Macroeconomics and Monetary Economics

Supporting Herbal Agriculture Market in Romania - Desideratum or Reality

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Abstract: Currently, Medicinal & Aromatic Plants (MAPs) sector are growing fast. This article is a trial of designing the challenges and future directions of medicinal herbal market in Romania, taking into consideration the medicinal plants market and individual exploitations. Data was collected from Romanian Medicinal and Aromatic Plants Growers, Manufacturers and Users Association using pretested questionnaire. Data were entered, cleaned and analysed by SPSS version 17. T-test, ANOVA and Regression analysis were carried out and the association was considered significant at p-value less than 0.05. A total of 220 respondents participated in the study, making a response rate of 88%. Our results indicate that the negotiation power of the legal person buyers is significantly bigger than that of the medicinal herbs individual producers and that this type of buyer benefits by significantly diminished prices. The study showed that a more positive attitude of consumers towards medicinal plants products will further strengthen the purchasing intentions, while the status of a bio consumers' consumption will not affect any change on their willingness to purchase medicinal herbs products.

Keywords: consumer behaviour; aromatic plants; herbal medicine; agricultural production

JEL Classification: D49

Introduction

In today's context, of great changes and mutations, both economic and especially natural bio-resources, it is important to know and to be conscious of products with medicinal properties origin (Bečvářová, 2005; Fowler, 2006). All of these phenomena work in favour of those at the heart of the natural medicine pyramid: plant-growers with therapeutic properties (Craig, 1999; Jamroz & Kamel, 2002). Although, with the development of chemistry, a number of synthetic drugs have been introduced into therapeutics, pharmaceutical and pharmacodynamics research states that plant-derived drugs are more biologically accessible products than

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human metabolism than synthetic drugs that sometimes produce harmful side effects (Mentreddy, 2007; Prakash, 2015).

A large number of medicinal and aromatic plant species, spice herbs and fruits are collected from the wild in Romania. As Romania ranks 6th in the number of medicinal herbs on the territory of the country, with more than 800 species, the businesses based on their cultivation have increased over the past two years by 40% (Sammons et al., 2016). Currently, Romania has become in the last years the main supplier of herbs for the countries of Europe, but also for America or Canada (exports increased by about 40% in 2016 compared to 2014). Traditionally, some large Romanian manufacturers secured supplies of raw materials by raising these on their own plantations.

An important statement of agricultural enterprises is that the organizations have a problem of anticipation and adaptation to what happens in their environment of existence and functionality (Horalíková & Zuzák, 2005; Houghton & Mukherjee, 2009; Carrubba & Scalenghe, 2012). By the same token, in the near future, trade structures in Romania will change again. PLAFAR's domination of the Romanian medicinal herbal market has declined continuously over the last couple of years, and there is an increasing number of small and medium-sized private companies competing on the market (e.g. PlantExtrakt). In 2016, Sommer (2016) reiterate the idea that some of the private companies do not contract their own collectors, but buy medicinal and aromatic plant raw material from intermediate traders or small companies.

From the point of view of the competition rules, the behaviour of individual producers of medicinal herbs has certain special characteristics such as: individual herb exploitations are characterized by a low financial power, which increases the degree of dependence on other market participants by implicitly reducing their possibilities of action; the existence of a significant difference between the negotiating power of the purchasers of legal medicinal products and that of the producers of individual medicinal products; in the primary market of medicinal products marketing, the representatives of the demand are traders and processors, whereas in the later stage of the marketing of these products the demand is expressed exclusively by the processors; it is worth noting that there is a link to the direct proportionality between the surface between the cultivated area and the distance to which the producers are willing to sell their production.

The market of medicinal herbal in Romania comes with several issues to be solved: better collaboration between authorities; more efficient policies for official control because of very complex matrices of medicinal herbs, more reliable and efficient laboratory methods of testing are necessary.

This article brings a new look to the actual empirical studies that try to demonstrate the connection between the organization of the medicinal plants sector, the

functioning and the mechanisms of this sector. This investigation provide an image of the competition mechanisms and the econometric estimations create a working instrument for the future analyses of the medicinal plants market for medicinal herbs producers, retailers and distributors.

On the other side, the main aim of this study is to deepen and discover a reality which is more or less known at the level of common sense. The novel European concept "integrated benefit – risk assessment" as well as the American concept of "multidisciplinary approach of food fraud" European Community regulations and national legal framework regarding to herbal products have been developed for the safety of citizens and public health. In order to not mislead consumers, by regulations on labelling, manufacturers of herbal food supplements and other final products from plants classified by law as a foodstuff must not attribute them the action to prevent, treat or cure a human disease or refer to such properties (Novak, 2014).

More importantly, the results of the present study suggest that the more positive attitude of consumers towards medicinal plants products will further strengthen the purchasing intentions while the status of a bio consumers' consumption will not affect any change their willingness to purchase medicinal herbs products.

The rest of the article is organised as follows: Section 2 details the materials and methods development; in Section 3 we present our results and discusses our findings; Section 4 provides concludes and suggests same recommendations as possible ways to improve practical implications.

Materials and Methods

The survey was performed during the first trimester of 2017. The sample was established on the basis of the data provided by Romanian Medicinal and Aromatic Plants Growers, Manufacturers and Users Association (http://ropam.org.ro/). The study utilized data collected through questionnaires adapted from previous studies (Harnischfeger, 2000; Kennedy, 2008; Ranjbar, 2014). The questionnaires were forwarded to 250 medicinal herbs producers, retailers, distributors, receiving back a number of 220 responses (88%).

