

Personalization in Email Marketing: The Role of Non-Informative Advertising Content*

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Abstract

In collaboration with three companies selling a diverse set of products, we conduct randomized field experiments in which experimentally tailored email messages are sent to millions of individuals. We find consistently that personalizing the emails, while adding *no* informative content about the product or the company, benefits the advertisers. In our main experiment, we find that adding the name of the message recipient to the email's subject-line increases the probability of the recipient opening it by 20%, which translates to an increase in sales leads by 31% and a reduction in the number of individuals unsubscribing from the email campaign by 17%. We present similar experiments conducted with other companies, which show that the effects we document extend from objectives ranging from acquiring new customers to retaining customers who have purchased from the company in the past. The effects also extend to other content of similar nature. Our investigation of several possible mechanisms suggests that such content increases the attention consumers pay to the other content in the rest of the advertising message.

Our paper quantifies the benefits from personalization, and contributes to understanding the role of advertising content. It contributes to the psychology-based research in marketing by establishing the robustness of lab findings in field settings. It has clear implications for the firms that are designing their advertising campaigns.

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1 Introduction

Every year, hundreds of billions of dollars are spent on advertising. A significant portion of this is spent on creating the content of advertising. Historically, about 15% of the total expenditure on advertising is dedicated to producing the ads and its content (Horsky (2006)). Still, the role of advertising content in consumers' decision-making is relatively under-researched. Researchers have categorized ad-content into whether it is informative or non-informative about the product to the consumers (Resnik and Stern (1977)). The importance of informative aspects of ad-content is evident. For example, an ad's content may comprise the name of the brand, its attributes and proposed uses for the consumers. Clearly, such elements of the content are useful for the consumer to know, and the advertiser to convey. On the other hand, the importance of non-informative aspects of ad-content – content that is *not* about the product, and provides the consumer with no information about the product – is less obvious. Removing such auxiliary content should not change the understanding of the ad message, or the understanding about the product. Psychology proposes mechanisms by which such content may influence consumer-decisions (Petty et al. (1983)), but which mechanisms, if any, are most operable in markets is unclear. In reality, the categorization into informative and non-informative ad content may not be binary or absolute; a piece of content may be informative in certain marketing contexts, while being non-informative in others.

This paper empirically studies the content of email advertising. Specifically, we focus on content used to *personalize* the ad messages. By personalization of an ad message, we mean adding of consumer-specific information to the email advertisement. This subject is interesting because of the following reasons. Firstly, email marketing is an important marketing channel and most businesses engage in it for various purposes such as to acquire new customers or engage and retain returning customers. (Experian Marketing Survey (2014)). Firms often have access to information about consumers that can potentially be incorporated into the marketing message to personalize it, making it an important topic from the perspective of marketing practice (Ansari and Mela (2003)).¹ Secondly, this context allows us to study the role of content

¹If firms are currently using this information in their email campaigns, one could argue that they already have

that is non-informative, thereby contributing to the broader understanding about advertising. Personalization, in general, can be conducted by adding informative (e.g., displaying a product browsed by the individual in the past) or non-informative (e.g., the message recipient’s name) content. We focus specifically on the content that is neither about the product being advertised nor the advertiser, but is about the recipient of the message. While this satisfies our definition of non-informative content (see above), one might construe such personalization as being implicitly informative. However, as we describe in detail later, our contexts and the manner in which we vary such content mitigates this concern. Consider the following example. Amazon sends a promotional email to an individual in its customer database, who has previously bought from the site. Because Amazon has delivered products to the customer’s address, he/she knows that Amazon has information about his/her name, address, etc. Further, in the context of email marketing, the message sender is already likely to know the recipient’s name because emails are personal and an email address is likely to contain the recipient’s name. Now, Amazon can craft its promotional email either by explicitly referring to the customer by name, or not. We would consider the former email as being more personalized. At the same time, including the name does not provide the customer any additional information about the product, or even any incremental information about Amazon. To that extent, we consider such personalization as being non-informative.²

We focus on the following empirical questions. Our first research question is, from the perspective of advertisers, does personalization of advertising messages affect consumer behavior and improve the campaign’s performance? Is its effect generalizable across firms and product categories? Second, from the perspective of broader understanding about advertising, can non-informative content in an ad affect consumers’ response to it? If it does, then what could be the underlying mechanism driving this effect?

To answer these questions we partner with three firms operating in three very different markets

knowledge of this effect. In such instances, our research helps quantify the magnitude of this effect and shed light on the mechanism that drives the effect.

²In choosing personalization as the basis for non-informative content, we try to balance the importance of such content against specificity to the context. For example, one might be able to find an operationalization that might be viewed as “more non-informative” in a specific context, but such an operationalization may not be as relevant to marketers. In particular, we want to use an operationalization (i.e., personalization) that has application beyond our particular empirical contexts.

that use email marketing for different purposes. Our main partner company (C) is one of the biggest players in a niche market, selling online test preparation products in many parts of the world. The main objective of their email marketing is to acquire new customers. In order to assess the generalizability of our effects we replicate our main findings with two firms in different settings. First, we partner with the largest online market-place in South America, Mercado-Libre (M). M uses its email marketing to engage with returning customers. A replication of our effect with M allows us to generalize the findings (a) beyond a customer acquisition campaign, and (b) with *experienced* customers who are aware of, experienced in dealing with the email sender, and may have already formed an opinion about the advertiser. In addition, M is an example of a company that previously used the information we manipulate. So we are able to examine the effect of removal of the experimental stimulus. We also partner with Stanford’s marketing team that sends emails to engage individuals who are likely to know about Stanford. This opportunity gives us the ability to further generalize our findings to a non-commercial setting, with a prestigious well-known brand.³

In collaboration with our partner companies, we conducted a series of large-scale randomized field experiments that vary personalization of email messages sent to millions of individuals. To create variation in personalization, we focus on the basic information the email marketers are likely to have access to (e.g., the email recipient’s name). Table 1 lays out the flow of the experiments.

