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Determinants of Migration to Kuwait

Introduction

MIGRATION has been frequently assumed to be governed by laws that apply across geographic boundaries and points in time. The search for universality has led to statistical formulations rooted in economics which attempt to explain migration through variables pertaining to wage rates, job opportunities, amenity levels, migration costs and information flows (Todaro 1976). Herberle (1938) had argued that migration is caused by a series of forces which encourage an individual to leave one place (push factors) and attract him to another place (pull factors). The push-pull theory's abstraction of the specific forces generating migration was considered by many researchers as oversimplification of a highly complex process. Lee (1966) had suggested that migration causation needs to be viewed within a framework of factors associated with area of origin, area of destination, intervening obstacles and the migrant themselves.

However, the economic growth models view migration as a cause and consequence of the modernization and growth of an economy and therefore the existing and potential employment opportunities are a function of the level and rate of development. Further within the growth of the economy there are cycles of 'booms' and 'depressions' and it has been postulated that there is a relationship between these cyclical economic fluctuations and flow of migration (Gobser-Meyers 1978). Another economic interpretation of migration is viewed through cost-benefit analysis under which migration is considered as

an investment activity requiring a cost to be incurred and a return to be expected (Okun and Richardson 1961).

Another approach to the interpretation of migration as a function of man's response to economic factors has been the application of regression-based models. Such models try to explain some measure of migration (dependent variable) through a set of independent variables such as wage rates, unemployment rates, distance, social structure, population size, labour force. By the inclusion of not only push-pull factors, but also measures of distance and intervening opportunities, it is now generally considered that regression models provide a more holistic explanation of the migration process. But many studies using regression procedures to analyse migration did not take account of the high degree of inter-relatedness among the independent variables which reduces the validity of their results. Stepwise regression method is a technique which has been suggested by many researchers to overcome the problem of multicollinearity (Houser 1974, Taylor 1980, Willis 1975).

I. Recent Trend in International Migration

The character of international migration has changed vastly in the past 50 years (OECD 1975). Majority of the countries have since 1935 introduced quota restrictions on migrants which has reduced the flow of voluntary migrants from the Third World countries to developed countries (George 1976). As a result, migration constitutes now an insignificant component in population growth or change in population composition of most of the countries of the world (Bogue 1969),

Labour migration to Western Europe is a recent phenomenon (Board 1976, Boehning 1979). After the Second World War, Western European nations felt shortage of manpower and they encouraged migrants to come for short periods to fill temporary labour gaps by staying for a few years and then returning to their home countries. The majority of these migrants to the West European countries came from Turkey, Greece, Yugoslavia, Algeria and Tunisia. It is estimated that during the early 1970s there were about 15 million labour migrants in Western Europe, majority of whom stayed for short duration and returned home after the expiry of their contracts. After 1973 when the economic activities in these Western European countries declined due to depression resulting from the oil crisis, their demand for foreign labour slackened. With the result that few fresh migrants arrived and more migrants returned to their home countries (Power and Hardman 1976).

Compared to the voluntary migration, the involuntary migration of people has grown rapidly. Involuntary migrants are people who are forced to migrate for their lives as a consequence of war or political upheavals. For example, in the Middle East region, many Palestinian Arabs had to leave their homes

in Palestine after the creation of Israel in 1948 and subsequent Israel-Arab Wars. These Palestinians have since settled down in neighbouring Arab and Gulf countries including Kuwait.

Migration to Gulf countries is a recent post second world war phenomenon and is mostly the result of two major events; discovery of oil and creation of Israel. Among these two factors, the most important, as far as migration is concerned, is the discovery of oil because the huge oil revenues ushered in an era of massive construction and development in these countries which needed the import of large foreign manpower.

Non-national population in the six Gulf GCC countries (Bahrain, Kuwait, Oman, Saudi Arabia, Qatar and United Arab Emirates) is estimated to be around 5 millions in 1984 (Kuwait, CSO, 1987b). The size rose from 0.4 million in 1960 to 4.2 million in 1980. The figure for the last year constituted over 32 percent of the total population and represented 57 percent of the work force for the same year. In the small states of the Gulf (Kuwait, Qatar and UAR), non-national have exceeded the size of the native population, leading to an imbalance in the demographic composition of the population.

A common characteristic of migrants to Gulf countries is that they are young, married males who are predominantly of rural origin. They tend to be better educated than the origin population as a whole.

