

Human Resource Development at the National and the Firm Level

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Abstract

Human resource is a source of economic growth at the macro, national level. It is also a source of firms' competitiveness at the micro, enterprise level. This paper deals with human resource development (HRD hereafter); it first briefly describes relationships between the economic growth and the investment in human resource since Japan's early stage of industrialization. Developing general human capital by formal and non-formal education was a major concern of government policy makers when Japan started to industrialize its economy. Then, it examines the HRD initiatives at the enterprise level around the analytical concept, "specific human capital" (Becker 1993). This paper points out that developing specific skills at the enterprise level contributes to strengthen competitive power of the firms on the basis of an exploratory study of foreign firms in China. The author asserts, contrary to a popular belief, that in-house innovative HRD would be a useful human resource strategy in those countries in which labor markets are open.

1. Developing General Human Capital in the Early Stage of Industrialization

First section of this paper reports an observation concerning the two variables of economic growth and investment in education. Levine & Kawada (1980: 82) estimated the composite index of secondary school and formal vocational school enrolment ratios to extend the discussion Harbison & Myers (1965) had made. Figure 1 shows that the human resource development index, calculated as the ratio of the secondary school and formal vocational school enrolments to the relevant school age population, and the five year interval, economic growth rates made steady advancement. In contrast, the real income per capita (calculated in 1960 US dollar) accelerated its growth in 1960's thereafter.

The correlation coefficient between the HRD and the economic growth variables for the period of 1985 to 1935 is .972 (statistically significant at 1%), using the secondary data prepared by Levine & Kawada (1980). The human capital theory appears to explain the economic growth of Japan as Schultz (1963) asserts. Later on,

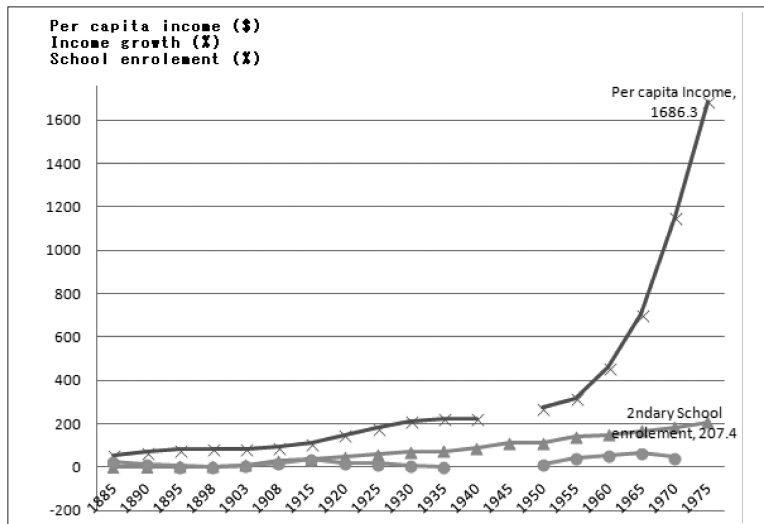


Figure 1 Economic Growth and Human Resource Development
Note: Base price=1960

the Japanese became rich enough to afford for higher education thanks to the economic growth.

The correlation coefficient between the two variables for the entire period of 1885 through 1975 is .848 (significant at 1%). This drop in the value of correlation coefficient from that of the early stage of industrialization suggests that the HRD in the form of investing in secondary and formal vocational education was important in the early days, while different factors in HRD merit our attention explaining the rapid economic growth in 1960's up to 2000.

2. Accounting for the Rapid Economic Growth from 1953 to 1971

Denison & Chung (1976: 46-50) quantitatively accounts for the components of rapid economic growth Japan has made for the period of 1953-71. The Japanese growth rate (8.8% a year) exceeded the average of the US and the advanced European countries (4.2%). It is noteworthy that increased education in the Japanese labor force as a growth source contributed to the extent that it did in the US and the European countries. In contrast, the differences in the growth rates are attributable to capital investment (1.2 percentage points) and the application of new knowledge (1.0 percentage point). The study further divides the decades into two, the 1950's and 60's. It finds that the economy grew faster in the latter period than in 1950's, and that increases in capital accounted for a quarter of this acceleration and advances in knowledge another quarter.

