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What role do climate considerations play for the consumption of red meat in Norway?

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Abstract:

Reducing emissions of greenhouse gases would be facilitated by change in a number of consumption activities, such as food choices. This paper examines red meat consumption in Norway and considers the factors explaining this practice, especially the possible role of climate concerns. The study is based on data from a survey of 2000 people age 18 years or older. It draws on perspectives from institutional and social psychological theory including a wide set of variables emphasizing the social dynamics behind consumption decisions. The data are analyzed using structural equation modelling. Habit is the strongest explanatory factor. Beliefs about qualities of red meat (being tasteful, nutritious, healthy) form the second most important factor, while social norms supporting such consumption comes third. The order of these factors depends, however, on model specifications. Gender and income also influence red meat consumption, but less than found in other studies. Finally, climate concern – personal norms and social pressures focused at reducing climate impacts – has an additional, negative impact on red meat consumption, but there are pro-meat social norms in Norway that are clearly more important. The paper discusses policy implications of these findings.

Introduction

Consumption of meat has been an issue in public debate mainly for animal welfare reasons. Lately the link to climate change has also been emphasized as especially the production of red meat is considered an important source of greenhouse gas emissions. This paper aims at expanding our understanding of what motivates meat consumption and what role climate impacts presently play. A framework based on institutional and social-psychological theories and concepts was developed and forms the basis for the study. It is a general framework developed to analyze various behaviors that have environmental impacts. It emphasizes individual characteristics and values, variables capturing aspects of the issue focused (here climate) and the type of behavior (here consumption of red meat). Regarding the level of issue and behavior, variables measuring social

context, and beliefs and norms that the individual holds are emphasized. The role of habits is also highlighted. The framework makes it possible to analyze relationships between individual and social processes as well as studying more volitional as opposed to habituated types of behavior.

Method

Data for this study was gathered through a survey among Norwegians, 18 years and older. The number of respondents was about 2000, recruited from a standing panel (Kantar). Data were analyzed using structural equation modeling estimating direct and indirect effects of the defined explanatory variables on the frequency of red meat consumption. Main relationships are documented in the below table.

Results

Consumption of red meat seems to be strongly habituated as ‘habit’ is the variable that has the strongest effect on consumption of red meat. A factor capturing the individual’s evaluation of various qualities of red meat like being tasty, healthy, and nutritious (wholesomeness) comes next. An important social dynamic is observed; social norms is the third most important factor in explaining red meat consumption. Its effect is only indirect, influencing habits. Together with the positive direct effect of household size, we note that there seems to be an important social dynamic where food practices are both culturally defined as well as ‘negotiated’. This is reasonable also since meals are social events. Personal norms regarding a responsibility for reduction of own greenhouse gas emissions were a fairly important factor explaining consumption – having the expected negative effect. Self-transcendence values influence the habit of eating red meat negatively. Self-enhancement values have the opposite effect – influencing social norms that are supportive of red meat consumption. We note that female tend to consume red meat to a lesser extent than men.

Table: Structural model of red meat consumption and its antecedents, N = 2073

Dependent variables		Independent variables	B	S.E.	β	t	p	R ²	Total effect on red meat cons.	Stand. total effect on red meat cons.
Red meat consumption	←	Habit	0.33	0.03	0.33	12.341	< 0.001	0.21	0.33	0.33
	←	Wholesomeness belief	0.25	0.06	0.13	4.432	< 0.001		0.52	0.27
	←	Gender	-0.16	0.05	-0.06	-3.128	0.002		-0.33	-0.13
	←	Cheap	0.08	0.03	0.06	2.889	0.004		0.11	0.09
	←	Income	0.03	0.01	0.06	2.763	0.006		0.03	0.05
	←	Household size	0.05	0.02	0.05	2.302	0.021		0.08	0.07
Habit	←	Social norms. red meat	0.91	0.07	0.64	13.775	< 0.001	0.61	0.30	0.21
	←	Wholesomeness belief	0.29	0.07	0.16	4.264	< 0.001			
	←	Self-transcendence	-0.16	0.02	-0.13	-6.653	< 0.001		-0.12	-0.09
	←	Household size	0.08	0.02	0.08	4.543	< 0.001			
	←	Cheap	0.06	0.03	0.05	2.154	0.031			
Wholesomeness beliefs	←	Personal norm CC	-0.25	0.03	-0.32	-7.813	< 0.001	0.12	-0.12	-0.08
	←	Gender	-0.18	0.03	-0.14	-5.495	< 0.001			
	←	CC skepticism	-0.09	0.03	-0.12	-2.962	0.003		-0.01	-0.01
	←	Age	-0.07	0.02	-0.11	-4.309	< 0.001		-0.07	-0.06

