OPEN ACCESS Freely available online

ISSN: 2157-7110
Journal of
Food Processing &
Technology

Perspective

Authentication of Consumer Evaluations of Food Production Utilisation of Nanotechnologies

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DESCRIPTION

The socio-cultural and historical contexts that influence people's attitudes toward and acceptance of emerging technologies and their applications is now recognised as an important determinant of their successful implementation and commercialization by stakeholders in academia, industry, and policy communities. The application of nanotechnology in the agri-food sector is not unique in this regard. However, at the time of writing, the literature on social acceptance of food nanotechnology is far more restricted than that linked with earlier, contentious food technologies, particularly the application of Genetic Modification (GM) to food production. The goal of the study is to trace issues related to consumer perceptions of and attitudes toward technology applied to food production, analyse this by checking what is known about consumer perceptions of and attitudes toward nanotechnology applied to agri-food production in particular, and extrapolate to existing and emerging examples of nanotechnology applied in the agrifood sector. Various academics and other key stakeholders have argued that while the application of agrifood technologies as a whole may not be automatically rejected by the public, societal acceptance or rejection of specific applications is shaped by how specific characteristics of agrifood technology applications are viewed in relation to the values held by members of society.

This may include, for example, the degree to which applications are perceived to be risky or beneficial, either to individuals or society as a whole, as well as the degree to which the regulatory context in which the technology is embedded promotes legislation and governance practises that optimise consumer and environmental protection. Dynamic socio-cultural shifts in societal values, such as emerging consumer preferences for environmentally friendly production systems, localized food production, and improved animal welfare standards, add another layer of complexity to the acceptance of emerging agri-food technologies, making it difficult to create a long-term commercialization trajectory for a new agrifood technology based on existing influential societal values. However, if consumers perceive novel agrifood technologies to act against their existing preferences (for example, through negative environmental impacts, increased globalization of the food supply, or compromised animal welfare standards), or if consumers perceive that they have been unknowingly exposed to risky or unethical food risks associated with agricultural production innovations, then product acceptance may be problematic.

Various sociocultural variables determine how and when technology are used to agri-food production in this context, independently of, or even in opposition to, currently dominant consumer ideals. Concerns regarding local, regional, and global food and nutrition security have highlighted the need to optimise food commodity supply and demand on a global rather than local scale. This concern occurs in a world where climate change, population growth, and socio-demographic shifts such as urban migration and higher population average age place additional demands on food supply. Food security must be given to a growing global population through both technological and social innovation. In this context, integrating nanotechnology innovation with public preferences and objectives for food security solutions may be beneficial. In affluent societies, for example, demand for functional foods and ingredients that can more precisely focus nutritional needs to the health requirements of the individual is a priority for some population segments, which may increase demand for foods produced using nano-technology that confer health benefits. At the same time, the adoption of "postproductivist" attitudes appears to be a common reaction to the green revolution and subsequent innovations in monoculture, high-input technologies, which have been defined as agricultural industrialization in the second half of the twentieth century. The postproductivist rural economy is distinguished by decreased food output and the progressive separation of state agricultural subsidies, as well as differential land use, a concentration on a more sustainable farming system, animal welfare, environmental balance, and a more local and regional approach to producing.

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Received: 04-Nov-2022, Manuscript No. JFPT-22-18946; **Editor assigned:** 07-Nov-2022, PreQC No. JFPT-22-18946 (PQ); **Reviewed:** 21-Nov-2022, QC No. JFPT-22-18946; **Revised:** 28-Nov-2022, Manuscript No. JFPT-22-18946 (R); **Published:** 05-Dec-2022, DOI: 10.35248/2157-7110.22.13.963

Citation: Okello D (2022) Authentication of Consumer Evaluations of Food Production Utilisation of Nanotechnologies. J Food Process Technol. 13:963