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***Impacts of Population Growth on Economic
Growth and Sustainable Development***

A Thesis

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List of Abbreviations	
ACF	Autocorrelation Function
ASFR	Age Specific Fertility Rate
BMF	BMF Gallup Media
CBD	Convention on Biological Diversity
CBR	Crude Birth Rate
CDR	Crude Death Rate
CBJ	Central Bank of Jordan
CCD	Convention to Combat Desertification
CFI	Comparative Fit Index
CDC	Cairo Demographic Center
CPI	Consumer Price Index
CSD	Commission on Sustainable Development
DHS	Demographic and Health Survey
ESI	Environmental Sustainability Index
EVM	Errors-in-Variables Model
FAO	Food and Agriculture Organization
GDI	Gender-Related Development Index
GDP	Gross Domestic Product
GEM	Gender Empowerment Measure
GNP	Gross National Product
GNDI	Gross National Domestic Index
GOJ	Government of Jordan
GWH	Giga Watt per Hour
IFI	Incremental Fit Index
IMF	International Monetary Fund
ISHC	Industry Specific Human Capital
I.S.S.R	Institute of Statistical Studies and Research
IUSSP	International Union for the Scientific Study of Population
IWRM	Integrated Water Resources Management
JFS	Jordan Fertility Survey
JPFHS	Jordan Population and Family Health Survey
L.E	Life Expectancy at Birth
LPG	Litter per Gallon
MCM	Million Cubic Meters
ORC MACRO	MACRO International
PACF	Partial Autocorrelation Function

List of Abbreviations	
SEM	Structural Equation Model
TAI	Technology Achievement Index
TFP	Total Factor Productivity
TFR	Total Fertility Rate
TLI	Tucker-Lewis Index
UN	United Nations
UNFCCC	UN Framework Convention on Climate Change
UNRWA	United Nations Relief and Works Agency for Palestine in the Near East
WTO	World Trade Organization

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CHAPTER ONE

Introduction

1.1. Introduction

Population and development usually used to study the consequences of population growth on the development of socioeconomic, human welfare, and natural environment. A major strain of the literature, which lies outside the modern demography argues that population growth, has highly adverse consequences on human welfare and environment. Demographers and other researchers have questioned the logic and evidence offered by the population alarmist school. The revisionist perspective finds generally modest effects of population growth on economic growth in developing countries (Hirschman, 2004).

For decades, economists and social scientists have debated the influence of population changes on economic growth. Three alternative positions define this debate: population growth restricts, promotes, and is independent of economic growth. Proponents of each explanation can find evidence to support their cases. All of these explanations, however, focus on population size and population growth. In recent years, the debate has given insufficient attention to a critical issue, of the "age structure" for the population, which can dramatically change fertility and mortality.

Since the Second World War, the developing countries have been experienced a "demographic transition", which means a world-wide process of demographic change, and describes the interaction between birth and death rates in their transition from very high to very low rates, or in other words it is the transformation of population from conditions of short life expectancy and large families to ones of long life expectancy and small families.

Economic behavior and the needs of people change from one stage of life to another. Nations with high proportion of children are likely to devote a high proportion of resources to their children's care, which depresses economic growth. By contrast, if most of a nation's populations are in working ages, the productivity of this group can produce a demographic dividend of economic growth, assuming that the policies will take advantage of this dividend. The combined effect of this large working group on health, family, labor, financial and human capital policies can affect the cycle of wealth creation. In

addition, the effect of a large proportion of an elderly population will be the same as the effect of a large proportion of young people.

Historically, population and living standards grow at the same time. However, in many developing countries, the economy grows very slowly in the recent past. Many economists believe that government institutions and policies are responsible for some countries' slow growth, and thus institution reform would increase economic growth in these countries (Johnson 2004).

At the same time, economists believe that a declining share of children in population can bring several economic benefits. Thus, the economic effects of demographic change in developing countries appear highly subject to these countries' future institutions and policies (Johnson 2004).

Changes in population structure have surely economic implications. As a high birth rate cohort enters the active age, which lies between 15 and 64 years of age, the following trends may be noticed. The potential labor force will expand when this generation enters the active age and become small gradually as high birth rate cohorts reach retirement age and are replaced by smaller cohort.