Dependent variables		Independent variables	B	S.E.	β	t	p	R ²	Total effect on red meat cons.	Stand. total effect on red meat cons.
	←	Member of envir. org.	-0.16	0.07	-0.06	-2.478	0.013		-0.04	-0.01
Social norms. red meat	←	Wholesomeness belief	0.56	0.05	0.44	10.775	< 0.001	0.48		
	←	Animal welfare	0.24	0.03	0.31	8.763	< 0.001		0.07	0.06
	←	Self-enhancement	0.21	0.05	0.15	4.157	< 0.001		0.04	0.02
	←	Climate impact	0.11	0.02	0.12	4.439	< 0.001		0.03	0.03
	←	Age	-0.09	0.03	-0.11	-3.660	< 0.001			
	←	Income	-0.03	0.01	-0.08	-3.038	0.002			
	←	Cheap	0.06	0.02	0.07	2.402	0.016			
Cheap	←	Age	-0.12	0.03	-0.12	-4.096	< 0.001	0.03		
	←	Self-enhancement	-0.18	0.06	-0.11	-3.111	0.002			
	←	Gender	-0.19	0.05	-0.10	-3.891	< 0.001			
	←	Memb. of envir. org.	0.36	0.11	0.08	3.407	< 0.001			
	←	Personal norm CC	0.08	0.03	0.07	2.534	0.011			
Animal welfare	←	Self-transcendence	-0.24	0.04	-0.22	-5.993	< 0.001	0.16		
	←	Gender	-0.40	0.05	-0.19	-8.022	< 0.001			
	←	Personal norm CC	-0.16	0.05	-0.13	-3.268	0.001			
	←	Age	0.06	0.02	0.06	2.772	0.006			
Climate impact	←	CC skepticism	-0.30	0.04	-0.28	-7.437	< 0.001	0.26		
	←	Personal norm CC	0.31	0.04	0.28	7.346	< 0.001			
	←	Gender	-0.10	0.04	-0.05	-2.331	0.020			
Personal norm. climate change (CC)	←	Self-transcendence	0.37	0.02	0.42	16.133	< 0.001			
	←	CC skepticism	-0.38	0.02	-0.41	-16.458	< 0.001			
	←	Social pressure CC	0.13	0.02	0.17	8.299	< 0.001		-0.02	-0.01
	←	Gender	0.21	0.03	0.12	7.079	< 0.001			
Climate change (CC) skepticism	←	Self-transcendence	-0.39	0.03	-0.41	-13.569	< 0.001	0.31		
	←	Age	0.25	0.03	0.29	10.007	< 0.001			
	←	Social pressure CC	-0.10	0.02	-0.11	-4.310	< 0.001			
	←	Self-enhancement	0.17	0.05	0.11	3.423	< 0.001			
	←	Gender	-0.12	0.04	-0.07	-3.046	0.002			
	←	Household size	0.04	0.02	0.05	2.021	0.043			
Social pressure climate change (CC)	←	Self-transcendence	0.54	0.03	0.48	19.839	< 0.001	0.24		
	←	Age	-0.07	0.02	-0.07	-3.594	< 0.001			
	←	Gender	0.09	0.04	0.04	2.144	0.032			

Note: B = Regression weights; β = standardized regression weights. The column named total effect shows the effect on the final dependent variable – red meat consumption – of increasing the level of an independent variable by one unit. The standardized total effect shows the total direct and indirect effects of a variable on red meat consumption. Variable definitions are found in Appendix A. The measurement model is in Appendix B. Model fit: Chi-square = 1586.949, 340 df., $p < .000$. TLI = .906, CFI = .931, RMSEA = .042 (CI₁₀ = .040 - .044).

Discussion

All in all, climate considerations are not (yet) important regarding red meat consumption in Norway. In that respect, we note that there is an ongoing debate about the science as well as maintaining pastures being an important aspect of Norwegian agriculture.

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