



Impacts of voluntary nutritional labelling: An analysis of the biscuits and cakes sector in France

Area Nutrition Research and Education in Europe

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INTRODUCTION

- Up to now in the EU, nutritional labelling is voluntary except when nutrition and health claims appear on the product packaging
- Many conflicts between the food industry, consumers and health policy makers about:
 - the need to mandate nutritional labelling
 - the type of information to mandate: nutrition facts panel? Additional logos like GDA or TL? In BOP or FOP ?
- A new EU regulation on providing information to consumers has been adopted: a nutrition facts panel has become mandatory, but no other additional information and logos

The new rules about the mandatory nutrition declaration will become applicable in five years at the latest after being published in the EU Official Journal

In this context, research on nutritional labelling is important in order to assess the effects of the voluntary labelling framework and the potential effects of future mandatory rules

- Effects of labelling on consumers' behaviour: many studies in Europe
- Effects on the food industry and the firms' strategies: less studied

Our goal

To get better insights into the firms' strategies related to labelling in the current policy framework

- What do the voluntary labels used on the food packages signal?
- What role does nutritional labelling play in the firms' strategies and competition?

Preliminary work which gives partial answers in a specific sector (the cakes and biscuits sector)

DATA

Food characteristics: **French Observatory of Food Quality (Oqali) database**

In 2010, 20.000 products in processed food sectors (60% of the food consumption of processed foods in France)

Each food item is described by several parameters:

- **Nutrient content** (energy, protein, fat, saturated fat, carbohydrates, sugars, fibre and sodium)
- **All information available on the packages**: nutrition facts panels, nutrition and health claims, logos, consumption guidelines, other labels (organic, fair trade, etc.)

Mean price and market share: obtained from **TNS Kantar Worldpanel**

Preliminary study focused on the biscuits and cakes sector (data collected in 2008/2009)

- Around 800 items with very heterogeneous types of nutritional information on the packages
- Significant contribution to daily sugar and fat intake
- Mostly consumed for taste and pleasure: how does the health issue interact with the taste issue?

METHODS

We need to distinguish:

- the use of nutrition and health claims (for which labelling is mandatory: generally BIG8)
- the analysis of the information provided on the product packages without nutrition and health claims (for which labelling is voluntary)

→ Two steps:

Step 1: full sample (products with and without nutrition or health claims)

Binary logit model: to analyze the use of nutrition or health claims in relation to additional nutritional information, the type of brand, the product category, etc.

Step 2: products without nutrition or health claims only

Ordered logit model: to analyze the probability to observe a more detailed nutritional label on the packages in relation to the nutrient content, the type of brand, the product category, etc.

STEP 1: use of nutrition or health claims

- Lower contents in fat and sugars, and higher content in fibre related to claims
- National brands positively related to claims
Private labels negatively related to claims
- Nutritional logos (GDA/TL on BOP or FOP) negatively related to claims
- Positive effect of consumption advice
- Positive effect of other labels
- No effect due to the category of products

Nutrition or health claims	Odds ratio (1)	Odds ratio (2)	Odds ratio (3)
Nutrient content			
Energy (kcal/100g)	1.005	1.004	1.003
Sugars (g/100g)	0.933***	0.933***	0.939***
Saturated fat (g/100g)	0.713***	0.719***	0.731***
Fibre (g/100g)	1.704***	1.723***	1.698***
Sodium (g/100g)	0.583	0.534	1.441
Type of brand			
National brands	2.634***	2.222**	0.896
Private labels	0.565**	0.663	0.303***
Hard discount brands	<i>omitted</i>	<i>omitted</i>	<i>omitted</i>
Nutritional logos			
GDA FOP		0.706	0.499*
GDA BOP		0.413*	0.294**
TL BOP		0.356*	0.192***
No GDA or TL		<i>omitted</i>	<i>omitted</i>
Consumption advice			
Recommended serving size			5.799***
Recommended accompaniment			2.280**
Organic or fair trade label			
			3.108**
Category of products			
Plain biscuits	2.237	2.614	1.602
Fruit biscuits	14.750*	16.045*	11.059*
Chocolate biscuits	6.562	6.621	4.894
Plain cakes	<i>omitted</i>	<i>omitted</i>	<i>omitted</i>
Fruit cakes	1.867	1.973	1.245
Chocolate cakes	0.850	0.925	0.637
Other category	10.393	10.689	6.970