The ratio of working persons to the total population follows the same pattern: first increasing then decreasing as the marked rise in the number of older people relative to those in the age 15 to 64 over compensate the decline in the number of persons less than 15.

This relationship between active persons and dependent because of age is relevant in economy. There is high demand of productive activity on one hand, on the other there are fewer young and old dependent persons, so there will be a suitable ground for saving and investment. This is a unique opportunity for growth in many developing economies, which must be utilized by adopting the right policy approach.

If these economies fail to adopt the right policy, then the opportunity may be the reverse of the effect.

The demographic window represents the "bridge" between a young and less developed population - high fertility and low life

expectancy which witness an old demographic regime (and often also socio-economic backwardness) - and an older and more developed population - widespread and successful birth control and long life expectancy. The same period can be perceived as a one-off opportunity from the point of view of economic growth and development in general: the absolute and relative number of potential income producers and savers should favour both wealth creation and accumulation (Birdsall and Sinding, 2001; Merrick, 2002). This would occur because greater resources would not be addressed to "unprofitable" investments, which are large and essential both in societies with a large number of elderly people and also in societies with a great number of youths. Hence, economic policies decisions are fundamental in order (Golini and Marini, 2005).

Population growth and urbanization are repeatedly implicated in environmental change. Their impact is often represented as strongly negative. At the same time, these demographic phenomena and their links to environmental outcomes are usually characterized in highly aggregated ways.

In Jordan, over the coming years, decision makers need to create policies that deal with demographic change in an appropriate way. Therefore, they have to be aware of changes that have occurred in the past and understand what will occur in the future. Therefore, this study will emphasize the impact of demographic changes, economic development and sustainable development.

1.2. Research Scope

This research will shed light on country of Jordan in the period 1979–2025. This period has been chosen because the developing factors take a long time to be seen, and because it came after the Arab Israeli war in 1967 and Palestine's occupation, which caused large flows of refugees to enter Jordan, but by 1979 the society of Jordan had settled down.

1.3. Country Background

Jordan is a small country with very few natural resources; its social and economic wellbeing have been intricately tied to its relations with neighboring Arab countries in terms of population

movements, and flows of trade and finance. With a population of about 5,350 million, it is similar in size to Lebanon and Palestine (West Bank and Gaza), but much smaller than Egypt (about 82 million), Syria (16 million) or Iraq (23 million). In per capita terms, JD 1785.275 in year 2006, Jordan is classified as a lower middle income economy.

The Hashemite Kingdom of Jordan lies approximately at the geographical heart of the Middle East, North Africa and the Muslim states of Central Asia. Bordered by Syria to the north, Iraq to the north-east, Saudi Arabia to the south-east, and Palestine to the west, Jordan is accessible by road from all of these lands. Its capital is Amman which lies in 19 hills or mountains; it has been the capital of The Hashemite Kingdom of Jordan since the early twentieth century. More than the centre of government, it is also a bustling, modern city that features many fine hotels, restaurants, art galleries and museums. Visitors can browse the old gold *souq* or shop at modern boutiques offering impressive local handicrafts and quality goods from abroad.



Located about a three-hour drive (260 km) south of Amman, the Nabataean city of *Petra* is undoubtedly one of the most spectacular archaeological sites in the world. Visitors approach the ruined city on foot, by horseback, or by carriage along a sandy, undulating track, stopping to explore the scattering of tombs carved from solid rock.

1.4. Importance of the study

The importance of studying impacts of population growth on economic growth, sustainable development and the openness of the demographic window in Jordan comes from focusing on the influence of population growth and the socio-economic indicators on different approaches of development, such as, economy, infrastructure, urbanization, and environment, and in the population of Jordan the study will:-

First, emphasize the impacts of the change in life expectancy and the decline in fertility that occurred in Jordan. Increased life expectancy has many economic effects as it can be thought of as a proxy to population health. Moreover, economic theories of mortality are very few and mortality is often seen as an exogenous factor. Fertility in Jordan is declining since 1970 and it is still declining, this will lead to a slowing of population growth. However, 'population momentum' will sustain population growth, even when fertility decline to replacement levels.

Second, since health affects the quality of labor and productivity, so increasing in labor inputs standard have an affect on