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What's Inside?

This issue of *FARE Share* features a groundbreaking study that confirms a federal program to help Canada's remote Indigenous communities offset high food prices is indeed working.

Inside, you'll read an assessment of Canadian Business Risk Management programs by Dr. Alan Ker who provided his insights to the House of Commons Standing Committee on Agriculture.

We also feature the first of two articles highlighting the findings of a study examining Canadian consumers' benefit and risk perception of genetically modified food.

On our back cover, Dr. Alfon Weersink answers the question: "Is profit the only reason to adopt new technology on the farm?"

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The FARE Share Newsletter features research and analysis from faculty and students in the Institute for the Advanced Study of Food and Agricultural Policy in the Department of Food, Agricultural and Resource Economics (FARE).

Nutrition North Program Lowers Food Cost

By: Jamie Naylor, MSc Student; Brady Deaton, McCain Family Chair in Food Security and Professor; Alan Ker, OAC Research Chair in Agricultural Risk and Policy, Director, Institute for the Advanced Study of Food and Agricultural Policy and Professor, FARE



A federal subsidy program aimed at reducing the cost of food in remote Indigenous communities in Canada is putting money into the pockets of consumers as intended. This is the finding of our study that assessed the effectiveness of the Nutrition North program.

Through this program, the Canadian government subsidizes food retailers in 116 remote and isolated communities across the country. Twenty-five communities in Nunavut receive the largest share of Nutrition North funding due to the high cost of transporting food to the region.

The program expects each dollar of the subsidy to be passed on to the consumer in the form of lower food prices. Unfortunately, audits and reviews of the program to date have failed to determine the pass-through rate of the subsidy. This lack of information and the persistence of high prices have led many to be critical of the Nutrition North program.

Study confirms program works

Using regression analysis on food price data in each of the 25 communities, subsidy rates, and covariates that control for community characteristics, we overcome the limitations of past research and provide the first-ever estimate of the pass-through rate of Nutrition North in Nunavut. Our results suggest that most, if not all, of the subsidy is passed on to the consumer in lower food prices.

The findings have implications for policy development in general and in specific. Generally speaking, efforts to reduce food prices by coordinating subsidies with food retailers in remote regions appear to be viable. Identifying this option could have implications for governments around the world when assessing plans to enhance economic and health outcomes in isolated regions.

Continued on page 3



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BRM: A Study in Syntax and Mythical Changes

By: Alan Ker, OAC Research Chair in Agricultural Risk and Policy; Director, Institute for the Advanced Study of Food and Agricultural Policy; Professor, FARE

This article is a summary of the brief that Dr. Alan Ker presented on June 12, 2020 to the House of Commons Standing Committee on Agriculture with respect to Business Risk Management (BRM) programs. Scan this QR code to view Ker's testimony starting at 15:18:40.



Very little has structurally changed in Canadian BRM programs over the past three decades. This is not an indictment of the program. A cursory look at agricultural trade numbers suggests that Canadian farmers are competitive internationally in almost all products. In 2017, Canada produced \$110 billion in agriculture and agri-food products and exported \$56 billion. It would be hard to argue that Canadian BRM programs have hindered the competitive position of Canadian farmers. Moreover, it is noteworthy that the average farm household has a significantly greater income than the average non-farm household and four times greater assets.

AgriStability, AgriInvest & AgriInsurance

BRM programs consist of AgriInvest, AgriInsurance, AgriStability, and AgriRecovery. More recently, there has been a great deal of dissatisfaction with AgriStability as represented by significant declines in participation. This dissatisfaction is, in my opinion, solely because of the pronounced and significant decline in loss coverage since Growing Forward 1. I want to reiterate that while the change in AgriStability program parameters may seem relatively minor, they are not. For example, while decreasing the level of coverage from 85% to 70% may not seem large, this could reduce loss coverage for some farms upwards of 100%.

“Interestingly, there exists a relatively costless federal reinsurance option available that has been, for the most part, ignored.”

AgriStability is also relatively complex. Although more simple alternatives exist, unless coverage and therefore budget allocations are increased, I suspect that producer dissatisfaction will remain high. If government BRM budgets are fixed, a decrease in coverage or subsidies in AgriInsurance could fund increasing coverage in AgriStability.