ESCWA Estimates on the age-sex structure of the non-national population for 1980 show that majority of the migrants in the Gulf region were between 15 and 64 years of age. The sex ratio ranges from a minimum of 169 percent in Kuwait to a maximum of 298 percent in Bahrain (U.N., ESCWA, 1982).

Labor migration has had a profound impact on both labor-sending and labor-receiving countries. For labor-senders, emigration has become an established feature of the domestic economic scene. In the wake of the departure of many migrant workers from such countries as Sudan, Egypt, Jordan, Syria, and the Y.A.R. have come domestic labour shortages, a sudden upsurge of workers' remittances, rapid domestic inflation, and in some cases stagnating economic development (Serageldin *et al.*, 1980). For labour-receivers, the non-national presence involves a number of unforeseen costs which may in the end outweigh the potential benefits of industrial development. Particularly significant among such factors are the following ; the volatile nature of labour supply, especially the highly qualified manpower; the economic costs of supporting expatriate communities; the fear of numerical and cultural domination; the development of immigrant ghettos and the rise of many types of social problems: and the stunted development of native manpower (Nagi, 1981).

By 1975, a majority of migrants was provided by Arab states, but this pro-

portion declined significantly, in favour of Asians during the last decade.¹ Birks and Sinclair (1980) estimated that in 1978, there were about one million east or south east Asians working in the Arab World.² Another estimate was given by Demery (1983) as 2 million Asians working in the Middle East in 1981.

These changes have been characterised by their rapidity and are remarkable in their strength. In Saudi Arabia, the substitution of Asians for Yemenis has been the major change in geographic composition since 1975, with the proportion of immigrant labourers brought in from the Far East and the Indian sub-continent growing from less than 5 percent in 1975 to around 30 percent by 1980 (Looney, 1985). The growth in Korean workers from 4,000 in 1975 to around 40,000 in 1980 was especially dramatic (Sidahmed, 1981). Perhaps the most dramatic change since 1975 has been the increasing rate of the South East Asian countries, especially Philippines, South Korea, Sri Lanka and to a lesser extent, Indonesia and Thailand (Kuwait, CSO, 1987b).

Amongst the Gulf states, Kuwait has the largest population and the greatest oil reserves. Oil was discovered in 1930s but its export was taken up only after the end of the Second World war. The percentage of total revenue* obtained from the sale of crude oil, gas and refined products has remained close to 90 percent over the 1970s and 1980s; in 1984/85, this percentage was 89.2 (Kuwait, CSO, 1986). In 1979, there was a record high revenue of KD. 5.7 billion that declined to KD. 2.7 billion in 1985 (Al-Qudsi and Hosni, 1986).

As the oil revenues started to flow in, the Government of Kuwait took up development of the country in a big way. Massive plans were drawn to build highways and roads, schools and hospitals, ports and airports, residential, commercial and industrial complexes; oil refineries and other infrastructures. During 1981-85, between 40-53 per cent of the total oil revenue income was spent on public services including education, health, social affairs, electricity and water, housing and land acquisition (Al Qudsi and Hosni, 1986). Since the population of the country was small, foreign labour was brought in to complete these works. Secondly, the creation of Israel in 1948 and later Arab-Israel wars in 1956, 1967 and 1973 brought in political situations which resulted in migration of large number of Palestinians and Jordians to the Arab countries including Kuwait.

1. The tendency of oil-rich countries for employment to make good their labour shortages by turning to India and Pakistan and by allowing agents to import more workers, especially from the Republic of Korea is only one aspect of a broader reorientation of their labour imports. A trend of growing significance has been the utilisation of south-east Asians supplies. (For more details, see Birks and Sinclair, 1980).

2. It is difficult to be accurate in breaking down this labour by nationality, but probably 20 percent come from the Republic of Korea.

3. Since 1977 the oil revenues increased substantially, but fell after 1960 as a result of declining demand for oil.

II. *Flow of Migrants to Kuwait*

The first census in Kuwait was conducted in 1957 and the latest (the seventh) in 1985. According to these census data, the country's population in 1957 was only 206,473. These included 92,851 non-Kuwaitis who constituted 45 per cent of total population. Since then, the Kuwaiti as well as non-Kuwaiti (NK) population has been increasing (Table 1), The migrant population has increased from 92,851 in 1957 to 391,266 in 1970 and to 1,016,013 in 1985. During the 15 years period 1970-1985, the net increase in this migrant population has been 624,747, an increase of 160 percent. Further there have been more migrants than national Kuwaitis since 1965 and as per 1985 census figures, the migrants constituted 60 per cent of total population (Kuwait, CSO : 1977 and 1986).

