
Sustainable Products: Exploring Consumer Decision Making in Bioplastics

Nima Nejadrezaei^{*†1,2,3,4}, Maeve Henchion^{*‡1,2}, Eoin O’neill^{§1,4}, and Lorraine Sweeney^{¶1,3}

¹BiOrbic, Bioeconomy SFI Research Centre – Ireland

²Teagasc Food Research Center Ashtown – Ireland

³Technological University Dublin – Ireland

⁴University College Dublin [Dublin] – Ireland

Abstract

A promising approach to mitigating the environmental impact of plastic production involves replacing crude oil with biomass in plastic products, maintaining their functional advantages while enhancing sustainability. Bioplastics offer a viable alternative to conventional plastics, but understanding the factors driving consumer acceptance is critical for a successful transition. This knowledge is essential for marketers, policymakers, and product developers. Despite the importance of this shift, research on consumer decision-making regarding bioplastic products remains limited, particularly in addressing broader issues like the attitude-behaviour gap. To bridge these gaps, this study employs an extended integrative framework (CBDM-BBP), which combines the Theory of Planned Behaviour (TPB) and Norm Activation Theory (NAT), alongside Partial Least Squares Structural Equation Modelling (PLS-SEM) for an in-depth multivariate analysis of consumer decision-making on bioplastic applications, including packaging and apparel. Drawing on data from a survey of 525 consumers in the Republic of Ireland, a recognised test market with strong government commitment to the bioeconomy and abundant natural resources, the findings underscore the intricate nature of consumer decision-making regarding bioplastic products. The results indicate that consumers demonstrate a sequential progression in their behavioural determinants, moving from interest to intention, willingness to pay, and ultimately to use behaviour. While they often exhibit a linear progression from interest to actual use behaviour, various factors can influence the process at each stage, leading to potential non-linear transitions. In the early stages of decision-making, self-interest values, norms, trust, and beliefs are key influences. However, as consumers progress to later stages, the role of self-interest, trust, and beliefs declines, with norms, particularly ethical values, gaining importance.

Keywords: consumer decision, making, consumer acceptance, behavioural determinants, bioplastics, bioeconomy, sustainability.

*Speaker

†Corresponding author: nima.nejadrezaei@teagasc.ie

‡Corresponding author: maeve.henchion@teagasc.ie

§Corresponding author: eoin.oneill@ucd.ie

¶Corresponding author: lorraine.sweeney@tudublin.ie