Given that our partner companies and other such marketers have access to the name of the recipient, we begin in experiment 1 by investigating the causal effect of the presence of a consumer’s first name in the subject-line of the emails they receive. Recipients in a randomly chosen treatment group have their first names mentioned in the subject line of the email. Emails to the corresponding control group do not mention the first name in the subject line, but are the same as the treatment group in every other respect. The body of the email begins by greeting the recipient using his/her name, for *both* the groups. This equivalence ensures that the total content of information provided by the email is the same for any recipient who opens the email. Addi-

³We present results from all the experiments that were conducted for this project with our collaboration. In addition to the above three firms, we also tried collaborating with Stanford Athletics for their sports ticket-selling campaigns. However, this partnership did not materialize at the time the paper was written.

tionally, all email ids in C’s mailing list are composed of the recipient’s name and the name of the company where he works in some form (are of the form Firstname.Lastname@company.com). Therefore, it would be reasonable to assume that the recipients in both the groups would be aware that the company has the information on their names. We then examine the effect of this additional mention of the recipient’s name in the subject line on several outcomes. We consider outcomes such as opening of the email and sales-leads, which the marketer would want to increase. We also consider outcomes such as unsubscription from the email campaign, which the marketer would want to decrease. The results of this experiment help us answer our research question of whether non-informative aspects of ad content affect the outcomes of interest. Being able to track multiple outcomes in the purchase funnel sheds light on the underlying mechanism by which such ad content works.

In our data we find that including the name of the recipient in the subject line of the email increases the probability of the recipient opening the email by 20%. This translates into a downstream increase of 31% in sales leads, and a decrease in the number of recipients unsubscribing from the email campaign by 17%. These findings provide evidence for the existence of the effect of non-informative content, which is statistically and quantitatively significant. The findings also motivated our partner company to alter their default email strategy to include the recipient’s name in the subject-line of the email.

To assess the generalizability of these findings across other empirical settings, we replicate this experiment at our other partner companies (M and S) in experiments 2 and 3. In both these cases we find data patterns similar to the above. Specifically, including the name of the recipient in the subject-line increases clicks and reduces the unsubscription rate.

To rule out whether these effects are specific to just this form of content (the recipient’s name), we run experiment 4 with C in which we experimentally include the *name of the company* where the recipient works in the *body* of the email for a randomly chosen treatment group. (Recall that the recipient’s name is now always included in the subject-line of any email sent by C.) Similar to the previous experiment, we find that the treatment group has higher sales leads, and lower unsubscription rates. Even conditional on opening the emails, the treatment group is more

likely to generate leads and reduce the unsubscribe rates. This evidence further corroborates our findings of the effect of auxiliary content on outcomes of interest to marketers.

Next, we examine the mechanism driving our effects. The marketing literature on advertising describes multiple mechanisms by which personalization could drive consumer behavior. Three mechanisms are potentially operable in our context, which we refer to as Mechanisms 1, 2, and 3. (Mechanism 1) Firstly, people have been shown to automatically orient their attention to their own name (Wolford and Morrison (1980); Cherry (1953)). Therefore, an email with one’s own name (or the name of the company where he works) could simply garner attention. (Mechanism 2) Secondly, self-relevance is a well-established means of increasing message elaboration (Petty et al. (1983); Wheeler et al. (2005)). Therefore, seeing one’s name could increase a recipient’s interest in learning more about the content of the email, thereby increasing the attention paid to the message in the ad and consideration of the product for purchase. (Mechanism 3) Thirdly, people might be more persuaded by messages matching aspects of their identity (Perloff and Brock (1980); Reed (2004); Nuttin (1985)). Therefore, seeing one’s name might increase the consumer’s liking of the product because it is associated with the self. For clarity of the role of the three mechanisms, we present a sequence of steps in an example decision process in figure 1, and highlight the stage up to which the mechanisms would affect the individual’s decision.

All three mechanisms can explain an increase in the likelihood of the email being opened. However, the mechanisms predict different outcomes conditional on opening the email. In the case of mechanism 2 the processing of the message by the recipient is enhanced. Therefore, mechanism 2’s effect would depend on the other (informative) content in the message. For example, consider an email that contains a price discount, which makes buying the product likely. In this case, the non-informative content enhances the processing of the message by the consumer, making more likely that the recipient considers the discount. Therefore, the non-informative content can increase the impact of the discount on purchase. Similar to mechanism 2, mechanism 3 also predicts an increase in purchase, conditional on opening the emails. However, unlike mechanism 2, mechanism 3 does not predict an interaction of the non-informative content with the other content in the ad, as it directly raises or lowers the consumer’s evaluation of the product. Often the advertising literature has referred to this as the “persuasive” effect of

advertising (Bagwell (2007)).

Our findings thus far are able to tell us something about the underlying mechanism. Specifically, our experiments consistently show that adding the personalized content *increases* the number of individuals who open the emails while *decreasing* the number of recipients who unsubscribe from receiving the emails. Because fewer people unsubscribe while more people open the email, our finding suggests that some individuals who opened the emails and, therefore, did see the email in the control condition would have changed their decision, and not unsubscribed if their email contained the additional personalized content. Therefore, it is likely that the effect of the personalized content extends beyond making the individual notice the email. Hence, this large decrease in unsubscription rates is inconsistent with mechanism 1. Further, we analyze the consumers' response conditional on opening the email. We find consistently that conditional on opening the email, sales leads increase and unsubscription rates decrease. This provides further evidence for the presence of mechanisms 2 or 3 or both.