As the oil revenues of the country increased from early 1970s as a result of spurt in oil prices in the international market, the tempo of developmental and construction activities also accelerated. This resulted in the net increase in non-Kuwaiti population and labour force imported for the development project. During the period 1965-75, the net increase in non-Kuwaiti population was 275,469. As against this, the period 1975-85 experienced a net increase of 493,264 in the migrant population (Table 1).

Over the period (1957-85), the sex ratio, defined as number of males per 100 females, of non-Kuwaiti population has improved from 366 in 1957 to

TABLE I—POPULATION BY NATIONALITY, CENSUS YEAR, KUWAIT

<i>Census Year</i>	<i>Population</i>			<i>Non-Kuwaiti Population as percent of total Population</i>	<i>Net Increase in Non-Kuwaiti population during inter-censal period</i>	<i>Sex Ratio of non-Kuwaiti population</i>
	<i>Kuwaiti</i>	<i>Non-Kuwaiti</i>	<i>Total</i>			
1957	113622	92851	206473	45.0	...	365.5
1961	161909	159712	321621	49.7	66861	267.4
1965	220059	247280	467339	52.9	87568	263.3
1970	347396	391266	738662	53.0	143986	166.4
1975	472088	522749	994837	52.5	131483	142.5
1980	565633	792339	1357972	58.3	269590	167.4
1985	681288	1016013	1697301	59.9	223674	160.8

Sex Ratio = Males per 100 females.

161 in 1985. (Table 1). This shows the shift in the composition of migrants. It reflects that during the last 20 years (1965-85) there was more inflow of composite families than in earlier years, The improvement in sex ratio is also due to import of single adult females to take up jobs of maids, nurses, waitresses in the country thereby increasing the number of females in the non-Kuwaiti population.

Census data by broad nationality groups show that among non-Kuwaitis the share of Arabs in Kuwait had declined from 80 percent in 1970 to 63 percent in 1985 and the share of Asian group had increased from 19 to 35 percent. Non-Kuwaitis belonging to all other nationalities constituted only 2 percent or so of their total (Table 2).

Census data by individual nationality is available till 1975. Table 3 shows the non-Kuwaiti populations in respect of 16 nationalities (with more than a thousand each in 1975) in the year 1965, 1970 and 1975. As may be seen, Palestinians/Jordanians constituted 39 percent of the total non-Kuwaiti population in 1975. This is followed by Egyptians (11.6%), Iraqis (8.6%) and Syrians (7.8%) among Arabs and Iranians (7.8%), Indians (6.1%) and Pakistanis (4.4%) among non-Arab nationalities.

Regarding the sex-composition of the non-Kuwaiti population, there were seven nationalities among them with sex ratio equal or below 115 as per 1975 census data and they are from Palestine/Jordan, Saudi Arabia, Lebanon, Bahrain, UAE, India and United Kingdom (Table 3). The balanced sex ratio for these 7 nationalities indicate that the migrants from these countries were largely accompanied by their wives and children.

With the passage of time, some of the nationality groups have acquired the demographic characteristics of a fairly stable, closed population.⁴ The average duration of residence for Arabs was 10.4 years, and for Asians 5.6 years in 1985. About 46 percent of the Arabs and 18 percent of the Asians had lived in Kuwait for 10 or more years in 1985 (Kuwait, CSO, 1987a). Non-Kuwaitis born within Kuwait, which was close to 30 percent in 1985, is another indicator of the relative stability of the expatriate population.⁵ The ratio is 41 percent for Arabs and 11 percent for Asians.

Migration to Kuwait is regulated by the Government of Kuwait which issues work and residence permits to migrants for specific periods. After the expiry of the period, the migrants return to their countries unless they get their per-

4. Due to the relative stability of the Arabs, their total dependency ratio was 73 percent compared with 108 for Kuwait. In contrast, the dependency ratio among Asians was only 13 (Shah and Al-omaia, 1988).

