CHAPTER III
ANALYSIS UNIT ONE: A CONTENT ANALYSIS

Divided into two main sections, this chapter introduces evidences, which sustained the enounced theory. Those evidences stated firstly from broad definition of human capital formation introduced by this study, and secondly on human capital formation related to formal education process. The core methodology here proceeds by content analysis of former studies to derivate conclusions.

III.1.EVIDENCE FROM THE FOUR SECTORS OF US AID INVESTMENT IN TAIWAN

The chart 2 of the next page suggests that U.S Aid investment to the four sectors of the economy in the Republic Of China (Taiwan) during the 1950s to mid 1960s contributed to fill the human capital gap through what we called: the Investment Circle focus On Human Capital Formation. A systematic process helps to direct money into projects with multidimensional effects on both sectors of the economy. Human capital formation related to those practical projects boosted results on a short period. The whole figure shows retro activeness between all the sectors of the economy, and between those sectors and the human capital formation.

As evidence to sustain this investment circle is the direct investment in human capital, the three sectors of the economy funds include a special Human Capital Commodities (HCC) import investment.[1] Thus, US$10,708 thousands from the US$407.006 million directed to infrastructure development went for special expenditures codified as Human Capital Commodities import (HCC). In the agriculture, and industry sector, US$2,980 and US$11,012 served the same purpose. Most of the US$235.102 (22.5 %) from U.S Aid to the agricultural sector hired Americans agriculture advisers and trained Taiwanese in the US and others countries as mentioned below.[2]

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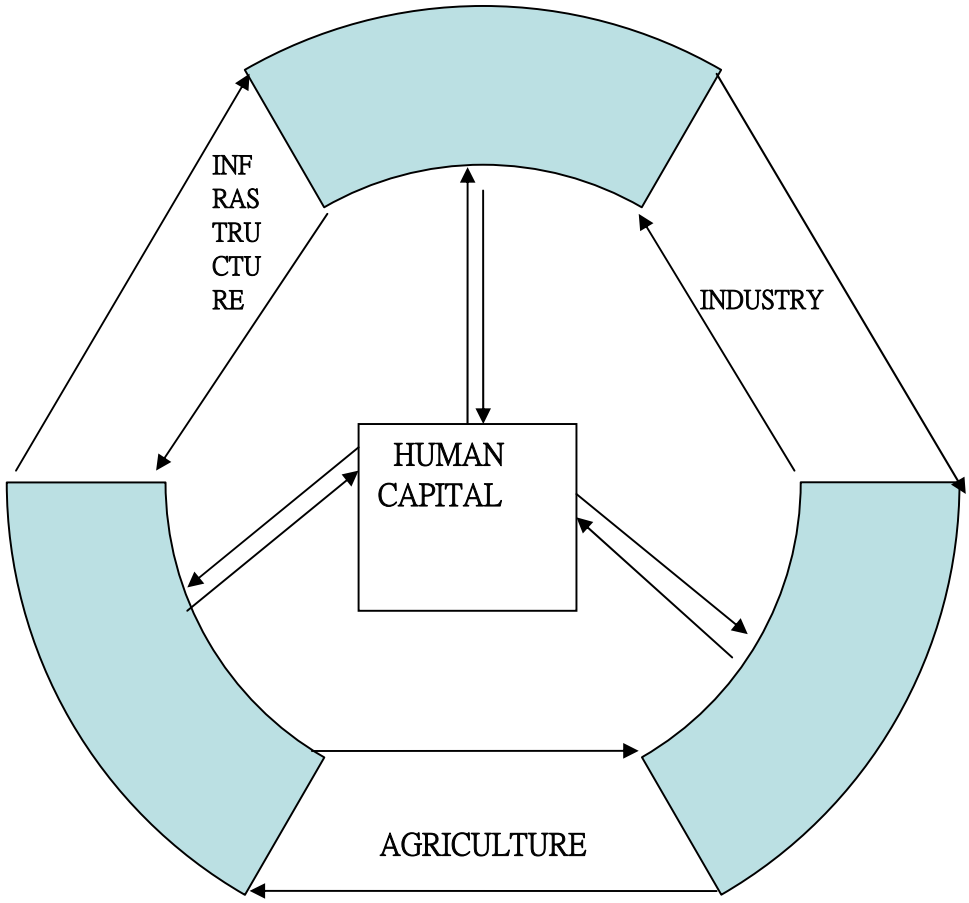
1 Neil Jacoby, (op-cit), 265, Annex B, Table B.8.

