The impact of social capital on the implicit price paid by the Italian consumer for fair trade coffee

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Abstract
Consumers in developed countries are increasingly interested in the consumption of food products incorporating ethical aspects, particularly fair trade products. These products are usually distributed in a network of World Shops and, more recently, in supermarkets and shopping centres. The fair trade product with the highest market share is coffee. This study aims to ascertain the implicit price paid by Italian consumers for the fair trade content of coffee and how this implicit price is influenced by the level of social capital of the territory where consumers live.

The data utilised are scanner data, based on the purchase at supermarkets and shopping centres observed from 2005 to 2007, referred to a territorial unit that is the province. Since scanner data are used, the analysis can allow for the coffee attributes described by the labels: branded, organic, decaffeinated, fair trade, espresso, and so on. The approach followed is the application of an hedonic regression where the dependant variable is the coffee price while the regressors are coffee characteristics (fair trade content and coffee other attributes) and several indicators of provincial social capital, alternatively included.

key-words: hedonic price, coffee, fair trade, scaner data, Italian consumers

JEL codes: C50, D12, L66, Z13

1. Introduction[1]

In the literature, the relationship between consumption and social capital has not been thoroughly investigated yet, while the role played by consumers in creating new meanings for quality and new organisational patterns in food distribution has been frequently stressed, with a particular focus on their role in the process of re-localization of food production chains, especially with respect to regional products. It has been stressed, for example, that the development of regional products can contribute to the creation of social capital, by strengthening local identities, by giving notoriety to the local area and by generating tourist demand, employment and income (Louriero and Hine, 2002).

In developed countries, consumers have become particularly active in the construction of food quality meanings since the awareness about the economic, social and environmental consequences of consumption choices has generated a new social identity: the ethical or socially responsible consumer.

The profile of the socially responsible consumer is known in the literature (Bovone and Mora, 2008): a woman, relatively young, with a medium-high income, high-level education and a high endowment of individual social capital; in Italy, she mainly lives in the North-Eastern regions (D'Alessio *et al*., 2009). The consumption of goods purchased for socially responsible motivations can be assimilated to the consumption of culture (Bovone and Mora, 2008), as in the case Fair Trade (FT) products, distributed by non profit firms in order to promote the economic and social development of particularly underprivileged populations through the international trade of food and home-made products. Consumers have become familiar with these goods sold, with certified labels, in a network of specialized shops, called *World Shops* (WS). People who buy in this segment can be considered the niche segment of more socially responsible consumers.

Besnard *et al.* (2006) and D'Alessio *et al*. (2007; 2009) investigate the purchase motivations for the niche segment of WS consumers in three Italian regions (Emilia Romagna, Puglia and Campania). The results of these studies are: a) the main purchase motivations of FT products are ethics or social responsibility, curiosity and health consciousness in Emilia Romagna or search for product information in Campania e Puglia. b) ethics or social responsibility motivates 76% of consumers in Emilia

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[1] Ornella Wanda Maietta has written § 1, 2, 4 and 5 and Moritz Bosbach has written § 3.

Romagna, 56% in Puglia and 43% in Campania; c) the share of consumers buying FT products for an ethical motivation in Campania and Puglia is higher in the older shops. The percentages of consumers, who include ethics or social responsibility among purchase motivations, seem to be highly correlated to the social capital endowment for the regions analysed underlining a relation between social capital and socially responsible behaviours of consumers.

The concept of social capital is an important analytical tool imported from social sciences into the economic literature as a consequence of Putnam's research (1993), in which the economic agent is analysed as a social being, whose behaviour is explained not only by self-interest, but also by rules, institutions and social relations among individuals.

In the literature, several definitions of social capital have been proposed. Putnam's definition emphasizes the characteristics of a social system that encourage democracy and economic development. Putnam, in fact, defines social capital as the trust; the norms that rule living together; the networks of civil associations; all elements, hence, that improve the efficiency of the social organisation by promoting agreed-upon initiatives. Putnam states that the higher density of civic associations in the Northern Italian regions explains their greater economic success if compared to the economic performance of Southern regions, where civic associations are less widespread.