5. Nearly 75 per cent of children aged 10-14 and 62 per cent of 15-19 year old persons were born in Kuwait.

TABLE 2-NON-KUWAITI POPULATION BY GROUPS OF COUNTRIES, CENSUS YEARS

		1965	1970	1975	1980	1985
Non-Kuwaitis	<i>T</i>	247280 (100.0)*	391266 (100.0)	522749 (100.0)	792339 (100.0)	1016013 (100.0)
Arabs	<i>M</i>	126364	184729	237425	340206	378704
	<i>F</i>	61559	128120	181762	234289	264110
	<i>T</i>	187923 (76.0)	312849 (79.9)	419187 (80.1)	574495 (72.5)	642814 (63.3)
Non-Arab Asians	<i>M</i>	44574	56110	66568	147956	237912
	<i>P</i>	9920	15807	31245	56148	118035
	<i>T</i>	54494 (22.0)	71917 (18.4)	97813 (18.7)	204104 (25.8)	355947 (35.0)
Non-Arab African	<i>M</i>	345	488	317	899	1063
	<i>F</i>	67	188	123	702	976
	<i>T</i>	412 (0.2)	676 (0.2)	440 (0.1)	1601 (0.2)	2039 (0.2)
Europeans	<i>M</i>	2114	2637	2327	5765	7055
	<i>F</i>	1715	2179	1953	4219	4853
	<i>T</i>	3823 (1.5)	4816 (1.2)	4280 (0.8)	9984 (1.3)	11908 (1.2)
Americans	<i>M</i>	302	434	422	1068	1668
	<i>F</i>	245	463	392	929	1474
	<i>T</i>	547 (0.2)	897 (0.2)	814 (0.2)	1997 (0.3)	3142 (0.3)

*Figures in parenthesis indicate percentages of total non-Kuwaiti population.

Note : M=Males; F—Female; T—Total

mits extended for another specific period⁶. Census data provide information about them by their duration of stay in Kuwait and this information can be used to get some estimates of return migrants from Kuwait. Suppose the total non-Kuwaiti population in 1970 is (P_{1970}) and (P^{5+}_{1975}) denotes the non-Kuwaiti population in 1975 with duration of stay of 5 years and more. Then the difference (P_{1970}) — (P^{5+}_{1975}) is the segment of 1970 migrants who had returned to their home countries (including those who died in Kuwait) in a period of five years. Analysis of the census data shows (Table 4) that

TABLE 3—NON-KUWAITI POPULATION BY SELECTED NATIONALITIES, CENSUS YEARS 1965, 1970 and 1975

Country of Origin	1965			1970			1975		
	Pop	% of Total non-Kuwaiti Pop.	Sex Ratio	Pop	% of Total non-Kuwaiti Pop.	Sex Ratio	Pop	% of Total non-Kuwaiti Pop.	Sex Ratio
Palestine & Jordan	77712	31.4	178	147696	37.7	118	204178	39.0	112
Iraq	25897	10.5	156	39066	10.0	152	45070	8.6	143
Saudi Arabia	4632	1.9	164	10897	2.8	124	12527	2.4	112
Lebanon	20877	8.4	159	25387	6.5	126	24776	4.7	114
Syria	16849	6.8	253	27217	7.0	171	40962	7.8	151
Egypt	11021	4.5	110	30421	7.8	133	60534	11.6	144
Sudan	418	0.2	429	773	02	266	1553	0.3	258
Yemen-South	2635	1.1	3413	8604	2.2	1025	12332	2.4	510
Yemen-North	144	0.1	1209	2363	0.6	601	4831	0.9	349
Bahrain	747	0.3	144	966	0.2	111	1359	0.3	72
UAE	1105	0.4	290	4435	1.1	179	2585	0.5	115
Oman	19584	7.9	616	14670	3.7	555	7313	1.4	233
Iran	30790	12.4	1644	39129	10.0	978	40842	7.8	446
India	11699	4.7	195	17336	4.4	154	32105	6.1	109
Pakistan	11735	4.7	186	14712	3.8	179	23016	4.4	187
U.K.	2837	1.1	124	2736	0.7	105	2423	0.5	114
Total non-Kuwaiti population	247280	100.0	236	391266	100.0	166	522749	100.0	143

6. In Kuwait, many expatriate do not register for work for fear of being deported. Beginning in 1986, a computerized system of civil registration has been put in place. Through this system, a civil registration card has been issued for each person residing in Kuwait. The intention is to have a legal stay in Kuwait. Moreover, a number of laws were passed establishing more stringent controls of the entry, stay and employment of expatriates in Kuwait.