2 Neil Jacoby, (op-cit, 1966), P.50. Jacoby's study, displays a total amount of US$1,092 million allocated to the four sectors of Taiwan economy from 1951 to 1965. From this amount, US$283 2 million (25.9%) went to human resources for the second place just after the physical infrastructure US$407.006 million (37.3%) in terms of investment. The agricultural sector kept US$235.102 million (21.5%), and holds the third place just before the industrial sector with US$166.276 million (15.3%) invested

Chart 2: Investment Circle focus on Human Capital Formation (ICHCF)



SOURCE: Chart drew by the author to describe the early investment plan interrelation between the three sectors of the economy and their common focus on filling the human capital gap.

> US technicians have provided 175-man year of technical assistance ..., 372 Chinese technicians were sent to the US. For 325 man-years of training, and 389 Chinese agriculturists, irrigation engineers, foresters, fishery experts, and rural health specialists were sent to Japan and elsewhere for 128 man-years of training.[3]

Another important intervening variable to sustain this theory is the psychological effect of the land reform, health and water resource development as directly linked to people life improvement. This make it possible to dispose of a healthy spirits in healthy and bodies to boost production in both quantity and quality variables[4]. People, the environment, tools for production, were settling ready to launch the development process. Indeed, back to the prevailing historical context, the Island population was uncertain about its own future. In 1950, Taiwanese were emerging from the World War II and the 228 incident under the KMT governor Chen I. The Americans presence as the wealthiest and powerful country of the time, combine to the land reform brought the necessary psychological push.[5] To maximize this surplus of energy, in the infrastructure, and industrial sectors, funds, and technical expertise went to specifics programs in phase with the disposable workforce level of education.

As stated by the literature, 74 percent of all domestic investments provided the country with physical infrastructures, which includes electric power, transportation and communication.[6] Aid to industry that work as grants and loans supplies financial intermediaries and technical support for private investment; particularly in fertilizers firms, shipping, cement, aluminum, pulp and paper, plastics, light industry for which the corresponding educated manpower were available. Concerning the fertilizer firms closely related to the agriculture development and therefore to the majority of the population (at that time), their overall production has increased from 18.6 kg in 1952 to 37.4 kg in 1962.[7] It appears therefore that in this early stage of development efforts were primary focuses on people to strengthen their overall capacities and turn them into

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[3] S.H. Hsieh, (1965), "Impact of US Foreign Aid on Taiwan's Agriculture Development, 1951-1964" (Taipei: JCRR,), Mimeo.

[4] For the public health and sanitation measurement, Jacoby referred to the 1965 death rates. About 6.5 per 1000 the lowest than any country in the world for this time. The country was owner of a healthy, vigorous, and mobile work force. Confer Jacoby, op-cit, 1966), P.189.

[5] For more information on the 228 events in Taiwan, do please confer Tse Han Lai, Ramon Hawley Myers, Wei. Wou, *A Tragic Beginning: The Taiwan Uprising of February 28, 1947* (1991). Ed: (California: Stanford University Press, 1991).

[6] Taiwan Statistics Data Book ,(1963), 44. The electric power output increased from 177.5 (K.H.W) in 1952, to 414.2 (K.W.H) in 1962.

[7] Taiwan Statistics Data Book, (1963), P.46

efficient pillar for a real growth of the economy. This supposes an interrelated, retroactive, and simultaneous investment into infrastructures, agriculture and industry, for which maximal focus on peoples expertise upgrading was bold. Indeed, both above-mentioned sectors of the economy walked concomitantly with peoples, and their education therefore, should match with different needs from those sectors. The second section content analysis covers aid investment in human capital as formal education.

III. 2 INVESTMENTS IN FORMAL EDUCATION: A CONTENT ANALYSIS

Prospecting U.S. Aid and government investment in formal education from 1951 to 1965, data show that this sector received a joint government, U.S. Aid investment attention. The aim here is not to show which of the two have been the most regarding about this sector, but to sustain that their dual emphasis on education has highly contributed to build the foundation for the economic development goal.

Data stipulate that formal education received more than 40 million as investments from the U.S Aid. The government for its part (confer table next page), and despite a heavy defense expenditure bill during this period, directed a non-negligible growing part of the budget to the education sector (6.4% 1951-1953; 11.1% 1954-1957; 12.3 % 1958-1960; 11.8 1961-1963; and 13.8 1964-1967).

Beside this government support to education, U.S. Aid worked as a fundamental tool during these early difficult years. Some scholars sustain that the U.S. Aid investment effects were clearly perceptible only from their focus on vocational school. We raised doubt concerning this conclusion as return on investment for formal education return is a long-term goal. Therefore, the return on investment for US Aid on formal primary, secondary and high education was to be prospecting from the 1970s socio-economical variables.

Which variables were not available in 1966 when the author was conducting his research?[8] Brain drain phenomenon data for Taiwan provided later on stated “The great influx of Mainland Chinese between 1949 and 1956 had already endowed Taiwan with an exceptional supply of professional talent in most fields.

[8] According to the author, the program offered material assistance to three national universities, 11 provincial colleges and universities. Specific projects were design to improve industrial education, train secondary school teachers, improved medicine and health.

