



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**Are Millennials More Green? A Consumer vs. Citizen Analysis of Dairy Product Preferences in Canada**

**Albert Boaitey, Ellen Goddard**

**Department of Resource Economics and Environmental Sociology, University of Alberta.**

**boaitey@ualberta.ca, ellen.goddard@ualberta.ca**

***Selected Paper prepared for presentation at the 2017 Agricultural & Applied Economics Association Annual Meeting, Chicago, Illinois, July 30-August 1.***

*Copyright 2017 by [authors]. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.*

# Are Millennials More Green? A Consumer vs. Citizen Analysis of Dairy Product Preferences in Canada

UNIVERSITY OF ALBERTA  
FACULTY OF AGRICULTURAL,  
LIFE & ENVIRONMENTAL SCIENCES

Albert Boaitay and Ellen Goddard  
Department of Resource Economics and Environmental Sociology  
University of Alberta, Edmonton, Alberta Canada

## INTRODUCTION

- The food preferences of consumers have important health, economic and environmental implications. In recent times, a segment of consumers whose purchase decisions are engaging the attention of key stakeholders in food production and marketing are millennials. This generational cohort represents a relatively young consumer category born after 1980 (Pew Research Centre, 2014).
- In Canada, millennials make up 27% of the population and represent the largest generational cohort (37%) in the labour force. Previous studies have shown that millennials are consumption oriented, technologically perceptive and have higher environmental, ethical and social consciousness as compared to other generations (Bucic et al., 2012). The main implication of these trends is that the taste and preferences of millennials are going to shape food purchases.
- Despite the potential impact of the preferences of millennials on current and future consumption, little has been done to understand their food choices. The results of the analysis of the preferences of millennials for sustainable milk products are presented in this study.

## Research Questions

- To what extent do the preferences of millennials differ from non-millennials with respect to dairy products produced from higher feed efficiency cows, and identified as being more sustainable?
- Are the factors that influence these differences in preferences product (milk versus yogurt) or context (voting versus buying) specific?

## Data and Methods

- Data for this study are from online survey conducted in Canada from November to December 2016. The survey was conducted through a market research company and it was targeted at the person who does most of the grocery shopping for the household. Respondents are drawn from a nationally representative Canada sample. About half of the sample answered questions about milk (n=789) and the other half answered questions about yogurt (n=791).
- Bivariate ordered probit models are estimated to determine the variables that significantly influence the individual purchase and voting decisions in relation to stricter environmental standards in cattle production. Respondents are asked if they would buy improved environmental milk or yogurt if the reduced greenhouse gases (GHG) emission made milk or yogurt more expensive (Table 1).
- Respondents are also asked if they would vote in a referendum if stricter environmental standards for reducing allowable methane emissions from cattle production would lead to increased prices of milk or yogurt. The explanatory variables include price increase (%), environmental attitude variables, animal attitudes, myths of nature and demographic variables and generalized trust.

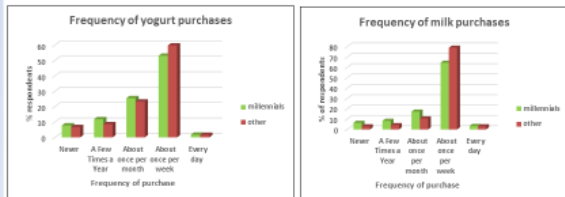


Figure 1: yogurt purchases: Millennials vs. others



Figure 2: milk purchases: Millennials vs. others

## Conceptual Framework

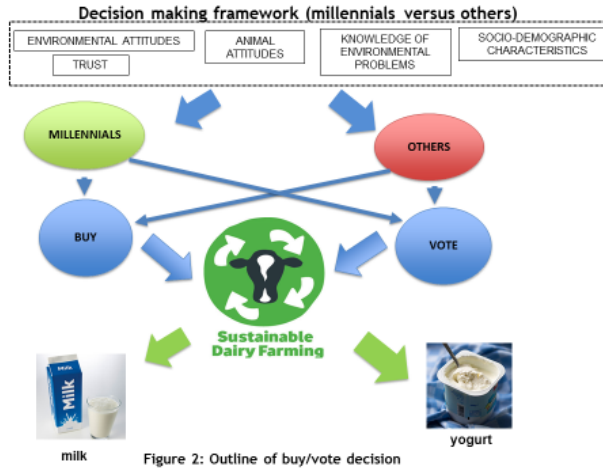


Figure 2: Outline of buy/vote decision

Table 1: Socio-demographic, knowledge and attitude characteristics of survey sample