17 to 24 percent of the migrant population returns to their countries in a period of 5 years

Migrant Labour Force

The 'voluntary' migrants to Kuwait from different countries have moved with the primary objective of being employed in gainful productive jobs. At such a high proportion of them, especially among male migrants, are expected to be in labour force. This is confirmed from census data shown in Table 4, which shows percent of total population of all ages by nationality group and sex in labour force. These percentages would, no doubt, be higher when computed with relevance to the adult (15+) population. However, from the figures in Table 4, the estimates of percentages of populations of these nationality groups who were not in labour force and who were dependents and consumers only can also be derived.

The three nationality groups considered are the Arabs, which include Palestinians and Jordanians also, Asians and Americans-Europeans. Data in Table 4 show that the Asian group had the highest percent of its population in labour force in all these years, among both males and females. According to 1985 census, 80 per cent of Asian population was in labourforce (88 per cent of male and 61 per cent of female Asians). The high percentage in labour force indicates the migration of mostly adult individuals rather than of composite families. The very high proportion of Asian females being in labour force represents a large number of maids recruited from these countries leaving their families behind⁷, In case of Americans-Europeans, the percentage of

TABLE 4-PERCENT OF NON-KUWAITI POPULATION IN LABOUR FORCE BY NATIONALITY GROUP AND SEX, CENSUS YEARS

<i>Percent of Population in Labour Force</i>												
<i>Nationality Group</i>	<i>1970</i>			<i>1975</i>			<i>1980</i>			<i>1985</i>		
	<i>M</i>	<i>P</i>	<i>T</i>	<i>M</i>	<i>F</i>	<i>T</i>	<i>M</i>	<i>P</i>	<i>T</i>	<i>M</i>	<i>P</i>	<i>T</i>
Arabs	59	9	38	54	10	35	59	11	40	58	12	39
Asians	86	16	71	80	29	64	85	35	71	88	61	80
Americans & Europeans	71	12	43	62	14	40	68	16	46	69	19	48
Non-Kuwaiti Total	66	10	45	60	13	41	65	16	48	70	28	54

7. In the Kuwait, Arab Times, 9 July, 1987, Dr. Abdul Hadi Al-Awadi, the Assistant Undersecretary for Planning Affairs, Ministry of Planning, Kuwait, stated that according to 1985 census, the expatriate labour force of 543,975 included 81,573 maids and 38,756 watchmen.

population in labour force in 1985 was of 48 percent including 19 percent gain fully employed women. Among the Arab group, only 39 percent were in labour force including 12 percent women.

Considering the non-Kuwaiti population as a whole, the percent of population in labour force has been increasing and it has gone up from 45 per cent in 1970 to 54 per cent in 1985. Compared to this, only 18.6 percent of Kuwaiti population was in labour force in 1985, when 126,410 Kuwaiti and 543,975 non-Kuwaiti were in labour force. So, for every 100 Kuwaitis in labour force there were 430 non-Kuwaitis in labour force in 1985 which shows the extent of dependence of the country on the migrant labour.

The census data show that the dependents-labour force ratio for the non-Kuwaiti population has been declining. Among them there were 144 dependents for every 100 workers in 1975, 108 in 1980 and 87 in 1985. In case of Asians this ratio has come down from 56 in 1975 to only 25 in 1985 resulting primarily from increasing number of workers from Asian females.

Data compiled from 1975 and 1980 censuses regarding the Sector—private or Government—of employment of migrants show that more than 70 per cent of workers were employed by the private sector (Table 5). In case of Asian workers, every 9 out of 10 workers were employed by the private sector whereas among Arabs 37 percent of the labour force were working in Government sector.

TABLE 5-NON-KUWAITI LABOUR FORCE IN GOVERNMENT AND PRIVATE SECTOR BY NATIONALITY GROUP 1975 AND 1980

<i>Nationality Group</i>	<i>Year</i>	<i>Percent of Labour Force</i>	
		<i>Govt. Service</i>	<i>Private Sector</i>
Arabs	1975	37	63
	1980	37	63
Asians	1975	11	89
	1980	11	89
Europeans	1975	22	78
	1980	26	74
Americans	1975	18	82
	1980	38	62
Non-Kuwaiti Total	1975	29	71
	1980	27	73

Recent data from the 1988-Labour Force Sample Survey showed that, Non-Kuwaiti labour force outnumbered Kuwaitis in every economic activity and occupation and they exhibit high level of dependency (Table 6). In certain sectors, such as construction, trading, and manufacturing, their contribution has become virtually a monopoly. Typically, non-national appear to have higher than average share in professional occupations, and low share in clerical occupations.

