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Perceived Norms Influence Perceptions of Risk and Attitudes for Food Technologies

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Objectives

Understanding the factors that influence consumer attitudes and risk perception is critical for effective marketing of new food technologies. Many variables impact attitudes and risk perception. However, food technology research has largely focused on demographic variables, and often only single technologies (e.g., GMOs). Our goal was to determine how psychological variables differentially influence attitudes and risk perception for a range of food technologies: antibiotics, hormones, vaccines, GMOs, sustainability, and animal welfare technologies. We examined how attitudes and risk perception for these technologies related to four social psychological variables from the Theory of Planned Behavior (TPB): perceived norms, past behavior, familiarity, and perceived control. In addition, we measured general Food Technology Neophobia (FTN), Trust in Science (TIS), chemical reasoning (CR).

Materials and Methods

Participants (n = 394) provided demographics followed by TPB, attitude, and risk perception surveys for each of the six technologies. Then they completed FTN, TIS, and a CR survey measuring dose–response beliefs (DR), beliefs in unknown risks (UR), the role of risk in society (RS), and naturalness/knowledge of chemicals (NKC). Multiple regression analyses were used to test for associations among the survey measures.

Results

The multiple regression models were all significant ($p < 0.05$). Variance accounted for (R^2) ranged from 0.49 to0.69 (See Table 1 for summary). Perceived norms were the strongest predictor of attitudes and risk with higher values being associated with stronger attitudes (standardized betas ranging from 0.51 to 0.71) and lower risk perception (–0.54 to –0.40). There were a number of technology-specific associations, including

Table 1. Standardized betas (> 0.10 in bold) from selected coefficients of regression models predicting risk perceptions and attitudes (rows) for each technology (columns)

Technology						
	Antibiotics	GM Food	Hormones	Vaccines	Animal Welfare	Sustainability
Risk perceptions						
DR	**0.12**	**0.12**	**0.12**	**0.11**	**0.13**	-0.07
UR	0.09	**0.11**	**0.23**	0.08	0.06	**0.17**
NKC	0.01	-0.04	-0.05	-0.01	**-0.12**	-0.05
Perceived norms	**-0.55**	**-0.40**	**-0.40**	**-0.51**	**-0.38**	**-0.50**
Past behavior	0.09	**0.10**	**0.11**	**0.14**	**0.18**	**0.11**
Familiarity	0.09	0.04	**0.10**	-0.01	-0.01	0.01
Attitudes						
UR	**-0.16**	**-0.17**	**-0.24**	**-0.18**	-0.01	-0.1
NKC	-0.01	0.03	0	0.07	0.09	**0.13**
Perceived norms	**0.71**	**0.51**	**0.56**	**0.62**	**0.45**	**0.64**
Control	-0.05	0.02	-0.04	-0.06	**-0.12**	0.02

familiarity increasing perceptions of risk for hormones, and NKC being primarily associated with animal welfare and sustainability technologies.

Conclusion

The present findings show a critical role for perceived norms– a person's perception that people they like also approve of or use a technology– across all technologies. This suggests that social factors like norms play a major role in consumer acceptance of food technologies. Other predictors varied in strength across technologies suggesting marketing may benefit from strategies tailored to specific technologies.