

The proportion of expenditure on children to family's income in Saudi Arabia

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Keywords

Saudi Arabia; family income; children's expenditure; children's impact; Saudi families' expenditure; Engel's curve model

Abstract

Saudi Arabia has witnessed enormous socio-economic changes for the last two decades. Due to this, the standard living of most Saudi people has been improved noticeably. Accordingly, that affects on the consumption expenditure of the Saudi family particularly on the children which has been increased substantially. However, no studies with respect to cost of children have yet been undertaken in Saudi Arabia. This study is to estimate the proportion of expenditure on children, to family's income in Saudi Arabia by estimating the cost of children in Saudi Arabia; using Jeddah as a case study. In the study, the cost of children is taken to be money expenditure that is the amount that parents actually spent on their children. The study involves a sample of (1500) respondents from the city of Jeddah. Also, explores attitudes and opinions towards certain topics related to cost of children and the family. The study highlights that cost of children rise proportionately to family income, children age, and their numbers.

1. Introduction

Saudi Arabia is a country that has observed enormous changes in recent years. It has witnessed the development and emergence of a new economic structure. The socio-economic structure has changed to large scale industrial activities; sizable trade; construction growth; improved communications and transportation means (Al-Mtairi Naife, 1985). Analogously, economy and society are inextricably mixed and there is no simple domain of economic knowledge separate from the broader social world into which the child is socialized. In view of, the social conditions influence the system of financial allocation within the household, which then creates consumers with particular orientations towards the economy, which consecutively repeat the existing social organization of the economy (Berti and Bombi, 1988). It is noteworthy that allocation of money to children in the household plays an important role in the formation of citizen consumers in the future (Miller 1987, Pahl 1989).

This study focuses at the consumption behavior of children at school age in Jeddah city. It also estimates the influence the expenditure cost of children in school age on family income. It observes the impact of that cost on the pattern of family consumption and saving. And examining how the influence of cost is increasing with the number and age of children. Also aims to measure the extent of difference in the influence of children with respect to income, and determine the factors influencing the children cost such as (Advertisements, demonstration, and import goods. The impact of the expenditure cost of children can be calculated in various ways. The financial costs can be calculated directly, by adding up the amount spent to feed, clothes, health care, education and entertainment. Indirect costs include life style choices that take children's needs into consideration, such as type and area of housing. Replacement costs quantify the amount needed to replace the labour of child rising. Opportunity costs, calculates the wages foregone by those who care for children (Bradbury, 1994; Joshi, 1990; Lovering, 1998; Whiteford, 1986).

There are a number of methods for calculating the cost of children, the most popular are: Engel's food share method, Rothbarth's adult goods method, Henderson's method, the Gorman-

Barten's method, and Deaton and Muellbauer's method. Each of these methods embodies different definitions of child costs, so that the same empirical evidence can generate quite different estimates depending on the method used.

There is difficulty involved in measuring the costs of children. Such as, it is not possible to segregate many types of expenditure made for the children from those made for the adults in the household (see Lazear and Michael, (1988), Nipa Basu, (1995). So they defining the cost of children are allocation of total private expenditure on children. The cost of children is estimated by comparing the average consumption expenditure of families with children to those without children to determine the child's share of family expenditure. The data used of the study are drawn from a questionnaire, giving a sample of (1500) households.

1. Research Problem

In the last two decades, the socio-economic transformation directly led to various quick changes in the process of development which have an effect on the individual's daily life. These changes have their own negative impacts affecting the life and behavior of the individuals. Among such negative impacts is the habit of increasing or mass consumption expenditure as there is a severe rush towards unplanned consumption by the people in general and by the children in particular. Whereas, the children are easily influenced by advertisements, demonstration, and new technological developments, that drive them towards more consumption and excess. That previously led to the increasing of the cost of children in Saudi Arabia. So, the research problem is about these following assumptions:

- a) Is the expenditure cost of children in Saudi Arabia (Jeddah) holds high percentage in the family budget?
- b) Is the expenditure cost of children affecting the family's consumption?

2. Literature Review

The concept of the methodology of measuring the costs of children through parents' discussion was introduced by:

The study of Lapovsky, Lucie (1981) focused on the annual costs of raising a child in a single-parent household. The costs associated with raising children in single-parent households are higher than in two-parent households because single parents must purchase more babysitting services to receive a given amount of personal leisure time. The marginal cost of the second child is much less than the marginal cost of the first child. Money expenditure consists of out-of pocket direct maintenance expenses for items such as food, clothing, shelter, medical care, education, and other categories (see Espenshade, 1984). This study investigates the money expenditure that parents make on their children, At the high end of the scale, per-child expenditures reach \$135.37 (in 1981 prices), while who have three children would commit an average of \$58.30 per child in expenses to age 18.

