# Companies' monetary benefits from consumer social responsibility

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# 1 Motivation

In recent years, the construct of consumer social responsibility has attracted significant attention within academic research and practice. Devinney et al. (2006) define consumer social responsibility as 'the conscious and deliberate choice to make certain consumption choices based on personal or moral beliefs' (p. 3). In this vein, the consumption of fair trade (FT) products can be seen as one prominent example of socially responsible consumption. As long as consumer social responsibility translates into increasing consumer willingness-to-pay (WTP) for FT products, companies might benefit if they sell FT products instead of, or in addition to, traditionally traded products. Although the FT market constitutes a niche market, the revenue from FT products is huge: in 2015 the worldwide revenue of FT products was approximately 7.3 billion dollars, whereas in Germany the realised revenue was 978 million dollars (Statista 2015d; Statista 2015b).

Products are called 'FT products' if they adhere to the guidelines of the FLO (fair trade labelling organisation) and are marked with an FT label. These guidelines have been developed to secure the rights of workers and to fix labour conditions. They address issues such as fair commodity prices, fair labour conditions for suppliers' employees (e.g. no forced or child labour) and the compliance of producers with workers' rights, among others (Fairtrade International 2015).

In Germany, the vast majority of FT products being distributed are coffee, fruits, flowers, chocolate and fruit juice (Statista 2015c). Much academic research has already been dedicated to FT coffee; several studies have been published,[1] which deal with the price premia that respondents are willing to pay. So far, however, the marketing literature has focused much less on FT fruit juices, despite the fact that fruit juices count as the top distributed FT products in Germany.[2] In our study, we decided to examine orange juice for several rea-

1 Andorfer and Liebe (2012) provide a literature review within the FT category.

2 To the best of our knowledge, Peyer and Balderjahn (2007) conducted the only FT orange juice study based on a German data sample.

sons: orange juice is the second most preferred fruit juice in Germany, only excelled in unit sales by apple juice (Statista 2015e). However, while apples can be planted in the (developed) Global North, where reasonable wages should be paid, oranges are commonly grown in the (emerging) Global South, where FT standards should be of crucial relevance. For example, in Germany more than 95 per cent of the imported frozen orange juice concentrate comes from South America, namely, Brazil or Mexico.

Despite the increasing sales potential of FT products, almost all the leading orange juice brands in Germany do not yet have an FT label. The Austrian brand Pfanner is currently the only established manufacturer's brand selling FT orange juice in the German market. However, Pfanner's annual unit sales (39m litres in 2015) are rather small compared to, for example, Eckes-Granini (341m litres in 2015), Valensina (224m litres in 2015) or Albi (117m litres in 2015) (Statista 2015a). To sum up, as yet, none of the top 10 leading brands in Germany is selling an FT orange juice. This is surprising because recent studies on FT products revealed that consumers increasingly acknowledge social product components, for example, the FT label, within their purchasing decision process (Auger et al. 2008). Furthermore, Tully and Winer's (2014) meta-study reported average price premia of 17 per cent, which is quite high. Last but not least, Peyer and Balderjahn (2007) found that an already established brand might significantly benefit from product enhancement with an FT label.

Therefore, we investigate whether German orange juice brands could benefit monetarily from the admission of FT standards, namely, the introduction of an FT label, and hereby consumer social responsibility. We will answer the following research questions: (1) Does the inclusion of an FT label increase a respondent's utility and therefore WTP? (2) How do a respondent's individual background variables, for example, gender or age, influence his/her WTP for the FT label? (3) What happens to equilibrium prices and profits if one brand adds an FT product variant?

To answer these research questions, we conducted an empirical conjoint choice study and evaluated the data by estimating mixed logit models. Subsequently, we calculated respondents' WTP and determined equilibrium prices and profits in a counterfactual simulation. We present the approaches and re-

sults of our empirical study in Section 2. In Section 3 we draw conclusions from the results of our research questions before closing the discussion.

