

May social labeling compensate the negative impact of monetary incentives in spillover effects? The case of products close to expiration date

Abstract: Using monetary incentives to trigger eco-friendly behaviors is common nowadays. However, positive spillover effect is less likely to emerge in these cases, while spillover is crucial considering the large number of sustainable issues we are confronted to. Research shows that social labeling can be used to trigger positive spillover. Yet, it has not made clear whether social labeling may be effective when a monetary incentive is offered to encourage behaviors. To fill this gap, our study investigates the effectiveness of social labeling in the purchase of products-close-to-the-expiration-date offered at a reduced price. Based on two experimental studies, we investigate the consequences of an eco-friendly and an economical labeling on subsequent behaviors. We aim at contributing to the social labeling literature by studying the unique case of eco-friendly behaviors led by monetary incentives and see whether the negative impact of monetary incentives on new behaviors may be turned around.

Keywords: *spillover effect, social labeling, monetary incentives*

Track: *Social Responsibility & Ethics*

1. Introduction

In the nineties, scientists begun warning policy makers and researchers about their tendency to tackle each environmental problem in isolation (Thøgersen, 1995). They argued that a positive change in one consumers' ecological behavior may "spill over" into other eco-friendly behaviors and that a holistic view should be preferred (Thøgersen, 1999). Spillover effect refers to the impact of a behavior on subsequent related behaviors (Dolan & Galizzi, 2015) and suggests that engaging in one behavior may lead people to engage in other related behaviors. For instance, making effort in waste recycling makes people more careful about excessive packaging when shopping (Thøgersen, 1999). Triggering positive spillover effect from a behavior to multiply the positive impacts this behavior has on our society remains a timely objective, considering the many challenges our society is confronted to. However, research highlights several limits to the emergence of positive spillover effect, one of them being the use of monetary incentives to induce eco-friendly behaviors (Thøgersen & Crompton, 2009). This limit represents an issue in our society as monetary incentives are often used as incentive for eco-friendly behaviors (e.g. lower taxes for green vehicles, bonus for people who take their bicycle to go working).

One technique to trigger positive spillover effect is social labeling (i.e. labeling someone as an eco-friendly person in order to activate eco-friendly dispositions that impact subsequent eco-friendly behaviors) (Cornelissen, Dewitte, Warlop, and Yzerbyt, 2007). Regarding the negative impact a monetary incentive may have on positive spillover effect (Thøgersen & Crompton, 2009), one may wonder whether social labeling is effective in such situations. Yet, to the best of our knowledge, no research has studied social labeling technique in the specific case of an eco-friendly behavior led by monetary incentives.

In this study, we aim at addressing this gap by investigating the effectiveness of the social labeling technique to reactivate the positive spillover effect in the context of products close to the expiration date ("PCE" hereafter). Often rejected by consumers (Gruber, Holweg, and Teller, 2016), PCE constitute a large amount of food waste and represent an economic as well as an environmental issue (de Hooe et al., 2016). To avoid throwing them away, retailers have introduced the date-based pricing, a tactic that consists in decreasing the price when the product approaches the expiration date and limits the economic losses. The monetary incentive seems effective for consumers who tend to buy these products they would overlook in favor of products presenting longer expiration dates (Aschemann-Witzel, 2018). If pushing sales with price reduction helps prevent food waste at retailers' level, it is not clear

what consequences it has on food waste at home and on other eco-friendly behaviors (Aschemann-Witzel, 2018), notably through overall attitude change. Based on this context, we want to understand how and in what conditions it is possible to trigger positive spillover effect emerging from the purchase of PCE. In particular, we want to analyze how consumers react to an environmental label compared to an economical label (i.e. smart on saving money), after they purchased a PCE at a reduced price.

We expect to contribute to the social labeling literature, by studying the case where the eco-friendly behavior is triggered by a monetary incentive and to the spillover effect stream of research by offering a “solution” to the limit identified by Thøgersen & Crompton (2009) when the eco-friendly behavior is led by monetary incentives.