Gronau (1988) also followed Rothbarth, where he has divided total expenditure between adults and children to estimate expenditure on children. Lazear and Michael's (1988), theoretical idea was very similar to Gronau's theoretical idea. They used a technique to identify expenditure on adults when there are some families without children. Peter McDonald, (November 1990), estimated the direct costs of children, by the amount of money parents have to spend on their children. The author found that: The costs of children rise with the age of the child. Food, clothing, fuel, and recreation drops from second to fifth ranking as income increases.

According to Rebecca Valenzuela, (winter 1999) the money costs of children can be calculated by comparing the expenditure of families with children to those without children to

determine the child's share of family expenditure. In the end he found the family budget would have to be increased for the first child, by about 18% for two-parent families, and by about 22% for single-parent families. Also the first child has a significantly higher budget requirement of 38% to meet the child's housing needs. The Ann Harding and Richard Percival's (spring/summer 1999) study estimated the private costs of children in 1993-94. The cost of a single child on an average amounted to between 11 and 17% of family income, for two children 20 to 33% of family income and for three children it is about 27 to 48%.

By Richard Percival and Ann Harding (2000). The cost of children is defined in this study as parental expenditure on children up to 17 years of age. The cost of a child was found to be lowest for children in the youngest age group (0-4 year olds). The cost was highest for children in the oldest age group (15-17 year olds). Donald Hirsch, Liz Sutton and Jacqueline Beckhelling (2012), analysis shows for the first time and in a strong way how much it costs to provide children with a minimum level of participation in society, as well as catering for their needs in terms of food, clothes and shelter. Many children's costs tend to rise, which is balanced with the cost of childcare decreasing as the child grows. The abrupt rise in food and childcare prices compared to inflation has made the spending needs change.

Christopher A. Sarlo (2013), reviews current approaches to estimate the child costs. The objective of this paper is to find, at least, a base level of annual child costs that would need to be covered for the healthy development of the child. The cost of raising a child is defined as the cash outlay "marginal" costs that parents spend when they add a child (age 12-18 years), to their household. The cost of children was measured using an expenditure survey that reports private expenditure on the children as a whole (The large survey approach). Engel's method was also used quite effectively by the researcher. Prevailing estimates of the cost of a child for Canada and the United States, currently, tend to be in the range of \$10,000 to \$15,000 per annum. These cost estimates have a distinct middle class bias and do not reflect the reality of raising children in lower income and newer immigrant households. Also, this paper finds that an annual outlay by using the budget standard approach was \$3,000 to \$4,500 per year depending on the age of the child. These cost estimates exclude any savings strategies such as home gardens, sewing and knitting clothing, couponing and taking advantage of sales, own repair and maintenance work in the home, etc. However, parents will spend more on their child depending on such factors as after-tax income, perception of economic security, additional obligations, parenting style, marital situation, and time preference.

3. Significance of the Research

There are important reasons for knowing the cost of a child, particularly in the economic and social policy areas. For example, the estimated proportion of expenditure cost of a child is directly relevant in setting levels of child-support payments following divorce cases. Also, there is a link between family size and the cost of childcare. So that, the purpose is to discover how much is spent by parents on their children's upbringing and to what extent they conform to this theory. Wherefore, estimating the proportion of spending on children helps for future parent's questions about expenses related to a child (fertility rate). A measure of the cost of children is also helpful for the policy makers as to: Estimating the needs for low income families; for drawing the poverty line; Get information about the economic situation of families with children regard to the income distribution; Determine the consumption demand on the goods and services. Moreover, the significance for estimating the cost of children in Saudi Arabia is the high percentage of population under 20. The researcher illustrates that by table (1) and figure (1): The table and figure, notice the percentage of children under (20) is (55.6%), while the

percentage of children in school age (5-19) is almost (39%). And the biggest number is to age group (5-9). However, the segment of population less than 20 years old is of special important since it is considered as one of the most important human resources in any society. That advancement and development take various, main and substantial aspects such as the continuous provision and development of services and fundamental environment in connection with education, health and entertainment; consequently emerged the seriousness and importance accounting the cost of children in Saudi Arabia to face the increase demand of commodities.