There are many measures of the level of social capital in Italy: among the others, the most recent ones are implemented by Cartocci (2007) and by Rizzi and Popara (2007) who confirm that Southern Italy provinces present a lower stock of several indicators of social capital.

The stock of social capital of a community seems to influence the motivations and, as a consequence, the willingness to pay of consumers who experience innovative consumption patterns, such as socially responsible consumption. In particular, Fair Trade creates social capital because the relationships among agents are based on trust and values which are shared and transmitted to consumers that adjust their lifestyles (Livraghi, 2007).

The distribution chains has also played a strategic role in the knowledge and in the diffusion of socially responsible consumption, particularly for FT products: for example, since 2006 the English chain, Marks&Spencer, supplies only FT coffee and tea (Wright and McCrea, 2007) and the Italian chain, Coop Italia, has received the prize *Ethic Award 2005* for its *'Solidal'* brand from the *GDO Week,* the leader chain magazine

(Cremonini, 2007). Consumers who purchase FT products in supermarkets and shopping centres can be considered as the mass market segment, more heterogeneous in terms of socio-economic characteristics and purchase motivations. In any case, FT products can be considered as luxury goods since consumers' income influences the willingness to pay for the ethical attribute: the implicit price paid by Italian consumers for the ethical attribute in coffee consumption is not constant but varies with their income from a mean of 2.14 €/kg paid in Southern Italy to a mean of 2.52 €/kg paid in the North-West (Maietta, 2004, 2005).

The present paper represents the continuation of the previous above-mentioned work, whose approach is adopted. The important difference is represented by a more detailed data bank whose territorial unit is represented no longer by the macro-region but by the province. The use of the province allows us to introduce provincial social capital (Cartocci, 2007; Rizzi and Popara, 2007) as a regressor, in order to test whether territorial characteristics influence the willingness to pay for the ethical attribute in the coffee consumption.

The data utilised are scanner data, based on the purchase at supermarkets and shopping centres observed from 2005 to 2007. Since scanner data are used, the analysis can allow for the coffee attributes described by the labels: branded, organic, decaffeinated, fair trade, espresso, and so on. The approach followed is the application of an hedonic regression where the dependant variable is the coffee price while the regressors are coffee characteristics (fair trade content and other attributes) and several indicators of provincial social capital, alternatively included.

2. The hedonic price model and its empirical specification

In this paper, the hedonic price of the ethical content in coffee consumption is estimated for the Italian market. The hedonic price (Rosen 1974) is used to explain the price of a differentiated product (or factor of production) and to estimate the implicit, shadow prices of its quality characteristics.

The product will be sold by a number of manufactures usually supplying more than one model, each model having different characteristics. The hedonic price function is:

$$P = f(z) \tag{1}$$

where z is the vector of characteristics for the product examined.

This hedonic price equation represents the equilibrium price schedule determined by the interaction of consumers and sellers in perfectly competitive markets or where arbitrage exists.

In fact, if the utility function for a representative consumer is:

$$U = U(x, z) \tag{2}$$

$$s.t. \ y = w \, x + f(z) \tag{3}$$

where x is a composite good which represents all goods expect the product examined and w is its price.

The first order conditions for utility maximisation are:

$$f_j = U_j(x, z)/\lambda(x, z) = g(\, y - P, z) \tag{4}$$

where: $f_j = \partial f / \partial z_j$; $U_j = \partial U / \partial z_j$ and λ is the Lagrange multiplier.

The representative consumer will use z_j up to the level where its implicit marginal price will be equal to the willingness to pay for z_j.

