



Spaces of International Economy and Management  
2010 SIEM International Symposium

*“Spaces of Japanese Management –  
Towards a Dynamic Hybridization Theory”*

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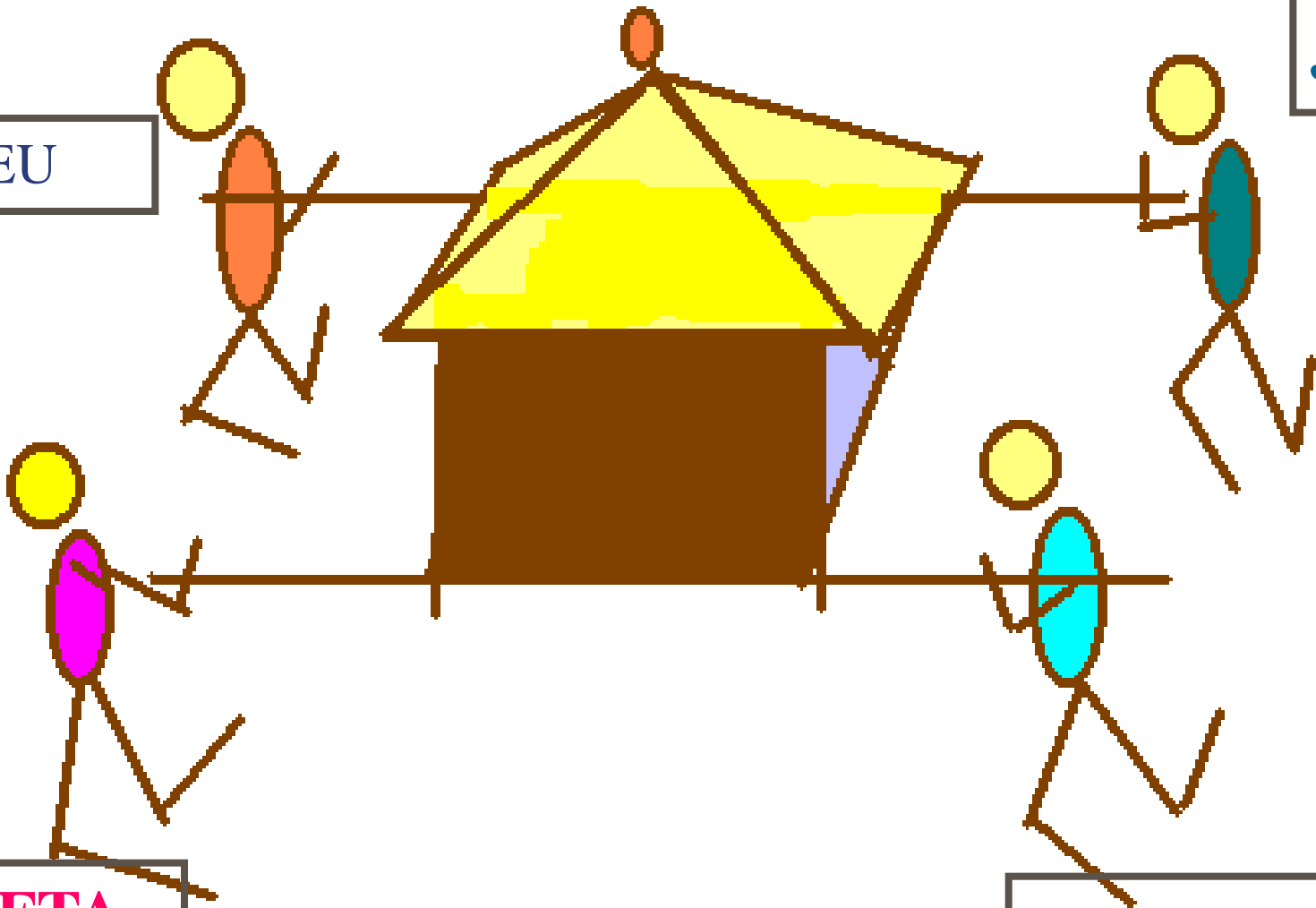
World Economy