Age Groups	Saudis	Percentage	Age Groups	Saudis	Percentage
Less than 1	6306	3.5%	45-49	5810	3.2%
1-4	23863	13.3%	50-54	4296	2.4%
5-9	26705	14.9%	55-59	3354	1.9%
10-14	23176	12.9%	60-64	2603	1.5%
15-19	19763	11.02%	65-69	2004	1.1%
20-24	16871	9.4%	70-74	1478	0.82%
25-29	13913	7.8%	75-79	968	0.54%
30-34	11018	6.1%	80+	784	0.45%
35-39	8919	5%	-----	-----	
40-44	7441	4.2%	Total		

Table (1) Population in Saudi Arabia (2011) Thousand People

Source: SAMA, Annual Reports, 1993-2012

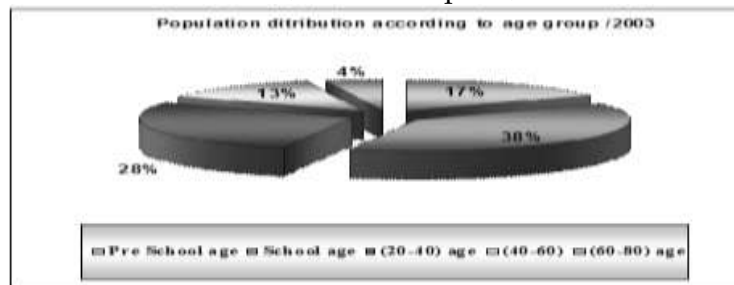


Figure (1) Population distribution according to age group

Many consumption decisions by the families are perhaps actually taken by children requirements. Therefore, children have a strong impact on the consumption demand. Although, the subject of the consumption expenditure of Saudi families and the determination consumption function of the Saudi economy's have received much research and study, inversion the subject of the children's cost and the extent of its effect on the family's consumption and saving, which has not received its due research.

4. *Research Objectives*

The main objectives of this research are:

- (1) To estimate the proportion of expenditure on children to family's income in Saudi Arabia by estimate the cost of children at school age in Saudi.
- (2) To measure the extent of the difference in cost of children regarding income, age and number of children
- (3) To determine the factors influencing the cost of children.
- (4) To determine the effect of the cost of children on family income.

5. **Methodology of the Research**

a) **Hypotheses**

The main hypotheses of the model are as follows:

- 1- The cost of children is influenced by their parents' income. Implies that the costs of children increase with the level of family income.
- 2- The influence of children increases when the number of children increases.
- 3- Families with the same level of income, the portion of cost for children, increases when the number of children increases.
- 4- Families with the same size and composition, the portion of cost for children decreases when the level of income increases.
- 5- The influence of young children less than the influence of older children.

b) **Model**

The costs of children are estimated by comparing the average expenditure of families with children to those without children to determine the child's share of family expenditure. The cost of children is calculated by expenditure costs of children in Jeddah, Saudi Arabia. To evaluate the influence on the family budget based on the additional expenditures incurred by their parents. The estimation of the cost of children will be based on the Engle Curve Model. Also, the study will use "Budget Standards Approach" (Saunders, 1999) to measure the cost of children. Whereupon, this study determines that basic goods and necessity for children "basket" are: (food, clothing, transportation, health and leisure). Therefore, the estimated equation for this research is a quadratic logarithmic percentage share and per capita expenditure:

$$(X_B/F) = \alpha + \beta_1 \ln(C/F) + \beta_2 (\ln(C/F))^2 + \beta_3 \ln F + \beta_4 (N_i) + \beta_5 NA + U$$

Where (X_B) represents the household expenditure share of a basket or group of goods, (C) is the total household consumption expenditures and (F) is the family size. Where, (N_A) is the number of adult in household. (N_i) the number of children clustered, in this study, into three categories according to the school ages: (N_1) is the number of children in elementary school ages (6-11), (N_2) is the number of children in intermediate school ages (12-14) and (N_3) is the number of children in high school ages (15-18) "teenager".

6. Research Limitations

In Saudi society, several major difficulties hindered the research progress. The foremost is the common problem of finding complete and recent statistical data. Also, the data are not available for variable such as: consumption expenditure of family by different between families with children and families without children. This is one reason that why this study was carried out in Jeddah. Jeddah city is the major sea port of the country and the main access to the holy cities and is considered as the main commercial centre in the country. All these factors and others led to development acceleration in the city and made it an attractive centre for a large number of migrants from different parts of the country. Jeddah was and is the major channel for the communication with the outside world. This early exposure has brought with it some cultural changes in the city population. Therefore, Jeddah is historically and economically important. In this sense, Jeddah is in the front-line of house in Saudi Arabia, and what is happening there may well presage likely development in other parts of the country. (AL-Ghamdi, S.Mohammed, 1991).