Finally, we attempt to distinguish between mechanisms 2 and 3. Recall that mechanism 2 predicts that the personalized content affects the processing of the rest of the message. Therefore, its effect is likely to depend on the other content included in the message. Motivated by this hypothesis, Experiment 5 has a 2x2 design. One dimension of the manipulation is the inclusion of the recipient's name in the email message body. The second manipulation either includes or does not include a mention of a potential discount a recipient can avail himself of. Mechanism 2 would predict that the impact of inclusion of the discount has a higher effect when the recipient's name is mentioned in the message. We find data patterns that are consistent with this mechanism. In the absence of the recipient's name in the body of the email, adding the possibility of the discount increases the leads, but this effect is not significant. However, when the name of the recipient is present in the email, the presence of the discount increases the leads significantly. Since such a pattern would not be predicted by mechanism 3, we conclude that our data are more supportive of mechanism 2 than 3.

With the above findings, this paper contributes to the literature in several ways. Firstly, it shows that non-informative parts of the ad's content such as personalization content can benefit

advertisers significantly. This finding sheds light on why advertising typically includes non-informative content. Previous studies in the economics and marketing literature such as Bertrand et al. (2010) and Sudhir et al. (2014) have shown the importance of advertising content on firm’s outcomes. Our paper complements that literature and extends it to the specific domain of content that is not about the product being advertised. Secondly, we show that the effect of non-informative content on the impact of advertising occurs through enhanced processing of the advertising message, and is not likely to be driven by changes in the consumer’s preferences. This finding has implications for how advertisers and policy makers think about the role of advertising (DellaVigna and Gentzkow (2009)). Thirdly, our inquiry into the mechanism also contributes to the consumer behavior literature. Lab studies have shown the existence of each of the three classes of mechanisms (see e.g., Petty et al. (2013)). By testing for the prevalence of those mechanisms in field settings, our paper contributes to this literature by showing their replicability and generalizability in the field.

Our paper also contributes to marketing practice by quantifying the effect of personalization of ad content. Understanding the mechanism helps us offer recommendations on the design of advertising campaigns. Two of our partner companies benefited from our findings by modifying the way in which they incorporate consumer specific information into their marketing campaigns. As mentioned earlier, motivated by our findings, C now adds the recipient’s name to the email subject line by default. To companies such as M, that have previously used such practice and who might be concerned about any negative fallout from the use due to privacy concerns in using this information, our results provide some reassurance by showing the benefits even after repeated use.

The rest of the paper is organized as follows. Section 2 discusses the literature related to our paper and how our paper contributes to it. Section 3 presents the main experiment and our findings from it in detail. We investigate the generalizability of our findings from the main experiment to other settings and other content in Section 4. Section 5 presents the final experiment that examines the mechanism underlying our effects in more detail. We conclude our paper in Section 6.

2 Relevant Literature

This paper relates to several streams of research on advertising in marketing. We categorize this research into (1) field studies on advertising content, and (2) psychology-based theories and empirical research with lab data. In the rest of this section, we discuss the findings from past research and discuss our paper’s relative contribution.

2.1 Empirical research on advertising content

Field studies on advertising content

Early research (Eastlack Jr. and Rao (1989); Lodish et al. (1995)) found that advertising is more likely to increase sales when the advertised creative changes. Such effects are also predicted by estimated empirical models of consumer demand (e.g., Naik et al. (1998); Moe (2006)). Ansari and Mela (2003) recognize the potential benefits from customizing internet communication and quantify its value by estimating a model using click-stream data. However, empirical research on the effect of specific aspects of advertising-content on consumer-decisions in markets is scant, except for a few papers. Bertrand et al. (2010) conduct a direct-mail field experiment in collaboration with a consumer lender, that varies several aspects of the advertising mail (e.g., mention of uses of a loan), and find a jointly (marginally) significant effect of content. They find that adding a photo of an attractive woman and not suggesting a use of the loan increase demand. In the context of charity donations, Sudhir et al. (2014) conduct a direct-mail field experiment that varies the framing of the message, and finds that monthly-framing of the donation yields better outcomes than daily-framing. Also, a story of an in-group person may cause a sympathy-bias leading to higher donations. In the context of internet banner ads, Lambrecht and Tucker (2013) find that ads showing the products already browsed by the individual is less beneficial for the advertiser. Comparing advertising effectiveness across multiple brands and creatives, Liaukonyte et al. (2015) find that the content-focus of a TV ad explains its impact on sales.

Our research complements the above literature by studying the inclusion of the message-recipient’s

information in an ad message, which is often accessible to the advertisers engaged in direct response media. Unlike the above examples, the content we study is *not* about the product being sold in the ad, but is auxiliary to advertising messages across product categories. In this respect, our paper is close to Wattal et al. (2012), who relate the use of the email-recipient’s name in an email to the actions taken subsequently by the recipient. They find that personalization hurts the advertiser, which is opposite of what we find consistently across a diverse set of contexts. A plausible explanation for the divergence of findings between the two studies is the difference in methodology. Wattal et al. (2012) compare the behavior of individuals who are selected to be sent personalized emails with the behavior of those not selected. This selection can lead to other inherent differences between the comparison groups which can influence the effect being estimated. While this possibility does not hamper a good description of observed data, addressing it is important for estimating causal effects and making recommendations, which is the objective of our paper. We overcome the selection problem by using randomization to get to apriori similar comparison groups. Methodologically, our paper is unique in empirical research on advertising for two primary reasons. We run multiple experiments to show the generalizability of our findings across empirical settings. Importantly, we run these experiments in order to distinguish between potential mechanisms that might be driving the effects.

Privacy concerns and personalization

Our paper also relates to the literature in marketing on personalization of advertising and consumers’ concerns about privacy violation. In the context of social advertising, Tucker (2014) finds that personalization of ads from a charity worked better when the consumers’ perceived control over their data was increased because of a platform-wide policy change. Goldfarb and Tucker (2011a) find that increasing targeting of ads, and their obtrusiveness leads to a negative response from the consumers, which is likely caused by privacy concerns. Goldfarb and Tucker (2011b) show that privacy-related regulation affects the effectiveness of advertising for websites that might benefit from using consumer-data. Goldfarb and Tucker (2012) and Tucker (2012) discuss the implications of privacy concerns for advertising and data-based marketing.

