Influence of Socio Economic Factors on Acceptance of Genetically Modified Foods

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Introduction

Genetically Modified (GM) foods are produced from crops and animals where the genes have been altered in that species for a favorable trait. This trait could be favorable to consumers or for farmers (Wachenheim, 2004). GM foods have become quite common in many countries though they are not available in Sri Lanka. Given the rate of usage of GM foods in the world, in near future Sri Lanka also will be using GM foods in the market. Contrastingly, there is a growing concern in consuming GM foods or related products where GM foods are used as inputs. Since there is no scientific proof for the side effects of GM foods consumption, it is always linked with increasing health problems which occur to millions of people daily in the world. Given this context, this pilot study attempts to study the acceptance of GM foods by Sri Lankan consumers if they are introduced to Sri Lanka and more specifically which cohort of Socio-demographic group prefers GM foods (Deodhar *et al.*, 2007; Kimenju and De Groote, 2008). This would support the companies and policy makers to readjust their preferences and policy formulations (Moro and Boccaletti, 2000; Huang *et al*., 2006.

Methodology

A group of 120 Agriculture undergraduates from Sabaragamuwa University of Sri Lanka were chosen for the study. Rather than the general consumers university students are familiar with GM foods and most probably they will be the society in the years to come when GM foods become a common good in the market. Further the present consumers might not be familiar with the GM concepts and interviewing the people with understanding on GM is costly and time taking activity. They are also a subset of consumers in the general market. Further university cohort represents different people from different socio-economic background. Participation was voluntary. Questionnaire included sections on socio-economic factors, Knowledge, awareness and perceptions on GM foods, and their willingness to consume GM foods. Descriptive analysis and non parametric tests (chi square analysis and t tests) were performed to check the relationship between preference for GM foods and socio economic and demographic determinants.

Results and Discussion

Majority of the sample are female (64.4%). About 52% are final year students followed by 32.5% of third year students. Most of them come from Semi urban areas (56.8%) and 27% are ruralites. About 43.2% of the households are earning a monthly income of between Rs. 25,000

to Rs. 40,000. Around 21% of them are getting a monthly house hold income above Rs. 40,000. 56% of respondents think that GM foods are beneficial. If GM foods are introduced in Sri Lanka, 56% say that they will not buy.

Table 1 shows the association between familiarity with GM techniques and factors like gender, income, location/residence and year of study. There exist a relationship between familiarity of GM foods and gender, whereas no relationship with familiarity on recombinant technology and hybrid breeding. As expected all the three statements show an association with year of study. Usually it is expected that with higher education in the sciences field they tend to show much familiarity with subjects like this. Income and residence suggest that there is a mixed result in association with GM foods, Recombinant technology, and hybrid breeding.

Table 01: Chi Square results on Familiarity about GM related techniques

Variable	Grouping variable	Level	Chi Square	Significance Level
Familiarity with Genetically Modified Food	Gender	2	12.142	0.002*
Familiarity with Genetically Modified Food	Year of study	4	16.295	0.012*
Familiarity with recombinant DNA technology	Year of study	4	21.111	0.002*
Familiarity with Hybrid breeding	Year of study	4	15.433	0.017*
Familiarity with Genetically Modified Food	Monthly Income	5	11.769	0.019*
Familiarity with recombinant DNA technology	Monthly Income	5	10.692	0.220
Familiarity with Hybrid breeding	Monthly Income	5	10.147	0.255
Familiarity with Genetically Modified Food	Residence	3	8.060	0.089
Familiarity with recombinant DNA technology	Residence	3	14.548	0.006*
Familiarity with Hybrid breeding	Residence	3	13.444	0.009*

Table 2 depicts the association between gender and perceptions on GM foods. Except statements on a) benefits of GM foods, b) buying nutritionally enhanced food, and c) GM foods can cause damage to health, other statements are not statistically different between male and female respondents.

Table 02: Differences in perceptions on GM foods by Gender

Statements	t statistic	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Heard about benefits of GM Foods	-2.092	0.039*	-0.277	0.132
Like to buy nutritionally enhanced GM foods	-2.037	0.044*	-0.299	0.147
Believe GM foods are more nutritious than normal food	-1.105	0.272	-0.158	0.143
GM foods can cause toxic effects	-0.613	0.541	-0.107	0.175
GM foods could cause allergic reactions	-0.802	0.424	-0.146	0.182
GM foods can damage health	-1.814	0.072*	-0.320	0.176
GM foods are artificial	-0.805	0.423	-0.201	0.250

Table 3 shows the results for the association between willingness to consume GM foods and factors like gender, income, residence and year of study. Gender and year of study suggest that there exist an association between willingness to consume GM foods in Sri Lanka. Neither income nor the residence shows an association between willingness to consume. It was expected that income and place of residence would show an association. As expected year of study was significantly influencing the decisions. Gender was expected not to have any association given the same levels of knowledge provided.

Table 03: Chi Square results for Willingness to consume GM food

Variable	Grouping variable	Levels	Chi Square	Significance Level
Willingness to consume GM foods if they are introduced in Sri Lanka	Gender	2	6.405	0.041*
	Year of Study	4	16.072	0.013*
	Residence	3	1.037	0.904
	Income	5	8.229	0.411

Conclusions

This study is on acceptance of GM foods and Perceptions on GM foods using undergraduate students. Though there are differences in perception Gender and year of study shows an association for willingness to consume GM foods. Income and geographic location did not show an association. Yet it seems that still Sri Lankans are not yet ready to accept GM foods as substitutes for non conventional counterparts. Nearly half of the respondents are not willing to consume GM foods if they are introduced. It is wise for firms conduct thorough market studies before they enter in to the Sri Lankan market. This clearly shows that consumers know the pros and cons of GM foods, but when it comes to purchasing intention they take a step backwards.

References:

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