7. Background of the Research

a) Justification for Studying Expenditure Cost of Children?

The characteristics of the populations have very strong affect on the economy. Many economy activities are related indirectly to demographic characteristics such as population growth, fertility rate, mortality rate and the age structure of populations. Therefore the policy

makers have begun to realize the costs of maintaining families, varying in size and composition, at a suitable standard of living (Farahat Ahmed, 1986).

The table (1-2) illustrates the International Demographic Characteristics trends compared with the important Demographic Characteristics and development changes occurred in the kingdom of Saudi Arabia. The table shows that great increase in the population growth rate in the Saudi Arabia is due to different factors. Firstly, the increase of the fertility rate in Saudi women, that reached to (7.3) during the period (1970-1985), compared with the international average of (4) children for each women. Which further declined to (6.2), in (1995-2000), but the rate is still high compared with the international rate of (2.8) child for each woman.

However, the high fertility of Saudi Arabia, still it produces a large proportion of children and a small proportion in consequence of adults in the economically productive age range almost (55.6) per cent of the population of Saudi Arabia is under the age of twenty . In contrast to a maximum of twenty five to thirty per cent in other developed countries. Also, differences in mortality among countries, whether developed or not, have only a slight effect on the age distribution of the population, specifically the proportion of population under twenty years old. So, the population of Saudi Arabia is very young. (World Bank, 2010). These characteristics of the populations in Saudi Arabia emphasize to important estimation of the expenditure cost of children. Particular, children share a bigger percentage in the populations in Saudi Arabia.

	Year	Saudi Arabia	Arab Country	Development Country	The World
Growth Rate	1975-2000	4.1	2.7	1.9	1.6
	2000-2015	3.0	2.0	1.4	1.2
Fertility Rate	1970-1975	7.3	6.5	5.4	4.5
	1995-2000	6.2	4.1	3.1	2.8
Population Under (15) years	2000	42.9	37.6	32.7	29.9
	2015	38.6	32.2	28.1	25.8
Population of (60) and over	2000	3.0	3.7	5.1	6.9
	2015	4.4	4.6	6.4	8.3
Mortality rate of infants	1970	118	132	108	96
	2000	24	46	61	56
Mortality rate for children Under five	1970	185	204	166	146
	2000	29	61	89	81

Table (2) Demographic Characteristics of Saudi Arabia Nation Compared with other Nation of the World

Source: SAMA, Annual Reports, 1993-2010

Moreover, the age distribution data of the inhabitants, shows that the category under 15 is the most of the different age categories, as illustrated in the previous table and continues to be the highest among the different age categories, representing (42.9) in (2001). It is the highest compared with the rest of the countries in the world. Despite the decrease of the rate to (38.6) nevertheless it represents the highest in the world.

b) Concepts and definitions of what is the cost of children?

There can be no single answer to the question, what does children cost? It is a question that is asked in many different contexts to refer to many different "costs". Browning (1992), draws a useful distinction between four types of question included in the apparently simple one, *viz*: what is the cost of a child? Thus it is illustrated that four distinct questions are being defined for determining the costs of children. These are:

i. The needs question:

How much does it cost for a family with 'children needs' compared to a childless family? Discussion of needs lends itself naturally to prescriptive judgments on how much children cost. In this approach a bundle of goods deemed necessary for the maintenance of a child is prescribed and then their costs calculated.

ii. The iso-welfare question:

How much does a family with children require, for being as well off as a family with no children? As can be clearly seen from the above, the iso-welfare question explicitly considers only the welfare of the parents. Of course, this has implications for the welfare of their children too. The technique for this method imputes the same welfare level to households (families with children and families without children) that have the same level of consumption of goods.

iii. The consumption question:

How do children affect the expenditure patterns of a household? Or how much more do parents spend when their children are living with them (as opposed to before they are born or after they have left home). This involves asking children what they think they need to spend on selected budget items or services (consumption part).

iv. The expenditure question:

How much do parents spend on their children? This is based on a large survey, such as the Family Expenditure Survey, of families on what they actually spend. In this approach the cost of children can be estimated by comparing the expenditure of families with children to those without children. This is done to determine the child's share of family expenditure.

c) The two main methods of calculating the cost of children:

The most popular methods for calculating the cost of children are: Engel's food share method, Rothbarth's adult goods method. Each of these methods embodies different definitions of child costs, so that the same empirical evidence can generate quite different estimates depending on the method used.