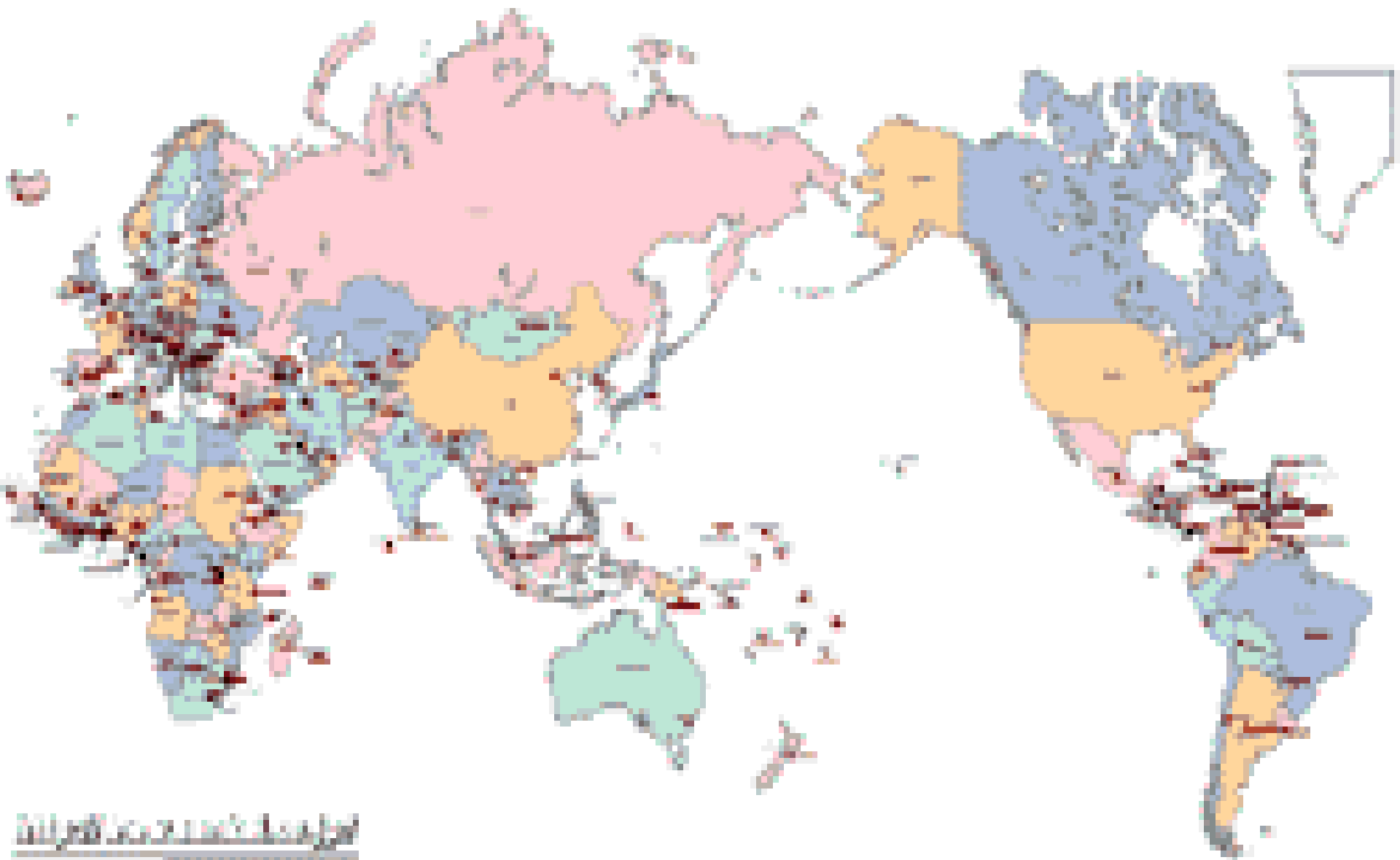
Japan

EU

NAFTA

BRICs





World Religion Distribution



# Methodology

- Hybrid Theory
- Abo et al., “Hybrid Factory: The Japanese Production System in the United States”  
Oxford University Press, 1994
- *Application* of the Japanese system and *Adaptation* to local conditions
- 5-Point Score for 23 Management Items
- Effective Transfer of Japanese Management and Production Systems



# Literature

- Abo et al., “Hybrid Factory: The Japanese Production System in the United States”  
Oxford University Press, 1994
- J. Likert, W. Fruin, and P. Adler edited,  
“Remade in America --- Transplanting and Transforming Japanese Management Systems,”  
Oxford University Press, 1999
- Yamazaki, K.. “The Management Style of Japanese Automotive Components Companies in North America”  
Proquest Company, Michigan, U.S.A., 2003



# 6 Groups & 23 Items

## I . Work Organization and Administration (6 items)

- ① Job classification
- ② Wage system
- ③ Job rotation
- ④ Education training
- ⑤ Promotion for workers
- ⑥ First-line supervisors(or team leaders)



## 6 Groups & 23 Items (2)

- II. Production Control
  - ⑦ Equipment
  - ⑧ Quality control
  - ⑨ Maintenance
  - ⑩ Operations Management

## 6 Groups & 23 Items (3)

- III. Procurement
  - ⑪ Local content
  - ⑫ Suppliers
  - ⑬ Procurement Method
- IV. Group consciousness
  - ⑭ Small group Activities
  - ⑮ Information sharing
  - ⑯ Sense of unity

## 6 Groups & 23 Items (4)

- V. Labor Relations
  - ⑰ Hiring policy
  - ⑱ Job security
  - ⑲ Labor unions
  - ⑳ Grievance procedure
- VI. Parent-Subsidiary
  - 21 Ratio of Japanese expatriate
  - 22 Delegation of authority
  - 23 Managerial Position of Americans

# How to Appraise 5-Point Score(Criteria)

- ① Job Classification (JC)
- 5-Number of JC is: 2 or less
- 4- 3 to 5
- 3- 6 to 10
- 2- 11 to 50
- 1- 50 or more

## ■ Job Rotation (JR)

5-JR is carefully planned and frequently conducted within and beyond work teams. Its clear aim is training of multi-skilled workers. (e.g., training table kept by team leaders and supervisors)

4-JR is planned and frequently conducted within but not beyond work teams


3-JR is frequently conducted with work teams

2-Rigid job assignment systems is moderated to some extent (job reassignment when product mix is changed; frequent product mix change, etc.)

1-JR is nonexistent; job assignment is rigid.

# 4-Perspective Evaluation

<u>Human-Methods</u>		<u>Human-Results</u>	
All items in I "Work Organization and Administration" and IV "Group Consciousness"		② Ratio of Japanese Expatriates	
		③ Managerial Position of Americans	
<input checked="" type="checkbox"/> Job Security			
<input checked="" type="checkbox"/> Grievance Procedures			
<u>Material-Methods</u>		<u>Material-Results</u>	
<input checked="" type="checkbox"/> Quality Control		<input type="checkbox"/> Equipment	
<input checked="" type="checkbox"/> Maintenance		<input type="checkbox"/> Local Content	
<input type="checkbox"/> Procurement Method		<input checked="" type="checkbox"/> Suppliers	

- 
- Elements introduced directly from Japan as “results” of the Japanese system
  - Elements applied as “method” regarding how to make and operate the system
  - Ability to distinguish between whether a firm puts priority upon: ① Transplanting the methods of the Japanese management and production system ② Transferring the results of the system in order to realize mother-plant operation

# 4-Perspective Evaluation

<u>Human-Methods</u>		<u>Human-Results</u>	
All items in I "Work		② Ratio of Japanese Expatriates	
Organization and Administration"		③. Managerial Position of	
and IV "Group Consciousness"		Americans	
<input checked="" type="checkbox"/> Job Security			
<input checked="" type="checkbox"/> Grievance Procedures			
<u>Material-Methods</u>		<u>Material-Results</u>	
<input checked="" type="checkbox"/> Quality Control		<input type="checkbox"/> Equipment	
<input checked="" type="checkbox"/> Maintenance		<input type="checkbox"/> Local Content	
<input type="checkbox"/> Procurement Method		<input checked="" type="checkbox"/> Suppliers	

# Research Population: 247 Japanese Automotive Components Companies in North America



FURUKAWA ELECTRIC



**DENSO**



**yazaki**<sup>®</sup>



**AISIN**

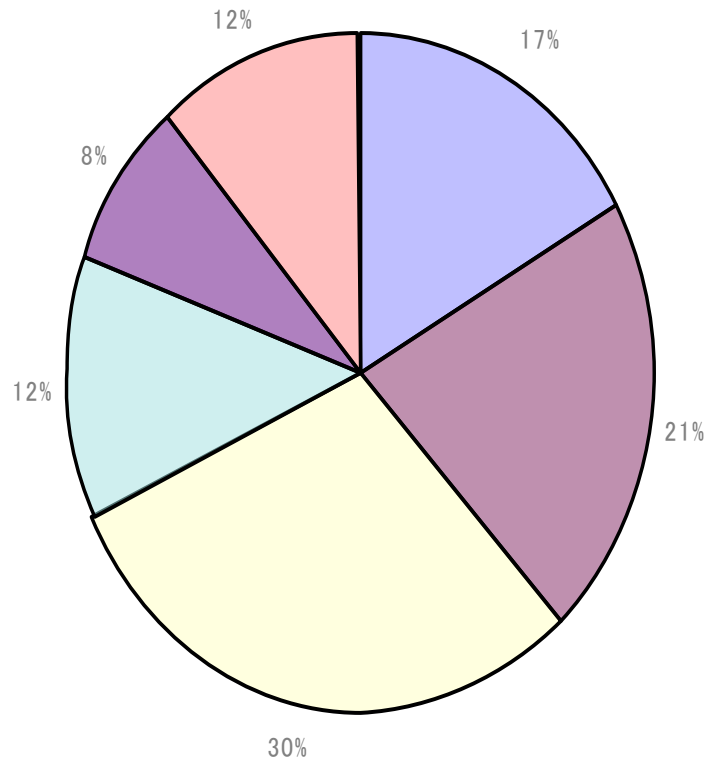
Perpetual refinement of technology ensures  
production of more responsive cars and enrich