Our paper contributes to the literature by showing that the consumer-information can be used

to significantly increase the effectiveness of advertising, and providing evidence for an underlying mechanism driving the effects. It differs from the above literature by focusing solely on personalization of ads – incorporating consumer’s information in designing ad messages – as opposed to targeting of ads. In other words, we focus on the decision of *what* to show in an ad rather than the decision of *who* is exposed to an ad. It is important to note that because emails are typically targeted to the individual recipient, our focus on email marketing allows us to control for any potential privacy concerns to a large extent. Also, our experiments are designed to not vary content that might inform the individual about the advertising firm (including the information it has access to), further mitigating the difference in potential privacy concerns between the control and treatment groups.

2.2 Psychology-based research

Research on attitudes and persuasion has shown that attitude change can occur via multiple mechanisms. Dual-process models of persuasion, such as the Elaboration Likelihood Model (ELM; Petty and Cacioppo (1986)) and Heuristic Systematic Model (HSM; Chaiken (1980)) integrate and organize the various attitude change theories and their associated mechanisms to show the various ways a factor like personalization can affect persuasion. These models propose an elaboration continuum, along which individuals can differ in the amount of thought they devote to attitude change. Extent of elaboration depends on the message recipient’s ability and motivation to carefully process the information. Any given persuasion-relevant variable, such as the inclusion of personalized content, can influence resulting attitudes and behaviors through multiple routes, depending on the baseline level of elaboration in the context (Petty and Wegener (1999)). Put more simply, people vary in their motivation and ability to think carefully about a persuasive message, and elements of the content of the message can exert a variety of influences on attitude change depending on how carefully people think about them. Below, we review three roles that a variable such as personalization could play in affecting persuasion (see Wheeler (2009)): (a) serving as persuasive arguments, (b) serving as peripheral cues, and (c) affecting the extent of argument elaboration.

When people have both the motivation and ability to elaborate and hence are thinking carefully about a persuasive message, they are in the central route to persuasion. In the central route, message recipients evaluate information with respect to the central merits of the attitude object. Hence, in this route, persuasion variables (aspects of ad content) are treated as persuasive arguments. For example, a person in the central route who reads an ad message would thoughtfully evaluate its arguments by relating them to other information already in memory to form a reasoned attitude about the product. Therefore, varying non-informative content in a message should not affect the attitude of a consumer taking this route.

When people lack either the motivation or ability to elaborate and hence are not thinking carefully about a persuasive message, they are in the peripheral route to persuasion. In the peripheral route, message recipients do not devote the effort to carefully processing the persuasive message and instead rely on peripheral cues to judgment. For example, a person in the peripheral route who reads a list of attributes might, instead of carefully thinking about the attributes, count the number of listed attributes and use the total count as a basis for forming an evaluation, using the heuristic that products with more listed features are better (see e.g., Petty and Cacioppo (1984)). There are myriad low-effort means to forming attitudes. One possible means is to use the heuristic that things associated with oneself are good. Previous research has shown that people are more persuaded by persuasive messages matching aspects of their personality or identity (Perloff and Brock (1980); Reed (2004)). People value objects they own more than others do (Kahneman et al. (1990)), and they even prefer letters of their own names relative to others (Nuttin (1985)). Because most people have favorable attitudes and feelings toward themselves, the presence of information related to themselves could also activate favorable affect that then transfers to the advertised product (see e.g., Staats and Staats (1958)). Hence, the presence of identity-relevant information in an ad message could serve as a positive cue to liking and thereby exert a direct and positive effect on attitudes. This type of effect is mechanism 3 described above in section 1.

Last, when baseline elaboration is moderate, a variable like personalization can influence the extent of message processing. That is, it can determine whether the message is processed in the central route or the peripheral route or is even attended to at all. Individuals exposed to

advertising messages can often choose to ignore it, or pay attention to it. The use of personalized information could affect whether the message is noticed and the amount of attention paid to it. For example, people have been shown to automatically orient their attention to their own name (Wolford and Morrison (1980); Cherry (1953); Shapiro et al. (1997); Tacikowski and Nowicka (2010)). In our context of email advertising, this is mechanism 1 described in section 1. If this were the only effect of including self-relevant information, adding the recipient’s name would only affect the opening of the email. Conditional on opening the email, the likelihood of carefully processing the persuasive message and being persuaded would remain the same. However, self-relevant information could have additional effects. Self-relevance is a well-established means of increasing message elaboration, which increases the extent to which people are affected by the quality of arguments in a persuasive communication (Petty et al. (1983); Wheeler et al. (2005); see Petty et al. (1992) for a review). This is mechanism 2 described above. Personalizing the email could increase the extent to which the recipient carefully elaborates on the content of the email after opening it. If this were the case, people reading the personalized emails would be more affected by the quality of the arguments in the email. Hence, emails with more compelling reasons to purchase (e.g., a discount) would be more effective to the extent that people were carefully elaborating on the message .

3 Experiment 1: Main Experiment

To study the effect of ad-content we partner with an advertiser that uses email marketing extensively. Our main partner company is a prominent player in a niche market. It sells online and offline training programs for preparation of standard tests like CFA and CPA. To preserve the anonymity of our partner company we cannot disclose it’s name. We refer to this company as C. Their main target market comprises working professionals looking to improve their skills by taking certification tests. Their products are expensive; they are priced in the order of \$1000. The main objective of C’s email marketing is to acquire new customers working in companies in various parts of the world. Specifically, the email marketing is used to generate “sales-leads”. An

individual replying to an email with an intention to make a purchase, after knowing the price, is called a sales-lead. These leads are forwarded to the sales team who then sell the products to the individuals. Sales-leads are valuable for the organization - the management puts a value of \$100 on one sales-lead.