(1) Engel's Food Share Method:

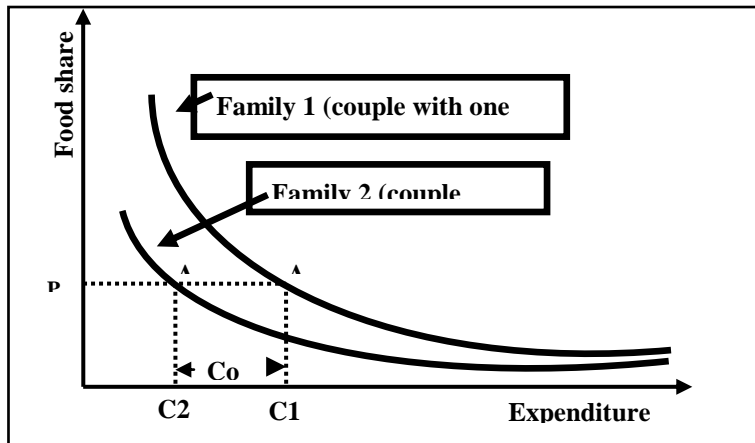
The first most commonly used method was suggested by Engel (1895). The observation suggested that the share of food could be used as an indirect indicator of welfare. Thus, according to Engel's methodology, a household is considered to be at the same level of welfare, before and after the birth of a child, if it is spending the same share of its budget on food. His method rests on the supposition that the standard of living of adults is correctly indicated by the share of the household budget committed to food. Given this, the cost of a newborn child can be measured by calculating the difference between a household with one child and a household with no child. The plausibility of Engel's assumption seems to be based on the empirical evidence that:

- i. For households of the same demographic composition, the food share varies inversely with income or total expenditure (Engel's Law).
- ii. For households with the same income or total expenditure level, the food share is an increasing function of the number of children. (Deaton 1981, Deaton and Muellbauer 1986, Conniffe 1992, Van Praag and Warnear 1997, Banks and Johnson 1993, Murthi 1994, Lyssiotou 1997).

Figure (2), shows explicitly the calculate child costs. At expenditure level C1, the food share of total expenditure of a couple family with a single child (Family-1) would be PF1 (point A1). A couple without children (Family-2) would have the same food share at expenditure level

of C2 (point A2). Thus, the methodology suggests that the cost of the child in (Family-1) is C1-C2.

Clearly, if the assumptions underlying this method are reasonable and can be accepted, it has several advantages. These have been summarized by (Van der Gaag, 1981) as:



Source: Deaton Angus and John Muellbauer, 1980.

Figure (2). Engel method to calculate the cost of children

- 1) The inherent plausibility of the measure given that food needs is likely to have first call on the incomes of most families.
- 2) It is a measure that is easy to estimate.

However, the assumptions underlying the use of an Engel estimator to calculate the cost of children have attracted a range of criticisms. One is that the main argument used in its favour (that is, basic needs are met first from a family's income) should logically see it extended to also include other basic necessities, such as housing, clothing and transportation. Arguably, doing so should better establish the link between relative household consumption and relative well being (Van der Gaag, 1981). So, Engel's cost of a child is a special case of a more general method known as the *iso-prop* (IB) method (Browning 1992, Blackorby and Donaldson 1996). According to the *iso-prop* cost function, the budget shares independent of demographic characteristics and prices.

The model used by Prais and Houthakker (PH) (1955) was the first attempt to generalize the model of Engel to permit the effects of demographic composition to vary between commodities. Under this model it is assumed that the consumption of particular commodities in different families will be influenced by both a commodity specific equivalence scale, and a general income scale. Afterwards Barten (1964) model was used; it also introduced commodity specific equivalence scales to deflate commodity quantities for different family types. Rather, the different commodities in different family types have an effect akin to changes in the prices of those goods.

(2) Rothbarth's Adult Goods Method:

One of the criticisms of the use of the Engel estimator in estimating the cost of children holds that the best measure should be one that is related to changes in the consumption of parents. Essentially, the cost of a child is the variation in the previous consumption of their parents, all else having remained the same. This suggests a measure that estimates the proportion of family income append on adult' goods (Williams, Price and Venohr, 1993). Such a method was known as the Rothbarth method (Erwin Rothbarth, 1943). So, the other equally famous measure of the cost of children is Rothbarth's (1943).