2. Theoretical Background

This research is based on two fundamental concepts that are interrelated. We describe first the positive spillover effect as well as its limit when there is a conflict of motivations. Second, we dig deeper in the social labeling technique, developed to trigger this spillover effect.

2.1. Positive spillover effect

“Positive spillover effect” refers to an initial behavior that positively affects the likelihood of engaging in subsequent related behaviors (Nilsson, Bergquist, and Schultz, 2017). By encouraging a behavior in a specific area, one can also contribute to other related areas. Different theories may be mobilized to explain this positive impact, but in the framework of this research, we will focus on the “Self-Perception Theory” (Bem, 1972). According to this theory, people form attitudes based on their own past behaviors. Engaging in an ethical behavior may thus make people develop ethical attitude (Holland, Verplanken, and Van Knippenberg, 2002). This attitude leads then people to behave more ethically and positive spillover arises (Nilsson et al., 2017). Based on the self-perception theory, positive spillover effect is more likely to appear when people can easily attribute their behavior to a motivation directly related to the behavior (i.e intrinsic motivation; such as food waste reduction). Thanks to this attribution, people may infer values from the behavior they have engaged in and consequently change their attitude towards the cause that is behind the initial intrinsic motivation (e.g. environmental concerns). This, in turn, would lead them to adopt

subsequent behaviors consistent with these values (Thøgersen & Crompton, 2009). However, a conflict of motivations may arise when an intrinsic (e.g. environmental concerns) and an extrinsic (e.g. monetary incentives) motivations co-exist. Literature in psychology has classified motivations into two important categories: intrinsic motivations and extrinsic motivations (Vallerand, 1997). Intrinsic motivations arise when individuals engage in a behavior for the behavior in itself. Rewards are internal and come from the pleasure and satisfaction the behavior gives to the individuals, among others due to their values (Deci, 1975). Extrinsic motivations emerge when individuals engage in a behavior to receive rewards or avoid punishment coming from outside (Deci & Ryan, 1980). Interestingly, the presence of extrinsic motivations seems to undermine the emergence of intrinsic motivations (Deci, 1971). People would indeed experience more difficulties attributing their behavior to the intrinsic motivation when extrinsic motivations co-occur (Steinhorst, Klöckner, and Matthies, 2015). The price reduction offered by the retailers for the PCE might thus limit positive spillover effect.

2.2. Social labeling

Literature indicates that different tactics may trigger positive spillover effect. Social labeling appears as a relevant one to consider. This technique consists in labeling someone as an eco-friendly person in order to activate eco-friendly dispositions that impact subsequent eco-friendly behaviors (Charry & Parguel, 2018). Based on self-perception theory, labeling consumers as eco-friendly can lead them to change their self-perception and finally make them more likely to engage in other eco-friendly behaviors (Nilsson et al., 2017). Interestingly, social labeling may trigger ecofriendly behaviors although the initial motivation was not necessarily ecological (Cornelissen et al., 2007). For instance, Cornelissen and colleagues (2007) showed that social labeling increases positive spillover effect on the purchase of other eco-friendly products when an eco-friendly television was chosen and although it might have been selected for other features pre-tested as highly important for consumers (e.g. dimensions of the screen). These studies on social labeling for eco-friendly behaviors focus on eco-friendly labeling to trigger positive spillover effect. However, based on self-perception theory and social labeling mechanisms, it should be possible to propose an economical label to consumers. With such label, one highlights the extrinsic motivation and social labeling might have a negative impact on the spillover effect.