The questionnaire has four sections. Sections A and B of the questionnaire measured information on the different stages of the medicinal plant production process. Section C evaluated attitudes and purchase intentions of medicinal herbs products. Section D contained items regarding information on sales, transport and storage of medicinal plants. All items were measured on a seven-point Likert-scale with one representing "I totally disagree" to seven representing "I totally agree". We computed the sample size by the formula for simple random sampling technique using the proportion ($p = 0.5$) that provides the maximum sample size, at

95% level of significance, and margin of error (d) of 0.05. Data were entered, cleaned and analysed by SPSS version 17. T-test, ANOVA and Regression analysis were carried out and the association was considered significant at p-value less than 0.05. A total of 220 respondents participated in the study, making a response rate of 88%. The analysis of the responses provided Cronbach's alpha test result of 70 percent, indicating good reliability of the questionnaire.

Results and Discussion

A total of 220 respondents participated in the study, making a response rate of 88%. The age between 31 - 45 years old with 61.4% had most frequency among age group. The most respondents had the knowledge about medicinal plants and were able to correctly describe them, whilst 32% did not. The analysis showed that there was a statistically significant difference between those in medicinal herbs producers group and in the medicinal herbs retailers and distributors ($p < 0.001$). However, there was no statistically significant difference between the two groups in relation to their tendency towards Medicinal & Aromatic Plants cultivation or purchase (Table 1 and Table 2).

Table 1. Description figures about tendency towards Medicinal & Aromatic Plants cultivation or purchase

P values	F	Average of squares	Degree of freedom	variables
<0.001	24.25	410.53	1	knowledge
<0.001	170.69	1804.82	1	trust
0.024	3.57	51.27	1	accessibility
0.06	1.42	26.37	1	price

Table 2. ANOVA between independents variables and tendency towards Medicinal & Aromatic Plants cultivation or purchase

P values	Medicinal herbs producers		Medicinal herbs retailers and distributors		Tendency towards Medicinal & Aromatic Plants cultivation or purchase
	percent	frequency	percent	frequency	
<0.001	0.83	1	0	0	Weak tendency
	31.67	38	45	45	Middle tendency
	67.50	81	55	55	Strong tendency
	100	120	100	100	Total

There was a statistically significant relationship between knowledge and tendency towards Medicinal & Aromatic Plants cultivation or purchase (β = -0.87; p = <0.001).The findings from the ANOVA analysis showed that the participant's knowledge had a statistically significant effect on the tendency towards Medicinal & Aromatic Plants cultivation or purchase. The negative coefficient indicates that as knowledge increases, the tendency towards Medicinal & Aromatic Plants cultivation or purchase decreases. As trust increases, the tendency towards Medicinal & Aromatic Plants cultivation or purchase increase and this could be expressed mathematically as $y = 10.54 + 1.42x$, where x represents trust of the participant; also there was a weak relationship between accessibility and tendency towards Medicinal & Aromatic Plants cultivation or purchase (β = -0.019; p = 0.024). The negative coefficient indicated inverse relationship between two variables (Table 3).

Table 3. Regression coefficients model for independent variables

P values	t	coefficients		
		Standard errors	β	
<0.001	98.41	0.229	12.15	constant
<0.001	-6.61	0.132	-0.87	knowledge
<0.001	28.16	0.206	10.54	constant
<0.001	17.63	0.081	1.42	trust
0.001	26.95	0.486	12.007	constant
0.024	-21.35	0.094	-0.019	accessibility

Therefore, the present analysis shows that the negotiation power of the legal person buyers is significantly bigger than that of the medicinal herbs individual producers and that this type of buyer benefits by significantly diminished prices.

This superior negotiation power can be the result of a superior economic efficiency, which does not justify the public authorities' intervention. Thus, the intervention could generate inefficiencies and could lead to price increase for end-user.

Conclusions

The herbal agriculture producers and processors generally agree that marketing opportunities do exist but there are many problems to be solved and increased government support is clearly needed.

Romania has a great potential in the field of aromatic and medicinal herbs but also in their processing because it is one of the first countries in the EU, in terms of the dynamics of market development and consumption of herbal food supplements. Both in the case of the medicinal herbs bread field and in the case of the medicinal herbs depositing services field, the price forms freely on the market, as a result of the interaction between supply and demand, without the direct intervention of the state in the price forming mechanism.

However, between 2015 and 2016, on the medicinal herbs depositing services field, there were two public interventions in price forming, interventions facilitated by the mechanism of subsidizing the costs corresponding to medicinal herbs depositing. Our opinion is that these public interventions can cause the alignment of the supply bearers' prices, reason for which we consider that the fact that these interventions were not resumed (in the same form) after 2016, is a positive fact.

Major economies of scale are being marketed on the medicinal plants market, and economic operators that integrate several types of sector-specific activities benefit from significant competitive advantages due to this diversification of activity. In terms of tariffs on this market, the analysed period seems to be characterized by a slight upward trend.

The novelty of the research is its application allows determining the complex average annual and maximum future demand of specific types of medicinal plants with limited official statistics. As the result of the approbation of the econometric estimations, the medicinal herbal market of Romanian has been calculated and the results show that there is the more positive attitude of consumers towards medicinal herbal products.

Medicinal plants are, have been, and will continue to be, an increasingly sought-after topic, which translates into a real business opportunity for those who are prepared to accept the challenges of such a business. For Romanians especially because of life conditions and environment, the challenges and future directions of medicinal herbal market in Romania was sustained by a primordial pattern and continue searches.

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