The content of the email ad-message sent by the company varies by the product. Figure 2 shows a typical email message. It mentions the product, its detailed features and its potential benefits to the consumer. Importantly, it also mentions the price of the product. Towards the end of the message it allows the recipient to “unsubscribe” from the emailing list and avoid receiving emails from C in the future. This feature is typical of email marketing messages. Further, all email ids in C’s list are corporate email ids and comprise the name of the person (firstname.lastname@company.com). This feature of the data-set is a consequence of the way the list of email-ids is compiled by C.

3.1 Experiment Design

Before our first experiment, the email messages from C mentioned the recipient’s name in the beginning of the body of the email message (e.g., “Dear Jack”). Our first experiment tests the value of repeating this information by including the recipient’s name in email’s subject-line. A total of 68,088 email-ids are randomized into the following two conditions.

- *Control group*: Recipients in this group are sent emails in the typical format used by C. The names of the recipients are not mentioned in the subject line.
- *Treatment group*: Recipients are sent emails with their names added to the subject line. Specifically, the name is appended to the beginning of the subject. For example, suppose the subject-line in a control email to a person named Jack Smith is “Learn Financial Modeling from Industry Experts”. Then the subject-line for the corresponding treatment group is “Jack, Learn Financial Modeling from Industry Experts”.

The only difference between the emails received by the treatment and control group is that the subject mentions the recipient’s name in the treatment group but not the control group. The

rest of the marketing campaign, the number of emails, other content remain the exactly same. The experimental addition to the message to the treatment group qualifies as non-informative content. Why? First, the recipient’s name does not convey any information about the product being sold by the advertiser. Therefore, adding it would not change the understanding about the product or the message. Second, the ad messages are delivered through emails, which are individual-specific. Also, all email addresses in our context already contain the recipient’s name. Therefore, as noted above, one might assume that all the recipients in our experiment are already aware of the message-sender’s knowledge of their names. Third, the name of the recipient is mentioned in the beginning of the email message (the body of the email) for both the groups. Therefore, we are just varying the *additional* mention of the recipient’s name. This makes it very likely that the experiment varies non-informative content of the message.

3.2 Empirical Findings

We examine the effect of a random allocation of an email to a condition where the recipient’s name is included in the email’s subject line. We observe multiple dependent measures. We observe the number of sales-leads generated, which is the main dependent measure of interest for C. We also observe the instances where an individual clicked on the link to unsubscribe from the email campaigns, indicating no interest in making a purchase. This gives us an estimate of the negative response of the individual. In addition, we also observe the number of emails that were opened in each condition. This measure is widely used in email marketing because it gives a measure of a consumer reading an ad message, which is relevant. It is also an interesting measure from a researcher’s perspective because it provides a measure of actual “exposure” to an ad, which is hard to obtain for most other advertising channels. However, we note that this measure is noisy and dependent on the software used by the email recipient.⁴ The company aims to maximize opens and leads, while minimizing unsubscribes.

Table 2 shows the results from the experiment. Column 1 shows that the probability that an

⁴To track opens, the emailing software embed a “pixel” (a very tiny image) into the email message. When the message is opened, the pixel is loaded from the internet, enabling the tracking of the act of opening an email. However, some email clients might block this step leading to opens not being tracked. Therefore, this measure is incomplete because it might miss some individuals who opened the email.

email is opened increases by 20%, from 9.05% to 10.80% when the name of the recipient is included in the subject line (p-val<0.01). If the treatment group has the same propensity to buy from the advertiser as the control group, conditional on open the emails, then we would expect some increase in the leads and the number of unsubscribes. Note from column 2, that $\frac{0.39}{9.05}$ of the consumers generate a lead after opening in the control group. Therefore, without looking at the estimates for the treatment group, we would expect lead rate would increase to 0.47% ($\frac{0.39}{9.05} \times 10.8$) because of the increase in the emails opened. Similarly, we expect the unsubscription rate to increase to 1.43% ($\frac{1.20}{9.05} \times 10.8$).⁵ However, Columns 2 and 3 of the table show that the lead rate increase is larger, 0.51%, (p-val=0.02) and the unsubscription rate *decreases* to 1.00% (p-val=0.01) instead of increasing. Columns 4 and 5 of the Table 2 show that the leads conditional on opening the emails increase (p-val=0.39) and unsubscribes decrease (p-val < 0.01).

3.3 Mechanism driving the effects

Past research reviewed in section 2.2 suggests a rich set of mechanisms by which advertising content could affect a consumer’s decisions. Ad content could provide information to the consumer, thereby influencing the product’s evaluation. Non-informative content could also drive consumer behavior in multiple ways. (1) Firstly, an email with one’s own name could make people notice the ad message. If this is the only mechanism of the effect, then adding the recipient’s name would only affect the opening of the email. Conditional on opening the email, the likelihood of a positive or a negative outcome would remain the same. (2) Secondly, seeing one’s name could increase his interest in learning more about the content of the email, thereby increasing the extent to which the recipient carefully elaborates on the content of the email ad. (3) Thirdly, self-relevant information could activate favorable affect that then transfers to the advertised product. Therefore, seeing one’s name can act as a positive cue and can directly increase his liking for the product. This effect is analogous to the possible utility-shifting effect of advertising discussed in the economics literature. DellaVigna and Gentzkow (2009) call this

⁵We expect this calculation to over-estimate the conditional lead rate and under-estimate the unsubscription rate. This is because, a priori, we expect the additional people who open the email because of the experimental treatment to have a *lower* propensity to buy from the advertiser, and a higher propensity to unsubscribe from the email campaign, compared to the rest of the individuals who opened the email. This is because this set of people chose not to open the email without the their names in the subject-line.

the “preference-based effect of advertising”. Bagwell (2007) refers to it as the “persuasive effect of advertising”. This effect is important because it has clear implications. For example, if advertising content increases a consumer’s liking for a product, the firm selling the product gains market-power and can charge a higher price.