At a more detailed occupational level, it was noted that occupations requiring longer period of education and experience have stronger concentration of

TABLE 6-KUWAITI AND NON-KUWAITI LABOUR FORCE BY ECONOMIC ACTIVITY AND OCCUPATION, 1988

<i>Sector and occupation</i>	<i>K.</i>	<i>% of total</i>	<i>N.K.</i>	<i>% of total</i>
Sector				
Agriculture & fishing	946	10.8	7,810	89.2
Mining & quarrying	3,212	53.3	2,816	46.7
Manufacturing	5,302	10.6	44,858	89.4
Construction	1,738	25.2	5,170	74.8
Electricity, gas & water	1,716	1.6	105,688	98.4
Wholesale & retail trade	5,016	6.3	74,866	93.7
Transport, storage & Communication	9,834	26.6	27,104	73.4
Finance & insurance	5,390	24.4	16,742	75.6
Community & personal service	114,598	31.0	255,640	69.0
Occupation				
Professional & technical Wor.	35,772	30.5	81,554	69.5
Administrative & managerial	6,028	47.8	6,578	52.2
Clerical and related	37,686	43.8	48,378	56.2
Sales workers	7,656	19.3	32,010	80.7
Service workers	47,344	22.8	160,446	77.2
Agriculture, animal husbandry, fishermen & hunters	1,342	16.5	6,776	83.5
Production workers & labourers	11,924	5.5	204,952	95.5
Total	147,752	21.5	540,694	78.5

Note : K=Kuwaiti; N.K.=Non-Kuwaiti

SOURCE : *Labour Force Sample Survey; Primary Results*. Central Statistical Office, Ministry of Planning, Kuwait. March 1988 (In Arabic).

foreigners, whereas administrative, clerical and teaching post* had far less foreigners⁸

III. Migration Model for Kuwait

As stated before, the migrant population by individual nationality in Kuwait is available till 1975 census. According to 1975 census data, there were only 15 nationalities, besides Palestinians/Jordians, which had more than 1000 migrants in Kuwait. These countries were Egypt, Iraq Syria, Lebanon, Saudi Arabia, Sudan, UAE, Oman, North Yemen and South Yemen among Arab countries and Iran, India, Pakistan and United Kingdom among Non-Arab countries. Thus only these 15 countries are considered for the model⁹.

The migration model consists of two components : one concerns the adult male migrants aged 20 years and above, almost all of whom are in labour force and the other comprises female migrants and infants, children and other males below 20; it includes all 'dependents' and female workers. The main reason for considering these two components of migrant population separately is large variation in the sex-composition of migrants of different nationalities (Table 3) and their labour force participation rates (Table 4). Thus on the basis of these considerations, the two-stage model has been suggested.

There are various causative factors which have attracted migrants to Kuwait. Foremost among them could be considered the opportunities for employment, clean environmental conditions, subsidized food stuffs, free medical aid and schooling, facilities to purchase certain goods (eg. VCR, Colour T.V., Cars) often out of their reach in their home countries. The linear regression model attempted in this study hypothesizes that 'voluntary' migration to Kuwait is a function of many (socio-economic, demographic and health-related factors in Kuwait and at home.

This linear regression model considers 13 likely causes of migration (independent variable). The model for adult male migrants is :

$$M_i = A + b_1 B + b_2 C + b_3 D + b_4 E + b_5 F + b_6 G + b_7 H + b_8 U + b_9 V + b_{10} W + b_{11} X + b_{12} Y + b_{13} Z + e$$

whereas M_i = No of male (20 + years) migrants in 1975 from country i is the dependent variable.

B = Life expectancy at birth in country(i) during 1970-75

C = Infant mortality rate in country (i) during 1970-75

D = Percent urban population in country (i) during 1970 75

E = Percent of population in country (i) with access to safe water during 1970-75

8. Teaching as an occupation is considered particularly suitable in view of the sex segregated work setting it permits (Alessa, 1981).

9. Trie Pileitiaians/Jordinans are excluded because their migration to Kuwait was mostly "involuntary" because of political factors and other special circumstances.