# 2 Experimental study

## 2.1 Questionnaire set-up

We conducted a conjoint choice experiment, where 360 (student) respondents were asked to choose their preferred orange juice alternative out of 16 choice sets, respectively. Each choice set contained three orange juice brands as choice alternatives and a no-choice option. The orange juice alternatives were built by permuting the following attributes with their associated levels:

- Brand (Albi, Granini, Hohes C, Valensina)
- Price per litre (1.09€, 1.39€, 1.69€, 1.99€)
- Type of packaging (PET bottle, tetrapak)
- Display of an FT label (no, yes)

For the non-price attributes (brand, packaging and display of an FT label), we used dummy coding, where 'Albi', 'PET bottle' and 'no FT label' served as reference categories. For the price attribute, we estimated a linear parameter.

In addition to the choice task, we were interested in respondents' individual background variables. Therefore, the respondents were asked about their age, gender, and 'consciousness of fair consumption' (CFC) level. The last variable served as a surrogate for consumer social responsibility. To determine the individual level of CFC, we used the scale developed by Balderjahn, Peyer and Paulssen (2013). This scale combines a respondent's beliefs about adherence to a specific labour standard with the importance a consumer attaches to adherence to this standard. We employed confirmatory factor analysis (CFA) to obtain CFC estimates at the respondent level.

## 2.2 Random utility and willingness-to-pay

Let us take a look at the underlying utility function and the model used to evaluate the choice data. We followed random utility theory and assumed that the utility of a respondent i for a certain alternative j in choice occasion t could be divided into a deterministic part and a random error term:

$$u_{ijt} = x_{ijt}^T \cdot \beta_i + \gamma_i \cdot p_{ijt} + \varepsilon_{ijt} \text{ with } \varepsilon_{jij} \sim EV(0,1).$$

The deterministic part is the sum of the product of a design vector, $X_{itj}$, multiplied by an individual part-worth utility vector $\beta_i$ (for all non-price attributes), and the product of the orange juice's price, $\rho_{ijt}$, multiplied by an individual price parameter $\gamma_i$. The random error term captures all effects that are not included within the deterministic part but which also influence the respondent's utility. If it is assumed to be Gumbel-distributed, the multinomial logit model results.

Since we want to account for observed heterogeneity, we follow Allenby and Ginter's (1995) approach and specify the individual preference parameter as:

$$[\beta_i^T, \gamma_i]^T = \Gamma^T \cdot \alpha_i + \vartheta_i \text{ with } \vartheta_i \sim MNV(0, \Lambda),$$

where the matrix $\Gamma$ contains the effects of our individual background variables on a respondent's preferences and $\alpha_i$ is a vector, which contains the individual background variables, for example, gender, age and CFC level. The unobserved heterogeneity term $\vartheta_i$ is assumed to be Gaussian-distributed with zero mean and covariance matrix $\Lambda$. Therefore, we apply the mixed logit model and use maximum simulated likelihood to estimate individual preference parameters (see Train 2009 for details regarding the model and its estimation).

In order to determine a respondent's WTP for the FT label attribute, we calculate the marginal rate of substitution between the FT attribute and the price.

Since we use dummy coding for the FT attribute, the WTP of respondent i can be computed as follows (see Tully and Winer 2014):

$$\mathrm{WTP}_i = \frac{\beta_i^{\text{FT label}}}{|\gamma_i|}.$$

## 2.3 Results

### 2.3.1 Preference and WTP for the FT label

Table 1 displays the estimation results of the mixed logit model, namely, the population means of preference parameters and their standard deviations (as a measure of the degree of unobserved heterogeneity), as well as the interaction terms with the individual background variables, that is, gender, age and CFC level.

| | Means | Standard deviations | Gender | Age | CFC |
|---|---|---|---|---|---|
| Granini | 0.468* | 2.507* | −0.306 | 0.323 | 0.176 |
| Hohes C | 1.572* | 2.678* | 0.070 | 0.841* | −0.036 |
| Valensina | 0.472* | 2.450* | −0.166 | −0.324 | −0.110 |
| FT label | 2.170* | 2.356* | 1.198* | −0.156 | 1.017* |
| Carton | 1.142* | 3.183* | 0.115 | 0.363* | 0.722* |
| Price | −6.364* | 6.558* | 0.374 | 0.160 | 0.655* |
| NONE | −8.294* | 10.001* | 1.951* | 0.249 | 1.728* |

* Parameters are significant at $p < 0.05$.