# Responses by Country & State

Location	Total hybrid plants	Responses	Response Rate
Illinois	16	4	25%
Indiana	29	9	31%
Kentucky	29	14	48%
Michigan	36	22	61%
Ohio	34	11	32%
Tennessee	26	13	50%
Other States	59	23	39%
Canada	18	12	67%
Mexico		5	
Total Plants	247	113	46%



# Responses by scale of employee



Employee(100 or less), 19 factories

Employee(101 to 249), 24 factories

Employee(250 and 499), 34 factories

Employee(500 to 749), 14 factories

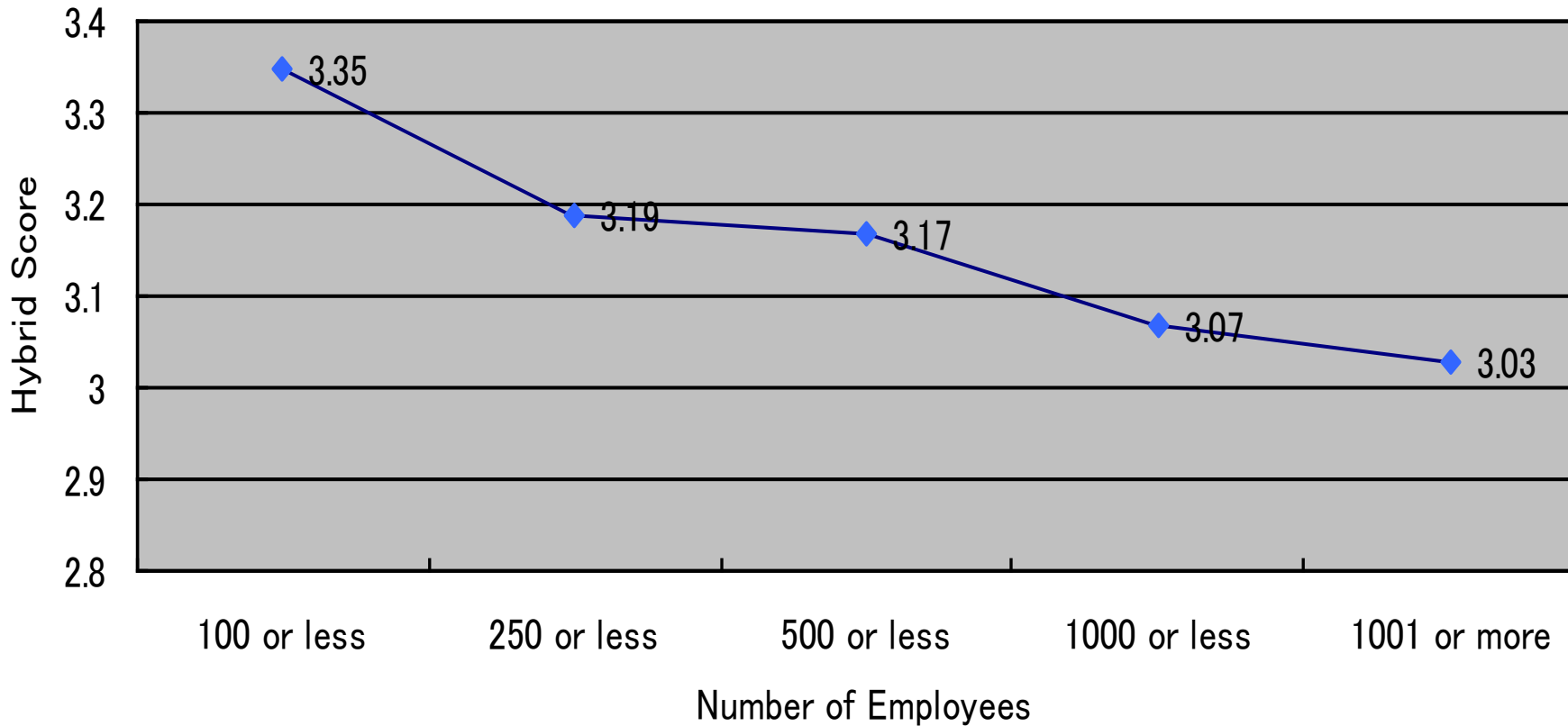
Employee(750 and 999), 9 factories

Employee(1000 or more), 13 factories

# Difference From Abo's Research

	Dr. Abo's Group	The Research
Population Japanese Manufactur	450 Japanese companies in USA and Canada	247 for auto components industry only
Auto Components Industry	138 in 1989 (in USA)	247(229 in USA and 18 in Canada) in 1999
Methodology	Sending questionnaire to 450	Sending questionnaire to 247
	15 auto components companies	Response Rate: 50%
	One-day visit survey, "day observation" for 10 companies	Day Observation for 6 companies
Verification	Response and visit result are almost same	Response and visit result are almost same
Questionnair	17 questions	21 questions
Eval	5-Point evaluation by criteria	5-Point evaluation by criteria
Criteria	24 items	23 items (Excl. Community)