Table 2: Government Expenditure in Education

	1951-1953	1954-57	1958-60	1961-1963	1964-67
Total per year, Bill. (N.T $)	**2.90**	**6.37**	**10.68**	**15.07**	**21.30**
% SHARES					
General Public services and defense	**71.9**	**72.6**	**73.6**	**68.8**	**68.8**
Education	**6.4**	**11.1**	**12.3**	**11.8**	**13.8**
Health, Social Security, and welfare	**2.0**	**3.5**	**4.5**	**3.8**	**3.4**
Services to consumers	**8.4**	**14.6**	**16.8**	**15.6**	**17.2**
Economic services	**5.0**	**5.7**	**6.0**	**5.1**	**5.2**

Source: adapted from Simon Kuznets, Growth and Structural Shift, in "Economic Growth and Structural Change in Taiwan" Table 1.18 Composition of Government Consumption by Class of Purpose, shares in Totals Current prices, 1951-1973 P.94

Only 6 per cent of the many university graduates who went abroad between 1957 and 1965 for advanced study returned home."[9]From this citation we may assert that the authors of the economic growth in manufacturing during the 1970s and trade growth during the late 1970s to 1980s are to be prospecting from the 1952 work force (12 and above) cohort. People of this cohort received adult education and were trained by the Joint Commission on Rural Reconstruction (JCRR) project. In addition, the population aged six and above, whom students have mostly been oriented to vocational schools, are those who achieved a high degree in trade related knowledge.

The first observation from the next page table helps to sustain the above-mentioned assertions. Indeed, the real GNP from 1967 to 1971 displays the highest percentage of growth. As the real GNP is a good measure for the national production, it make sense to correlate this growth to the return on investment for vocational education, and adult education mostly handle by the JCRR and the US Aid funds during the 1950s and the mid 1960s. From the late 1960s to the late 1980s, agricultural output has shifted respectively from 19.48 percent of the GDP to 7.82 percent. This shift in term of workforce was a gain for the manufacture sector.

This transfer of workers was facilitated by the knowledge accumulated through direct training, adult education, and by the formal vocational school to which, most of the U.S Aid funds to education went. Concerning the trade growth witnessed by a positive trade balance that started from 1977 to1981 with US$1065.6 million (47.6 million for the previous period), and its even further uptrend to US$10321 is related to the graduate of the 1952 youth cohort (age six and above) and adult cohort (age 12 and above) as well. Jacoby attests it when he wrote; "The graduate of these schools, found job in trade …, more investment should have been done for the vocational school…, the lack of a comprehensive survey of Taiwan man-power in the early period is the essential raison behind this error."[10]

9 Jacoby, (1966), P.186.
10 Idem

Table 3: Taiwan Economic Performance from 1952-1987

Years	Real Growth Rate as percentage of GNP	Agriculture as percentage of GDP	Manufacturing as percentage of GDP	Saving Investment Ratio	Average Trade Balance
1952-56	8.9	34.08	13	0.36	-81.4
56-61	6.98	31.46	16.54	0.88	-93.6
62-66	9.9	26.52	19.6	0.98	-60.6
67-71	10.58	19.48	25.58	0.98	-54
71-76	9	14.2	32.64	1.03	-47.6
77-81	9.06	10.38	34	1.08	1065.6
82-87	9.76	7.82	35.72	1.76	10321

SOURCE: Wen-hui Tsai, Social Changes Under the Impact of Economic Transformation in Taiwan: From Industrialization to Modernization During the Post WWII, (1989), P.6.

Otherwise, it sounds relevant to mention that Jacoby's analysis concerning the brain drain negative effect is not to be imputing to U.S Aid financed students. As displays from figure 2 and 3 of the next page, the government sponsored more outflow students that stayed abroad while the limited number of students financed by the U.S Aid in flowed at 96.9 percent. This reversal achievement teach that for human capital development planning, a population survey to establish nature, level of the population, and the available work force is a pre-requisite for success. One should control the scope of needs for a well-suited design based on the goals to achieve on a short time.

According to Yager's account of the JCRR experience, surveys have preceded the institution of projects implementation within the rural area in Taiwan: "These surveys hold in phase (A) operations have prepared the way for the investment of funds in the phase B programs." [11] The JCRR adopted a pragmatic operational way that allowed financing students for studies related to needs of the early economic development phase.

However, it is also relevant to underline that the outflows of formal students sponsored by the government turned in late 1980s to 1990s to be the pillars of the country economic development. The tandems U.S Aid government focus on education were both worth each for a certain period. First, when the national government was facing multidimensional weaknesses, the U.S Aid led the tandem. Secondly, it was the turn of the government to take full responsibility to draw education plan in phase with the country economics needs. Moreover, to understand the complete historic of why and how it did work in Taiwan more than elsewhere, the comparative unit of the next chapter is fundamental.