level of significance : ***=1%, **=5%, *=10%

STEP 2: detail of nutrition labelling

Performed on items without nutrition or health claims

Gradient 1: no labelling or only BIG4

Gradient 2: BIG8

Gradient 3: BIG8 and extra labels located only on the BOP

Gradient 4: BIG8 and extra labels located on the FOP

- No clear relation between nutritional quality and labelling gradient
- National brands negatively related to high level gradient
Private labels positively related to high level gradient
- No effect due to the category of products

Gradient 1 to 4	Odds ratio (1)	Odds ratio (2)
Nutrient content		
Energy (kcal/100g)	0.999	0.997
Sugars (g/100g)	1.003	1.001
Saturated fat (g/100g)	1.036	1.044**
Fibre (g/100g)	1.149**	1.172***
Sodium (g/100g)	1.969	1.560
Type of brand		
National brands	0.457***	
National brand 1		0.297***
National brand 2		0.225***
Other national brands		1.440
Private labels	3.907***	
Private label 1		4.891***
Private label 2		2.433***
Private label 3		4.820***
Private label 4		26.303***
Other private label brands		4.310***
Hard discount brands	<i>omitted</i>	<i>omitted</i>
Category of products		
Plain biscuits	0.517	0.631
Fruit biscuits	0.575	0.672
Chocolate biscuits	0.605	0.668
Plain cakes	<i>omitted</i>	<i>omitted</i>
Fruit cakes	0.618	0.731
Chocolate cakes	0.697	0.891
Other category	1.195	0.972

level of significance : ***=1%, **=5%, *=10%

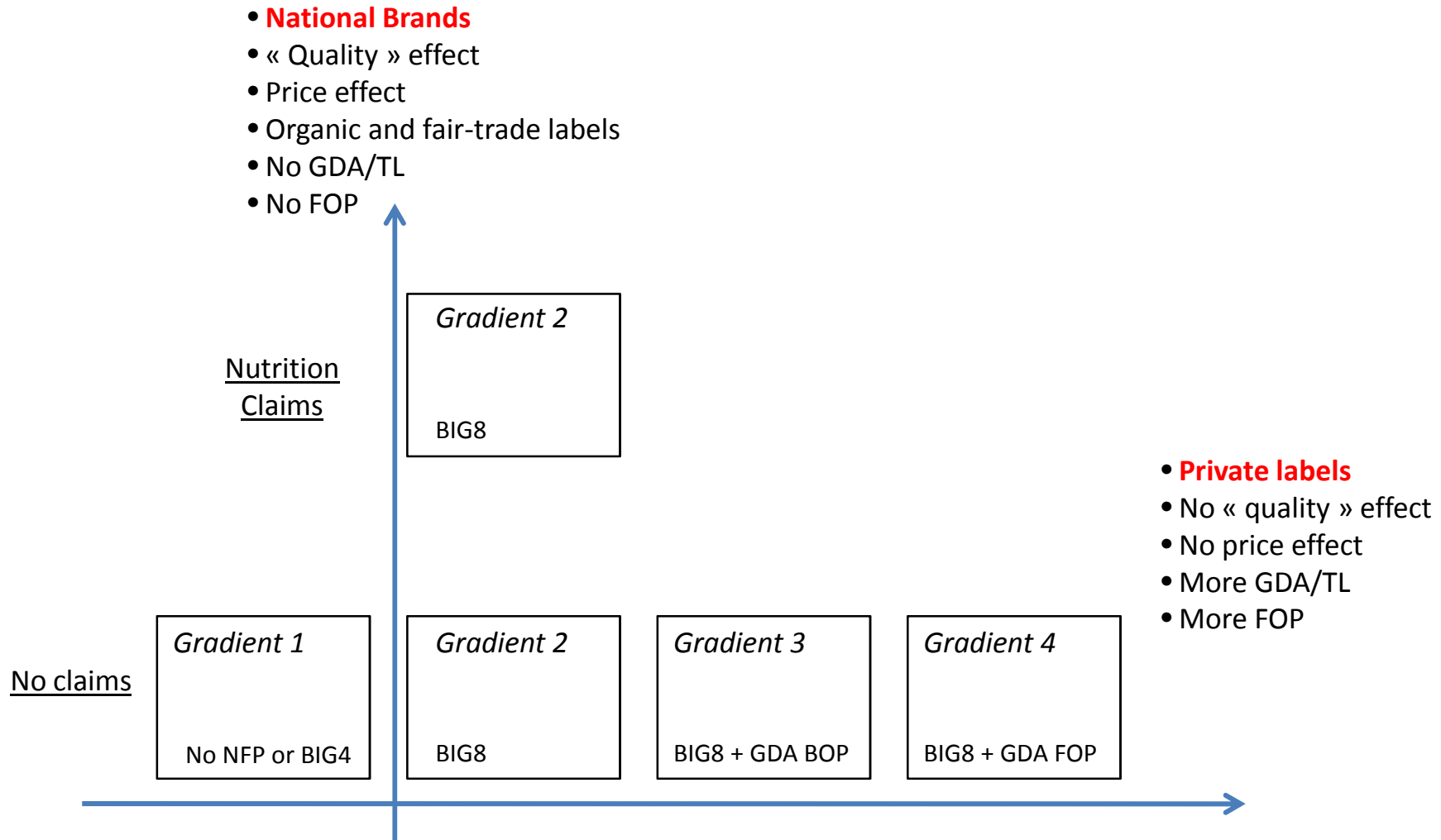
WHAT ABOUT THE PRICES?