- F — Radio receivers per 1000 population in country (i) during 1970-75
- G = Television receivers per 1000 population in country (i) during 1970-75
- H = Physicians per 10,000 population in country (i) during 1970-75
- U = General hospital beds per 10,000 population in country (i) during 1970-75
- V = Annual growth rate in labour force in country (i) during 1970-75
- W = Difference in per capita income of country (i) from that of Kuwait 1970-75 (in US\$)
- X = Natural logarithm of the distance between the known centre of out-migration of the country (i) and Kuwait
- Y = Adult literacy rate in country (i) during 1970-75
- Z = Daily per capita calorie supply in country (i) during 1970-75

Distance is not entered linearly as costs of moving from a country to Kuwait is not a linear function of distance, Rather more cost is involved in packing and re-settling than on actual travel. By using natural logarithm of distance, it is assumed that costs per unit of distance fall off rapidly as the distance increases.

In the second regression model for 'dependents' which consists of the rest of the population of foreign nationalities other than adult (20+) males, the form of the equation is the same involving all the 13 independent variables, but here, the dependent variable M_i' , denotes the 'dependent' population of a country i in Kuwait in 1975.

Correlation Matrix

The simple correlation coefficients between independent variables and the dependent variables, M_b and M_i' are shown in the correlation matrix (Table 7). The correlation matrix shows that some of the independent variables are highly inter-correlated creating the problem of multi-collinearity. For instance, the infant mortality rate (C) and the life expectancy at birth (B) which are both mortality measures, have a simple correlation co-efficient of ($-.90512$). Similarly the two health facilities measures of Physicians/10,000 population (H) and General Beds/10,000 population (U) are highly correlated with $r = .84404$. Also the two mass media and information measures of TV/1000 Population (G) and Radio receivers/1000 population (F) have high correlation ($r = .93694$) between themselves. For this reason, only one variable from each of the three pairs of these independent variables was considered for step-wise regression analysis.

TABLE 7-CORRELATION MATRIX

<i>PART 1</i>							
<i>Independent variables</i>							
<i>independent Variables</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>
<i>B</i>	1.00000	-.90512	.74049	.69012	.83104	.77192	.74403
<i>C</i>		1.00000	-.86306	-.87414	-.88748	-.80309	-.83518
<i>D</i>			1.00000	.88295	.80722	.81513	.78267
<i>E</i>				1.00000	.72027	.64770	.81565
<i>F</i>					1.00000	.93694	.73892
<i>G</i>						1.00000	.76258
<i>H</i>							1.00000

<i>PART 2</i>								
<i>Independent variables</i>						<i>Dependent variables</i>		
<i>Independent variables</i>	<i>U</i>	<i>K</i>	<i>W</i>	<i>X</i>	<i>Y</i>	<i>Z</i>	<i>M_i</i> <i>(adult males)</i> <i>(aged 20+)</i>	<i>M'_i</i> <i>(rest of population)</i>
<i>B</i>	.81255	-.17468	-.32438	.21142	.83254	.74250	.11422	.18845
<i>C</i>	-.82355	-.10224	.52815	.01751	-.83483	-.65138	.14293	-.09463
<i>D</i>	.50890	.19996	-.71163	-.15408	.80862	.67205	-.15064	-.01409
<i>E</i>	.68515	.34912	-.75303	-.25047	.64116	.68408	-.16291	.05708
<i>F</i>	.90621	-.12835	-.46759	.23515	.85394	.60253	-.34450	-.19189
<i>G</i>	.96170	-.21847	-.57526	.29818	.85467	.65979	-.38495	-.34644
<i>H</i>	.84404	.02585	-.66579	.04692	.67607	.65491	-.19538	-.06235
<i>U</i>	1.00000	-.31292	-.58301	.33535	.82709	.64996	-.32458	-.25367
<i>y</i>		1.00000	-.28656	-.81889	-.18190	.00433	-.04247	.12134
<i>W</i>			1.00000	.32514	-.36902	-.60922	.41936	.37843
<i>X</i>				1.00000	.20115	.01541	-.07462	-.16630
<i>Y</i>					1.00000	.61813	-.00833	.04575
<i>Z</i>						1.00000	.14348	-.03246

From the correlation matrix, it is also observed that the independent variable (W) which connotes the difference in per capita income of Kuwait and the country of origin is the best single predictor of the number of adult (20+) males as well as their 'dependents' belonging to different nationalities in Kuwait. This variable far outweighs the other variables which concern more with social, demographic and health related aspects in the countries of origin of the migrants. There may be several reasons for this but the most probable could be the strong urge on the part of migrants to improve their social, economic and financial standing in their own communities through more earnings and savings. To achieve this, they migrate to a more affluent and prosperous country with ample employment opportunities. The flow of information on employment economic and other conditions in Kuwait by the return migrants from Kuwait to people of their own communities must have acted as a strong 'pull' factor for them to migrate to Kuwait.