A set of $j = 1,..,m$ characteristics can be identified, if data over $k = 1,..., n$ models are collected for a regression of the price of model k (P_k) on the levels of its characteristics (z_{kj}).

$$P_k = \beta_0 + \sum_{j=1}^{m} \beta_j z_{kj} + \varepsilon_k \tag{5}$$

The empirical specification, generally adopted, is semi-logarithmic. For a characteristic described by the dummy variable j, the percentage effect on product price, due to the presence of such an attribute, depends on the value of the estimated coefficient and is uqual to:

$$\Delta P \, /P \ = e^{\beta_j} - 1 \tag{6}$$

The hedonic price model is generally applied to the study of markets with a high level of product differentiation and where the price paid by consumers reflects the

marked variability in product characteristics. Coffee can be described as a heterogeneous good, as in Goddard and Akiyiama (1989) and Sellen and Goddard (1997). Infact, consumers (and roasters-buyers) are concerned about what variety[2] of coffee they acquire. Sellers also distinguish their products by highlighting their country of origin, by emphasising their particular characteristics or by showing a commitment to organic, shade-grown (like Rainforest Alliance) or Fair Trade practices. Then, niche or speciality coffees, new types of coffee drink sold at a premium, have been successfully introduced in the market.

4. The data

In this work, scanned data are used: they are referred to the total observed purchases of all brands supplying roasted coffee in Italian supermarkets over the period 2005-2007 from IRI InfoScan[3] source. Brands usually supply more than one model with different characteristics, most of them described in the label. Price and sale volume for each reference is known; finally, these informations are given for a territorial unit, roughly corresponding to the Italian province.

From this analysis, Italian market appears highly segmented since products of the same brand can differ for a big variety of packaging choice (and then price); also, blends recipes are responsive to changes in consumers' tastes (and relative prices) and new characteristics are offered, like organic and Fair Trade coffee. The sector is composed by few leaders and by a large number of small firms; competition is strong in each segment.

Descriptive statistics are reported in table 1. Moka is an Italian special brewer used to prepare coffee[4]. Espresso coffee is prepared by a high-pressure machine like those used in the bar.

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[2] Varieties are typically divided into robustas, which are more acid and higher in caffeine, and arabicas, which are milder and fragrant. Arabicas are further subdivided into Colombian milds (from Colombia, Kenya and Tanzania), unwashed arabicas (mainly Brazilian) and other milds (mainly from Central and South America).

[3] www.infores.it

[4] Italian coffee is very different from the instant or filter coffee that is a long beverage. This latter is not very widespread in Italy and is mainly consumed by young people.

Variabile	Media	Dev. st.
Price (€/kg)	11.38	13.6
Vacuum-packed	0.76	0.4
Canned	0.06	0.2
Branded	0.55	0.5
Arabica	0.16	0.4
Fair Trade	0.02	0.1
Espresso	0.20	0.4
Organic	0.01	0.1
Private Labels	0.05	0.2
Moka	0.57	0.5
Pre-dosed pods	0.09	0.3
Filter coffee	0.01	0.1
No. packages	1.68	1.2
Coffee beans	0.13	0.3
Gift packaging sets	0.05	0.2
Other packaging sets	0.03	0.2
Decaffeinated	0.09	0.3
Income (€ per capita)	22766	4488
Social capital (Rizzi&Popara, 2007)	0.42	0.3
Social capital (Cartocci, 2007)	1.15	2.49

The dummy variable Branded corresponds to 1 for: Lavazza, Segafredo, Kimbo, Sao, Illy, Vergnano, Mauro, Splendid and Hag. The dummy variable *Private Labels* corresponds to supermarkets labels. Fair Trade labels are: CTM Altromercato, Commercio Alternativo, Libero Mondo and the firms with the Fairtrade label for Italy[5]. The figures for the disposable income variable are proxied by the value added, at base-years, for inhabitant sourced from Istat. Finally, the figures for the social capital indicators are sourced from Cartocci (2007) and from Rizzi and Popara (2006), who report a recent measurement of the civicness component *a la* Putnam.

Table 1 - Descriptive statistics

4. The results of the hedonic regressions

The all sample has been split in sub-.samples corresponding to packaging weights of 125, 250, 500 and 1000 gr in order to keep the quantity fixed. The results of the hedonic regressions performed are reported in the tables 2 and 3, where the bold character underlines the estimated coefficients which are significant at least at the 5% level. All the four regressions have been performed with provincial proxies, whose

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[5]   The list of these firms is at the address: http://www.equo.it

coefficients have been omitted in the tables for space reason.

