1 **To go or not to go, that is the question: Using social influence to reduce hot beverage cup**

2 **waste**

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1   **Abstract:** While most consumers today feel concerned by environmental issues, the consumption

2   of hot beverage in disposable cups remains very important. In this study, we use influence strategies

3   related to social norms to reduce these behaviors and get consumers to consume their hot beverage

4   in reusable cups. 14373 orders were analyzed and demonstrate that normative messages can be

5   effective to change consumer behavior toward a more responsible choices.

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7   **Keywords:**

8   Reusable cups, Social norms, Environmental psychology

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1   **1. Introduction**

2   "Whilst forms of ethical consumption of one sort or another have been around for centuries,

3   the phenomenon has risen to considerable prominence in the last ten to fifteen years. Ethical

4   consumption covers a range of different activities, including boycotting certain companies in

5   response to poor social, ethical or environmental record, buying non-animal-tested products,

6   choosing fair trade or organic products, etc." (Crane and Matten, 2010, pp. 369-370).

7   According to Freestone and McGoldrick (2008), the increase in environmental awareness

8   over the past decades has led to the creation of a group of authentic sustainability-focused

9   consumers with strong ethical beliefs, called ethical consumers. These ethical consumers are

10 increasingly influenced by ethical concerns when forming their opinion about a product or

11 engaging in buying decisions (Bray, Johns, and Kilburn, 2011). Hence, ethical consumerism can

12 be considered the practice of choosing a certain product based on ethical consequences and the

13 outcomes of one's behavior. We can identify a great variety of ethically-minded buyers, driven by

14 different motivations and acting in diverse manners. In this paper, we refer to any individual

15 choosing a given product over another based on motivations, which takes into account the social

16 or environmental consequences of his/her decision, as an 'ethical consumer'. For instance,

17 choosing to consume hot beverages in reusable cups (made of chinaware) rather than disposable

18 cups (made of paper) can be considered an ethical choice.

19   Nonetheless, even if ethical considerations are growing in importance (Bray et al., 2011),

20 results show that these ethical concerns do not necessarily lead to ethical behavior (Vermeir and

21 Verbeke, 2006). Indeed, most authors agree on the fact that "ethical consumerism is a burgeoning

22 movement, yet ethically-minded consumers rarely purchase ethically" (Carrington, Neville, and

23 Whitwell, 2012, p.2759). Researchers refer to this misalignment between intentions and behavior

1 as the attitude-behavior gap (Bray et al., 2011). The attitude-behavior gap posits that, even though

2 many consumers claim they embrace strong ethical beliefs, these values are, in most cases, cast

3 aside when it comes to actual consumption. In other words, "the attitude-behavior gap is where

4 30% of consumers report that they are very concerned about environmental issues, but they are

5 struggling to translate this into purchases" (Young, Hwang, McDonald, and Oater, 2010, p. 20).

6 This gap is found in a variety of ethical behavior examples. For instance, as early as 1972,

7 Bickman's research showed that students who declared themselves concerned about environmental

8 protection did not pick up litter thrown on the ground by other people. More generally, different

9 meta-analyses attest to the importance of this gap (Bamberg and Möser, 2007; Klöckner, 2013;

10 Osbaldiston and Schott, 2012) and report only modest correlations between ethical attitudes and

11 behavior.

12 Concerning the attitude-behavior gap, a recent report estimates that approximately half of the

13 hot drinks consumed in UK coffee shops are served in disposable cups (House of Commons

14 Environmental Audit Committee, 2018). As a result, there are 7 million disposable coffee cups

15 thrown away daily in the UK, or approximately 2.5 billion cups annually, of which a mere 1% are

16 recycled (Gabbatiss, 2018). In Switzerland, disposable food and beverage packaging represent

17 more than 50% of global littering (Dorn and Stöckli, 2018).

18 However, most of the research shows that consumers show a strong interest in environmental

19 issues. Thus, many studies focusing on consumer behavior highlight the fact that the motivation

20 to engage in more ethical consumption is increasing (Hughner, McDonagh, Prothero, Shultz, and

21 Stanton, 2007; Naspetti and Zanoli, 2009). Among the explanations proposed to account for this

22 gap, the social desirability of responses has often been highlighted (Carrington et al., 2010). Thus,

1   it is possible for individuals to declare ethical attitudes that they know are different from their actual

2   behavior to comply with their normative aspect.