**Table 1: Parameter estimates**

Let us first examine the population means of the preference parameters: obviously, the reference brand 'Albi' is the least preferred brand. The display of the FT label increases a respondent's utility, while the price parameter shows the expected negative sign. Hence, increasing prices decreases utilities. The carton packaging is preferred to the PET bottle. However, the size of the standard deviations shows that preference heterogeneity is highly prominent; for example, for the FT label, the standard deviation exceeds the parameter's magnitude. Hence, we may derive the following: on the one hand, there are respondents who strongly favour FT orange juice, while, on the contrary, there are respondents who do not like the FT label at all.

An inspection of the interaction terms reveals further insights: a high CFC level is associated with an increasing preference for the FT label, the carton packaging, the no-choice option and decreasing price sensitivity. Females are more likely to choose an FT orange juice or the no-choice option. Older respondents prefer the carton packaging and the brand 'Hohes C'.

We calculated each respondent's individual WTP for the FT attribute and found a median FT price premium of 24 euro cents. The mean FT price premium was approximately 35 euro cents. The discrepancy between the median and mean WTP once more reflects the substantial heterogeneity within our data. Focusing on the median WTP results, we found that young women with a high CFC are willing to pay the highest premium for the FT product feature (› 50 euro cents), whereas older men with a low level of CFC are willing to pay the smallest premium (‹ 10 euro cents). Hence, we were able to validate the literature's finding that the degree of a respondent's consideration of social product features is associated with the level of his/her individual background variables (Auger, Devinney, and Louviere 2003).

### 2.3.2 Equilibrium prices and profits

So far, our findings have suggested a high WTP for the FT label. However, the WTP is a purely demand-based measure that takes into account neither additional costs resulting from the introduction of an FT label nor the competitive market situation. Hence, not surprisingly, it is well known that the WTP often overstates the potential price premium (Allenby et al. 2014).

Therefore, we leave the individual utility level, which we used to calculate respondents' individual WTP, and focus on aggregated choice probabilities and market shares of our four brands instead. In our model, the market share is obtained via an integration of the logit choice probability pr ($x_j$, $p_j$, $\beta_j$, $\gamma_j$) over the (estimated) heterogeneity distribution. For brand j we have:

$$s_j = \int pr(x_j, p_j, \beta_i, \gamma_i) \cdot \varphi(\vartheta_i | \Gamma, \Lambda) d\vartheta_i.$$

For simplicity's sake, we consider one retailer, who uses fixed mark-ups $m_j$ for each brand j. We follow the approach of Yang, Chen and Allenby (2003) and assume that manufacturers maximise profits $\pi_j$ of brand j under Bertrand competition:

$$\max_{w_j} \pi_j = M \cdot s_j \cdot (w_j - c_j)$$

with $p_j = w_j + m_j$, where M denotes the market size (which we normalise to 1 w.l.o.g.), $c_j$ describes the costs and $w_j$ is the wholesale price of brand j. For the cost specification, we assume that the FT label attribute increases the marginal cost by 5 per cent. The maximisation is based on a fixed-point approach. Table 2 displays the equilibrium price results in three different market scenarios.

| | Scenario 0 | Scenario 1 | | Scenario 2 | |
|---|---|---|---|---|---|
| Brand | Price | Price | Diff. | Price | Diff. |
| Albi | 1.793 | 1.800 | 0.007 | 1.778 | −0.015 |
| Granini | 1.890 | 1.919 | 0.029 | 1.876 | −0.014 |
| Hohes C | 1.893 | | | 1.953 | 0.060 |
| Hohes C (FT) | | 2.125 | 0.232 | 2.174 | 0.281 |
| Valensina | 1.787 | 1.810 | −0.166 | 1.776 | −0.011 |

**Table 2: Equilibrium prices in varying market scenarios**

In scenario 0, we consider our four brands, assuming that none of them sells an FT orange juice. The calculation of equilibrium prices reveals that Hohes C yields the highest price, which is on par with the price of Granini. Albi and Valensina also show lower prices being on par with each other.