All three mechanisms can explain the positive effect of inclusion of the recipient’s name in the email on the chances of the recipient opening the email. However, the mechanisms have different predictions about what happens after the email is opened.

- Mechanism 1 predicts no change in behavior of the set of individuals who open the email regardless of the recipient’s name. Therefore, this mechanism predicts that the total number of instances of individuals unsubscribing from the campaign, and sales leads generated can only increase because of the experimental treatment.
- Mechanism 3 predicts an increase in the consumer’s liking of the advertised product. Therefore, it predicts an increase in total leads in the treatment group. The number of unsubscribers would remain the same or decrease in the treatment relative to the control group, if the individuals who unsubscribe in the control group can change their mind because of the experimental treatment. Conditional on opening an email, this mechanism allows for the consumer’s behavior to change and become more favorable towards the advertised product.
- In the case of mechanism 2 the inclusion of the recipient’s name in the email enhances the processing of the message. Therefore, similar to mechanism 3, mechanism 2 predicts an increase in total leads. It allows for the unsubscribes to increase or decrease relative to the control group. It allows the consumer’s behavior to become more favorable towards the advertised product, conditional on opening the email. However, mechanism 2’s effect depends on the other (informative) content in the message. For example, consider an email that contains a price discount. Suppose the price discount leads to a positive outcome. In this case, the non-informative content enhances the processing of the message by the consumer, thereby magnifying the impact of the discount. Hence, unlike 3, which affects

attitudes and behavior without affecting message processing, mechanism 2 predicts an interaction of the non-informative content with the other content in the ad.

Our findings from experiment 1 in Table 2 provide some evidence about the underlying mechanism. Specifically, addition of the recipient’s name to the subject reduces the chances of unsubscribes. This suggests that seeing the name in the subject line affects the consumer behavior, beyond just making them open the email. Our findings also show that the leads conditional on opening the emails increase. This again supports the proposition that seeing the name in the subject line has an effect beyond just making the individuals open the email. This rules out the possibility that mechanism 1 is the only mechanism at play. Either or both of mechanisms 2 and 3 are playing a role.

In addition to the potential mechanisms considered above, adding the recipient’s name can also potentially affect the likelihood of the email being classified as “spam” by the email servers (mechanism 4). This can increase the likelihood of the consumers seeing the emails and responding to it. This possibility, like mechanism 1 discussed above, would predict an increase in the probability of the recipient opening an email, but not our finding of the total number of unsubscribes decreasing. Therefore, this mechanism is not likely to be driving our effects. Further, in our survey of the industry forums, we did not find any evidence of personalization, like our case, affecting spam classification.⁶

4 Generalizability of the findings

Our findings suggest that personalization of messages benefits company C’s email advertising campaign, which is aimed at acquiring new customers. These findings are quantitatively and theoretically significant, and raise important questions about whether these effects can be generalized to other advertisers in other settings. The potential underlying mechanisms link to basic consumer psychology, which allows for the possibility of generalization. But whether the effects extend to other settings and are significant, is an empirical question. To proceed in this

⁶One of our own checks supports this expectation. In an experiment, we repeated the use of the recipient first-name in the email body and found that the estimated open-rates did not change.

direction, we take steps to check whether our findings are likely to extend beyond company C’s campaigns. We explore two aspects of generalizability. First, are these findings specific to C or a company in a niche market? Can they extend to companies that are widely known and sell products that are purchased by a broader market? Second, are these findings specific to using the name of the message recipient, or do they extend to other elements of personalization.

4.1 Generalization beyond the current context

We run experiments with similar designs as Experiment 1 in other settings. We partnered with two other companies (a) Mercado-Libre (M), and (b) Stanford marketing (S). These two companies provide empirical settings very different from our main collaborator company. We discuss these differences before describing the specifics of the experiments.

Experiment 2 with Mercado Libre: M is a large e-commerce website selling a wide variety of products in 13 countries. It is the largest online seller in Latin America with hundreds of millions of dollars in annual revenues (MercadoLibre.com). It spends tens of millions of dollars on online and offline marketing. Unlike C that sells a niche product, M has a wider appeal and is well known in it’s market. It’s target market comprises a general audience rather than working professionals. Further, the email campaign we focus on with M is aimed at *re-engaging old customers* (unlike C’s campaign that aimed to acquire new customers). Also, prior to collaborating with us, an email in M’s campaign had included the recipient’s name in the subject-line. An example email from M is shown in Figure 3.

Experiment 3 with Stanford newsletter: Stanford’s marketing team sends monthly newsletters to spread awareness about the latest research, and also about the executive education programs offered at the business school. This setting comprises a very well-known university attempting to engage a target market that is likely to be well-aware of the advertiser. Therefore, it is significantly different from both C and M, and can help us further gauge the limits of our findings. An example email newsletter from Stanford is shown in Figure 4.

The design of the experiments 2 and 3 is the similar to experiment 1. Email-ids are randomly divided into a treatment and a control group. The control and the treatment emails are exactly

the same, except the subject-line of the treatment emails has the recipient’s name appended in the beginning. In the case of M, the treatment email is the usual email they send, and the control email is the one with the name of the recipient removed from the subject line.

Unlike C, the main outcome of interest for both M and S is whether the recipient of the email clicks on a link in it. This measure, referred to as a “click”, is commonly used in online marketing. It suits their specific objective of engaging individuals and drawing them to their websites, rather than selling specific products. Therefore, we focus on three dependent measures: (a) whether the recipient opens an email, (b) whether he clicks on a link in the email, and (c) whether the person unsubscribes from the mailing list.