The first approach (descriptive statistics and price regression) suggests:

- the label gradient does not influence the products prices: price does not increase from gradient 1 to gradient 4
- the presence of a claim has a positive effect on price
- the presence of an organic or a fair-trade label has a positive effect on price

In the biscuits and cakes sector, these results suggest the following diagram:

Diagram summarizing the results from step 1 and 2



CONCLUSION

Our study has clearly some limitations:

- Only one food sector studied (work in progress to extend this study to other food sectors)
- Nutritional “quality” assessment based on a small number of nutrients
- Methodological improvement needed especially to better assess the price effect

However, our analysis suggests that it might be important to consider the role of labelling in the competition between firms

because labelling decisions are clearly related to brand strategies for national brands in a different way than it is for private labels

PERSPECTIVES

Oqali data is matched with TNS Kantar panel allowing to assess the impact of labelling on consumers' behaviour

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Thank you for your attention

Oqali
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Descriptive statistics and OLS estimates of the hedonic price function

	Descriptive statistics		Estimation results
	Mean	SD	Coeff.
Price (€/kg)	6.658	3.579	
Nutrient content			
Energy (kcal/100g)	454.864	53.041	0.020***
Sugars (g/100g)	32.892	8.922	0.108***
Saturated fat (g/100g)	9.689	5.461	0.093***
Fibre (g/100g)	2.972	1.749	0.263***
Sodium (g/100g)	0.252	0.142	1.020
Nutrition labelling			
Gradient 1	0.266	0.442	<i>Omitted</i>
Gradient 2	0.309	0.463	0.379
Gradient 3	0.213	0.410	-0.088
Gradient 4	0.212	0.409	-0.460
Nutrition or health claims	0.193	0.395	0.902**
Type of brand			
National brands	0.312	0.464	3.743***
Private labels	0.534	0.499	0.210
Hard-discount brands	0.153	0.361	<i>Omitted</i>
Consumption information			
Recommended serving size	0.772	0.420	0.642**
Recommended accomp.	0.196	0.397	-0.094
Organic or fair-trade label	0.053	0.223	3.660***
Category of products			
Plain biscuits	0.140	0.347	-0.673
Fruit biscuits	0.131	0.338	-1.653***
Chocolate biscuits	0.394	0.489	1.771***
Plain cakes	0.041	0.198	<i>Omitted</i>
Fruit cakes	0.045	0.208	2.364***
Chocolate cakes	0.105	0.307	0.929*
Other category	0.143	0.350	0.043
Intercept			-9.919***

R²

Asterisks indicate levels of significance:***= 1%; **= 5%; *=10%.

685 obs.