In scenario 1, we assume that Hohes C switches entirely to an FT variant. In this case, the price increases by 23 euro cents. In scenario 2, we consider a product line extension of Hohes C; in other words, Hohes C introduces an FT version in addition to the traditionally traded juice. In this case, Hohes C may charge a 28 euro cent higher price for the FT juice and, interestingly, a 6 euro cent higher price for its traditionally traded juice. Table 3 displays the corresponding equilibrium profit results.

While Hohes C already yields the highest profit (8.5 euro cents) in scenario 0, these profits increase to 13 euro cents (+53%) in scenario 1. In scenario 2, all non-FT orange juices lose profits. However, Hohes C increases its total profits by 89 per cent. Because of the strategy's superior financial success, it seems advisable to extend the product line (scenario 2), thereby giving consumers the opportunity to reveal their true social preferences, rather than completely switching to the FT variant (scenario 1), thus forcing buyers of Hohes C to buy an FT juice (Devinney et al. 2006).

| | Scenario 0 | Scenario 1 | | Scenario 2 | |
|---|---|---|---|---|---|
| Brand | Profit | Profit | Diff. | Profit | Diff. |
| Albi | 0.021 | 0.023 | 0.002 | 0.018 | –0.008 |
| Granini | 0.028 | 0.033 | 0.005 | 0.025 | –0.009 |
| Hohes C | 0.085 | | | 0.057 | –0.028 |
| Hohes C (FT) | | 0.130 | 0.045 | 0.104 | 0.104 |
| Valensina | 0.043 | 0.048 | 0.005 | 0.039 | –0.004 |

**Table 3: Equilibrium profits in varying market scenarios**

# 3 Conclusions

To investigate whether the introduction of an FT label might pay off monetarily and whether brands might benefit financially from consumer social responsibility, we conducted an empirical conjoint choice study using the top German orange juice brands. In particular, we formulated three detailed research questions: (1) Does the inclusion of an FT label increase a respondent's utility and therefore WTP? (2) How do a respondent's individual background variables influence his/her WTP for the FT label? (3) What happens to equilibrium prices and profits if one brand adds an FT product variant?

We allowed for observed and unobserved consumer preference heterogeneity by estimating a mixed logit model. (1) We found that the vast majority of respondents (85%) favour the FT label attribute, which translates into increasing WTP. The estimation of a mixed logit model further enabled us to additionally address the influence of individual background variables (e.g. age, gender and individual level of CFC) on consumers' WTP. (2) We found that young women with a high CFC level were willing to pay the highest premium for the FT label attribute, while older men with a low level of CFC were willing to pay the smallest premium. The mean WTP was 35 euro cents, which translates into an average price premium in the orange juice category of 20 per cent. To gain further insights, we conducted an equilibrium analysis, in which equilibrium prices and profits for the examined orange juice brands were determined in a counterfactual simulation. (3) In the case of Bertrand competition at the manufacturer level and a retailer using fixed mark-ups, the equilibrium price increased by 23 euro cents respectively 28 euro cents. The equilibrium profit increase for the leading brand Hohes C was considerable (53% respectively 89%).

In sum, the equilibrium price of Hohes C is only two-thirds of the (mean) WTP for the FT label, but revenues are still higher for Hohes C after the introduction of an FT orange juice. Therefore, the introduction of an FT label seems to be advisable from an economic point of view, and Hohes C appears to benefit substantially in monetary terms from consumer social responsibility.

## References

Allenby, Greg M., and James L. Ginter. 1995. 'Using extremes to design products and segment markets.' *Journal of Marketing Research* 32 (4): 392–403.