Practically, the only difference between Rothbarth models, to the Engel model is that the measure used to establish comparable household living standards is the level of expenditure on a particular good rather than its share of total expenditure. Rothbarth's model became very popular and has been used by several (See Henderson '1949-50 and 1950-51', Espenshade 1973, Nicholson 1976, Lazear and Michael 1988, Gronau 1991). This method assumes the total expenditure to be the absolute amount spent on adult goods. He identified his estimate of child costs by prior selection of a group of adult goods, the total expenditure on which correctly indicates adult welfare. In other words, the Rothbarth scale is based on the assumption that the welfare of an adult is directly linked to the level of expenditure on "adult goods". This implies that the consumption preferences of parents are separable from those of children. Therefore, a couple with children would have to receive compensation in order to restore the level of expenditure for adult goods that the couple would maintain during situation without children.

In this methodology the indicator of utility is the consumption of a set of strictly adult goods. Consumption by adults is not directly observable from a budget survey. However, there are certain commodities, like alcohol, tobacco and adult clothing that can be safely assumed to be consumed by adults. If a family spends the same amount on strictly adult goods before and after the birth of a child, it is assumed to be at the same level of welfare in both situations. Given this, the Rothbarth equivalence scale is derived as the ratio between the expenditure of households with the same share of adult goods.

Finally, in empirical studies, the cost of child can be measured by calculating the difference of the adult goods between a household with one child and a household with no child. Figure (3) shows how expenditure on the adult goods is used to calculate child cost. In this instance, the expenditure curves rise with the assumption that, as family expenditure increases, so will their expenditure on adult goods. As well, it can be seen that the expenditure curve for the family with no children lies above the curve of the family with children. This reflects the method's assumption that the additional costs associated with the presence of children will result in less expenditure by adults on goods that are solely for their consumption. At expenditure level C1, the expenditure of a couple with a single child.

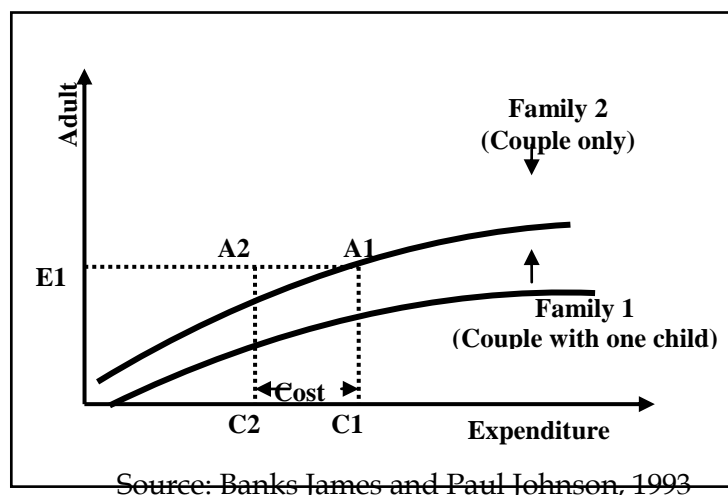


Figure (3). Rothbarth method to calculate the cost of children

(Family 1) on adult goods would be E1 (point A1). One without children (Family 2) would have the same expenditure on adult goods at a level of C2 (point A2). Again, the cost of the child in family (1) is estimated as C1-C2 (Banks James and Paul Johnson, 1993).

Subsequently, in the special case that children consume only food, and non food goods are related as adult goods. Deaton and Muellbuer (1986) show that Engel scales are greater than the Rothbarth scales. According to these authors, if a monetary compensation for the birth of a child is given on basis of the Rothbarth method so that the initial level of expenditure for adult goods is restored, the amount of total disposable expenditure increase but the level of non food expenditure remains unaltered. It follows that the food share increases in relative terms.

Moreover Rothbarth and Engel scales are based on the observed consumption of a single good from which we deduce the general welfare level of the household. For this reason, Deaton and Muellbuer (1986) show that Engel method will overestimate the cost of children and the Rothbarth method underestimate the cost of children.

As a consequence, the reason to be Engel method provides an overestimate of the cost of children and Rothbarth method provides an underestimate of the cost of children are not identical across different commodity groups, demographic composition and changes in the prices {Deaton and Muellbuer (1986)}. Such as that, the equivalence scale researcher were development the Engel method or Rothbarth method for estimate the cost of children, by included different commodity groups, demographic composition and changes in the prices.

d) **Different approaches for measuring the cost of children:**

There are different approaches that have been used to measure the cost of children (see Peter McDonald, 1990).

i. **The Large Survey Approach:**

This is based on a large survey on what families actually spend, such as the Family Expenditure Survey. In this approach the cost of children can be estimated by comparing the household expenditure of a couple with children with that of a couple of the same age without children who have an equivalent standard of living.

ii. **The Opinion Surveys Approach:**

With the opinion survey approach, the researcher simply asks a representative sample of families how much it costs to keep their children. This involves in knowing what they think they need to spend on selected budget items or services according to the ages of children and their number in a family. Little wonder that the opinion survey approach is regarded as being unlikely to produce reliable estimates.

iii. **The Budget Standard Approach:**

A characteristic of this approach is that normative judgment is used to create a basket of goods and services which represent the type of commodities, quantities and quality of family consumption. Budget standards are among the oldest methodological tools in the social sciences. With the budget approach, the researcher specifies a standard "basket" of goods that a child of a given age and sex, would need. This method has two main difficulties: what should be included in the basket, and how much do the items in the basket cost? Despite these problems, the basket of goods approach is likely to be far better and more widely used.