It would be beneficial for capital scarce, developing countries to find how Japan

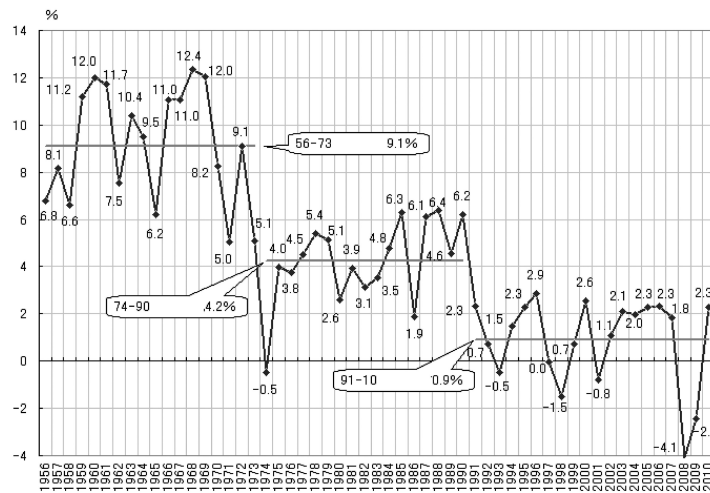


Figure 2 Real GDP Growth Rate: 1956-2010

managed to gain from the second largest growth factor i.e., application of new knowledge. Accounting for the rapid economic growth since 1950's would call for an examination of HRD at the level of enterprise and substantiating the contents of new knowledge in detail.

Figure 2 depicts the year on year economic growth since 1956, showing that the rapid economic growth ended in 1973, followed by the slower growth, and eventually stagnating up to the present. The changes in the growth rates may make employers and workers change their labor market behavior so that a new account for the source of economic growth will be in order. In other words, relative weight of external and internal labor markets would vary in response to the economic slowdown. This means that the choice of HRD in external or in internal labor market would matter.

3. Work Practices as Key for High Performance

Osterman (1994) surveyed management practices that had been implemented by American manufacturing firms. It finds that about 35% of establishments use teams, job rotation, quality circles, and Total Quality Management, i.e., “innovative work practices,” for their core work force in early 1990's. This high usage of the work practices may explain the recovery of the American economy in the 1990's. Ichniowski & others (1996), and Ichniowski & Shaw (1999) relate the practices with corporate level performance, and call them as “high performance work practice.”

Using the MIT IMVP cross national studies of automotive manufacturers in the world, MacDuffie (1995) analyzes whether the production efficiency and the product quality are dependent upon the “flexible manufacturing policies” and the bundle of

human resource management practices. It finds that the world class automotive manufacturers gain their competitiveness from a set of human resource management practices, such as extensive training, team-based work systems, and contingent compensations, and the usage of a lean production system.

Cappeli & Neumark (2001) proposes a careful research plan to examine the causal relationships between high performance work practices and corporate performance. It is noteworthy that Japanese large-size firms usually implement elements of the high performance work practices and that the MIT IMVP teams name the positive impact of the practices on corporate level performance as the “Japan effect.” Therefore, it would not be appropriate for Japanese managers to call such common management practices as “innovative.” Yet, the practices comprise the new knowledge in growth accounting, and may serve as a tool for managers and policy makers in developing countries to develop their human resources to accelerate the economic growth. This author, with the collaboration of a graduate student from China, explored the usefulness of the innovative human resource management practices in China. The findings would be useful for global corporation managers to choose human resource management strategies of “make” or “buy”.

4. Human Resource Development at the Enterprise Level

Inouye & Song (2010) applied the concept, innovative human resource management or the high performance work practices, to study foreign owned corporations located in China to examine whether in-house human resource development yields better corporate performance. It is widely believed that firms opt for buying, rather than making, human resources in rapidly growing developing countries, since working people can enjoy growing job opportunities by job hopping. The high performance work practices discussions, however, test in part a hypothesis that investing in training and education at the enterprise level yields better outcomes at the individual and the corporate levels. Inouye & Song (2010) studies whether it holds among firms in China.