Allenby, Greg M., Jeff D. Brazell, John R. Howell, and Peter E. Rossi. 2014. 'Economic valuation of product features.' *Quantitative Marketing and Economics* 12 (4): 421–456.

Andorfer, Veronika A., and Ulf Liebe. 2012. 'Research on fair trade consumption – A review.' *Journal of Business Ethics* 106 (4): 415–435.

Auger, Pat, Timothy M. Devinney, and Jordan J. Louviere. 2003. 'What will consumers pay for social product features?' *Journal of Business Ethics* 42 (3): 281–304.

Auger, Pat, Timothy M. Devinney, Jordan J. Louviere, and Paul F. Burke. 2008. 'Do social product features have value to consumers?' *International Journal of Research in Marketing* 25: 183–191.

Balderjahn, Ingo, Mathias Peyer, and Marcel Paulssen. 2013. 'Consciousness for fair consumption: Conceptualization, scale development and empirical validation.' *International Journal of Consumer Studies* 37 (5): 546–555.

Devinney, Timothy M., Pat Auger, Giana Eckhardt, and Thomas Birtchnell. 2006. 'The other CSR: Consumer Social Responsibility.' *Stanford Social Innovation Review, Leeds University Business School Working Paper No. 15–04*. Accessed 25 January 2017. doi:10.2139/ssrn.901863

Fairtrade International. 2015. *Child labour and forced labour guidelines*. Accessed 25 January 2017. http://www.fairtrade.net/fileadmin/user_upload/content/2009/programmes/2015-fairtrade-child-forced-labor-guidelines.pdf.

Peyer, Mathias, and Ingo Balderjahn. 2007. 'Zahlungsbereitschaft für sozialverträgliche Produkte.' *Jahrbuch der Absatz- und Verbrauchsforschung* 3: 267–288.

Statista. 2015a. 'Inlandsabsatz der führenden Hersteller von Fruchtsäften und Nektaren in Deutschland im Jahr 2015 (in Millionen Liter).' *Statista*. Accessed 25 January 2017. https://de.statista.com/statistik/daten/studie/76900/umfrage/hersteller-fruchtsaft-fruchtnektar-getraenke-inlandsabsatz/.

––– 2015b. 'Revenues from fair trade products in Germany from 1993 to 2015 (in million euros).' *Statista*. Accessed 25 January 2017. https://www.statista.com/statistics/516727/fair-trade-product-sales-germany/

––– 2015c. 'Umsatz mit Fairtrade-Produkten in Deutschland nach Warengruppen in den Jahren 2012 bis 2015 (in Millionen Euro).' *Statista*. Accessed 25 January 2017. https://de.statista.com/statistik/daten/studie/226517/umfrage/fairtrade-umsatz-in-deutschland/.

––– 2015d. 'Umsatz mit Fairtrade-Produkten weltweit in den Jahren 2004 bis 2015 (in Millionen Euro).' *Statista*. Accessed 25 January 2017. https://de.statista.com/statistik/daten/studie/171401/umfrage/umsatz-mit-fairtrade-produkten-weltweit-seit-2004/.

––– 2015e. 'Pro-Kopf-Konsum der beliebtesten Fruchtsäfte in Deutschland in den Jahren 2005 bis 2015 (in Liter).' *Statista*. Accessed 25 January 2017. https://de.statista.com/statistik/daten/studie/6185/umfrage/pro-kopf-verbrauch-der-4-beliebtesten-fruchtsaefte/.

Train, Kenneth E. 2009. *Discrete choice methods with simulation*. Cambridge: Cambridge University Press.

Tully, Stephanie M., and Russell S. Winer. 2014. 'The role of the beneficiary in willingness to pay for socially responsible products: A meta-analysis.' *Journal of Retailing* 90 (2): 255–274.

Yang, Sha, Yuxin Chen, and Greg M. Allenby. 2003. 'Bayesian analysis of simultaneous demand and supply.' *Quantitative Marketing and Economics* 1 (3): 251–275.