifying opportunities to improve things, challenging the status quo, and creating favorable conditions (Crant, 2000). Frese and Fay (2001) mentioned that it is characterized by five components: 1) it is consistent with the organizational mission; 2) it takes a long-term focus; 3) it is action-oriented and goal directed; 4) it is persistent in the face of obstacles; and 5) it is self-starting and proactive. As similarities between characteristics of Kaizen and personal initiative can be found in many aspects; for instance both concepts include the activities that are outside the contributors work role, persistent in identifying and solving problems that are consistent with the organizational goal, we propose a first hypothesis as follows:

Hypothesis 1: Kaizen completion is positively associated with employees’ personal initiative at work

2.2. Factors lead to successful Kaizen transfer abroad

The transfer of Kaizen overseas has been studied as part of the studies on transferring Japanese management practices overseas. In these studies, one of their main research interests was to investigate factors that have influence on the transfer of Japanese management approaches abroad. Ouchi (1982) introduced the Type Z organization which refers to a mixture of “ideal types” of American (Type A) and Japanese (Type J) form of organization which is particularly appropriate for many situations in American organizations. Several authors have looked at the influence of the external environment for example national culture (Fukuda, 1988; Kono, 1992; William G. Ouchi & Jaeger, 1978; White & Trevor, 1983). Lillrank (1995) concludes that direct transfers of Japanese innovation practices often fail not because of geographical distance but rather due to the mental distance, i.e. culture, history and strategic paradigms. Tata and Prasad (1998) discussed the implementation of TQM and indicated the influence of the cultural and structural factors on successful implementation of TQM. In those studies, it is found that the culture and organizational structure are the two major factors that have influence on the Japanese management transfer success.

This stream has been succeeded by the studies of international kaizen transfer. Saka (2004) studied the transfer of Japanese work systems, including kaizen, to Japanese subsidiaries in the UK. These were all in the automotive industry. She found that the degree to which systems was transferred differed by company. She notes: “...the operational autonomy provided to individuals in small-group activities, strengthened by a sense of ‘groupism’ in large firms in the Japanese automotive industry, conflicts with the low worker discretion and sense of individualism that has traditionally strengthened the management hierarchy in the UK automotive industry” (Saka, 2004: 221). This seems to point to the issue discussed under the definition of kaizen and related to how companies are organized. In this instance Saka’s remarks suggest that the companies that she studied had more mechanistic organization structures compared to the Japanese headquarters having more organic organization structures. Various studies have also shown that in Japanese manufacturing firms, job classification

tends to be much simpler and broader in comparison with the American firm (Cole, 1979; Kenney & Florida, 1993). Kenney and Florida (1993) find that Japanese organize work on the basis of just a few job classifications. For example, there are four job classifications for production workers at Nissan and NUMMI, three at Honda and Toyota, and only two at Mazda and SIA. This is significantly different from the traditional U.S. production organization where virtually every job has its own job classification, and where those job classifications are seen by workers and unions to provide the basis for wage increases and employment security (M. Aoki, 1988; Koike, 1998; Shimada, 1990).

Studies on kaizen transfer have also identified another important variable. Recht and Wilderom (1998) examined the existing literature on the transferability of kaizen oriented suggestion systems with an emphasis on the influence of cultural characteristics. Recht and Wilderom (1998: 11) point out that the kaizen oriented suggestion systems is oriented on intrinsic value. Although in Japan some rewards are provided, these are of symbolic nature. They conclude the main strategy of Japanese companies that set up shops abroad is to minimize cultural conflict for example by setting up greenfields in non-unionized areas. Other studies support the notion that culture is an important variable for the transfer of kaizen. Aoki (2008) notes that “the implementation of Japanese kaizen activities in overseas plants is situated in the cultural and social contexts” (519). Furthermore, Imai (1986) states that kaizen starts with the recognition of a problem. Without this problem identification, there is no potential for improvement. In order to promote kaizen, it is important that there exists an organizational culture where operators can admit their mistakes (Imai, 1986; Ohno, 1978; Wakamatsu, 2007).

It can therefore be concluded that two of the main variables that are associated with the kaizen completion in the overseas subsidiaries are 1) the way in which the receiving organization is organized, i.e. more organic versus mechanistic, 2) the organization culture.