There are a number of processes which are used to arrive at the child's itemized budget.

- (1) The individual item method: This is most commonly used in developing a child's budget standard. It establishes a set of individual child requirements, such as clothing, shoes, etc, leaving adults responsible for them and shared or fixed household costs, to overcome the problems of those basket items.
- (2) The per capita method: This is useful for estimating consumption which is shared by all family members and where the distribution of the consumption for individuals in the family is unknown.

- (3) The differential calculation method: The difference in spending between a childless family and a family with children for similar items of consumption is the extra cost of a child. This extra cost is shared among the children in a family.

iv. The Utility Approach:

In this approach, the cost of a child is measured by comparing utility levels of a household before and after the birth of a child. Since parents are the only ones present in both situations, therefore only parent's utility is considered. Parents get utility from their own consumption and their children's consumption. This approach is always used to estimate the cost of children from the aspect of welfare point.

e) Some Difficulties in Measuring the Cost of Children:

There are some of the difficulties faced the econometricians who trying to measure the cost of children using an expenditure survey that reports expenditure on the family as a whole {see Lazear and Michael (1988), Nipa Basu (1995)} such as:

- (1) Measurement of the apportionment of private goods (example: Who used the bar of soap?)
- (2) Measurement of the apportionment of public goods in the household (example: Which family member got what amount of the amount of the expenditure on the electricity or water?).
- (3) Measurement of the allocation of non-pecuniary resources (such as leisure time or the use of the extra room in the house)
- (4) Measurement of the family externalities (i.e. measurement of the joy or satisfaction to one member from the consumption or gain in wellbeing of another).

8. Findings

Our results are therefore based on the cost of each child was found to rise with family incomes. Thus, the study shows that the cost of a single child averaged between 22-27 per cent of family income, for two children 32-45 per cent of family income and, for three children, about 38-59 per cent (see table 4).

The sample families' opinion indicated the three most important factors that influenced children's expenditure cost were: friends and relatives, followed by TV advertisements, and lastly, parents' consumption habits.

Furthermore, the cost of the first child is the greatest across all incomes, the additional costs of each child diverged as incomes rose. So the marginal cost of the second child was always lower than that of the first, while the marginal cost of the third child was lower even. In addition, more than three quarters (75.9%) the sample families feel the children cause a financial burden to them. On the other hand, 24.1%, a little less than a quarter answered with NO, shown in figure (4). As a consequence, this result emphasizes the assumption of the research. Likewise, the most expenditure aspects of the children are: Fast food came at the first place among the most three expenditure aspects of the children, followed by clothes and toys in the second and third places.

Family income level	Average income	Number of children					
		1	2	3	4	5	6
		%					

1(Bottom)	4310	26.8	45.0	58.6	65.2	68.6	70.0
2	9210	25.4	40.2	50.5	55.2	57.3	57.7
3	13380	25.0	38.5	47.6	51.6	53.2	53.4
4	19380	24.4	36.6	44.6	48.0	49.2	49.2
5(Top)	34640	22.0	31.9	38.1	40.6	41.5	41.3

Table (4) Estimated average costs of children, as a proportion of income, by number of children and gross family income quintile

Family income level	Average income	Age of Child group		
		(6-11 years)	(12-14 years)	15-18 years
		%		
1(Bottom)	4310	23.9	27.3	29.0
2	9210	23.1	25.7	26.4
3	13380	23.0	25.2	25.7
4	19380	22.5	24.5	24.8
5(Top)	34640	20.5	22.0	22.1

Table (5) Estimated average costs of a single child as a proportion of total family income, by age of child

9. Perception of Cost of Children

Regarding child consumption, sample families were asked whether children cause a financial burden on them. More than three-quarters replied (yes), a percentage of 75.9%. On the other hand, 24.1%, a little less than a quarter, answered (no). This is shown in Table 6. As a consequence, this result emphasizes the assumption of the research.

