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**Consumer Valuation of a Shelf-tag Nutrition Icon:  
The Case of Guiding Stars for Ready-to-Eat Breakfast Cereal Products**

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# Consumer Valuation of a Shelf-tag Nutrition Icon: The Case of Guiding Stars for Ready-to-Eat Breakfast Cereal Products

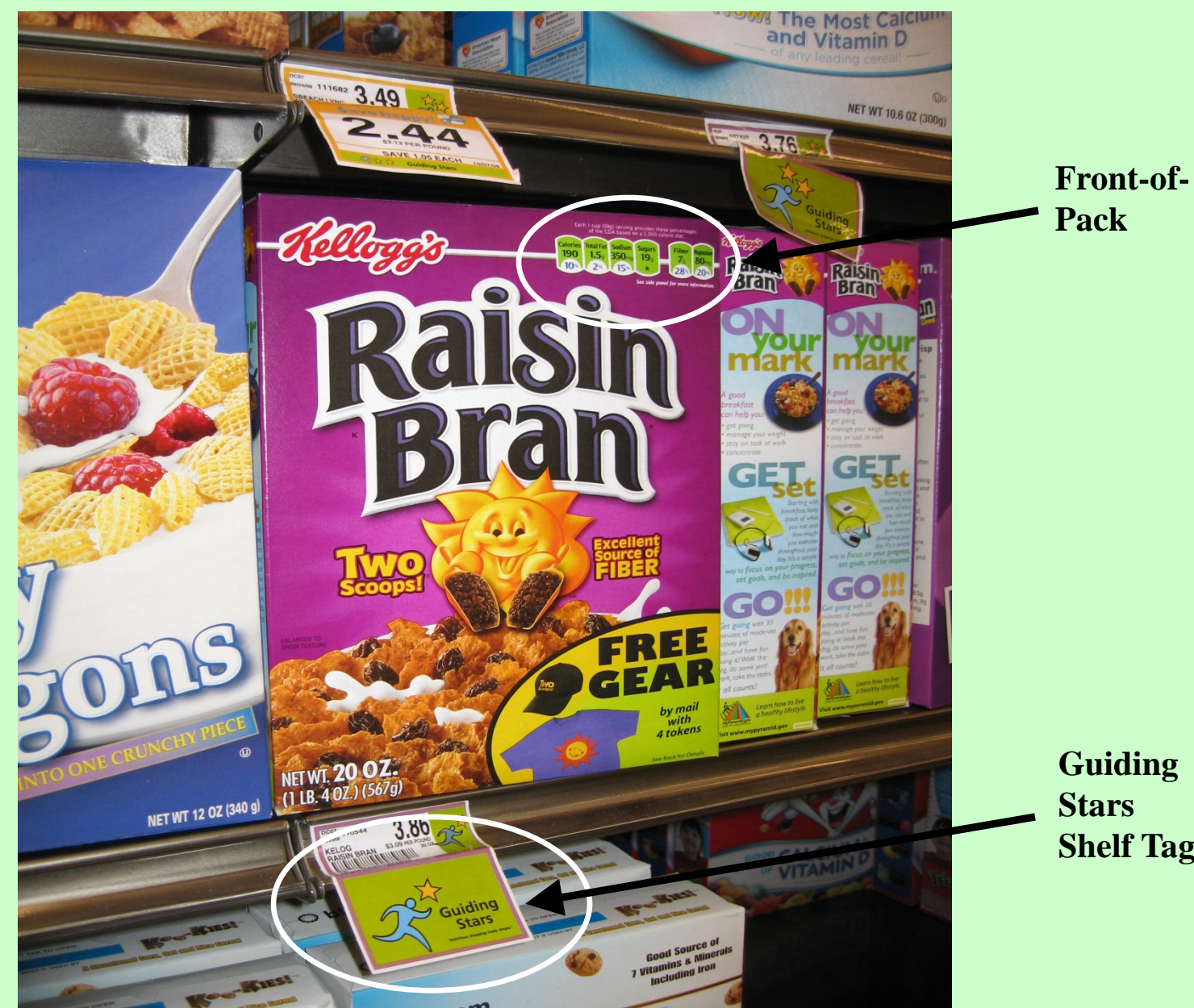
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## INTRODUCTION

Food manufacturers communicate with consumers about products' nutritional characteristics and promote sales using packaging information such as claims, statements, logos, and nutrition symbols (i.e., Front-of-Pack labeling such as Nutrition Keys)

Recently, more food retailers have also been adding nutrition information to shelf tags in stores. Guiding Stars®, developed by Hannaford in September 2006, is one of more prominent programs.

- 0 star
- 1 star – “good nutritional value”
- 2 stars – “better nutritional value”
- 3 stars – “best nutritional value”



## OBJECTIVE

To extend the literature by exploring consumer valuation of the shelf-tag nutrition information by estimating the hedonic prices of the star ratings while controlling for nutritional and marketing attributes.

- previous US research examined cereal products, but did not include shelf-tag information
- A Swedish study of front-of-pack icon suggests the nutrition information may be negatively valued

## DATA AND MODEL

### Data

-- Guiding Stars ratings and Nutrition Facts label information of 378 cereal products sold at Hannaford

-- at Universal Product Code level, week of April 4-10, 2010 (3.5 years after the launch of the shelf-tag program)

### Linear Model

$$\text{Unit Price} = f(\text{star rating, package size, brand, first ingredient, nutrients})$$

- Star rating – 3, 2, 1, 0 stars (reference)
- Package size – number of servings
- Brand – national brands, other brands, private-label brands (reference)
- First ingredient – first item on the ingredient list : corn, wheat, oat, rice, other (reference)
- Nutrients – calories, saturated fat, protein, sodium, fiber, sugars, calcium, Vitamin C, Vitamin A, iron

## RESULTS

- *Ceteris paribus*, Guiding Stars were negatively valued 3.5 years after program launch
- Major brands increase value
- Calcium and fiber contents increase value
- Saturated fat content decrease value

## SUMMARY

- Valuation of the star rating information appears consistent with the valuation reported in the Swedish study
- Valuation also appears consistent with analysis of sales data (Lin and Lee 2011)
- Reasons?? Could “healthier” cereals are seen as less desirable?

### Limitations

- Data (one-week sales, little front-of-pack information)
- uncertainty of what label information was observed and considered by buyers

## ORDINARY LEAST SQUARES ESTIMATES (n=378; Adjusted R<sup>2</sup> = 0.76)

Variable	Coefficient estimate (cents)	p value
3 star	-13.64	<0.0001
2 star	-7.23	<0.0001
1 star	-3.24	0.02
Major brands	7.96	<0.0001
Other brands	18.15	<0.0001
Number of servings	-0.80	<0.0001
First ingredient is CORN	8.26	0.001
First ingredient is WHEAT	0.23	0.92
First ingredient is OAT	-0.68	0.75
First ingredient is RICE	5.76	0.03
“Organic” in product name or first ingredient	1.30	0.41

Variable	Coefficient estimate (cents)	p value
Calories	0.19	<0.0001
Saturated fat	-2.23	0.04
Fiber	1.58	<0.0001
Sugars	-0.84	<0.0001
Sodium	-0.02	0.003
Protein	0.79	0.1
Calcium	13.45	0.004
Vitamin C	4.53	0.29
Vitamin A	2.78	0.76
Iron	-2.41	0.37
Intercept	8.01	0.06