Organizational structure

There are many studies on organization structure identifying various aspects of structure such as for example the degree of specialization, the degree of centralization, the degree of formalization, the degree of standardization and the degree of configuration (Blau, 1968; Inkson, Pugh, & Hickson, 1970; Pugh, Hickson, Hinings, & Turner, 1968; Reimann, 1974). Literature suggests that the nature of organisational structure could be distinguished as mechanistic versus organic (Harvey, 1968; Miner, 2005; Zanzi, 1987). In this study, it is assumed that what matters the most is whether the organization has a more organic structure versus a more mechanistic structure. The concept of organic versus mechanistic structure was introduced by Burns and Stalker (1961). A mechanistic form of organisation is appropriate to stable conditions, with a high formalization and centralization, clear hierarchy of control in which responsibility for overall knowledge and control rests at the top. The tasks of management are broken down into specialism, with individuals carrying out assigned and defined tasks. Vertical communication is prominent and there is a requirement for loyalty to superiors. In comparison, an organic form of organisation is appropriate to changing conditions when new and unexpected problems continually emerge, and which cannot be separated and assigned among the different specialism. There is continual adaptation and redefining of individual tasks and a supportive rather than restrictive nature of specialist knowledge is emphasized. Communication and interaction can take place at any level, as determined by the need of a process, and there exists a much higher degree of commitment to the organisation.

According to Hayashi (1994) Japanese organizations tend to have organic structures with decentralized decision-making, low degree of specialization and formalization, and horizontal communication. Furthermore, a person's job description is not clearly defined and often overlaps. This vagueness is assumed to promote the development of kaizen (Y. Hayashi, 1994). For example, in organic organisation on one hand, when a problem occurs, there is no specific individual who covers it because individual's responsibility is vaguely defined. Thus people surrounding the problem will

autonomously share information to tackle the problem together. Responsibility for overseeing projects and for accepting rewards or punishments is shared collectively by all members of a sub-unit. On the other hand, in the mechanistic organisation, when the problem occurs in the area where no specific people cover it, people logically argue to decide whose realm of responsibility the problem falls upon based on the job description. If it is found nobody's problem, then the job description is rewritten so that someone can take care of it. In this organisation design, the responsibility is more distinct. In the organic structured firms, this vagueness of one's responsibility promotes the kaizen among employees. Therefore:

Hypothesis 2: Organically-structured firms leads to more successful in transferring Kaizen than Mechanistically-structured firms.

Organizational culture

Similar to organization structure, there are many studies on organization culture. Culture in this regard has been defined as the "collective programming of the mind" (Hofstede, 2001). In this research, it is particularly important to identify culture characteristics that potentially influence the ease with which kaizen can be transferred. In this research, competing values model is used (Quinn & Rohrbaugh, 1981). The model was developed to explain differences in the values underlying models of organizational effectiveness. Quinn and Rohrbaugh's (1981) research showed that models of organizational effectiveness could be distinguished along two axes reflecting different value orientations. One axis is a flexibility and discretion versus stability and control. The second axis is an internal-external focus dimension. The resulting quadrants parallel four major theoretical streams in the organizational effectiveness literature. Those are: Clan, adhocracy, hierarchic, and market

The clan culture emphasizes flexibility and maintains a focus on the internal organization. This culture has a primary concern with human relations. The purpose of organizations with emphases on

the group culture tends to be group maintenance, belonging trust, participation are core value, and primary motivational factors include attachment, cohesiveness, and membership. Toyota is famous for performing and successfully sustaining Kaizen among workers (J. Bessant, Caffyn, Gilbert, Harding, & Webb, 1994; Imai, 1986; Monden, 1994; Ohno, 1978; Wakamatsu, 2007). Hence, it is possible to consider that looking at the Toyota culture will provide insights for the suitable corporate culture for Kaizen development. Toyota's corporate culture can be described by a relatively group oriented and egalitarian corporate culture. Individuals develop identification to the group and a sense of 'community of fate', and believe that all share a common destiny with one another (Cole, 1979; Ohno, 1978). Toyota attaches significance to worker's loyalty to their companies and tried to cultivate a sense of togetherness among them (S. Hayashi, 1988). Company uniforms, songs, morning exercise, after work social gatherings, and ceremonies are organizational mechanisms used to sustain and build Toyota culture (Besser, 1996; Kenney & Florida, 1993; Liker, 2004; Shimada, 1990). Imai (1986) states Kaizen starts with recognition of problem and without it there is no potential for improvement. On the other hand, it is human nature not want to admit that one have a problem, since admitting to problems is tantamount to confessing failings or weaknesses. Literature indicates that in order to promote Kaizen, it is important that developing an organisational culture that operators can admit their mistakes, fact that everyone has problems and can discuss things freely (Imai, 1986; Ohno, 1978; Wakamatsu, 2007). In order to achieve this, the mutual trust among employees and between management and labour must be developed. Creating a sense of belonging and shared fate foster employee commitment. Consequently, they are willing to interchange or apply their knowledge and experience without restrictions (Recht & Wilderom, 1998). In summary, corporate culture that focuses on the internal improvement, group-oriented, human resource orientation, belonging trust, participation which characteristic is assumed that suitable for developing Kaizen. Thus, it is hypothesized:

Hypothesis 3a: Clan organizational culture positively relates to successful transfer of Kaizen.

The adhocracy culture emphasizes flexibility and change, but maintains a primary focus on the external environment. This orientation emphasizes growth, resource acquisition, creativity, and adaptation to the external environment. Key motivating factors include growth, stimulation, creativity, and variety. Literature shows that characteristics of this culture which emphasize on change matches with the Kaizen development. Kaizen activities in Toyota are often considered as a representative of Japanese kaizen activities (K. Aoki, 2008). Toyota put their emphasis on the flexibility and small and continuous changes. Katsuaki Watanabe the former CEO of Toyota described the corporate culture of Toyota as “No change is bad” (Osono, Shimizu, Takeuchi, & Dorton, 2008) that everyone is not satisfied with the status quo trying to improve the situation all the time. Although Toyota has primary concerns with human relation and group culture, they equally put their emphasis on the adaptation of the external environment. Toyota’s Top management maintains the keenness to the environmental changes and expresses the sense of urgency which generates culture for continuous change in the organization. Thus, it is considered that adhocracy affect positively on the Kaizen development. Thus:

Hypothesis 3b: Adhocracy culture positively relates to successful transfer of Kaizen.

The hierarchical culture emphasizes internal efficiency, uniformity, coordination, and evaluation. The purpose of the organization with emphasis on the hierarchical culture tends to be the execution of regulations. Motivating factors include security, order, rules, and regulations. Leaders tend to be conservative and cautious, paying close attention to technical matters. Effectiveness criteria include control, stability, and efficiency. The underpinning philosophy of Kaizen requires employees to identify and diagnose quality problems and take corrective action without going through the management hierarchy (Besser, 1996; Cole, 1979; Imai, 1986; Wakamatsu, 2007). Teamwork and

mutual trust among workers are critical for Kaizen development. In companies that have mainly vertical coordination and control channels, it is less likely to develop a teamwork which in turn, difficult to develop a mutual trust among workers. For these respects, hierarchical culture is deemed not suitable for kaizen development. Thus:

Hypothesis 3c: Hierarchical culture negatively relates to successful transfer of Kaizen.

The market culture emphasizes productivity, performance, goal fulfillment, and achievement. The purpose of organizations with emphases on the market culture tends to be the pursuit and attainment of well-defined objectives. Motivating factors include competition and the successful achievement of predetermined ends. Leaders tend to be directive, goal oriented, instrumental, and functional, and are consistently providing structure and encouraging productivity. Effectiveness criteria include planning, productively and efficiency. For these companies, pressure for the results comes from those external constituencies, which in turn, makes company more short-term and explicit result oriented. In the market culture each individual is striving for the result, steep internal competition exists within the corporation (Cameron & Quinn, 2006). Competitive and independent goals are likely to undermine relationship development (Deutsch, 1949; Johnson, 1981) which is critical element of the Kaizen as it is discussed already. Deming (2000) said, “Harm comes from internal competition and conflict, and from the fear that is thereby generated” (p.82). Expecting that others are uninterested and may even be oriented toward obstructing one’s goals, individuals and groups undermine relationships and create doubt they can work together to improve their products. Therefore, it is considered market oriented culture does not lead to the successful kaizen transfer. From the discussion above, following hypothesis was developed:

Hypothesis 3d: Market culture negatively relates to successful transfer of Kaizen.