# Analysis by Number of Employees





# Analysis by Operational Years

**5-Point Evaluation**

**2 classifications**

**1-10 years**

**11 years or more**

**3.28**

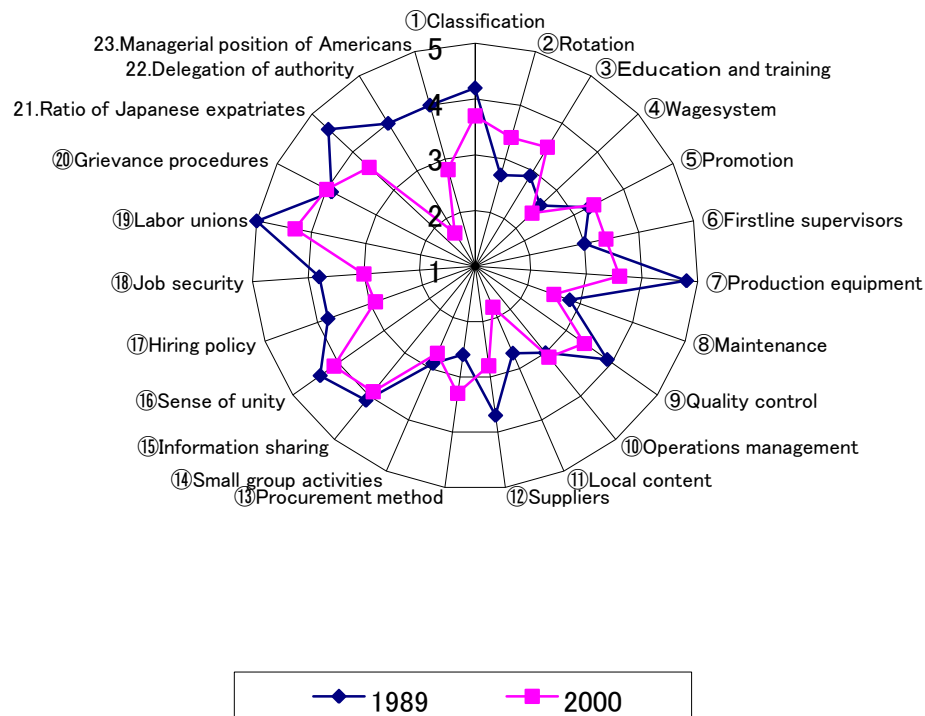
**3.12**



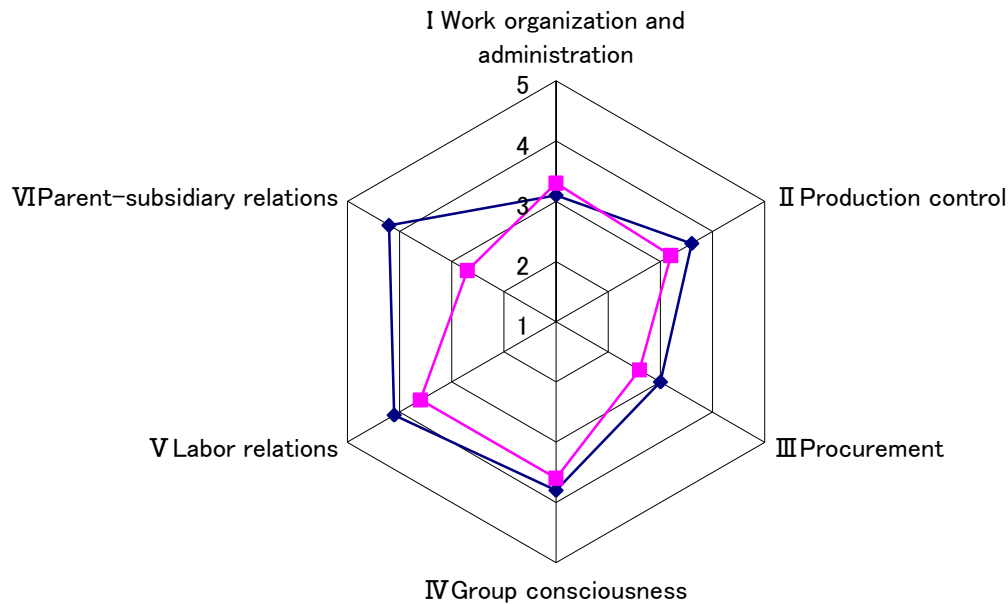
# Analysis by Operational Years (2)

5-Point Evaluation			
4 classifications			
1-5 years	6-10years	11-15 years	16 years or more
3.42	3.08	3.10	3.22

# 23-item change in 1989 & 2000 for automobile components companies



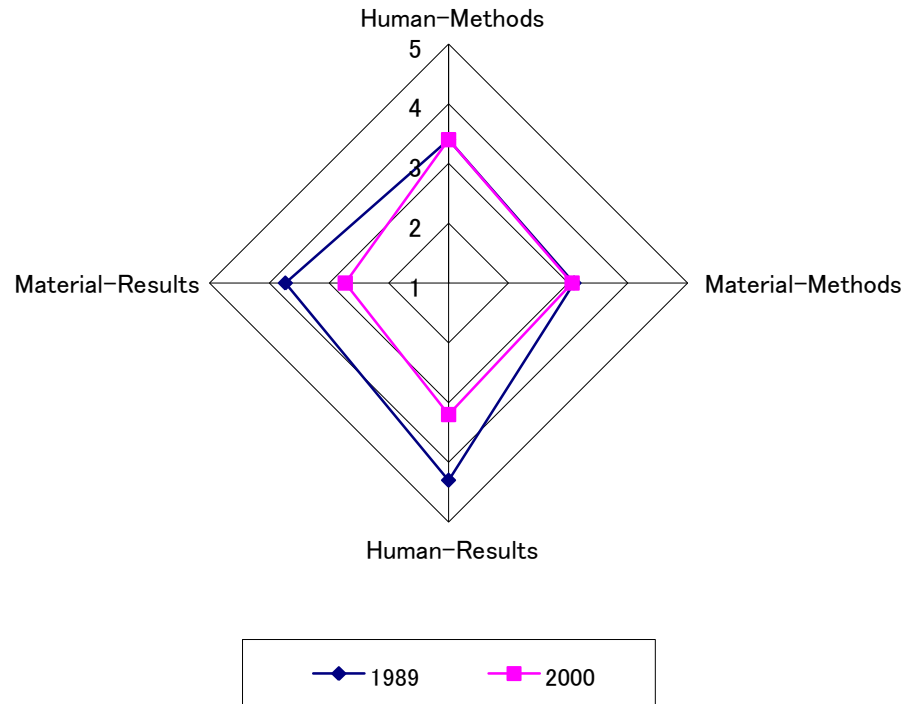
# 6-Group in 1989 and 2000 for automobile components companies