3. Research Question and Hypotheses

As explained in section 2, monetary incentives, such as price reductions may diminish the emergence of positive spillover effect. However, due to the small percentage of people who buy PCE when sold at a regular price, retailers will probably not change their tactic. Consequently, while the two types of motivations (economical and ecological) appear simultaneously, the economical one will most probably overtake the ecological one (Deci, 1971). Social labeling could allow to reactivate the ecological motivation and hence the positive spillover effect. Yet, to our knowledge, no research has focused on this specific case in the literature. In addition, no research has studied the impact of an economical social labeling (i.e. label someone as a smart-money person after he/she has purchased a product with a monetary incentive). Yet, supermarkets may be somewhat labeling consumers without being aware of that, for instance through their encouragements to buy PCE with a price reduction. Then, by highlighting the economical motivation, the likelihood of positive spillover effect might be even more undermined. Therefore, we study whether labeling an individual who purchased PCE for economical motivations as an ecofriendly (VS money-smart) consumer makes him/her more (VS less) prone to adopt subsequent eco-friendly behaviors.

Based on these objectives, here are our hypotheses:

- H1: The purchase of a PCE with a price reduction (VS a regular product) decreases the likelihood of people to engage in other eco-friendly behaviors.
- H2a: With an eco-friendly labeling, consumers who have bought a PCE with a price reduction are more likely to engage in other eco-friendly behaviors than without labeling.
- H2b: With a smart-money labeling, consumers who have bought a PCE with a price reduction are less likely to engage in other eco-friendly behaviors than without labeling.

4. Study 1

Study 1 is a pilot study aiming at studying the conflict of motivations in the case of the purchase of PCE offered with a reduced price.

4.1. Research method

We conduct a between-subjects experiment with two different conditions: presence of a reduction for the PCE vs regular price for the PCE. Participants are randomly assigned to one out of the two conditions. Respondents are asked to imagine they are making purchases for the evening dinner and have to choose for four different products (i.e. olives, salmon, pie and yogurts) between a “regular” product (regular price; regular expiration date) and a “PCE” product (either reduced price by 50% or regular price; close to the expiration date). We measure then the positive spillover effect by asking respondents how likely they are to spend the remaining money to engage in eco-friendly actions (i.e. buying a goodie for a charity and buying an organic product) as well as their intention to waste food in the following weeks (measured with 4-item scale of, Visschers, Wickli, and Siegrist, 2016).

We also measure three different control variables on a scale from 1 to 7. The first one is “preference for consistency” (9 items, Cialdini, Trost, and Newsom, 1995). People’s personality differs in terms of tolerance for inconsistency or preference for consistency and people’s preference for consistency may increase the likelihood of developing positive spillover effect (Thøgersen & Crompton, 2009). The second one is “attitude towards food waste” (3 items, Visschers et al., 2016). It is essential to control for this variable as people with strong values and norms related to the cause of a behavior are more likely to develop positive spillover effect (Thøgersen & Crompton, 2009). The third one is “environmental attitude” (4 items, Whitmarsh & O’Neill, 2010). The relevance for self-identity of an eco-friendly behavior influences the likelihood of a positive vs negative spillover to occur. People with a higher environmental attitude may thus be more prone to positive spillover effect (Van der Werff, Steg, and Keizer, 2014).

4.2. Results

We performed a t-test on the three dependent variables to identify significant differences between our two conditions on respondents who have at least bought one PCE (see Table 1). This revealed a significant difference in the likelihood to buy a goodie for a charity ($p = 0,039$) and a marginally significant difference in the likelihood to buy an organic product ($p = 0,09$) (see Table 1). The positive spillover effect is undermined with a price reduction. It partially confirms the conflict of motivations in the case of the purchase of PCE at reduced price.

Table 1: t-test results

	Without price reduction (n=31)	With 50% reduction (n=60)	<i>Sig. ANOVA (p-value)</i>
Donation to a charity	2,87 (1,852)	2,10 (1,535)	0,04**
Purchase of an organic product	4,13 (2,330)	3,31 (2,062)	0,09*
Food waste intention	6,27 (0,914)	5,99 (1,058)	0,22

Furthermore, to ensure perfect randomization of respondents, we control the potential differences between our two samples on three variables (environmental attitude, attitude towards food waste and preference for consistency). Results of a t-test show that no one of these variables was significantly different between the two samples (see Table 2).