4.1.1 Findings from Experiment 2

The scale of M’s campaign allowed us to draw a large sample size. A total of 1,111,130 emails were sent as a part of Experiment 2. Table 3 shows the results from this experiment. Column 1 shows that the probability of opening an email increases from 21.78% to 23.07% (a 6% increase) when the name of the recipient is added from the subject line. If the treatment group has the same interest in M as the control, then conditional on open the emails, we would expect some increase in the clicks and the number of unsubscribes. The clicks would increase from 2.10% in the control group to 2.22% ($=\frac{23.07}{21.78} \times 2.10$) and the unsubscription rate would increase from 0.055% to 0.058% ($=\frac{23.07}{21.78} \times 0.055$). However, Columns 2 and 3 of Table 3 show that the click-rate increase is larger, to 2.25% (a 7% increase), and the unsubscription rate *decreases* instead of increasing. The unsubscription rate decreases to 0.049% which is an 11% decrease. These findings are similar to those of experiment 1. They indicate a similar underlying mechanism. Seeing the name in the subject line affects consumer behavior, beyond just making them open the email. Indeed, our findings in Column 4 and 5 show that the clicks conditional on opening the emails increase (p-val=0.27) and unsubscribes decrease (p-val=0.04). This again supports the proposition that seeing the name in the subject line has an effect beyond just making the individuals open the email.

4.1.2 Findings from Experiment 3

The lower half of Table 3 shows the results from Experiment 3. Note that the sample size we were able to get ($N=5000$) with S is significantly smaller relative to the other experiments. Therefore, we expect this experiment to be low powered. Column 1 shows that the likelihood that an email is opened increases significantly from 12.8% to 15.8% (23% increase) when the name of the recipient is included in the subject line. If the treatment group has the same interest in S as the control, conditional on open the emails, then we would expect the click-rate to increase from 1.48% in the control group to 1.83% ($= \frac{15.8}{12.8} \times 1.48$) and the unsubscription rate would increase. However, similar to the other two experiments, columns 2 and 3 show that the click rate increases by a larger amount, by 32% to 1.96% because of the treatment, and the number of unsubscribes decrease rather than increase. Because of the low power in the experiment, the effect on unsubscription-rate is not estimated precisely enough to be statistically significant. However, this finding again supports the proposition that seeing the name in the subject line has an effect beyond just making the individuals open the email.

4.2 Generalizability with other content - Experiment 4

Working with the partner company C, we designed experiment 4 to determine whether varying other pieces of non-informative personalized content affects the outcomes. For our objective, it is important that the content we experiment with is related to the recipient, and not the product that is being sold. Therefore, in this experiment, we use the name of the company where the recipient works. This piece of content has no explicit information about the product. Recall that all the email ids used by C are of the form “@company.com” (where company is the recipient’s place of work). Therefore, conditional on getting an email, the recipients know that the marketer is aware of the firms in which they work. So we view that adding this piece of content to the email message for the treatment group does not change the total information content in the email.

A total of 100,993 emails were sent as a part of experiment 4. Figure 5 shows the emails sent to the control and the treatment group. The emails are the same except the treatment email

has five extra words that include the recipient’s company name. Note that this experiment is different from experiment 1 in that the subject line is the same across the treatment and control groups. The manipulation is in the body of the treatment group’s email. Also, there is no other mention of the company name in the email.

Table 4 shows the results from this experiment. Column 1 shows that adding the name of the company to the email message does not change the likelihood of the email being opened. This is expected, because at the time the consumer makes the decision to open the email, the content seen by both the treatment and the control group is the same. For other measures – leads and unsubscribes – we find significant improvements in the treatment group relative to the control group. Column 2 shows that the leads almost double, increasing from 0.11% to 0.23% (p-val< 0.01) because of the experimental treatment. Although the absolute numbers are small, the relative increase is very large, and consequential.⁷ Column 3 shows that the number of unsubscribes is lower in the treatment group. It decreases by about 6%, from 3.88% to 3.66% (p-val=0.06). Columns 4 and 5 show that leads and unsubscribes decrease even conditional on opening the emails. This is not surprising given that the effect of the experimental manipulation, if any, can only occur after the emails are opened. These findings corroborate the findings in the previous experiments. They show that the effects we document are not limited to including the “name of the recipient”.

5 More Evidence on the Mechanism

The findings so far suggest that the effects of non-informative personalized content is not just limited to the individual noticing the advertising message, which is mechanism 1 from Section 3.3. In this section, we attempt to identify whether mechanisms 2 or 3 play a prominent role in the effects. This step is important because these mechanisms have different implications for advertisers designing ad campaigns. It is also important for a better theoretical understanding of advertising effects, i.e., whether it can affect consumer’s preferences directly.

⁷Our collaborating firm has not yet implemented a system to include this information in their default emails. This is because, unlike the first name, incorporating the company name in the message requires cleaning and verification manually.

Mechanism 3 predicts that the consumer’s probability of buying the product increases because personalization increases the consumer’s liking of the product. This implies that the consumer’s willingness to pay increases, which may allow firms to increase prices. On the other hand, mechanism 2 does not make such clear predictions. This mechanism predicts that the effects are a consequence of increased attention paid to the rest of the content of the email. Therefore, it increases the consumer’s sensitivity to the other content of the email. For example, if the advertiser is contemplating giving a discount in the email, then including the name of the recipient in the email will increase the chance of the consumer considering the discount and increasing the effectiveness of giving the discount.