The two different specifications of social capital give the same results in terms of significativity and values of coefficients except for the social capital indicator which is significant in the second specification as a single variable but not interacted with the ethical attribute for the regressions referred to the packages of 250 and 500 gr weight.

The ethical attribute is significant for all the four sub-samples with a positive sign for the 125, 250 and 500 gr weights and a negative sign for the 1000 gr weight. It is interesting to observe that in Maietta (2004; 2005) the implicit price, paid for the ethical attribute in coffee consumption over the period 1998-2002 in the mass market segment , is significant only for the 250 gr weight. Then, it is possible to state that social responsibility is more widespread among consumers of supermarkets than in the past. The use of the quantity allow us to segment the market: the most socially responsible consumer is who buys the package of 250 gr weight because the implicit price paid for the ethical attribute is higher than the ones paid in the other segments and the one paid in the past in the same segment, reported in Maietta (2004; 2005). These consumers, who are also interested in organic products, are generally single or have a small-size family and/or can buy smaller packages with a higher price, they are women and men, whose lifestyle is inspired to social responsibility, described by Catturani *et al*. (2008) and by Cicia *et al*. (2008).

The package of 125 gr weight is probably purchased by edonist or curious consumers willing to experiment new ways of making coffee, i.e., the pre-dosed pods. The implicit price paid for the ethical attribute is low but still positiva for consumers who choose the package of 500 gr weight, probably also because thay prefer the formula of coffee beans.

The implicit price paid for the ethical attribute is negative for who buys the package of 1000 gr weight, thus confirming that the willingness to pay for the ethical attribute is positively related to consumer income: this packaging formula presents the lowest unitary price.

Finally, the indicators of social capital do not influence the implicit price paid for the ethical attribute in coffee consumption in the mass marhet segment. The indicators of social capital *à la* Putnam, sourced from Rizzi and Popara (2007) and Cartocci (2007), tested in this paper are not significant in their interaction with the ethical attribute.

Table 2 - The coefficients of the hedonic regressions. Dependant variable ln(Price); social capital from Rizzi&Popara (2007)

Variables	Coef.	P-value	Coef.	P-value	Coef.	P-value	Coef.	P-value
	weight = 125gr		weight = 250 gr		weight = 500 gr		weight=1000 gr	
Constant	**6.59**	0.00	4.18	0.07	2.92	0.16	0.12	0.96
Vacuum-packed	**-1.86**	0.00	**-0.85**	0.00	**-0.27**	0.00	-0.06	0.20
Canned	**-2.63**	0.00	**-0.23**	0.00	0.05	0.08		
Branded	**0.15**	0.00	**0.28**	0.00	**0.06**	0.00	**0.25**	0.00
Arabica	**0.11**	0.00	**0.10**	0.00	**0.26**	0.00	**0.25**	0.00
Fair Trade	**0.16**	0.00	**0.56**	0.00	**0.11**	0.04	**-0.24**	0.00
Fair Trade x Social Capital	-0.09	0.11	-0.07	0.12	0.01	0.92	-0.04	0.83
Organic	0.04	0.20	**0.28**	0.00			**0.55**	0.00
Private Labels	-0.09	0.00	0.01	0.30	**-0.10**	0.00	**-0.03**	0.04
Dummy 2006	**0.01**	0.02	**0.02**	0.02	**0.02**	0.01	**0.03**	0.00
Dummy 2007	0.01	0.12	**0.03**	0.01	**0.05**	0.00	**0.06**	0.00
Dummy North-East	-0.03	0.39	0.01	0.90	-0.03	0.44	**-0.08**	0.02
Dummy Centre	-0.06	0.30	**-0.12**	0.01	**-0.11**	0.03	0.01	0.92
Dummy Mezzogiorno	-0.13	0.32	-0.12	0.36	-0.15	0.21	-0.01	0.93
lnIncome	-0.10	0.54	-0.14	0.55	-0.07	0.74	0.19	0.42
Social capital	0.04	0.13	0.01	0.62	0.02	0.35	0.01	0.85
Moka	**-1.19**	0.00	**-0.15**	0.00	**-0.10**	0.00	**-0.28**	0.00
Pre-dosed pods	**-2.29**	0.00						
Filter coffee					**1.12**	0.00	0.15	0.35
No. packages					0.01	0.18	**-0.06**	0.00
Coffee beans					**0.18**	0.00	-0.01	0.67
Gift packaging sets			**0.50**	0.00	**0.45**	0.00		
Other packaging sets			**-0.34**	0.00			-0.02	0.74
Decaffeinated			-0.01	0.49				
Espresso	**-0.05**	0.00						
No. observations	4004		21722		15914		10312	
R^2	0.88		0.59		0.44		0.45	