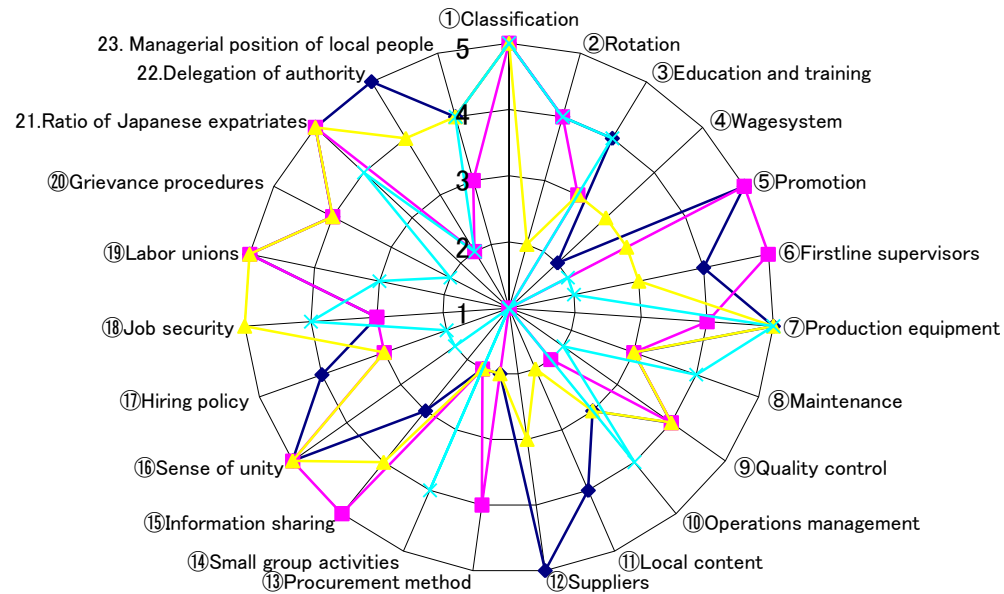
—◆— 1989

—■— 2000

# 4-Perspective in 1989 and 2000 for automobile components companies



# 23-Item at Company X & Y in 1989 & 2000



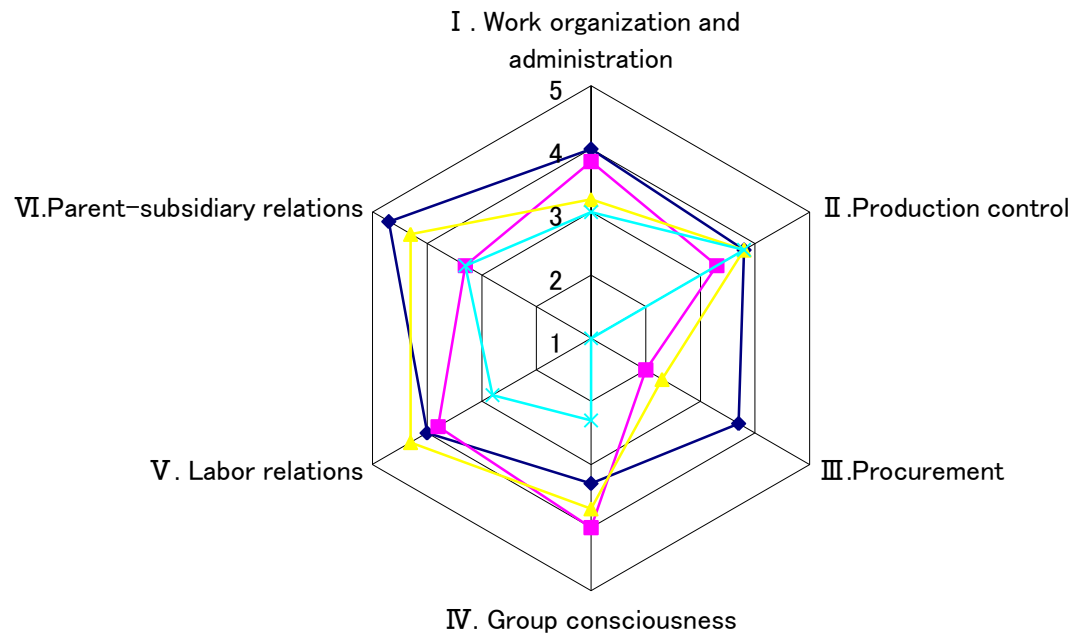
◆ Co. X 1989

■ Co. X 2000

▲ Co. Y 1989

✕ Co. Y 2000

# 6-Group at Company X & Y in 1989 & 2000



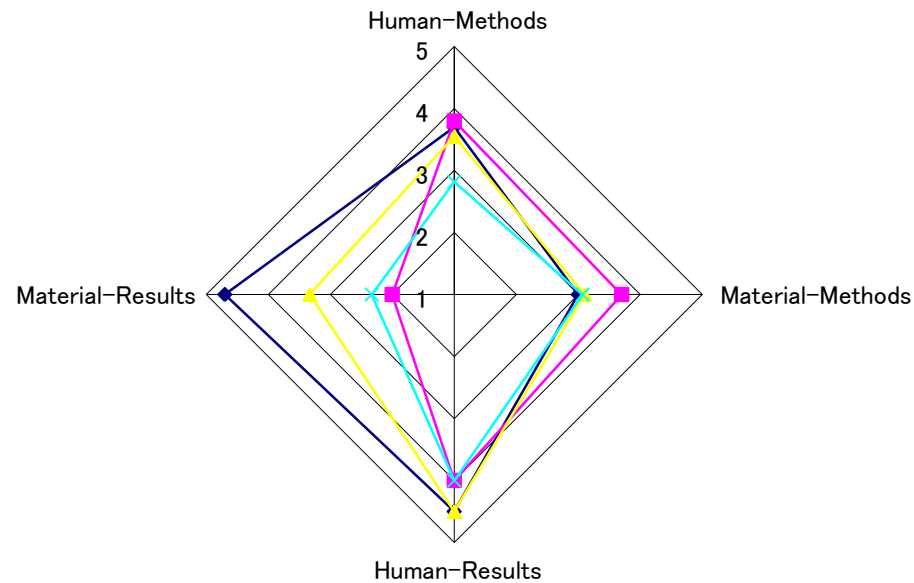
◆ Co. X 1989

■ Co. X 2000

▲ Co. Y 1989

✕ Co. Y 2000

# 4-Perspective Evaluation at Company X & Y in 1989 & 2000



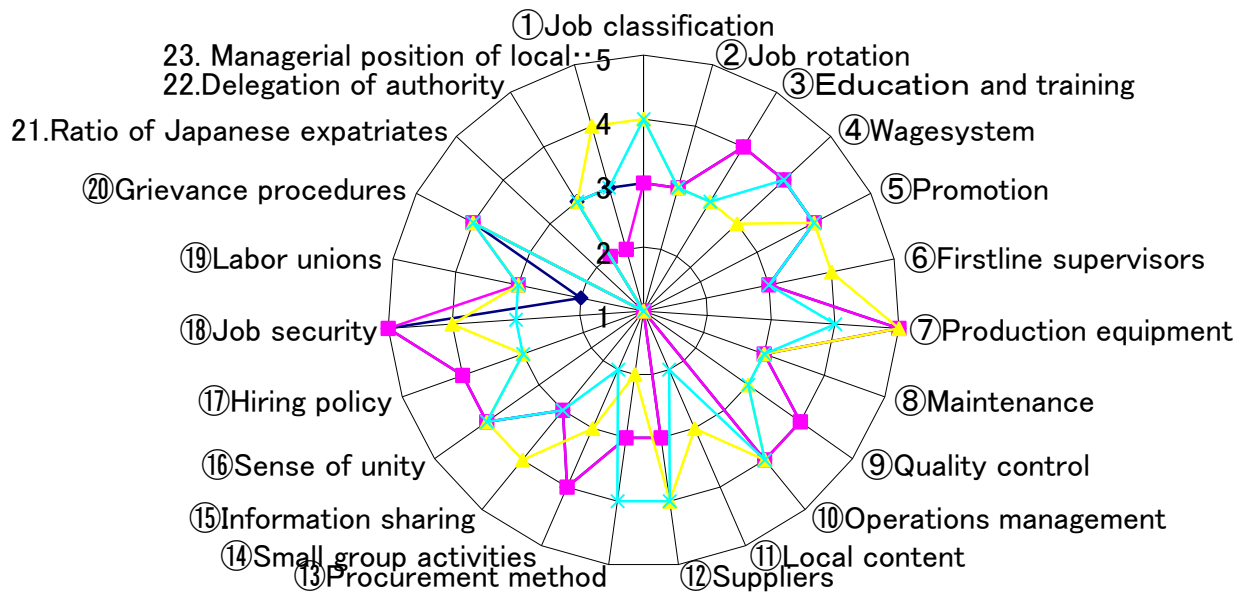
—●— Co. X 1989

—■— Co. X 2000

—▲— Co. Y 1989

—×— Co. Y 2000

# 23-item Scores at Company A & B in 2001 & 2006



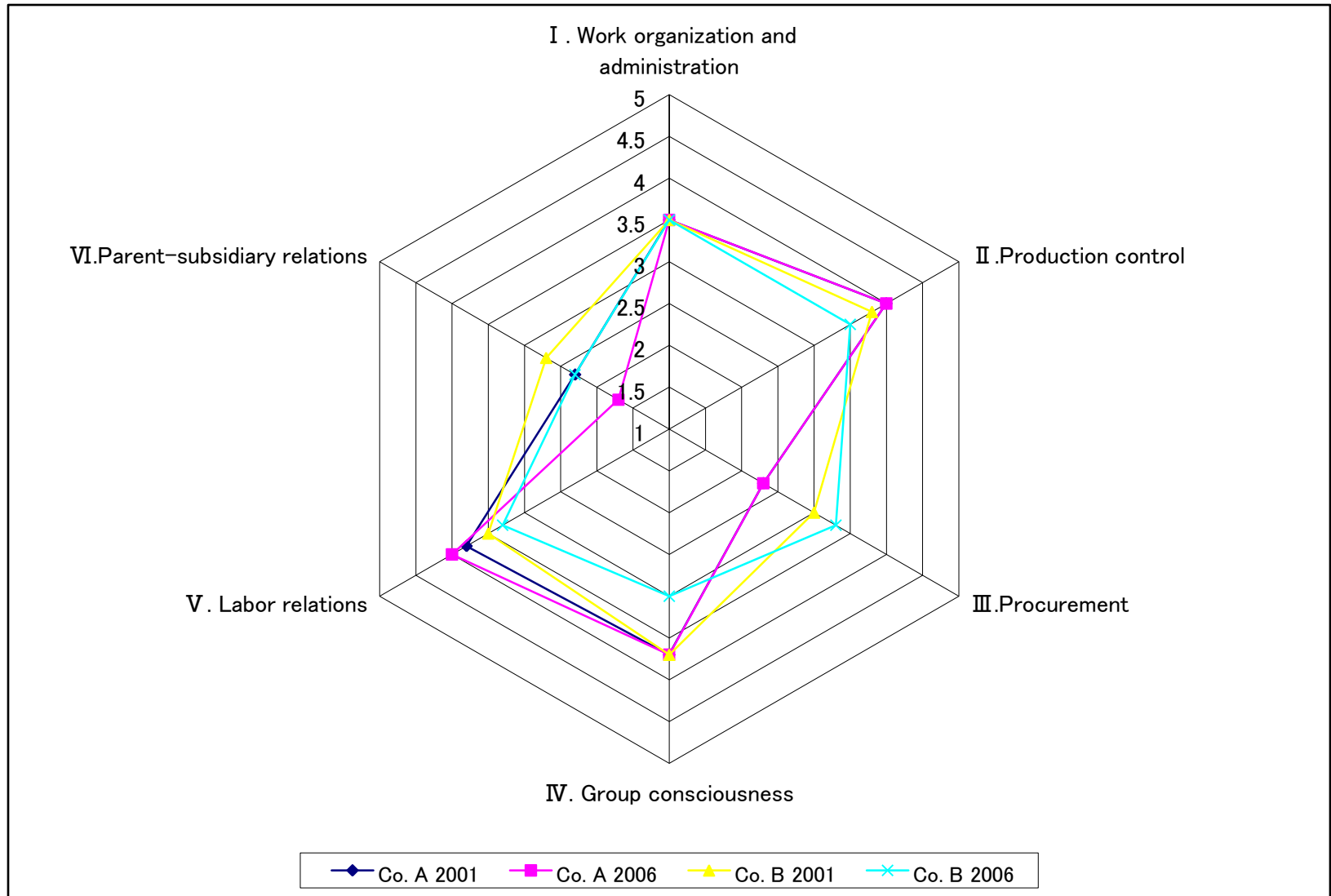
◆ Co. A 2001

■ Co. A 2006

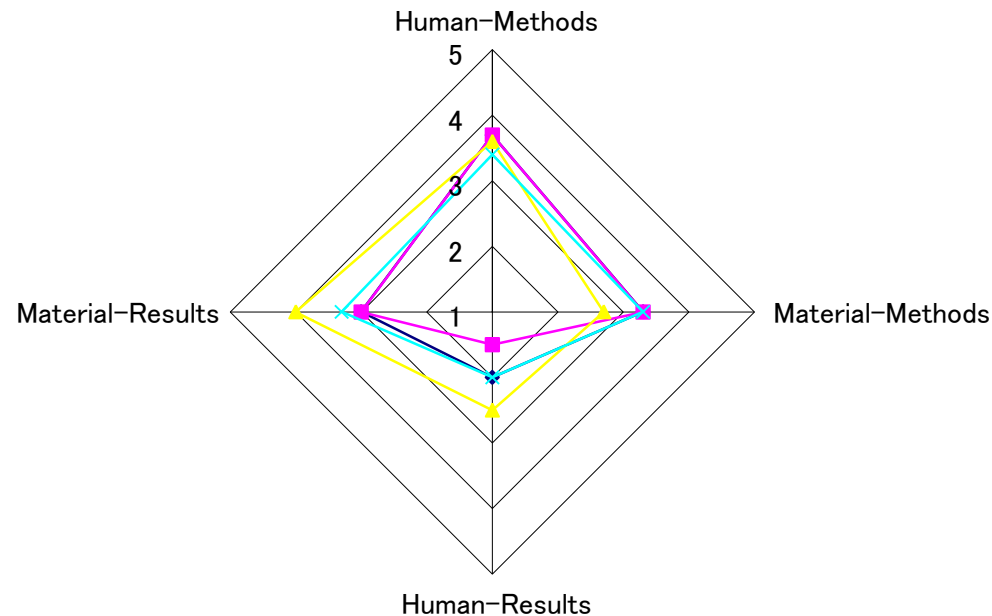