3. Methods

3.1. Measures and analysis

Personal initiative

Frese et al. (1997) (1996) discussed several measures of personal-initiative. One of the issues they described is that measuring self-initiative by means of a survey is inadequate and may lead to incorrect conclusions. They followed an interview format that allowed probing in several areas. A similar approach is proposed in this study. From Frese et al. (1996) and Frese and Fay (2000) three measures for personal initiative are adopted. These are overcoming barriers, activeness, and initiative at work. Overcoming barriers is measured through interviewing respondents and confronting them with four difficult situations. For each situation subsequent barriers are introduced. Overall, a score ranging from 0-5 is allocated based on how many barriers are overcome. The activeness measure is related to the overcoming barriers information and in this case a rating of a scale of 1-5 is determined based upon how actively the barriers were overcome. Lastly, a retrospective measure for initiative at work is used where respondents are asked four questions about work situations and what the respondent did. For example whether they submitted suggestions to improve work during the last year. Two ratings for each question are made. One involves rating how much quantitative initiative was involved (on a scale from 1 to 5), this means how much effort in time it involved. The other rating is how much qualitative initiative was necessary (on a scale from 1-5), this means looking at how much the activity went beyond what is expected from a person in that job (See Appendix A). Averaging the ratings per respondent provides an indicator for personal-initiative for a respondent. Combining all respondents gives an indication for overall level of personal-initiative in the organization. The inter-item reliability coefficient of overcoming barriers, activeness, and initiative at work were 0.81, 0.87, and 0.79 respectively.

Operator's personal initiative was also measured by manager's perception on the personal initiative of shopfloor initiative. After the definition of personal-initiative was given by the interviewer, respondent was asked to indicate what percentage of employees currently demonstrates personal initiative.

Degree of organic organizational structure

The operationalization of this construct by Covin and Slevin (1988), who adopted Khandwalla's (1977) scales, will be used in this research (See Appendix B). This measure includes seven questions which are measured on a seven point scale. The ratings on these items were averaged to arrive at a single organicity index for the firm. The higher the score on this measure the more it was oriented to an organic style; the lower the score, the more the top management was oriented to a mechanistic style. The inter-item reliability coefficient of this scale is 0.83.

Degree of organizational culture

The competing values culture instrument by Quinn and Spreitzer (1991) will be used in this research. In the competing cultures instrument organization cultures are measured along two dimensions. One dimension measures the organization on a scale from flexibility and discretion versus stability and control. The other dimension measures the organization culture on a scale from internal focus and integration versus external focus and differentiation. This leads to four main groupings of cultures: Clan, adhocracy, hierarchic, and market. The measurement is accomplished through four questions related to company characteristics, company leaders, the "glue" or holding agent, and company emphasis (See Appendix C). For each of these questions, respondents are asked to divide 100 points among four answers to indicate emphasis. The average of these measures provides an indication of degree of organizational culture. The inter-item reliability coefficient of this scale is 0.76.

Level of Kaizen completion

Measure for the level of Kaizen completion in terms of Brunet and New's definition of Kaizen is not established. Several authors proposed the measures for the kaizen or continuous improvement (Claver, Tari, & Molina, 2003; Douglas & Judge, 2001). However, those measures were used as one of the elements of different constructs such as TQM and quality management and are not developed particularly to measure the concept of kaizen. Moreover, those items do not fit to the definition which we adapted from Brunet and New (Brunet & New, 2003). In this study, the level of kaizen completion was measure by asking a question to managers; "In your perspective, what is the degree of completion of developing kaizen in this factory as a percentage?" after the definition of Kaizen was provided. This means 0% is the minimum kaizen completion and 100% is the maximum kaizen completion.

3.2. Sample

Data for this research were collected from the Japanese manufacturers in the Netherlands. Japanese manufacturers were selected because Kaizen has been frequently used as one of the best practices in the Japanese manufacturing industry (K. Aoki, 2008). Thus it was considered that they were transferring the Kaizen to their overseas factories. The Netherlands was chosen as a target country for several reasons. Firstly, due to the fact that most of the Dutch can speak good English which makes us easier to conduct interviews and questionnaires in English. This also have an advantage on producing less bias caused by misunderstanding arise from the language issues. Secondly, because the Netherlands has relatively homogeneous culture, the results are considered not to be influenced by the subcultures of the nation. Finally, due to the small sized countries, Japanese companies in the Netherlands were accessible within limited time and budget.