3   This normative aspect is found in most studies dealing with ethical attitudes and behavior.

4   Indeed, it is common to explain ethical behavior by mobilizing the Theory of Planned Behavior

5   (Ceglia, de Oliveira Lima, and Leocádio, 2015). According to this theoretical model, human

6   behavior is determined by their intention to act, which, in turn, is determined by three social and

7   psychological evaluations (Rimal and Real, 2015). More specifically, ethical behavior would be

8   affected by attitudes, subjective norms and perceived control of the individual (Ajzen, 1991). On

9   this basis, we see that the attitude towards ethical behavior is one of the elements that determines

10   the incidence of behavior, but other elements, such as norms, can also play a significant role.

11   Indeed, research has shown that the way people evaluate the social value of behavior can

12   influence their intention to perform this behavior. Indeed, even if, initially, subjective norms were

13   considered as a lower predictive factor than attitude to predict behavior, more recent contributions

14   have shown that the power of the norm is strongly related to situational elements such as others'

15   perceived behavior or attitude (Hagger and Chatzisarantis, 2005). These contributions have led

16   researchers to use the normative aspect of behavior to generate what could be named as normative

17   influence (Cialdini, Kallgren and Reno, 1991).

18   The objective of this research is to use the normative aspect of human behavior to reduce this

19   attitude-behavior gap and promote ethical consumption, such as the use of reusable cups.

20   **Using normative influence to reduce the attitude-behavior gap**

21   Normative influence has increasingly been used to drive ethical behavior that complies with

22   social norms, and which has been applied to various causes such as promoting towel reuse among

23   hotel guests (Terrier and Marfaing, 2015) or increasing energy saving activities (Griskevicius et

1   al., 2008). Normative influence strategies are supported by a strong body of evidence supporting

2   the effectiveness of social norms in affecting human behavior, especially when they are activated

3   by the situation (Cialdini et al., 1991; Schultz et al., 2007). Cialdini and Trost (1998) define social

4   norms as a set of "rules and norms that are understood by members of a group, and that guide

5   and/or constrain human behaviour without the force of laws" (p.152). Each social norm can be

6   defined by its descriptive (the most commonly-observed behavior in a given situation) and

7   injunctive (what most people approve of in a given culture) aspects (Terrier and Marfaing, 2015).

8   On this basis, a normative message is a message that highlights both aspects of the norm and focus

9   individual attention on them: Ideally, it aims to align individuals' behavior to the values shared by

10   their society or culture, all the while reflecting what most individuals do (Goldstein, Griskevicius,

11   and Cialdini, 2006). For instance, rather than trying to convince individuals that recycling waste is

12   important (by explaining the positive or negative consequences of behavior,), a normative message

13   will simply recall the social value of the behavior (the majority of individuals think it is important

14   to recycle) and its social support (the majority of individuals recycle effectively). Thus, a normative

15   message focuses the individual's attention on the normative aspect of the situation and directs

16   him/her towards norm-consistent behaviors. For instance, in the hospitality industry, research has

17   demonstrated that guests are more likely to reuse towels when they know that other guests are

18   doing the same thing versus when they are merely informed of the environmental benefits of towel

19   reuse (Terrier and Marfaing, 2015).

20   Recently, normative influence has been used to foster the use of reusable takeaway boxes in

21   a takeaway restaurant (Dorn and Stöckli, 2018). However, and in contradiction with the classical

22   literature on the subject (Cialdini et al., 1991; Goldstein et al., 2006; Schultz et al., 2007), results

23   obtained in this specific context failed to show an influence of the normative influence on

1   disposable box choice. Dorn and Stöckli (2018) explained these results by the fact that their

2   implementation of the normative influence might have been suboptimal, i.e., not displayed in the

3   right place. Another limitation could be the way they formulate their normative messages. Indeed,

4   while most of the interventions using normative influence highlight the descriptive aspect of the

5   norm by very specific formulas (e.g., "Almost 75% of guests…", Goldstein et al., 2006)…", Dorn

6   and Stöckli's research (2018) used a more general formula ("Our customers demand a reduction of

7   packaging waste. Many of them already use…"). This overly general formula can be considered as

8   another reason for the weak effect of their normative message.

9   　　　The main objective of this research paper is to use this normative influence to reduce the gap

10   between attitude and behavior in the case of a hospitality school bar. More specifically, we will use

11   normative influence to reduce the consumption of hot drinks sold in to-go cups. To that end, we

12   will use traditional specific messages, highlighting the fact that the vast majority of comparable

13   people perform the desired behavior.