▲ Co. B 2001

✧ Co. B 2006

# 6-Group Scores of two Brazilian Companies in 2001 & 2006



# 4-Perspective Evaluation of two Brazilian companies in 2001 & 2006



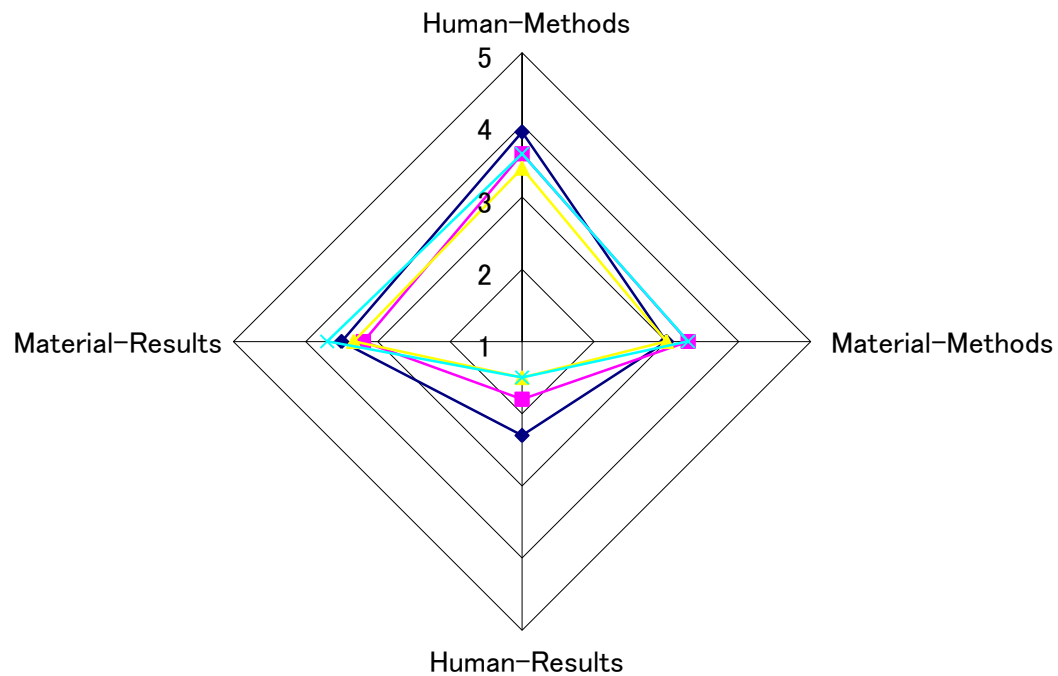
◆ Co. A 2001

■ Co. A 2006

▲ Co. B 2001

✧ Co. B 2006

# 4-Perspective Evaluation of Brazil & Argentina Companies in 2001 & 2006



—◆— Brazil 2001    —■— Brazil 2006    —▲— Argentina 2001    —×— Argentina 2006



## Finding Summary

1. The longer time the less hybrid score in total in most cases.
2. As for 4-Perspective Evaluation, the longer time the less hybrid score in Material-Results & Human-Results.
3. Time does not affect Japanese management uniformly in foreign countries according to 23-item & 6-group figures.