Table 3 - The coefficients of the hedonic regressions. Dependant variable ln(Price); social capital from Cartocci (2007)

Variables	Coef.	P-value	Coef.	P-value	Coef.	P-value	Coef.	P-value
	weight = 125 gr		weight = 250 gr		weight = 500 gr		weight =1000 gr	
Constant	**6.59**	0.00	4.14	0.07	2.86	0.16	0.14	0.95
Vaccum-packed	**-1.86**	0.00	**-0.85**	0.00	**-0.27**	0.00	-0.06	0.20
Canned	**-2.63**	0.00	**-0.23**	0.00	0.05	0.08		
Branded	**0.15**	0.00	**0.28**	0.00	**0.06**	0.00	**0.25**	0.00
Arabica	**0.11**	0.00	**0.10**	0.00	**0.26**	0.00	**0.25**	0.00
Fair Trade	**0.16**	0.00	**0.56**	0.00	**0.11**	0.04	**-0.24**	0.00
Fair Trade x Social capital	-0.09	0.11	-0.07	0.12	0.01	0.92	-0.04	0.83
Organic	0.04	0.20	**0.28**	0.00			**0.55**	0.00
Private Labels	**-0.09**	0.00	0.01	0.30	**-0.10**	0.00	**-0.03**	0.04
Dummy 2006	**0.01**	0.02	**0.02**	0.02	**0.02**	0.01	**0.03**	0.00
Dummy 2007	0.01	0.12	**0.03**	0.01	**0.05**	0.00	**0.06**	0.00
Dummy North-East	-0.03	0.30	-0.01	0.79	**-0.08**	0.05	-0.07	0.08
Dummy Centre	-0.03	0.43	-0.03	0.60	-0.04	0.50	-0.06	0.22
Dummy Mezzogiorno	-0.05	0.41	-0.08	0.34	-0.07	0.38	-0.03	0.70
LnIncome	-0.10	0.54	-0.14	0.55	-0.07	0.74	0.19	0.42
Social capital	0.00	0.46	**0.02**	0.02	**0.03**	0.00	0.00	0.62
Moka	**-1.19**	0.00	**-0.15**	0.00	**-0.10**	0.00	**-0.28**	0.00
Pre-dosed pods	**-2.29**	0.00						
Filter coffee					**1.12**	0.00	0.15	0.35
No. packages					**0.01**	0.18	**-0.06**	0.00
Coffee beans					**0.18**	0.00	-0.01	0.67
Gift packaging sets			**0.50**	0.00	**0.45**	0.00		
Other packaging sets			**-0.34**	0.00			-0.02	0.74
Decaffeinated			-0.01	0.49				
Espresso	**-0.05**	0.00						
No. observations	4004		21722		15914		10312	
R²	0.88		0.59		0.44		0.45	

5. Concluding remarks

Objective of the present paper is to test whether territorial characteristics influence the implicit price paid for the ethical attribute in the coffee consumption by consumers of supermarkets an shopping centres, who can be considered as the mass market segment of socially responsible consumers.

The data utilised are scanner data, based on the purchase at supermarkets and shopping centres observed from 2005 to 2007; the coffee attributes analysed are those described by the labels: branded, organic, decaffeinated, fair trade, espresso, and so on. The approach followed is the application of an hedonic regression where the dependant variable is the coffee price while the regressors are coffee characteristics and two indicators of provincial social capital, alternatively included.