Linear Regression Models

The results of step-wise regression are shown in Tables 8 and 9. Encouraging results are obtained after entering five more variables besides W (difference in per capita income of Kuwait and the country of origin (i)). In the model for adult (20+) males migrants, 84 percent of variation in the dependent variable is explained jointly by these 6 independent variables. Before entering the sixth variable Y (literacy), the results had shown that only 73 per cent of variation in the dependent variable could be explained by the 5 variables together. The analysis were stopped after 6 variables as it was felt that the model would

TABLE 8—REGRESSION RESULTS FOR DEPENDENT VARIABLE M_{it} MALE ADULT (20+) POPULATION, OF MIGRANTS BY NATIONALITY IN KUWAIT

<i>Independent Variable</i>	<i>Regression Coefficients</i>	<i>S.E. of Reg. Coeff.</i>	<i>T=Test (d.f=8)</i>	<i>Prob</i>
W (Income)	3.0220	1.8408	1.642	.13928
G (T.V)	-196.5080	60.3152	-3.258	.01156
U (Hospital Beds)	250.9807	234.3868	1.071	.31550
X (Distance)	-1759.9433	7808.6123	-.225	.82733
Z (Calorie)	17.8391	4.7857	3.728	.00581
Y (Literacy)	325.4380	139.5059	2.333	.04795
Regression Constant = — 68235.6763				
R Squared = .8389		Multiple R^2 = .9159		
F - 6.943 with 6 and 8 d.f (P = .007676)				

TABLE 9—REGRESSION RESULTS FOR DEPENDENT VARIABLE M<, 'REST'
OF POPULATION OF MIGRANTS OTHER THAN ADULT MALES (20+)
BY NATIONALITY IN KUWAIT

<i>Independent Variable</i>	<i>Regression Coefficients</i>	<i>S.E. of Reg. Coeff.</i>	<i>T. Test (df-8)</i>	<i>Prob</i>
<i>W</i> (Income)	3.8329	3.2084	1.195	.26644
<i>G</i> (T.V)	-298.0605	105.1277	-2.835	.02197
<i>U</i> (Hospital Beds)	677.9178	408.5295	1.659	.13562
<i>X</i> (Distance)	-12263.0198	13610.1883	-.901	.39389
<i>Z</i> (Calorie)	9.5313	8.3414	1.143	.28618
<i>Y</i> (Literacy)	477.1065	243.1548	1.962	.08537

Regression Constant = -29152.8510
 Multiple *R* = .8374
R Squared = .7012
F = 3.129 with 6 and 8 d f. (*P* = .0695)

lose simplicity and further increment to R^2 would be marginal. Regarding the second model for 'dependents' in migrant population, the results indicate that these 6 variables jointly explain 70 per cent of variation in the dependent variable.

The six independent variables in both models are *W* (Income), *G* (TV), *U* (Hospital beds), *X* (Distance), *Z* (Calorie) and *Y* (Literacy). Among them, only *G* and *X* have negative regression coefficients. The negative regression coefficient for distance variable is understandable as distance generally increases costs of migration, hinders accessibility and inter-communication. But the negative regression coefficient for variable *G* (TV)/1000 population, needs further enquiry in the inter-relationship between this variable and migration. In the case of other variables, positive regression coefficients for *W* (per capita income difference) and *Y* (literacy rate) are as expected. Positive regression coefficients for the variables *V* (Hospital beds/1000 pop) and *Z* (per capita daily calorie supply) perhaps indicate that a well-fed and medically cared community is in a better position to send more of their people out to earn and improve their economic status than other more disadvantaged sections of their communities of origin.

IV. Conclusion

The two stage model approach to describe the stock of migrants from other countries to Kuwait has helped us in understanding the migration process.

As in other countries the migration into Kuwait is regulated by the Government of Kuwait through work and residence permits issued for a specific period. The Palestinians/ Jordians were however permitted under special political circumstances after the creation of Israel and subsequent Arab-Israel wars. In spite of regulated migration into Kuwait, the study shows that the migrant stock in Kuwait by nationality can be explained on the basis of classic socio-economic and demographic variables.

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