

Economics of the Family-Household in Marginal Zones of Jordan

Raid AL baqain

Abstract

Recently, household economy has started to gain more attention after a long period of overlooking in developing countries. The consolidation of the rural development process, as a main objective in farming system development, should focus on the role of the household economy in improving the living standard of the farm families. This paper tries to investigate the priorities that the families in the marginal zone of Jordan considered in spending their income. Also, the paper tries to examine the factors that influence the amount of household expenditure. For the latter objective a multiple linear regression model, through making use of a dummy variable, has been applied. It has been found that more than half of the family cash outflow is located under household expenditures. Expenses on food from the market, social occasions and education, comprise more than two thirds of the total household expenditure. The value of food from own production consumed by the family comprises about 40% of the total annual food consumption. In fact this was not the case 10-20 years ago when own production was the main source of food. The change reflects a transition in the development process of farming systems in the marginal zone of Jordan. The empirical results indicate that values of capital owned by the farmer, reflecting his wealth and status within the local community, as well as off-farm incomes have the highest significant influence on how much the family spends. Likewise, the results suggest that less educated and older farmers with large family size have a positive influence on household expenses at a significant level of 2.5%-5%.

Problem Statement and Objectives

Satisfying farm as well as family-household requirements is an important issue that appears heavily on the surface as the farmers make their decisions. This, however, demonstrates the interactions between the farm and family-households' requirements and how complex the system is (see figure 1). The importance of the household economy in the development of the farming system was always given less emphases as a criteria of living standard. Criteria by which living standard is commonly characterized are the supply of food, water, energy, housing, sanitary equipment and clothes. Additional parameters are the degree of satisfaction of demands for education, health, independence and cultural freedom (DOPPLER, 1993b).

However, full satisfaction of the family needs requires a large budget in which farmers with their limited income sources can not manage. Thus, this problem appears to be a continuous one. On the one hand, farmers are usually confronted by issues of a lack of liquidity and cash availability while on the other hand, it is still necessary to satisfy household issues even at a minimum. Finding out how much the farmer spends, on average, on each of the mentioned

criteria and what the factors are that might influence the amount of money households spend are the main objectives of this paper.

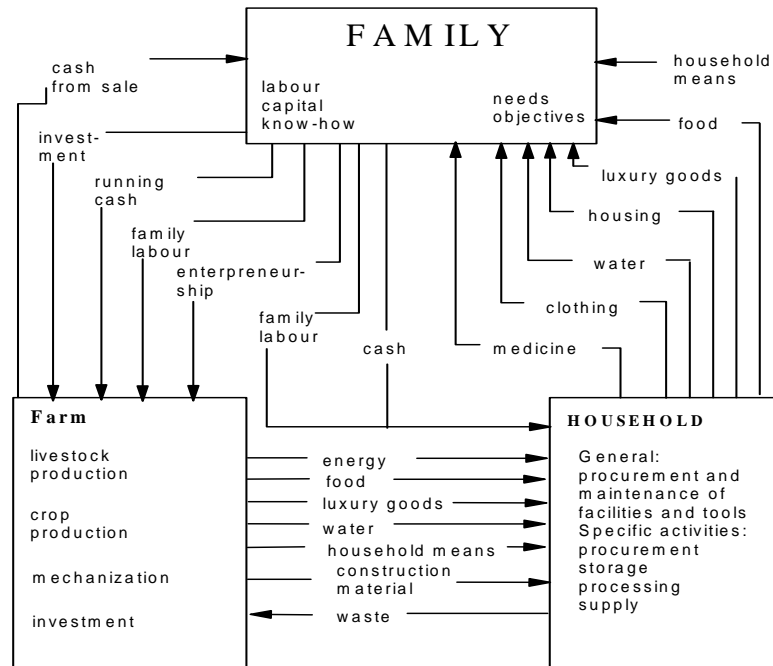


Figure 1. The Internal Relationship in the Family-Farm-Household System.
Source: DOPPLER, 1991, page 16.

Methodology

A cross-sectional primary survey of about 60 farmers from eleven villages, located in the marginal zone of Jordan- Madaba Governorate, was conducted in 1993/1994. The Farming System Approach has been used considering the farm, household and family as one unit. In order to examine the influence of various selected factors on the value of household expenditures, an econometric multiple linear regression model was used. Various hypotheses of relationships will be examined, mainly the relationships between the family-households expenses in the marginal zone with the level of off-farm income, the value owned capital, the size of the family, the age of the farmer and his education level. In this model, the dummy variable was used to handle the qualitative variable, the education level of the farmers, within different categories. The results of the regression analysis will help in testing the significance of the hypothesized relationship and to find out whether such a relationship is a positive or a negative one.

Results

The sources of the family income are generated mainly from off-farm activities and farm-household sales (crop and livestock production). These two components regulate the amount of cash the head of the family allocates to household items. It has been found that off-farm income plays an important role in the stability of the family income in the marginal zone of Jordan (AL-BAQAIN, 1997, MAURER, 1997). Off-farm activities contributed more than 60% to family incomes in the marginal zone of Jordan. This percentage can be more or less, assuming that off-farm income is fixed, depending on how successful the agricultural season is. Nevertheless, off-farm activities are and will be a vital source of liquidity to the farm families in the marginal zone and an important element in improving their living standard.