The analysis performed shows a higher diffusion of social responsibility in the mass market than in the past, because the implicit price paid for the ethical attribute is positive and significant for the consumers who buy the packages of 125, 250 and 500 gr weight while it is significant and negative for the consumers who buy the package of 1000 gr, thus confirming that the willingness to pay for the ethical attribute is positively related to consumer income.

Finally, the indicators of social capital do not influence the implicit price paid for the ethical attribute in coffee consumption in the mass marhet segment. The indicators of social capital *à la* Putnam, sourced from Rizzi and Popara (2007) and Cartocci (2007), tested in this paper are not significant in their interaction with the ethical attribute.

References

Besnard F., M. D'Alessio, O.W. Maietta, (2006). Analisi delle motivazioni di acquisto dei prodotti alimentari del Commercio equo e solidale: un'analisi comparata sui consumatori delle botteghe del mondo in Emilia Romagna e in Campania, *Economia Agro-alimentare*, **10**, 2: 131-169.

Bovone L., E. Mora, (2008): (eds.), *La spesa responsabile*, Roma: Donzelli Editore.

Cartocci R., (2007). *Mappe del tesoro. Atlante del capitale sociale in Italia.* Bologna: Il Mulino.

Catturani I., G. Nocella, D. Romano, G. Stefani, (2008). *Segmenting the Italian coffee market: marketing opportunities for economic agents working along the international coffee chain.* Comunicazione, XII Congresso EAAE, Ghent, 26-28 Agosto.

Centro Nuovo Modello di Sviluppo (2003), *Guida al consumo critic*o. 4ª edizione. Bologna: EMI.

Cicia G., M. Corduas, T. Del Giudice, D. Piccolo, (2009). *L'analisi delle preferenze dei consumatori nei confronti delle produzioni di qualità: uno studio del consumo di caffè equosolidale mediante il modello CUB.* In Proceedings of XLV SIDEA Workshop.

D'Alessio M., B. De Devitiis, O.W. Maietta, (2009). *Il commercio equo e solidale nell'analisi economica: le motivazioni all'acquisto dei prodotti.* In F. Pernazza (a cura di), *Il commercio equo e solidale: principi, regole, modelli organizzativi*, Napoli: ESI.

Goddard E. W., T. Akiyiama, (1989). United States demand for coffee imports, *Agricultural Economics*, **3**: 147-159.

Livraghi R., (2007). The Economics of Fair Trade, *Journal for Perspectives of Economic Political and Social Integration* , **13**: 17-38.

Loureiro M. L., Hine S., (2002). Discovering Niche Markets: A Comparison of Consumer Willingness to Pay for Local (Colorado Grown), Organic and GMO-free Products, *Journal of Agricultural and Applied Economics,* **34**: 477-487.

Maietta O. W., (2005), The hedonic price of fair trade coffee for the Italian consumer, *Cahiers Options Méditerranéennes,* 64, 45-55.

Maietta O.W., (2004). Le preferenze dei consumatori italiani di caffé: un'indagine su dati scannerizzati con particolare attenzione ai prodotti del commercio equo e solidale. In E. Defrancesco (ed.), *La liberalizzazione degli scambi dei prodotti agricoli tra conflitti e accordi*, Milano: F. Angeli.

Putnam R. (with R. Leonardi and R. Nanetti), (1993), *Making democracy work*, Princeton NJ: Princeton University Press.

Rizzi P., S. Popara, (2006). Il capitale sociale: un'analisi sulle province italiane, *Rivista di Economia e Statistica del Territorio*, **1**: 67-86.

Rosen S., (1974). Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition, *Journal of Political Economy*, **82**: 34-55.

Sellen D., E. Goddard, (1997). Weak separability in coffee demand system. *European Review of Agricultural Economics*, **24**: 133-144.

Wright S., D. McCrea, (2007): (eds.). *The Handbook of Organic and Fair Trade Food marketing,* Oxford: Backwell Publishing.