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15   **2. Methods**

16   This experiment was carried out in two phases. In the first phase, we confirmed the existence of a

17   gap between consumer attitudes and behaviors towards ethical consumption. In the second phase,

18   we tested the effectiveness of two persuasive messages to increase ethical consumption.

19   *2.1. Participants*

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21   　　　Participants of the study were students and staff members of one international hospitality

22   management school in Switzerland consuming hot beverages (coffee, tea and hot chocolate) at the

23   main bar of the school. Participants were unaware of the objective study and no incentives were

24   provided upon participation.

1 ### *2.2. First phase*

2 To ensure that attitude and behavior toward hot drink consumption were misaligned, we ran

3 a preliminary study.

4 In order to do that, 100 participants – students and staff members – were randomly selected

5 around the main bar (Mbar) of the school. The participants' attitudes toward hot drink consumption

6 was assessed using two questions: 1) "Which option do you believe is more environmentally

7 sustainable when ordering your drink (coffee or tea) at school: For here or to go?", and 2) "If

8 possible, would you be willing to change your consumption habits at school towards more

9 sustainable choices? » No specific choice was made for the sample choice because we wanted to

10 capture the natural population of bar customers.

11 Similarly, we observed actual consumption of hot beverages (coffee, tea and hot chocolate)

12 at the same bar over a 7-day period. We took into account all the hot beverage orders made at the

13 bar during the period. To do so, the bar managers were daily asked to record the number of hot

14 beverages cups (coffee, tea, and hot chocolate) consumed "to-go" and "for here*"* respectively at

15 the MBar, using a form especially drafted for the study. Concretely, in the morning, before the bar

16 opened, the identical inventory of "to-go" cups (3600) was available at the bar. At the end of each

17 day, after closing, the remaining number of "to-go" cups was counted and deducted from the

18 morning inventory to compute the daily number of "to-go" cups sold. Secondly, the total number

19 of hot beverages sold (of both "to-go" and "for here" cups) during the day was checked on the

20 revenue report printed out from the bar Property Management System. Finally, the total number of

21 "for here" cups sold during the day was computed by subtracting the number of "to-go" cups sold

22 from the total daily number of cups sold.

23 For this second step, we analyzed 8,328 hot beverage orders.

2.3. Second phase

Similar to the preliminary study, we observed hot beverage orders made by students and staff members of the same international hospitality management school in Switzerland at the same school bar. For this second phase, the procedure was organized in two different 7-day periods during which persuasive messages were displayed on different screens situated above the bar. The same messages were also printed on paper and presented in six plastic stands for display (20cm x 25cm), placed in a salient position on the bar's counter to increase visibility.

During the first period, a normative message was used to encourage the use of disposable cups. This normative message stated: 80% of the (name of the school) community expresses a desire to protect the environment / 85% of the (name of the school) community agrees that consuming "for here" is more eco-friendly than "to-go". A total of 6,997 hot beverages were ordered during this period.

During the second period, a more traditional message was used, and 7,376 hot beverages were ordered. The traditional message stated: We are dedicated to protecting the environment / Please consider that consuming "for here" is more eco-friendly than "to go".

During these two periods, the daily number of "to-go" and "for here" cups sold at the bar was recorded with the same method as during the first phase of the study.

3. Results

3.1. First phase

Results show an important gap between the attitudes expressed by our original 100 random participant sample and the orders made by bar customers. Indeed, although 91% of the respondents believed that consuming hot beverages "for here" is a more environmentally sustainable choice

1   than "to go" and 93% of participants agreed to be willing to change their consumption habits

2   towards more sustainable choices if given the opportunity, orders observed at the bar show that

3   only 32.97% of the customers consume their coffee or tea "for here" (respectively, χ^2 (1)=148.996,

4   p<.01, and χ^2 (1)=159.388, p<.01).

5   With a total sample size of 8428 observations, we could detect with the power of .95 an effect

6   size of 2.09 which lower than the small effect size for this test according to Cohen's (1988)

7   convention (calculation performed with GPower 3; Faul, Erdfelder, Lang and Buchnerm, 2007)

8   To increase the use of disposable cups, we implemented two communication strategies during

9   the second phase of this study.