A list of Japanese manufacturers in the Netherlands was obtained from the website of the Netherlands Foreign Investment Agency (NFIA) and a publication from Japan External Trade Organization (JETRO). Two lists were combined to develop one list of companies. It was identified

that there were 52 Japanese manufacturers operating in the Netherlands. Researchers phoned all the companies asking for participation. It was found 4 companies that were either closed the factory or transfer the operation to other countries in 2009. Out of 48 companies, 16 companies agreed to cooperate to our interview survey though 2 companies were identified that they were not working on Kaizen as they recently established their factory in the Netherlands. Total of 14 companies (29.1 per cent of the population) were found useful.

3.3. Procedure

Each company was asked to arrange separate meetings with managing director (MD), production manager, and 3 to 5 shopfloor operators. With regard to the data on the personal initiative of the shopfloor operators, on one hand, managers were asked about their perception on the level of completion of Kaizen in percentage, and the level of personal initiative of shopfloor operators in percentage after the definition of personal initiative was provided by the researcher. For shopfloor operators, on the other hand, measurement developed by Frese et al. (1997) was used. Degrees of organic and organizational culture were measured by questionnaires developed by Covin and Slevin (1988), and Quinn and Spreitzer (1991) respectively. In each company, all the respondents were asked to fill them in after a short description about how the questionnaires work. Respondents were asked to fill in the questionnaires regarding organizational structure and culture before the kaizen was initiated. It allows us to see if the organizational structure and culture before the implementation of kaizen affect the current Kaizen completion. Finally, the Kaizen completion was answered by the managers in percentage. Table 1 shows the summary of measures used and questions asked to managers and shopfloor operators.

Table 1: Summary of questions asked

	Personal initiative		Degree of organic structure	Degree of organizational culture	Kaizen completion
Measures	Perception on shopfloor operators	Instrument of Frese et al (1996)	Instruments of Covin and Slevin (1988)	Competing cultures instrument Quinn and Spreitzer (1991)	Perception in percentage
Managers	X		X	X	X
Operators		X	X	X	

In some companies, MD was not able to participate in the interview survey due to their heavy duties. These cases, he/she were replaced by other top or middle manager who was deemed to have sufficient knowledge about kaizen and organization characteristics. Moreover, some companies rejected to accept the interview with shopfloor operators also mainly due to their heavy duties. Characteristics of the samples are shown in Table 2 below:

Table 2: List of surveyed plants, respondents and intre-class correlation coefficient

Companies	Size (employee)	Respondents	Intra-class correlation coefficient
			** $p < 0.01$
			* $p < 0.05$
			† $p < 0.10$
A	500-999	<ul style="list-style-type: none"> • 3 middle managers (Dutch) • 3 operators (Dutch) 	Organizational structure 0.91** Organizational culture 0.80 **
B	100-199	<ul style="list-style-type: none"> • MD (Japanese) • 2 middle managers (Japanese) • 3 operators (Dutch) 	Organizational structure 0.70* Organizational culture 0.42 †
C	100-199	<ul style="list-style-type: none"> • MD (Dutch) • 3 operators (Dutch) 	Organizational structure 0.72* Organizational culture 0.85 **
D	200-299	<ul style="list-style-type: none"> • MD (Dutch) • Middle manager (Dutch) • 3 operators (Dutch) 	Organizational structure 0.63† Organizational culture 0.75 **
E	50-99	<ul style="list-style-type: none"> • 2 middle managers (Japanese) • 3 operators (Dutch) 	Organizational structure 0.61† Organizational culture 0.47 †
F	0-49	<ul style="list-style-type: none"> • MD (Dutch) • Middle Manager (Dutch) • 3 operators (Dutch) 	Organizational structure 0.70** Organizational culture 0.79 **
G	50-99	<ul style="list-style-type: none"> • MD (Japanese) • 2 middle managers (Dutch and Japanese) • 3 operators (Dutch) 	Organizational structure 0.87** Organizational culture 0.58 †
H	500-999	<ul style="list-style-type: none"> • Middle manager (Japanese) 	Not applicable
I	100-199	<ul style="list-style-type: none"> • MD (Japanese) 	Not applicable
J	0-49	<ul style="list-style-type: none"> • MD (Japanese) • 2 middle managers (Dutch and Japanese) 	Organizational structure 0.63† Organizational culture 0.77 *
K	1000 and more	<ul style="list-style-type: none"> • Middle managers (Dutch) 	Not applicable
L	0-49	<ul style="list-style-type: none"> • MD (Neither Dutch nor 	Not applicable