Foreign-owned firms located in China may serve as catalysts that transplant new HRD systems from their home countries to China. Then, Chinese domestic firms may learn about the usefulness of the HRD practices. Disseminating the new management practices would eventually strengthen the competitiveness of the firms in China. The findings in China about the effectiveness of new HRD may also be of interest among firms in the other developing countries for catching up with Chinese competitors. Major points of Inouye & Song (2010) follow.

The study tests three hypotheses on the basis of the preceding studies made by Rosenzweig & Nohria (1994), Osterman (1994), MacDuffie (1995), and Pfeffer (1998).

H1: Human resource development (HRD), together with other human resource

management practices, may lead to a flexible organization.

H2: Human resource development (HRD), together with other human resource management practices, may lead to a better organizational or individual level performance.

H3: Innovative work practices may lead to a better organizational or individual level performance.

Figure 3 shows the relationships among the variables. The independent variables of human resource management includes four items; sharing of corporate mission, careful hiring, extensive in-house training and education, and high payments contingent upon performance. The intervening variable of flexible organization includes three; teamwork, small group activities, and Total Quality Management (TQM). The dependent variable of organizational performance includes three; labor productivity, sales, and profits. Another dependent variable of individual level performance is measured by motivation and job satisfaction. The control variables are years of operation in a host country, number of expatriate managers from the home country, firm size, and the Japanese dummy (value 1 for Japanese capital investment, or 0 for non-Japanese).

Some 102 private firms participated in our survey. Their majority capital came from the investors headquartered outside of mainland China. They belonged to the

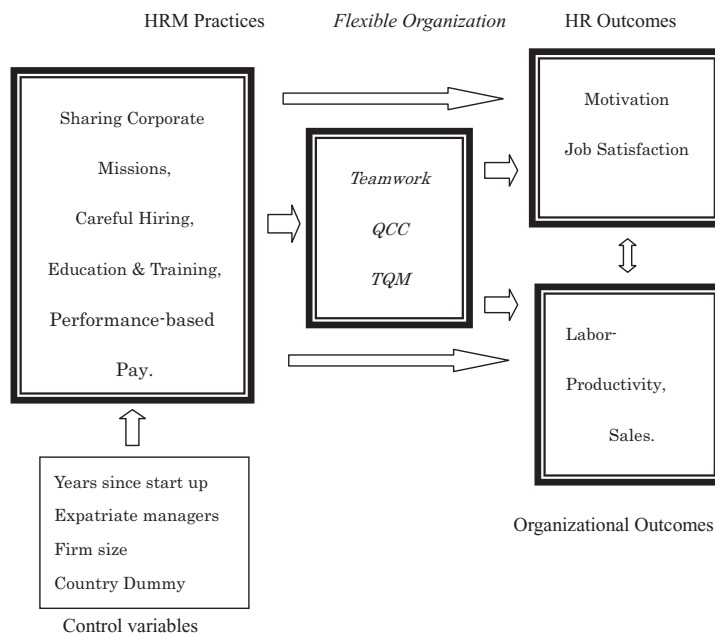


Figure 3 Relationships among Variables

Association of Foreign-owned private companies in Zhengzhou city, Henan province as of August 2006. They are in manufacturing industry, half of them aiming at host country markets, and the rest at a cost-saving production base.

The questionnaire concerning the independent and the intervening variables are from Osterman (1994). Respondents' subjective evaluations on the performance comprised the dependent variables to avoid difficulties in securing financial performance data from Chinese managers. A five-point Likert scale was used to measure all the variables, 5 being "strongly agree." The human resource development (HRD) variable includes the following items; amount of training for new employees, amount of annual training and education for the other employees, on-the-job training (OJT) or off-the-job training for the core employees, training opportunities abroad, planned job rotation, and developing multi-skilled employees. (The Cronbach alpha of HRD factor is .782.) The factor scores were used to estimate structured multiple regression equations to test the hypotheses.

Table 1 shows the causal relationships that the human resource development leads to the flexible organization among foreign firms located in central China. The regression result means that HRD is one key to establish innovative work practices. In other words, it shows that the making of human resources that are specific to their firms, rather than the quick fix of buying human resources, can serve as a useful business model in the leading foreign firms. The regression result supports H1, though it is HRD alone that is statistically significant and that all the other independent variables are not.

Table 2 reports that shared corporate mission brings about higher motivation or higher job satisfaction among employees (statistically significant at 1%, respectively). This supports H2, though the HR variables do not, nor does the flexible organization.