There has been some discussion of public or private coverage for shallow losses not covered by current programs. Although AgriInvest is meant to assist farmers with these types of losses, governments could consider offering non-subsidized individual or area-level shallow loss products but cover program administrative and operating costs. However, I would not expect farmer participation to be high as many would continue to choose to self-

insure against these shallow losses. Farmer demand for private alternatives would be even less as the coverage would be the same as the public program but at a greater cost to the farmer.

Provincial Crown Corporations deliver most of the BRM programs to producers. However, these entities tend to behave more like a private insurer and less like a public delivery agent. The current AgriInsurance rate setting methodology is biased in favour of provincial Crown Corporations collecting excessive premiums, much like a private insurer. The Crown Corporations have \$7.5 billion in reserves and, unless there is a change to the rating methodology, I expect these reserves to grow. This level of reserve could cover the maximum-ever loss multiple times over. Note, \$3 billion of these funds belong to the farmers. Furthermore, despite these excessive reserves, provincial Crown Corporations still purchase private reinsurance. These Crowns represent the only public entity – across all other government agencies in the developed world – that purchase private reinsurance. For example, Farm Credit Canada does not purchase private reinsurance. Last year, private reinsurance premiums paid by these provincial Crown Corporations were over \$100 million, of which 40% was farmer paid and 36% was federally paid. Interestingly, there exists a relatively costless federal reinsurance option available that has been, for the most part, ignored.

BRM & COVID-19

Finally, with respect to the COVID-19 pandemic and BRM programs. COVID-19 can be considered a Black Swan event. Governments have the option to deal with these events in real-time as they arise. This is almost always more efficient, as Black Swan events cannot be predicted as to their specific form, their timing, or the most appropriate policy response.

I would suggest trading carefully in making structural BRM policy changes at this time in response to COVID-19. The last few months have been a strong testament to the resiliency and adaptability of the current Canadian agricultural and food system. Nonetheless, the pandemic has provided an avenue for rent-seeking and alternative agenda enhancing efforts. To date, I believe the government response has been appropriately measured.

“I would suggest trading carefully in making structural BRM policy changes at this time in response to COVID-19.”



Emotions, Affect and GM Food Acceptance

Research by: Emma Burger, MSc Student; Andreas Boecker, Associate Professor and Chair; and Yu Na Lee, Assistant Professor, FARE

An increasing body of research points to the important role of emotions in food purchase decisions. Since claims of both significant benefits and catastrophic risks have been linked to genetically modified (GM) foods, emotions likely play an important role in consumers' perception and valuation.

“Segmentation revealed that affect as a motivational driver of product evaluation is multifaceted as opposed to simple dichotomies, such as positive vs. negative feeling or accepting vs. rejecting GM food.”

Funded by the Ontario Agri-Food Innovation Alliance, this project aimed to investigate consumer emotions, information and purchase intentions for GM food. As the first of two, this *FAREShare* article focuses on the identification and characteristics of emotion-based consumer segments.

Specific emotions reflect pleasant or unpleasant mental states, such as happiness and interest, and anger and worry, respectively. They are components of affect, which is defined as an overall bad or good feeling towards an object. The link between affect and information processing is important, as experimental studies suggest probabilities and numerical information are more likely to be ignored in affect-rich decisions, for example, about treatment options for severe diseases. Although claims of both enormous benefits and catastrophic risks have been linked to biotechnology, few studies addressed the role of affect and emotions in consumers' preferences for GM foods.

Distinct affect profiles

The objective of this research project was to determine whether consumer segments with distinct affect profiles can be identified and whether they also differ regarding socioeconomic characteristics, food purchase behaviours, attitudes and values.

Data were collected through an online survey (n=302) in July 2019. Affect was measured in relation to stated purchase intentions for a hypothetical GM product — the ‘Always Green Avocado,’ featuring delayed browning. The study used a scale based on five pleasant emotions (interest, happiness, pride, excitement, optimism) for positive affect and four unpleasant emotions (fear, worry, anger, and pessimism) for negative affect. A four-cluster solution fit the data best.