Japanese)			
M	50-99	• Middle manager (Dutch)	Not applicable
N	0-49	• MD (Japanese)	Not applicable

In all cases, questionnaires were filled by respondent in front of the researcher in the conference room at the company. Before they answer the questions they were informed that they could ask any questions for clarification if necessary.

4. Results

Kendall's tau was used to measure a correlation among variables. Kendall's tau is the non-parametric test that is suitable for testing hypothesis with small sample (Hollander & Wolfe, 1999). Results from the test of the three hypotheses are shown in the Table 3.

Table 3: Descriptive statistics and correlations (Kendall's τ)

	Mean	SD	2	3	4	5	6	7	8
1. Kaizen completion	0.36	0.22	0.47 n = 6	0.02 n = 12	0.49 * n = 12	0.49 * n = 12	0.25 n = 12	-0.62 ** n = 12	-0.11 n = 12
2. Personal initiative (OP)	3.23	0.74		-0.33 n = 7	0.05 n = 7	0.48 n = 7	-0.24 n = 7	-0.33 n = 7	0.05 n = 7
3. Personal initiative (MG)	0.44	0.17			-0.08 n = 14	0.48 n = 14	0.01 n = 14	-0.17 n = 14	-0.07 n = 14
4. Degree or organic structure	3.82	0.90				0.48 * n = 14	0.60 ** n = 14	-0.54 ** n = 14	-0.31 n = 14
5. Degree of Clan org. culture	25.47	10.80					0.25 n = 14	-0.49 * n = 14	-0.42 * n = 14
6. Degree of Ad-hoc org. culture	16.50	8.17						-0.49 * n = 14	-0.20 n = 14
7. Degree of Hierarchical org. culture	29.62	9.07							0.13 n = 14
8. Degree of Market org. culture	25.92	11.37							

** $p < 0.01$ (one tailed)

* $p < 0.05$ (one tailed)

Hypothesis 1: The first hypothesis relates the kaizen completion and personal initiative. On one hand, Kaizen completion was significantly related to operator's personal initiative (managers), $\tau = 0.49$, $n = 12$, p (one-tailed) < 0.05 level. On the other hand, Kaizen completion was not significantly related to operator's personal initiative (operators).

Hypothesis 2: The second hypothesis predicts that organically-structured firms positively and mechanistically-structured firms lead to negatively relates to Kaizen completion. There was a significant relationship between the Kaizen completion and degree of organic organizational structure, $\tau = 0.49$, $n = 12$, p (one-tailed) < 0.05).

Hypothesis 3a, b, c, and d: The third hypothesis related organizational culture and kaizen completion. Hypothesis H3a predicts the group culture leads to higher Kaizen completion. The clan culture was significantly related to Kaizen completion, $\tau = 0.49$, $n = 12$, p (one-tailed) < 0.05 , Hypothesis 3b predicts adhocracy organizational culture leads to higher Kaizen completion. The relationship between two variables was found not significant. Hypothesis 3c predicts Hierarchical organizational culture leads to lower kaizen completion. Hierarchical culture was significantly related to Kaizen completion, $\tau = -0.62$, $n = 12$, p (one-tailed) < 0.01). Finally Hypothesis 3d predicted market organizational culture leads to lower Kaizen completion. The relationship between two variables was found not significant.

5. Discussion

It was found that the managers' perceptions on the operator's personal initiative had more significant result than that of operators. It is assumed that this result occurred because we did not have an option to select the operators randomly but the company prepared them for us. The data collected from those operators are subjected to bias because they tended to be the best operators in the factory. The results from the instruments of Frese et al. (1997) could have been more reliable if we had opportunities to interview with larger number of operators which was randomly selected by the researcher. On the

other hand, managers' perception shows a better result. It is considered that they had better assessment about operator's personal initiative. This study suggests that the managers' perception on the personal initiative can be a reliable measure and it has a significant relationship with the kaizen completion. It suggests that the personal initiative may in fact be able to use as one of the proxies of Kaizen completion.

