



# Know who to give: Enhancing the effectiveness of online product sampling<sup>☆</sup>

Xianghua Lu<sup>a</sup>, Chee Wei Phang<sup>a,\*</sup>, Sulin Ba<sup>b</sup>, Xinlin Yao<sup>a</sup>

<sup>a</sup> School of Management, Fudan University, Shanghai, China, 200433

<sup>b</sup> School of Business, University of Connecticut, Storrs, CT, USA

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## ABSTRACT

Product sampling is an established marketing strategy to increase product exposure and sales, and its use has recently been extended online. Online product sampling affords the advantages of reaching mass audiences, as well as opportunities for firms to select promising sample recipients. In this study, we leverage on the data from an online platform's early effort in administering online product sampling campaigns, whereby sample recipients were randomly selected from among the consumers who indicated interest in the product sample. This affords a relatively "clean" environment for us to investigate the behaviors of consumers in terms of their subsequent purchase-making after being given a product sample, with minimal biases arising from purposive selection issues. We find that, overall, receiving a product sample could increase the consumers' purchase probability by around 300%. Furthermore, the effects vary among different type of consumers. Specifically, average consumers who have few or moderate experience on the platform demonstrated highest purchase probability compared to mature shoppers and also "opportunists", after they received a product sample. This study contributes to the literature by unveiling consumer heterogeneity in response to online product sampling when receiving a sample, and provides guidance to firms' decision-making in targeting potential consumers so as to better economize on these campaigns.

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## 1. Introduction

Product sampling is a widely employed marketing strategy for a variety of physical products such as food and beverages, cosmetics, housewares, and personal care products. A sampling campaign allows consumers to experience the product first-hand thus reducing uncertainty associated with the product, and has been shown to be effective in promoting the sales of the product [1–4] as well as the brand concerned<sup>1</sup> [5]. With the burgeoning of e-commerce, product sampling is being increasingly administered online. For example, *Pinchme.com* in the U.S., *gotry.in* in India, and *try.taobao.com* and *Yihaodian.com* in China, allow brands to offer product samples to their consumers online.

With product sampling moved online, the cost of administration becomes lower and the scale of reach greatly increases. A typical online sampling campaign usually involves three steps: (1) brands post a free sample offer on an online platform, displaying pictures and information

of the product concerned; (2) whoever visits the platform and see the offer may apply for the sample and provide their information (e.g., shipping address) before the offer expires; (3) the platform (or the brand) selects the applicants and sends out the sample. This process affords opportunities to select more promising sample recipients from among the applicants, e.g., those who may be more likely to make subsequent purchases after receiving the product sample.

However, our understanding of how the selection should be made to enhance the effectiveness of online product sampling is currently lacking owing to at least two reasons. First, previous literature on product sampling in the offline context offers limited insights into this issue as they mostly employed aggregate data in their investigation due likely to data constraints in this context (e.g., [1–3,5,6]). Specifically, they can only focus on whether product sampling increases overall sales, without being able to take into account who among those receiving a product sample contributed to the sales and their characteristics. Second, strategic selection choices are likely made by existing platforms or brands administering the product sampling campaigns [2], e.g., giving product samples mostly to innovators or loyal/frequent consumers. This makes it difficult to truly discern what kinds of consumers are indeed more (or less) profitable to be selected as sample recipients.

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\* Corresponding author.

E-mail addresses: [lxhua@fudan.edu.cn](mailto:lxhua@fudan.edu.cn) (X. Lu), [phangcw@fudan.edu.cn](mailto:phangcw@fudan.edu.cn) (C.W. Phang), [Sulin.Ba@business.uconn.edu](mailto:Sulin.Ba@business.uconn.edu) (S. Ba), [xinliny@fudan.edu.cn](mailto:xinliny@fudan.edu.cn) (X. Yao).

<sup>1</sup> Source: <http://www.qsr magazine.com/news/research-reveals-impact-store-sampling>, last accessed July 5, 2015.

In this study, we collaborated with a leading e-commerce platform in China, and tapped into the unique opportunity that they just started their online product sampling section. During this initial period, they decided to rely on random drawing to give out product samples as they hope to gain more systematic knowledge of selecting recipients based on consumer behavioral data collected at this stage. The random drawing approach implies that the sample recipients are likely to come from heterogeneous backgrounds in the absence of specific selection criteria, which affords a relatively “clean” setting for us to analyze what kinds of consumers are more/less promising for giving out the product samples. For instance, if the selected recipients consist mainly of loyal consumers, this would preclude the possibilities of identifying other profitable consumer segments, as well as those less promising ones who should not be selected. Our dataset collected during this period involved >100,000 sample applicants who applied for 401 product samples. The e-commerce platform also allowed us to track the consumers' ex-post purchase behavior (anonymized) for two months after the sampling campaigns.