What the priorities are and how much to spend are usually decided by the family as the decision-making unit in the whole system. Beside farm requirements, the head of the family always tries to satisfy his family needs as well as his social obligations. The latter issues, which include all the expenses for marriages, funerals and other related issues, consume much of the family income budget. As table 1 shows, household expenditures⁵⁰ in the marginal zone comprise around 53% of the total annual family cash outflow. This however, is not all, Maurer 1997, in classifying the different farming systems in the marginal zone of Jordan, goes further than that. According to his figures collected in 1992/93, household expenditures comprise on average 75%⁵¹ of the total families cash outflow for the different farming systems. Even though there are differences between the two results, these figures still denote the high share of household expenditures in the families economy. In comparison to the marginal zone of Jordan, Wachholtz (1996) on the other hand found that farm families in the marginal zone of Syria spent between 22%-32% of the total cash outflow on household items. In contrast to the marginal zone, farm families in the high potential zone of Jordan spent around 38% of their total family cash outflow on household items (et. al AL BAQAIN, 1997).

Table 1. Annual average cash balance per family in US\$ in the marginal zone of Madaba, Jordan 1993/1994

	Mean Value in US\$
Sales of crop production	1590
Sales of livestock production	4738
Off-farm income	4010
Loans for the year 1993/1994	615
Selling capital (i.e. machinery and equipment)	120
Others (rent land or farm machinery)	173
Total cash inflow	11246
Expenses of crop production	1085
Expenses of livestock production	2492
Water, rent for land and interest for capital	1030
Wages for permanent labour	817
Other farm expenses	374
Household expenses	6500
Total cash outflow	12298
Family cash balance (Cash inflow - Cash outflow)	-1052

⁵⁰ The household package includes all the expenses, in cash, on purchased food, water, clothes, health, energy, education, social issues, house maintenance, transportation and communication. The social issues includes death or marriage cases in the family, pilgrimage, invitations etc.

⁵¹ The figures were calculated by the writers using Maurer's analysis of cash affluence in the farming systems of the marginal zone of Jordan, table 41, page 90.

This paper is concerned with household economy and tries to focus on the amount of money that is spent on the different components of household activities. This is helpful in finding out about decision making within the family and reasons behind such decisions. The farm families in the marginal zones of Jordan allocate their household expenditures to both food and non-food items (table 2).

The average value of household expenditures of about 6500 US\$ shows low variation indicating high degree of homogeneity within the farm families in the marginal zone. When disaggregating the sum, purchased food from markets consumes the largest share of the family household budget with about 37% and with low variation as the value coefficient of variance (C.V) denotes. Whereas, the value of food, consumed from own production, is about 1585 US\$ and comprising 40% of the total value of food consumption. The value of subsistence varies from year to year depending on the volume of quantity of food consumed by the family and on the degree of price changes. Nevertheless, these results show that pure subsistence farm families no longer exist in the Bedouin societies. The family food package consists mainly of livestock products like meat, milk and milk by-products, which vegetables and olives on the crop production side. Bread is mostly bought at the market except in those families with large size and/or families who find difficulties in reaching the market daily and who make their bread at home. Sugar and rice are the only items that are bought at the market since Jordan is a importer of 100% of these products.

Table 2. Statistical analysis of household expenditures (US\$/year) in the Marginal Zone of Jordan, 1993/1994

N = 60	Mean	Std	C.V
Food*	2388	874	0.37
Social Issues	1099	2086	1.90
Education	939	1021	1.09
Clothes	509	404	0.79
Water and Energy	337	254	0.75
Transportation & communication.	334	594	1.78
Housing	330	937	2.84
Health	206	424	2.06
Others	358	550	1.54
Total	6500	3892	0.60

* Only purchased food from the market

The social occasions comprising about 17%, but with higher variation, are ranked as the second priority in the family budget. The reasons for this are varied but still mostly related to tradition and culture where social connections are very important for the inhabitants in the rural areas. The social activities in the marginal areas are considered as an obligatory custom. Also, the fact that families belong to larger families, called tribes, does have an influence on such attitudes. How much to spend or to participate depends on the farmer's status in his community. The third important component the families spend their income on is education comprising 15% of the total household expenditure. The high expense rate for education is

due to the many family members who are involved in education. This reveals the importance of education in family priorities.

The Econometrics Model

The empirical part aims at analyzing the factors that influence the level of expenditures within the household. A multiple regression model is used to explain the relationship between the explained variable Y , in our study household expenditure, and a number of explanatory variables X_i . The selected explanatory variables are both quantitative and qualitative ones. SPSS software has been used to carry out the analysis. The following equation represents the linear regression model, which uses the dummy variable. This model would be helpful to test the hypotheses of the influence of each single parameter X_i on Y using the t-test ratio.