- **Enthusiastic consumers** exhibit a strong positive and weak negative affect. They are younger, stated the highest purchase intentions and have the highest frequency of consuming avocados.
- **Technology opposers** have an inverse affect profile to that of enthusiastic consumers. They tend to have a strong preference for non-GM foods, are older, and consume avocados infrequently.
- **Conflicted consumers** have a high degree of both positive and negative emotions. Similar to enthusiastic consumers, they are younger and have high purchase intentions but perceive the GM avocado as having greater risk, and have the highest share of members with university education.
- **Indifferent non-consumers** have a low degree of both positive and negative affect. These consumers are on average older, have the lowest share of participants with children in the household and a low purchasing intention for the Always Green Avocado.

Policy & communication campaign impact

The results of our study have implications for policy and communications because segmentation revealed that affect as a motivational driver of product evaluation is multifaceted as opposed to simple dichotomies, such as positive vs. negative feeling or accepting vs. rejecting GM food. Although positive and negative affect are correlated with benefit and risk perception, respectively, differences in affect between segments are stronger and thus more actionable for communication campaigns.

The second article about this project will highlight segment-specific links between purchase intentions and exposure to information about GM food.

Continued from page 1

Nutrition North

More specifically, our results indicate that Nutrition North effectively lowers food prices. This may be the result of competitive pressure, or the effectiveness of institutions in enforcing contracts between the government and food retailers. For this reason, Nutrition North Canada is in a position to lower food prices even further by increasing the amount of the subsidy provided. Nutrition North may

also target the subsidy to the specific food items desired by households that view themselves as food insecure. The effectiveness of these specific actions will require continued dialogue between research and food policy.

This project was supported by the McCain Family Chair in Food Security research funds.

With files from @UofGuelphNews

Motivation for Technology Adoption

By: Alfons Weersink, Professor, FARE



Why do farmers adopt new technology in some cases but not in others? Understanding the reasons can help us potentially improve farmer productivity, lower food prices and reduce the sector's environmental impact.

New technology adoption involves a change in behaviour, therefore understanding adoption requires an understanding of the motivations behind behaviour. The standard assumption is that farmers are motivated to make money; if the new technology increases the bottom line, then it will be adopted.

More than profit maximization

But there are motivations aside from profit maximization that can influence the uptake of new practices by farmers. Other factors influencing the decision to adopt could be risk (too many unknowns), work-life balance (desire for more leisure time), family (provide opportunities for the next generation), peer pressure (increasing size to keep up with the others), social norms (desire for a good looking crop), and environmental stewardship.

These motivations can be grouped into three categories. First, is the relative advantage of the technology, which includes whether it increases profits compared to the current system, and also includes other motivations like greater leisure time. Second, is the trialability of the technology, which involves how easy is it for farmers to test the new innovation out before investing in it. Third, are social, cultural and personal influences. The burgeoning field of behavioural economics has shown that these non-economic factors can affect our decisions and “nudge” us away from what we intend to do even if that is what we want.

The influence of the three factors depends on the stage of the adoption process. The first stage is an awareness by the farmer that there is a new technology that may be of practical relevance to their operation. Given knowledge of its existence, the next stage is to collect information about its applicability, including costs and production impacts. If this non-trial evaluation suggests potential, the next stage is an evaluation of the technology through small-scale trials. The use of the practice can then be scaled up or changed, provided the small-scale trial,

or its observation, indicates potential. The performance of the newly adopted technology is continually reviewed and assessed to determine if modifications are necessary.

Social, cultural and personal factors

Early on in the process, when farmers are learning from others about the practice, social, cultural and personal factors are likely to play a relatively large role. Later in the process, when farmers have personal experience in using the practice on their own farm, the influence of outsiders will be reduced to some extent. Influences like social norms could still play a role, but the farmer is no longer primarily relying on outsiders for their information.

Overall, a fuller understanding of adoption decisions requires something more than the assumption of a single binary decision of adopt/don't adopt and the assumption of profit maximization. Adoption needs to be understood as a process with multiple stages, a process in which the final decision to use the new technology can only occur if the previous stages are completed. While profit considerations are clearly important, particularly in the later stages of the adoption process, they need to be supplemented with other social and cognitive considerations, particularly in the early adoption process stages.

“While profit considerations are clearly important ... they need to be supplemented with other social and cognitive considerations.”

The research is discussed further in a podcast from the Applied Economics Perspectives and Policy (AEPP). Scan these QR codes to hear and read the recent AEPP Special Issue on the adoption of agricultural innovations.

Podcast:



AEPP Special Issue:



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