As expected, the data support the organic organizational structure firm has better performance on transferring Kaizen than the mechanistic organizational structured firms. It can be interpreted that one of the major reasons why Japanese companies have been facing difficulties with transferring Kaizen abroad is because they have difficulties changing the organizational structure from mechanistic to organic. Hayashi's (1994) research shows that the Japanese companies in general have more organic structure than that of non-Japanese companies. It can explain why those Japanese companies prefer the greenfield investment rather than joint-ventures because Japanese can develop the organic organizational structure with their own initiative and they do not need to deal with changing the organizational structure.

The result also suggests that the organization with clan culture to be more successful for Kaizen transfer. In contrast, hierarchical culture does not fit well with Kaizen development. From this result, similar to the organizational structure, one of the main reasons that the Japanese companies facing difficulties transferring kaizen abroad could be that they have to change the culture of the organization. Changing culture is considered more difficult than the structure because it is related to people's belief which is influenced by the national culture. Especially the clan oriented culture is assumed difficult to be developed in the national culture is more individualistic oriented culture like in the Netherlands (Hofstede, 2001). Literature shows that Japanese company are trying to hire personnel who possess cooperative attitude and motivation for solving problem within teams (Inabetsu, 1998; Oliver & Wilkinson, 1992; Shimada, 1990). Recht and Wilderom (1998) mentioned that the Japanese preference for individuals without previous work experience ('uncontaminated' labour). These activities are

interpreted as companies trying to set a condition for developing clan culture or change the organizational culture to clan oriented culture. With regards to adhocracy and market culture, it was found there is no significant relationship with Kaizen completion. This indicates that what influences on the successful kaizen transfer is whether a company has flexibility orientation or control orientation; not the internal or external dimension.

As far as the transferability of Kaizen to the Netherlands is concerned, the data suggest that it is possible to transfer kaizen to up to high level. However, they were not achieving the same level or better than in Japanese plants even for the companies which operate in the Netherlands for a long period (up to 20 years). This is assumed that there are some external environment factors such as national culture that is difficult to be manipulated by managerial efforts. For instance, employee's commitment to companies, high labour turnover rate etc.

6. Conclusions

This study investigates the relationship between success of international Kaizen transfer, personal initiative, organizational culture, and structure. Three hypotheses are proposed. Firstly, Kaizen transfer is positively associated with personal initiative (H1). Secondly, successful kaizen transfer is positively related to organically structured firms and negatively associated with mechanistically structured firms (H2). Lastly, clan and adhocracy organizational culture leads to positive (H3a, H3b) and control-oriented and market culture leads to negative outcome (H3c, H3d). Findings show that H1, H2, H3a, and H3c were confirmed but H3c and H3d were rejected. This study suggests that the successful Kaizen transfer is associated with high personal initiative, flexibility-oriented organizational culture and organic structure. This research has contributions to both theory and practice. The findings contributes to the literature on kaizen by presenting clearer idea about the concept of Kaizen by suggesting personal initiative can be used for the proxy of Kaizen. It can also suggest that difficulties of transferring Kaizen abroad are mainly caused by developing or changing the organizational

structure and organizational culture in their overseas counterparts. Moreover, this study provides broad direction to practitioners what types of culture and structure that a company has to develop in order to promote kaizen in their organizations. Furthermore, this study proposes that the Kaizen can be transferred up to high level in the Netherlands. However, none of the company indicated that they were achieving the same level or better than in Japanese plants perhaps because of the non amendable factor such as national culture.

7. Limitations

Any conclusion drawn from this study, however, should be regarded as tentative due to the limitation of the study. First, in some sample companies, reliability of the organizational structure and culture data can only be assumed to be high given the fact that these data were gathered from one respondent. Data collected from multiple respondents per organization would have been preferred. Second, the small sample size restricted us to utilize many statistical analyses to further support the findings. Third, the use of subjective measures leaves open the possibility that respondents may have answered certain questions in what they believed were socially desirable or managerially appropriate manners. Although precautions were taken to minimize response bias, by cross checking the data that are provided by respondents in the different level in the organization, social desirability bias may have nonetheless affected the findings. Fourth, the research design was cross-sectional. Thus, cause-effect relationship cannot be definitively inferred from the research results.

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