# Two Auto Industries'

## Associations in Japan & USA

- Japan

- Automobile Assembling

- JAMA

- Automotive Components

- Japan Auto Parts Industries Association (JAPIA)

- USA

- Automobile Assembling  
Big3 (or GM, Ford)

- Automotive Components

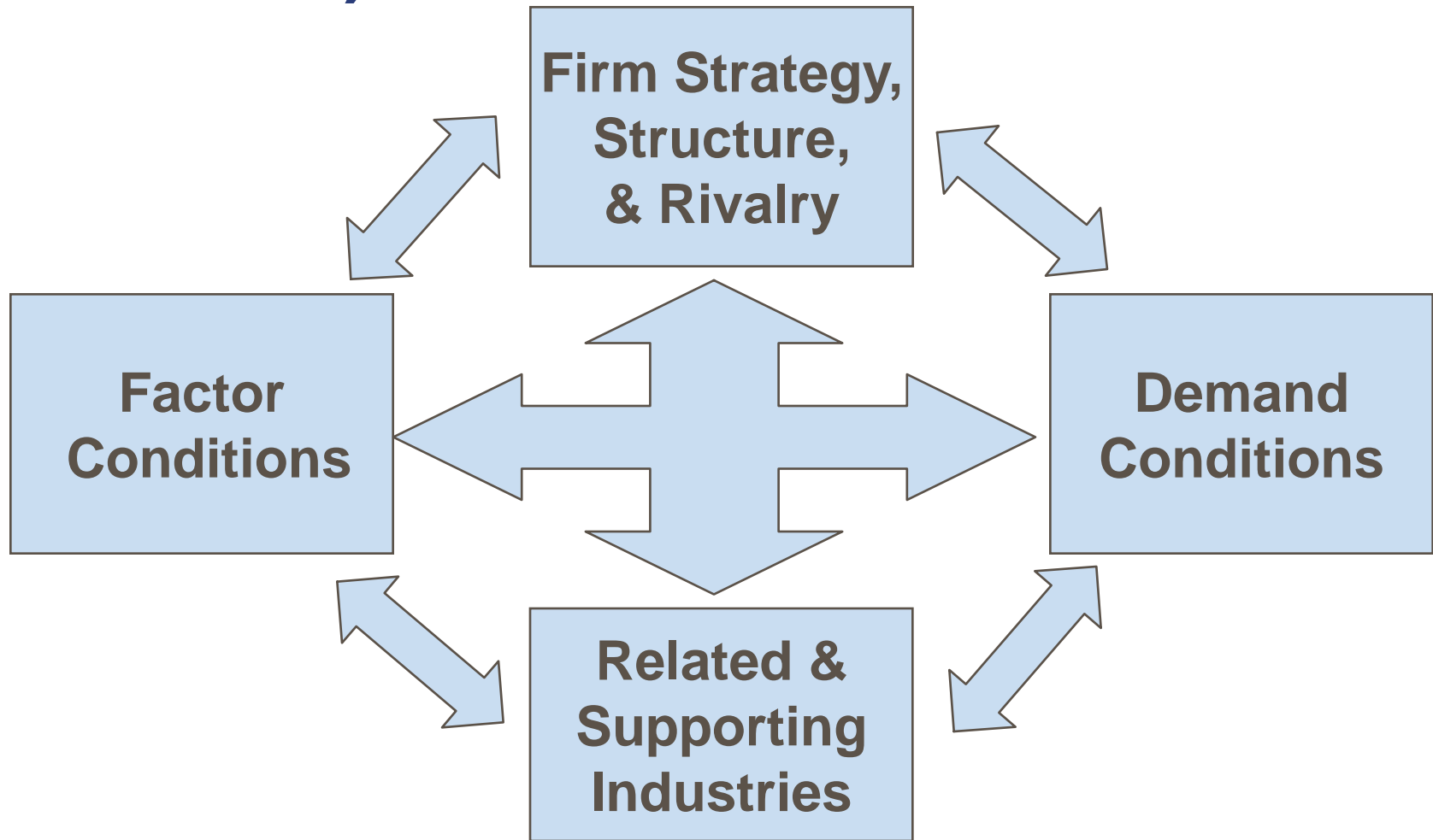
- (1) MEMA

- (2) OEM Suppliers  
Original Equipment  
Suppliers Association  
(OESA)

# Trade and market in the U.S. automotive components industry

- Dependency on the assemblers for American automotive components companies increased.
- Keiretsu trades decreased.
- The American automotive companies approaches more strongly to Japanese auto assemblers.
- The management style may be decided by main customers.