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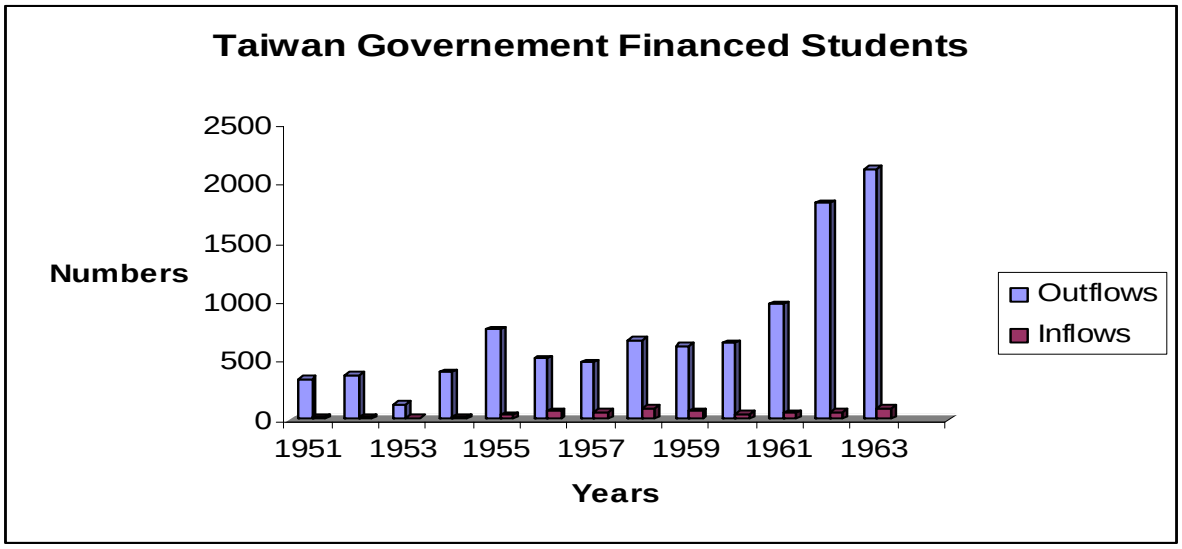
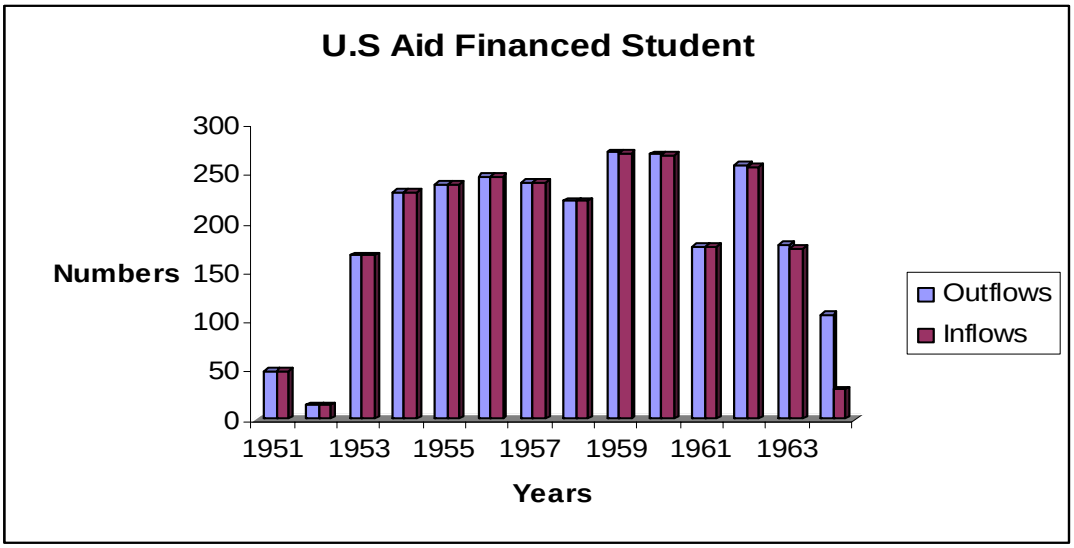
[11] Joseph Yager, (*Transforming Agriculture in Taiwan: the experience of the Joint Commission on Rural Reconstruction*, (U.S.A: Cornell University Press, 1988), 39. The author précised that there was one phase A project in each of the following category: farmers organization (survey of farmers associations), rural health (health survey), land tenure reform (farm rent reduction), and audio-visual education (public information and education).

Graph 2: Taiwan Government Financed Students Outflow-Inflow Trend from 1951 to 1963.



Graph 3: U.S Aid Financed Students Outflow-Inflow Student from 1951 to 1963.



Source: figures drew with collected data from Jacoby, (1966), P.299.