Table 1 HRM and Flexible Organization

	Eq.1	Eq.2
Control Variables		
Years in China	.308**	.120
Expats	.243†	
Firm size	.148	
Japan Dummy	.198	
Independent Variables		
Sharing of missions		-.047
Careful hiring		.112
HRD		.678**
Performance payments		.011
Adjusted R ²	.189	.495

Dependent Variable; Flexible organization, ** significant at 1%, (†10%)

Table 2 HRM impacts on Personnel performance

	i) Motivation		ii) Job Satisfaction	
	Eq.1	Eq.2	Eq.1	Eq.2
Sharing of missions	.619**	.617**	.545**	.545**
Careful hiring	-.056	-.024	-.062	-.065
Performance-based pay	.125	.135	.197	.198
Flexible organization		-.126		-.012
Adjusted R ²	.339	.334	.296	.274

Dependent Variable; i) Motivation, ii) Job Satisfaction. ** beta coefficients significant at 1%

Table 3 HRM impacts on Organization performance

	Eq.1	Eq.2
Sharing of missions	-.129	-.124
Careful hiring	-.083	-.168
Performance-based pay	.386**	.354**
HRD	-.046	
Flexible organization		.228**
Adjusted R ²	.118	.164

Dependent Variable; organization level performance,

** beta coefficients significant at 1%

Table 3 shows the results concerning organizational outcomes. The performance based pay explains about 12% of variations in organizational performance. The equation (ii) shows that having flexible organizations, on top of performance-based pay systems, further improves the organizational performance by 4 percentage points. H3 is thus supported.

The HR outcomes of higher motivation or job satisfaction and higher organizational performance are likely to be correlated with each other, according to organization behavior theories. Using the factor scores of these three variables, the correlation coefficient between the motivation and the organizational performance turned out to be “not significant.” In contrast, that of job satisfaction and the performance was -.216 (significant at 5% level). The sign is opposite to the expectation. This puzzling outcome calls for some deliberations beyond the information possessed by this author.

5. Summary

Human resource development in the form of formal schooling in Japan contributed to its economic growth in the early stage of industrialization. The growth rates accelerated in 1960's to 1973, making the explanatory power of formal schooling weaker when it comes the growth accounting. This paper, therefore, examined the

unexplained contributor of new knowledge to serve for development policy making. Therefore, it would be useful for us to focus on a new knowledge in the form of human resource development at the enterprise level.

Managers' strategic choice of innovative human resource management, or the high performance work practices, strengthens the competitiveness of their firm which, in turn, would contribute to the national economy thanks to HRD at the enterprise level. Most Japanese large-size firms implement the innovative work practice, making the management appear conventional but not innovative. The author, therefore, selected foreign firms in China to compare the usefulness of the innovative HRD.

The foreign firms in China may introduce new HRD practices from their home countries. On the basis of the primary data collected from about 100 non-Chinese multinational corporations in central China, this paper finds that HRD at the enterprise level contributes to establishing flexible organizations. The flexible organizations then contribute to achieving better corporate level performance. These findings are common to preceding studies of high performance work practices done in advanced countries.

Global corporations diversify their site locations in Asia, resulting in increases in the in-flows of foreign direct investment. They are busy generating work force out of a labor force new to the industry when they start up their production. HRD by the government in the form of formal education is a must. When it comes to the supply of managerial talents, higher education would matter. In addition, HRD at the enterprise level extends talent development to include firm-specific components. Some employers may take note of the findings of this study in China showing that HRD at the firm level would lead to better corporate performance.

HRD, thus, involves the government in upgrading human resources, followed by the employers' initiatives to advance their core employees by implementing innovative work practices to strengthen competitiveness on the basis of human resources. A quick fix of buying work force may be a choice for short-term objectives, but the making talent at the enterprise level could be the strategic choice in the long run. What is necessary to make this work? Both employers and employees have to gain out of investing in specific skills. It would be, therefore, a good idea for national policy makers to start some technical cooperation programs with foreign investors aimed at developing specific human capital at the enterprise level.

Note

The author would like to express his appreciation to Professor D. C. Yoshida for his help in brushing up the earlier draft. All the insufficiencies are mine.

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