Table 2: t-test results

	Sample1(no reduction) (n=31)	Sample2 (reduction) (n=60)	<i>Sig. ANOVA (p-value)</i>
Environmental attitude	6,03 (0,873)	5,93 (0,866)	0,611 (n.s)
Attitude towards food waste	6,12 (1,056)	5,93 (1,222)	0,461 (n.s)
Preference for consistency	3,25 (1,155)	3,28 (1,211)	0,902 (n.s)

5. Study 2

Study 2 is our main study aiming at testing our two hypotheses described in section 3 as well as overcoming one important limit identified in our pilot study. In the pilot study, alternative explanation could be that we primed money saving with the price reduction, which could explain that people are less likely to spend their money (either for organic products or for charity). In this study, we want to reject this alternative explanation by using two different dependent variables that are not linked to money.

5.1. Research method

The main study is an experimental study. We tell respondents they have to buy smoked salmon. We chose this product because this product was the most often selected when offered at reduced price in our pilot study. Respondents have to imagine they are in their usual supermarket and should choose between “regular” (regular price; regular expiration date) smoked salmon option and “PCE” smoked salmon (reduced price by 50% and close to expiration date). These two samples serve to verify the first hypothesis (2x1 conditions).

In the “PCE” sample, we then randomly assign respondents to one of the three conditions to verify our second hypothesis (3x1 conditions). In the “ecofriendly labeling”

condition, respondents are told: “You have saved this product from trash, you must be an environmentally-friendly person. Well done!” In the “economical labeling” condition, they are told: “You have made a bargain, you must be a money-smart person. Well done!” In the no labeling condition, respondents do not receive any label.

Respondents then answer socio-demographic questions (age, revenues, household size etc.) and the three same control variables than in the pilot study. We then measure two dependent variables to evaluate the spillover effects. The first dependent variable asks respondents the time they are willing to devote per month to help (without much effort) an association fighting against food waste (e.g. Solidarity Fridge), described as a real non-for-profit association . For the second dependent variable, we use the choice between a green-products and a non-green products box that respondents may win in the lottery we organize to thank them.

5.2.Results

Data will be collected in the coming days. Results will be presented at the time of the conference.

6. Discussion

Considering the economic, social and environmental consequences for society, encouraging the purchase of PCE is a key societal issue and a relevant topic of research. Retailers, to save these products from direct trash, have introduced monetary incentives aiming at triggering consumers’ purchase of such products. However, such monetary incentives may be harmful for the emergence of positive spillover effect.

In this context, we have first demonstrated empirically the negative impact a price reduction may have on the likelihood to engage in subsequent eco-friendly behaviors. In a second step, we intend to investigate further whether it is possible to reactivate the positive spillover effect (diluted by the monetary incentive) by applying social labeling.

With this study, we will contribute to the social labeling literature by investigating whether social labeling is also effective at reactivating an intrinsic motivation (i.e. ecological motivation) in situations where economical motivations co-occur as well as studying the impact of an economical social labeling. Hence, we will contribute to the spillover effect stream of research by offering a “solution” to the limit identified by Thøgersen & Crompton (2009) when motivations conflict. Indeed, they emphasize that positive spillover effect is not

likely to appear if first motivations are economical. If social labeling can indeed reactivate this positive spillover effect, the technique would be a potential solution to overcome the limit.

If social labeling is effective in such situations, we will also be able to develop recommendations for retailers in order for them to keep on selling PCE with a larger societal objective than only saving these specific products from trash – and avoid large economic losses. We also want to guide them regarding a potential economical social labeling that might be to avoid in the perspective of triggering positive spillover effect.

Further research has to be conducted first to study the social labeling as explained in this paper and also to find potential moderators that could enhance or limit the impact of the social labeling effect to reactivate positive spillover effect.

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