# M. Porter's "The Diamond of National Advantage" (The Competitive Advantage of Nations)



Thank you for your attention.



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# Characteristic of the Research

- Analysis by 4-Firm Type by Ownership and Presidency
  - (1) 100% Japanese owned company
  - (2) Joint Venture with Local Capital
  - (3) (4) Japanese or American (Canadian) President
- Cluster Multivariate Analysis
  - (1) Suburban Proactive Conservative Operation
  - (2) American Type Large-scale Operation



## Profile by Ownership & President

- **JJ** :Both ownership and president are Japanese  
72 factories, 63% of the research
- **VA** :Joint Venture with American president  
12 factories, 11% of the research
- **VJ** :Joint Venture with Japanese president  
12 factories, 11% of the research
- **JA** : Ownership is Japanese and the president is American;17 factories, 15% of the research



## Average Score by 4-Firm Structure

survey year		Firm Structure Type			
1989	2000	JJ	VA	VJ	JA
3.57	3.16	3.37	2.97	3.23	2.64



## 4-Perspective Evaluation by 4-Firm Structure

	Human-Methods	Human-Results	Material-Methods	Material-Results
JJ	2.3	3.7	3.1	4.1
VA	3.3	2.4	3.1	2.5
VJ	3.7	3.0	3.0	2.4
JA	2.9	1.5	2.8	2.2



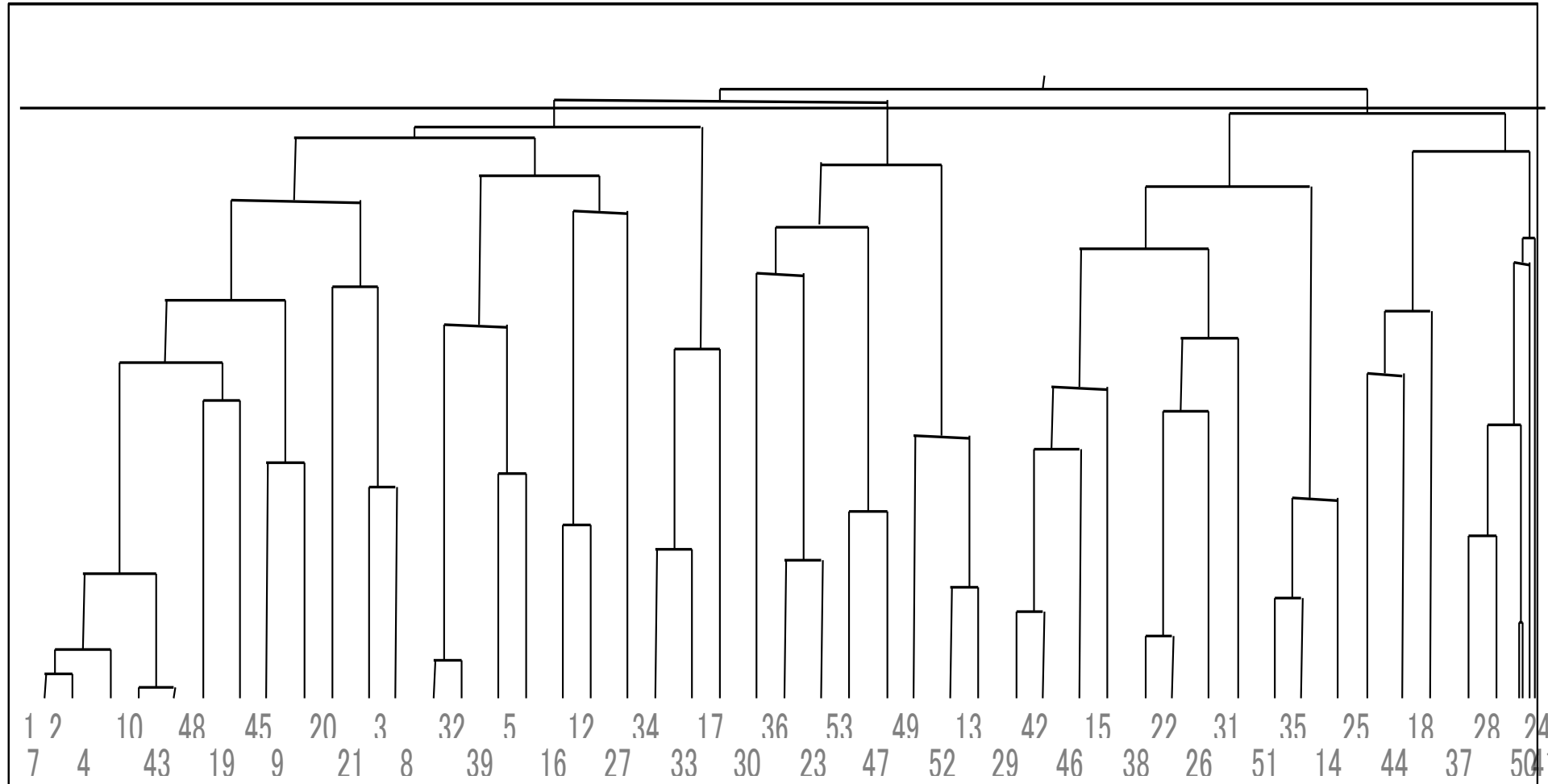
# Average Score by Firm Location

5-Point Evaluation		Location			
survey year		survey year: 2000			
1989	2000	USA	MI	Canada	Mexico
3.57	3.16	3.20	3.09	3.10	2.73

# 3-Cluster Multivariate Analysis

Cluster No.	No. of object	Proportion
1	71	69.6%
2	23	22.5%
3	8	7.8%
Total	102	100.0%
Exception	11	
<b>Classified Sample No.</b>		
< 1 >	< 2 >	< 3 >
Object No.	Object No.	Object No.
1	18	23

# Hierarchical Cluster Dendrogram



- 
- (1) Suburban Proactive Conservative Operation
  - (2) American Type Large-scale Operation
  - (3) Mono-cultural and Mono–customer Operation

	1st C	2nd C	3rd C
23–Item Ave. Score	3.4	2.6	3.1
Ave. Opt. Year	10	11.5	10
Ave. T/O Yearly Rate	15.1	17.3 Monthly	12.1
Ave. Employees	447	606	254
Note:	Location: Suburbs of large cities	Including 3 Mexican Operations	4 in Canada