We developed a Probit binary choice model to test the effects of product sample's application outcomes on applicants' purchase behavior. A Latent Class Model (LCM) is further utilized to ex-post identify distinct consumer segments that demonstrate different post-sampling purchase behaviors, which can be used to support subsequent target strategy of online product sampling. LCM is an approach that identifies latent subgroups, or patterns across individuals from a population, based on observed variables (e.g., individual characteristics) that explain the unobserved heterogeneity within the phenomenon of interest (post-sampling purchase in this case) ([7–9]).

The results indicate that the receipt of product sample could overall increase the brand purchase probability by around 300%. Based on the LCM analysis, it is further unveiled that there are three subgroups of consumers that emerge from the sample applicants: 1) average consumers who have moderate experience on the e-commerce platform, and tended to apply for the samples less frequently (54.68% of the sample); 2) seasoned consumers on the platform with rich shopping experience, and who are less likely to respond to the marketing activity (30.75% of the sample); 3) opportunistic consumers who are keen on applying for product samples, yet their ex-post purchase level was very low (14.58% of the sample). Taken together, our results, as will be explained in greater details later, suggest that the third group of consumers appear less profitable and constitutes those whom marketers should avoid, while the first and second groups are those whom marketers may want to pay more attention to.

The findings from our research may contribute to the literature in the following ways. First, our research demonstrates how individual consumers' purchase behavior is affected by whether their application for a product sample is successful or unsuccessful. While the positive effect of receiving a product sample is important to understand, there is a need to also account for the negative repercussions from consumers who indicate an interest in a product sample yet are denied access to it. By taking these consumers into consideration, our study offers a more complete understanding of the effects of product sampling, afforded by our dataset from the online product sampling context that captured consumer purchase behavior at the individual level. This is in contrast to previous literature that mostly relied on aggregate data, and focused on whether product sampling increases consumer purchase as a whole without examining whom among the consumers contributed more/less to the purchase (e.g., [1–3,5,6]).

Second, we unveil the major types of consumer characteristics and show which of them are more and less profitable as sample recipients in terms of their likelihood of subsequent purchase-making. Specifically, three types of consumers each with their distinct characteristics emerge from the LCM analysis. These insights are enabled by our unique dataset, which was collected from a period during which our corporate partner just started their online product sampling section and selected sample recipients using a random drawing rather than a purposive selection

approach. The generated insights enhance our understanding of the characteristics of consumers to whom the offering of product samples is particularly effective (or ineffective), and help marketers and brands in targeting more profitable consumers in giving out product samples in their future campaigns.

In the following sections, we begin by discussing the conceptual background of this study.

## 2. Conceptual background

### 2.1. The online product sampling context

With online product sampling becoming a popular marketing strategy, there has been an increasing number of online platforms that engage in administering sampling campaigns. Among them, some platforms just provide sample delivery service (e.g., *Pinchme.com*), while consumers cannot purchase the sampled products on the platform. Others operate as an e-commerce marketplace with online sampling offered (e.g., *try.taobao.com*). Consumers can directly make purchase online if they are interested in the products offered for sampling. In this study, we focus on the latter type of online platforms, i.e., online shopping platforms with product sampling offered whereby consumers can make purchase of the products concerned. While these platforms are somewhat similar with offline markets where consumers can try out a product before making a purchase, the online platforms are advantageous in that firms can track each consumer's shopping behavior after the sampling, and more importantly identify profitable consumers to better economize on their product sampling campaigns.

It is also important to note that our focal context of online product sampling involves physical products, and differs from the sampling of digital goods such as music and software that have been more widely investigated in the extant literature [6,10–12]. Unlike digital products that can be easily copied and distributed, the sampling of physical products usually involves the delivery of full-sized products of some monetary value to a physical address. This makes the sampling of physical products attractive to the consumers, and also increases the likelihood that consumers may feel obliged to purchase such products after receiving the sample due to feelings such as gratitude and reciprocity [5,13,14].

### 2.2. Research on physical product sampling

Little research has investigated the effectiveness of online physical product sampling campaigns. Among the few exceptions, Hui et al. [15] conducted a survey to examine consumers' willingness to participate in and their satisfaction with online product sampling in New Zealand, but the insights offered by their study are limited by individuals' self-reported data. Given the growing popularity of online physical product sampling campaigns, the existing research is far from adequate. Therefore, our paper aims to quantify the impact of online product sampling success on individual consumers' purchase behavior, with a view to unveil heterogeneity in the consumers through the LCM technique.

Research on physical product sampling in the offline context may provide some insights. Specifically, several explanations have been offered with regard to why physical product sampling could be effective. For instance, offering free product samples has been noted to reduce product uncertainty for consumers by serving as a direct source of information, thereby leading to a greater effect on sales compared to indirect experiences provided through advertising [16]. This may be particularly valuable for physical products, of which many of their features can only be conveyed via sampling experience [16–18]. For most consumers, free sampling provides their first usage experience with a brand, and may thus become a critical factor in determining their brand beliefs and purchase intentions [19,20].

Apart from uncertainty reduction, product sampling may also influence consumer purchase via a self-perception shaping mechanism [21–

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