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 D_1 + \beta_6 D_2$$

Where,

Y = Value of household expenditure

X_1 = Value of off-farm income

X_2 = Value of capital (measuring the wealth)

X_3 = Number of family members

X_4 = Age of the head of the family (the farmer)

D_1 = Education level of the farmer, 1 if years of education 1-9 year and 0 otherwise

D_2 = Education level of the farmer, 1 if years of education >9 years and 0 otherwise

β_i = Values of the Coefficient of the explanatory variable

α = Value of the constant

Dummy variables, with binary coding 0 and 1, are used in the regression analysis. Since the qualitative variable education has more than two categories, two dummy variables should be introduced into the model to take care of the three levels of education. The three forms of education level are determined by years of study. The first group of farmers have less than 9 years of education. The second group are farmers who have more than 9 years (from secondary stage up to university level) and the last group are the illiterate farmers.

Besides, the variable X_2 that indicates the value of capital owned by the farmers, has been used in this model to reflect the state of wealth of the farmers. The total sum herein includes the value of houses (e.g. family house, farm house, stores), machinery and equipment (e.g. farm equipment, cars, pickup) and finally the value of the animals the farmers own.

Empirical results of the model

The statistical results of the model are presented in table 3 in which all the coefficients show a positive relationship with the explained variable. However, the implied t-ratios are all statistically significant at the 0.5%-5% level, except for the dummy variable D_2 which is significantly different from zero at the 10% level. Of all the explanatory variables, the high t-ratio of quantitative variables supports the hypothesis that the values of owned capital and off-

farm income have more influence on the value of household expenditure than the other factors. The owned capital by the farmers, reflecting their position in the local society, makes sense in suggesting that the wealthier and the higher status the farmer has in the rural society, the more his household expenditure is. Moreover, farmers in such a position always have more obligations in their societies and spend more money on social occasions. Likewise, an increase of off-farm income by 1% raises the household expenditure by 0.26% assuming that all other variables are held constant.

Also the t-value of X_3 and X_4 suggest that the number of family members and the age of the farmers are associated with the level of household expenses at the 5% level. This positive relationship implies that the family size and farmer age are significant determinants in the changes in the household expenditure. On the other hand, the qualitative dummy variable D_1 , as t-ratio indicates, suggests that less educated farmers influence the level of household expenditures at the 2.5% level. Whereas in the case of more educated farmers, the significance is at the 10% level.

The suitability of the linear model (the coefficient of determination R^2), reflecting how much the explanatory variables succeed in explaining household expenditure, is 0.53. Though the value of R^2 is not high, it is still accepted since the data depends on a cross sectional primary survey. However, the significance of the whole model to fit the data can be tested by the F-test value, which is significant in this model at the 1% level.

Table 3. Results of statistical analysis of the linear regression model

Variable	Coefficient	T test value	level of significant
Off-farm income in US\$	0.26	2.52	1%
Value of capital owned in US\$	0.03	3.93	0.5%
No. of family member	220	1.97	5%
Age of the head of the family	96.8	1.99	5%
D_1	2760.4	2.38	2.5%
D_2	1996.8	1.59	10%
Constant	-4766.9		
R^2	0.53		
Adjusted R^2	0.47		
F-value	9.87		1%

Conclusion

Though families in the marginal areas of Jordan have a complete set of objectives that have to be satisfied, the limited budget of those families stands as a constraint in doing so. In these situations, families try to set their priorities in the decision making process. The results indicate that food items are still the main concern issue. This makes sense, as food is the basic need that individuals should satisfy. Expenses on social issues and education are also on top priorities. While the latter is considered an investment in childrens better future for the family

as whole, the first one still satisfies mostly the needs of the head of the family. This conclusion accompanies the results of the empirical part of the study, in which the wealth and the status of the farmer in the society have the highest influence on the household expenditures. This fact still exists in the rural areas since it is highly related to customs and tradition within the big Bedouin tribes. However, values are always undergoing in which farmers might realize in the future that part of this money could be useful in categories such as health, clothing and other requirements that concern the whole family. Therefore, rearranging priorities to produce better results for the families could enlarge the future potential for further improvement in the living standard, thus farming systems.

References

- Al Baqain, R. 1997. *Socio-economic Interactions Between Low and High Potential Agro-ecological Zones and Farming Systems in Jordan*. In Doppler (ed.), *Farming System and Resource Economics in the Tropics*. Vol. 28, Wissenschaftsverlag Vauk Kiel KG.
- Doppler, W. 1991. *Landwirtschaftliche Betriebslehre in den Tropen und Subtropen*. Eugen Ulmer Verlag, Stuttgart.
- Doppler, W. 1993b. *Agricultural Research and Development Towards Sustainable Production Systems*. Definition and concepts of farming systems. In: Natura/Nectar project, Week 1, day 1.
- Maurer, M. 1997. *Dynamics and Potential of Farming Systems in the Marginal Zone of Jordan*. Unpublished manuscript. University of Hohenheim, Germany.
- Wachholtz, R. 1996. *Socio-economics of Bedouin Farming Systems in Dry Areas of Northern Syria*. In Doppler (ed.), *Farming System and Resource Economics in the Tropics*. Vol. 24, Wissenschaftsverlag Vauk Kiel KG.