Product	Milk	Yogurt	Canada population
Average age	45.2 (15.5)	45.1 (15.5)	46.9 <sup>1</sup>
Female	50.8%	52.2%	51.7%
Average household size	2.35 (1.14)	2.40 (1.07)	2.50
Average years of education	15.1 (2.02)	15.1 (1.99)	13.1
Rural	12.7%	14.0%	20.0%
Average household income (\$)	73,684.6 (32,626.2)	77,831.4 (32,842.0)	83,407.0
Buying decision			
Yes, I would always buy the improved environmental (reduced GHG) ...	27.6%	27.6%	59.6%
No, I would only sometimes buy the improved environmental (reduced GHG) ...	44.2%	50.2%	19.5%
No, I would never buy the improved environmental (reduced GHG) ...	28.1%	22.4%	21.2%
Voting decision			
I would vote in favor of the stricter livestock environmental standards	56.7%	59.6%	
I would vote against the stricter livestock husbandry conditions	20.7%	19.5%	
I would not vote	22.7%	21.2%	
Animal attitude scale (0 - 25)	15.9 (3.55)	16.1 (3.32)	
Self-rated knowledge of environmental problems (1 -10)	5.69 (2.22)	5.71 (2.18)	
Myths of nature			
MYTH 1: Environmental problems can only be controlled by enforcing radical changes in human behaviour in society as a whole (nature ephemeral).	48.5%	49.1%	
MYTH 2: Environmental problems are not entirely out of control, but the government should dictate clear rules about what is and what is not allowed (nature tolerant).	38.5%	39.3%	
MYTH 3: We do not need to worry about environmental problems because in the end, these problems will always be resolved by technological solutions (nature benign).	2.15%	1.90%	
MYTH 4: We do not know whether environmental problems will magnify or not (nature capricious).	10.5%	9.48%	
New human interdependence paradigm (NHIP) scale score (factor scores of 5-item scale)	0.003	6.5E0-11	
Sample size	789	791	

## Results

Table 2: Results of Ordered Probit Regression and Marginal Effects (ME) Estimates (Milk)

	Milk							
	Millennials buy(n=289)		Other buy(n=479)		Millennials vote(n=289)		Other vote(n=479)	
	Coef.	ME	Coef.	ME	Coef.	ME	Coef.	ME
Price	**	-0.002	***	-0.002			*	-0.001
Age								
Female			*	0.015	**	-0.055	*	-0.039
Household size								
Education					**	0.020	**	0.014
Income								
Nature ephemeral	**	0.189	***	0.186	***	0.332	***	0.285
Nature tolerant	**	0.229	**	0.115	***	0.276	**	0.164
Nature benign							*	-0.291
Environmental problems								
NHIP			**	0.051	*	0.052	**	0.051
Animal Attitude	**	0.025	***	0.014	***	0.039	***	0.020

Table 3: Results of Ordered Probit Regression and Marginal Effects (ME) Estimates (Yogurt)

	Yogurt							
	Millennials buy(n=289)		Other buy(n=479)		Millennials vote(n=289)		Other vote(n=479)	
	Coef.	ME	Coef.	ME	Coef.	ME	Coef.	ME
Price	*	-0.001	***	-0.002			*	0.008
Age			*	0.003			*	0.084
Female							*	0.027
Household size	**	0.041					***	0.019
Education								
Income								
Nature ephemeral	***	0.329			*	0.197	***	0.223
Nature tolerant	**	0.249					**	0.168
Nature benign								
Environmental problems								
NHIP	***	0.058	***	0.077	***	0.131	***	0.073
Animal Attitude	***	0.016	**	0.031			***	0.027

- The results show that in general, sociodemographic variables and animal attitudes have a lower effect on consumers (both millennials and non-millennials) purchase/vote decisions as compared to environmental attitudes. The effect of environmental attitudes is more comparable in the buy decision for milk for both millennials and non-millennials. Environmental risk perceptions (particularly myth 1 and 2) have a higher effect in the vote decision (milk) for millennials as compared to non-millennials.
- Environmental attitudes have a higher effect in millennials buy decision (yogurt) as compared to non-millennials. The effect of the NHIP score was however higher for non-millennials. With the exception of the NHIP score, the effect of environmental attitudes was higher in non-millennials' vote decision for yogurt as compared to millennials.
- Price is not significant in the vote decisions of millennials for both milk and yogurt but significant in their buy decisions for the two products. For non-millennials, price is significant in all but the yogurt vote decision.

## Conclusions

- The study found that preferences for sustainable dairy products differ for different generational cohorts (millennials vs. non-millennials). There were also differences by product (milk vs. yogurt) and by context (vote vs. buy).
- Authors are grateful to the Faculty of Agricultural, Life & Environmental Sciences Endowment Fund for the Future Support for the Advancement of Scholarship (SAS) travel award.

REFERENCES:  
Bucic, T., Harris, J., and Aft, D. (2012). Ethical consumers among the millennials: A cross-national study. Journal of Business Ethics, 110(1), 113-121. Pew Research Center (2014). Millennials in adulthood. Available at: <http://www.pewsocialtrends.org/2014/03/07/millennials-in-adulthood/> (Accessed November 14, 2016).