

Links between agricultural production and women food insecurity in central-eastern Tunisia

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In the Tunisian rural governorate of Sidi-Bouzyd, cradle of the jasmine revolution, the agricultural sector is characterized by the diversity of family farms production systems and of the related technical and economic practices.

The aims of this study is to analyse the links between the type of structure and functioning of the farms, the incomes generated and the women food (in)security in this region.

Material and Methods

The survey is based on a sub sample of 577 women out of which 304 are part of a farming household. Farms are characterized by their cropping patterns, use of family labor, infrastructure, equipment, and finally by their performances, appreciated through the income generated which includes self-consumption. A typology based on the structure and the functioning is realized with FAMD methods (Factorial Analyse on Mixed Data) to characterize the diversity of the farms. Women perceived food-insecurity was measured through 9 questions inspired by the HFIAS (Household Food Insecurity Food Scale).

An analyze in two steps is realized : (1) the types of farm are compared through their production and the women food insecurity and (2) a structural recursive model with two equations is designed to analyze the links between the different components of the relation agriculture-food security.

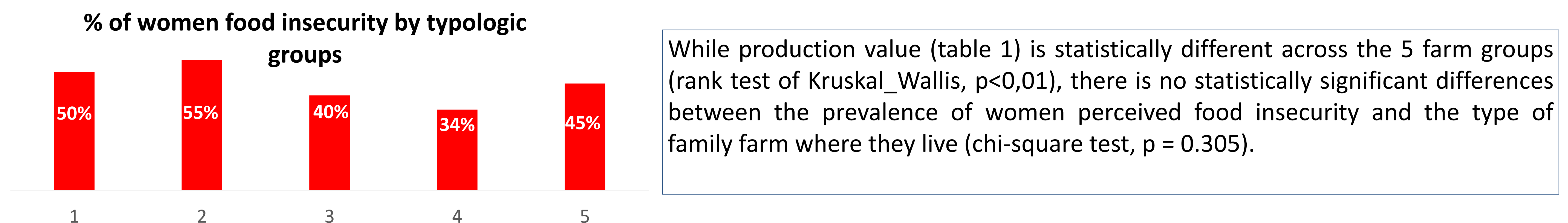
Results

Table 1: Typology of family farms (and mean values of characteristics)

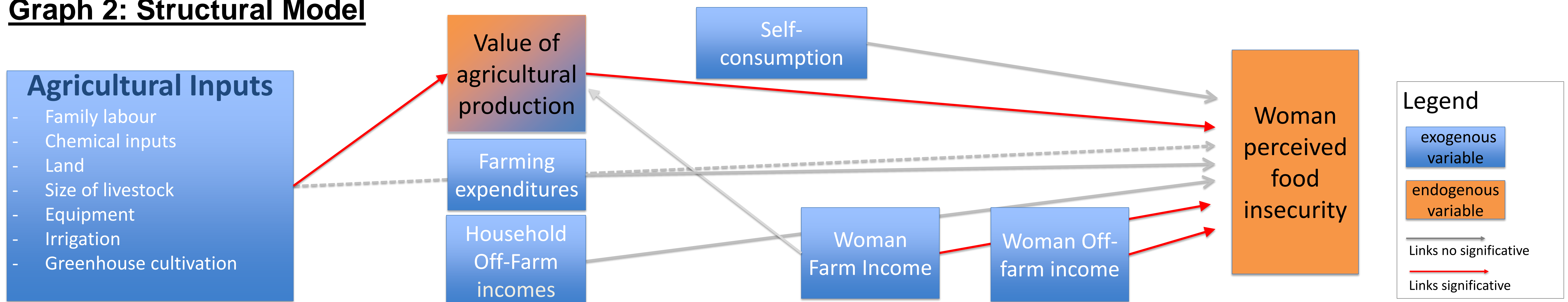
Typologic Groups	Number of farms	Family workers (n)	Area (ha)	Chemical Inputs (dinar/year)	Equipment value (dinar)	Production (dinar/year)
1. Exclusive livestock production	62	1,8	1,1	0	12	6 849
2. Farm with greenhouse cultivation	20	2,7	3,4	3863	1086	17 446
3. Specialized farms	37	2,1	4,0	182	310	4 211
4. Farm with mixed crop/livestock with irrigation	65	2,5	5,2	1107	1095	17426
5. Farm with mixed crop/livestock without irrigation	120	2,4	5,5	15	395	12 385



Graph 1: Comparing groups among production and food security



Graph 2: Structural Model



First step of the model: OLS Regression of agricultural production on agricultural inputs

- Chemical inputs, the land farmed, the presence of irrigation infrastructure have all a significant ($p < 0.05$) and positive influence on the value of agricultural production.

Second step of the model: Logit Regression of the women food insecurity on the value of production and other incomes of the household and woman

- The value of the production has a significant but small effect on the level of food insecurity perceived by women. An increase of 1000 dinar of the value of production reduced the risk of food-insecurity by 10.2% ($p < 0.05$).
- Female off-farm incomes have a more important influence on of women perceived food security (reduced by 61%, ($p < 0.05$)).

Conclusion

Our study shows the complex relation between the agricultural activities and food security. The women food access is only partially covered by agricultural production. These results show the interest to consider, in the pathways linking agriculture to nutrition, women's ability to generate off-farm income.

Reference

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