Children Constitute high cost	Frequency	%
Yes	1138	75.9
No	362	24.1
Total	1500	100.0

Table (6) Perception of Cost of Children

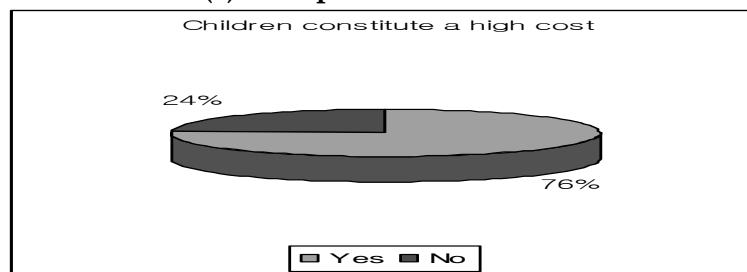


Figure (4) Children constitute a high cost

10. Contribution of Research

With increased mobility and expansion of opportunities stemming from the processes of urbanization and industrialization, people give more attention to timing and planning their lifestyles. One of the most important reasons for looking at the intra-household allocation of resources in Saudi Arabia is because children's expenditure cost is important. Children consume some of the commodities purchased by the household, they receive care and domestic services provided by their parents, and receive services directly provided or subsidized by the government (for example, education and health).

Estimates of the cost of children in Saudi Arabia may be used to assess the additional costs faced by parents in families with children compared to other family types, and the relative assistance that the government provides to families with children compared to those without. Other possible uses include assessing the appropriateness of the current child, providing budgeting advice to families with children, and investigating poverty and the living standards of families with children. Furthermore, this study is the first quantitative examination the proportion of expenditure on children to family's income in Saudi Arabia by estimate the cost of children in Saudi Arabia.

11. Implication of Research

a) Implications of Cost of Children for Families

How might families use cost estimates in their decisions about having children? Much family decision-making is shaped by the environmental settings in which the family functions. So estimates of the cost of children may be used to ensure that families have enough income to maintain an adequate standard of living, be able to live with dignity in our society, and that the costs of children are fairly distributed among those who receive the benefits of children. However, estimates are highly contentious in the assumptions on which they are made, and the reliability of the estimates. Estimates also vary greatly, depending on the components that are included, and it is therefore important that estimates are clear about what costs they do or do not include.

b) Implications of Cost of Children for Policy Makers:

The cost of children at the micro-level is one of the socio-economic factors which influence other factors at the macro-level and form a whole complex of interacting factors, and are indirectly responsible for changes in fertility level. Some of these factors are levels of education, urbanization, industrialization, modernization, social mobility, and employment of women. Child costs are particularly important, and must be manageable for the government population programmes to improve human welfare. In addition, government education programmes and social security programmes will all affect the cost of children. The justification for these programmes has to be made in terms of their abilities to enhance the quality and standards of living of parents and children alike. In other words, these programmes must enhance human welfare.

It is generally accepted that the social dimension of development should be integrated at the micro level in order to ensure that policy interventions are effectively targeted to the neediest and most vulnerable groups of the population. So the policy exercise has to have the ambition of, firstly, improving knowledge on how to use both approximate and exact estimates of cost of children, and secondly, widening the informational basis for the optimal design of future demand for commodities and services.

12. Conclusion and Recommendation

The economic boom in the Saudi Arabia in the seventies and the tremendous world-wide rise in oil prices had a great affect not only on the dominance of the oil sectors, but on all aspect of the Saudi national economy, furthermore consumption expenditure for Saudi individual's (particularly children). Therefore, this study has estimated the proportion of expenditure on children, to family's income in Saudi Arabia by estimating the cost of children; where the expenditure costs of children were defined as parental expenditures on children up to 18 years of age. The level of expenditure was determined by comparing the average expenditures of couple families with and without children at the same standard of living. The measure of the material standard of living is the proportion of total expenditure spent on a basket of goods that

includes (food, clothing, transportation, health, leisure and education).). The study shows that the proportion of expenditure on children was rise with family incomes. Also found that the proportion of expenditure of a single child averaged between 22-27 per cent of family income, for two children 32-45 per cent of family income and, for three children, about 38-59 per cent.

The researcher suggests the following recommendations: Help children learn the difference between needs, wants and wishes. This will prepare them for making good spending decisions in the future. And encourage the children – from the family and school – to save from their daily pocket-expense and tell them how it is useful in the future. Future studies should continue to explore the estimate of time cost of children in Saudi Arabia, including those of paid or unpaid work, and the effects of time cost on family's income. Further to this, a study of the proportion of expenditure on children for single parent family's income in Saudi Arabia should be a worthwhile undertaking.

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