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**“The Role of Individuals in a Knowledge Based Economy: Analysis  
of Attitudes towards Genetically Modified Products with Health  
Benefits”**

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**ABSTRACT**

With the advent of the information age, individuals now have easy access to medical and health information which is very important in a period when individuals appear to be changing their attitude toward quality, specifically their definition of quality of genetically modified (GM) products. To reduce risk, individuals tend to rely on sources of information with high degrees of credibility to make informed decisions about diet and a lifestyle to promote health.

Various research studies have revealed the health benefits of consuming unsaturated fatty acids. Although the consumption of omega 3 fatty acids is very beneficial, most households consume very little portions of fish (a natural source of omega 3) on a weekly basis. As a result scientists have been conducting research into alternative ways of obtaining dietary omega 3 using different food technologies such as genetic modification. In spite of the potential benefits from such research, scientists and investors have to deal with the concerns of individuals as consumers,

citizens or social activists, which is a source of market uncertainty for the GM product. Market uncertainty in turn has an impact on firms through sales, market share, reputation, management strategy and governance forms used to safeguard exchanges.

When framing the question of individual perceptions, extensive research has been conducted on the role of consumers as end users of GM products. However this research will focus on two other domains in which individuals function that significantly contribute to the debate of the role of individuals in a knowledge based economy. Understandings are shaped by the social representations of the groups to which individuals belong and may result in differences in the cognitive view structures. Such differences could also be observed in the relationship between cognitions and health behaviors across sub-groups. Apart from being end users making purchasing decisions for GM products, individuals function within associations that set industry standards as regulators that define the positioning rules for GM products in the market. In addition, individuals function within the scientific, retail and processing system thus setting the accessibility rules that determine the products that are available for end users to purchase.

The decision to purchase or not to purchase an innovative product is based on factors such as price, perception of health benefit or risk, ethical issues, environmental factors, budget constraint and individual characteristics. Activities that raise consumer perceptions for the firm's brand and product reputation will increase the value of a product to a consumer. Where value to the consumer is represented by the maximum price the consumer is willing to pay for the perceived benefits in an innovative product. When the marginal utility of income is constant, the area under the demand curve above the market price (measured as consumer surplus) gives an exact measure of the willingness to pay (WTP) for a price change (the extra consumption) of a good. The amount the consumer is willing to pay for a good can be considered a representation of the certainty equivalence where the utility of the certainty equivalence is equal to the expected utility derived from the consumption of the good. The difference between the utility of a sure wealth and the expected utility of an innovative product is the utility loss due to uncertainty.

A survey instrument will be used to elicit WTP values and attitudes towards omega3 from the natural source, genetically modified (GM) source, and transgenic source within the positioning, accessibility and purchasing domains. The elicited WTP values will be used as a measure of expected utility to be derived from the use of omega3 from the different sources. The likelihood of an individual approving, producing or purchasing omega3 will be determined as a function of the elicited WTP values, health benefits or risks, ethical issues and other socio-economic factors such as income and price.

The elicited WTP values for the natural source will reflect attitudes and perceptions toward omega3 that represent the risk-less situation while elicited WTP values for the GM source and the transgenic source of omega3 will reflect attitudes and perceptions which have the influence of temporal uncertainty on the *ex ante* WTP values. The difference between the elicited WTP values from the natural source, the GM and transgenic sources will be analyzed and used to estimate a measure of the temporal uncertainty for GM and transgenic sources.

This aim of this paper is to investigate how perceptions and attitudes towards health related decisions and innovative products are framed within the positioning, accessibility and purchasing

domains in which individuals function in. Using willingness to pay for the expected benefits this research will investigate the attitudes and factors that influence the positioning rules established by regulators, accessibility rules by researchers and innovators and the likelihood of purchasing an innovative product with health benefits such as omega3.