10   *3.2. Second phase*

11   A chi-square test of independence was performed to compare the percentage of "for here"

12   cups consumed in the two conditions. With a total sample size of more than 14000 observations,

13   we could detect with the power of .95 an effect size as small as .03 which is ten times lower than

14   the small effect size for this test according to Cohen's (1988) convention (calculation performed

15   with GPower 3; Faul et al., 2007). A significant difference was found when comparing the

16   normative message to the conventional message (χ^2(1)=317.36, p < 0.01). As seen in Table 1, there

17   was a higher "for here" consumption with the normative message (35.22%) than with the

18   conventional message (22.05%).

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20   **4. Discussion**

21   Our results support the hypothesis of an attitude-behavior gap in hot beverage ethical

22   consumption. Indeed, there was a significant difference between the attitude towards on-campus

23   ethical consumption (as reported by a representative sample of participants) and the actual

1   consumption behavior observed at the same period. Specifically, the actual percentage of "to go"

2   cups daily consumed at the bar was significantly different than what we could expect on the basis

3   of the results emerged from the questionnaire.

4   　　　　The findings of the field experiment carried out in this study further demonstrate the potential

5   of normative messages in fostering consumers' environmentally-responsible behavior, as opposed

6   to conventional environmental messages (Goldstein et al., 2008; Schultz, 2008; Terrier and

7   Marfaing, 2015). Indeed, "for here" hot beverage consumption was significantly higher when

8   participants were confronted with the normative message than when they were confronted with the

9   traditional message. This can be explained by the fact that activating social norms increased

10   participants' motivation to act in accordance with their attitudes (Schulz et al., 2008). These results

11   represent a step forward in using normative messages in diverse environments to trigger ethical

12   behavior such as pro-environmental conduct. The use of the normative messages seems to have the

13   potential to increase responsible behavior in hot beverage consumption and constitutes an

14   important contribution to previous studies exploring diverse theoretical frameworks in this field

15   (Carrington et al., 2012; Vermier et al., 2006).

16   　　　　From a more theoretical point of view, our results significantly diverge from those obtained

17   by Dorn and Stöckli (2018) in a similar context. These differences could have their origin in the

18   wording of the message. Indeed, the message used by Dorn and Stöckli (2018) mobilized the

19   descriptive aspect of the standard via a rather general formula ("Many of…") while that of the

20   present research used a more specific formula ("80/85% of…"). It would, therefore, seem that

21   activating the norm via precise and quantified data is more effective for generating ethical behavior.

22   Future research will have to focus on this issue to define the best levers for normative influence.

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5. Conclusion and implications

In terms of limitations, as a quasi-experimental setting, our research lacks discrimination between participants, hereby staff and student. This should add more value to our results, but, in a natural context, it was complicated for bartenders to note specific behavior executed by staff or students. This is also linked to the way we collected the information at the end of the day. The main reason was that our objective was to follow the regular journey of the customer, while just adding a piece of new information (e.g., our messages). The other limitation could be linked to our sample. Even if the majority of the hospitality students and staff were not trained in using this kind of message, they are familiar with normative messages and ethical consumption. However, as our results show, differences between conditions remain significant and confirm results observed with non-specialist individuals (Goldstein et al., 2008; Schultz, 2008; Terrier and Marfaing, 2015).

The findings of this paper yield managerial recommendations for stimulating ethical consumption, especially within the hospitality industry. Encouraging ethical consumption and helping to reduce the attitude-behavior gap of ethical consumers may be useful not only in fostering eco-responsible behavior (in an era where environmental problems represent a real threat to our planet and society), but might also represent an efficient cost-cutting tool in decreasing expenses such as waste management, which are estimated to increase in the upcoming years (Jamasb and Nepal, 2010).

Regarding marketing, the findings of this paper offer important insights and strategic direction for managers seeking to target the ethically-minded customer. The implementation of social norms as a means of encouraging ethical behaviors may represent a relatively simple and inexpensive yet effective solution. It is noteworthy to remember that marketing strategies targeting

1   the ethical consumer are being widely adopted, but their efficacy remains questionable (Carrington

2   et al., 2012).

3   Finally, our results provide insight for public policy makers and government action involving

4   ethical concerns as they strive to promote environmentally-friendly behavior such as recycling. As

5   explored in the literature (Schaefer and Crane, 2005), the attitude-behavior gap is a phenomenon

6   that also affects collective action and activates social norms that may enhance cooperative behavior

7   (Ostrom, 2000).

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