5.1 Experiment 5

With the above motivation, in order to distinguish between the mechanisms 2 and 3, we design another experiment. This experiment has a 2x2 design. One of the dimensions of the experiment is the non-informative personalization content. Specifically, we randomize the inclusion of the recipient’s name in the body of the email (note that the subject-line always contains the name in all the emails from C after experiment 1).⁸ The second dimension is the presence of text that conveys the *potential for the consumer to receive a discount*. In choosing the second dimension we consider the following factors. First, to estimate statistically significant effects, we need to vary informative content that is likely to be strongly informative, and has a broad appeal. A discount satisfies this condition because this category is expensive, the consumer is likely to know the price mentioned in the email and, therefore, a consumer’s decision to purchase is likely to be influenced by a discount. Second, however, a striking piece of content may affect other aspects such as the chances of an email being classified as spam by the email server. From our survey of the industry literature, this factor appears to be especially true for a discount.⁹ Cognizant of this possibility, we do not use a discount percentage number. Instead, in the middle of the email body, we mention the *possibility* of a discount. This may still interest the consumer because of

⁸Such variation – repeating the recipient’s name in the body of the message when it has already been added to the subject-line – was also tested in another experiment. Since that experiment is similar to the distinction between conditions A and B in experiment 5, with similar inference from the estimates, we did not include that one in the paper.

⁹For example: <http://www.leadformix.com/blog/2013/09/top-100-spam-trigger-words-and-phrases-to-avoid/>

the average price in our focal product-category, but is less likely to be affected by spam-filters.

Table 5 shows the 4 conditions in experiment 5. Figure 6 shows a snapshot from an email in the experimental-condition D, with both the recipient’s name and the possible discount mentioned in the body of the email. It highlights the elements that are experimentally manipulated. Note that the experimental mention of the name and the discount are inserted at different points in the email. This experiment is different from experiment 1, because the subject-line of the email always has the name of the person in it.

5.1.1 Empirical Findings

The results from experiment 5 are shown in Table 5. A total of about 1.4 million emails were sent as a part of this experiment. In each of the four conditions, about ten thousand emails were estimated to be opened. The average detected open-rate for this campaign is about 3%, although it is lower in conditions with the discount. This is expected in light of the discussion above. Note that the difference is very small and works against the test, making our test more conservative.

Using an ANOVA test, we find that the leads are significantly different across the four conditions ($p\text{-val}=0.02$). The condition that shows the recipient’s name and mentions the discount generates the largest number of leads. Comparing leads in the absence of a discount (condition B vs. A), we find that adding the recipient’s name to the body of the email does not increase the leads further ($p\text{-val}=0.38$). Comparing leads in the absence of the recipient’s name (condition C vs. A) in the body of the email, adding the possibility of the discount increases the leads, but the this effect is not significant ($p\text{-val}=0.27$). However, when the name of the recipient is present in the email (condition B vs. D), the presence of the discount increases the leads from 0.021% to 0.032% ($p\text{-val} < 0.01$). Thus we find support for the hypothesis that the effect of the discount is larger in the presence of the recipient’s name. Consequently, the data favor an explanation based on mechanism 2 as opposed to 3. Our conclusion is further supported by comparing the likelihood of a lead conditional on opening an email. Using an ANOVA test we find that the probability of a lead conditional on opening an email is significantly different across conditions

($p\text{-val} < 0.01$), with the highest value in the condition when both the discount and the name are mentioned in the email. Table 7 shows p -values from testing the equality of this mean for each pair of conditions. We find that the unsubscribe-rate does not change significantly across conditions.

5.1.2 Discussion

The results from experiment 5 are consistent with the following mechanism: viewing his name in the ad-message increases the likelihood of the individual reading the message more carefully and processing it, which in turn increases the chances of a positive outcome if the content is useful. It implies that the effect of adding the non-informative piece of content (e.g., the recipient’s name) depends on the other content of the email. By itself, such content may have limited value.

This mechanism is important to consider while interpreting the effect of advertising content. Past research has categorized the effect of advertising into informative (belief changing) and persuasive (preference changing). If these are the two kinds of effects of ad-content, one might infer the effect of non-informative ad content as evidence for advertising shifting consumer preferences, which is consequential (DellaVigna and Gentzkow (2009)). However, as seen in our data, the effect of non-informative ad content can exist through increased deliberation and message processing, which allows it to work without changing preferences. This mechanism has significant implications for empirical researchers studying advertising.

6 Conclusion

The above findings contribute to our understanding about the role of advertising content. First, they demonstrate the quantitative significance of ad content by showing, across several settings, that aspects of ad content can significantly change how consumers respond to the ads. Therefore, to predict the success of an ad campaign, one needs to consider the content of the ads, in addition to the usual factors such as reach, frequency and timing that are typically incorporated in models of consumer demand.

Second, the paper illustrates the importance of content that is *unrelated* to the product being advertised, but is related to the ad’s target audience. Such content is not likely to be informative about the advertised product and may be perceived as “auxiliary” to the core message in an ad. Still, it can be important for the campaign’s performance. We show evidence for the effect of such content in several settings, that are diverse in terms of marketing objectives and baseline message characteristics. Further, the paper sheds light on the mechanism by which this effect operates, by making use of detailed data on consumer response, such as a user opening an email, unsubscribing from the campaign, in addition to the usual end outcomes related to sales. Our investigation of the mechanism shows that non-informative content can be valuable in garnering a consumer’s interest, and increasing the likelihood of him processing and responding to the rest of the advertising message. This mechanism suggested and shown by the paper is novel. It proposes that the effect of the non-informative content depends on how the consumer evaluates the rest of the (potentially informative) content in the ad, which has empirical support in our data.

Our findings raise several questions about the “*boundary*” of the effect of personalization – under what conditions do we expect the effects to vanish? Our data shed some light on this issue. As seen in experiment 5, the benefits from adding personalized content is lower when the consumer’s interest in the rest of the message is low. Past research on privacy also suggests some boundary conditions. For example, in the context of email marketing, consumers may expect the sender to know their name, and not be surprised to see it in the email. However, this may not be the case for other broader yet customizable channels such as internet banner advertising. Privacy concerns might hurt the advertiser in such settings. Other boundaries for this effect may also exist. How the effect of personalization content changes when more email marketers engage in personalization is yet to be studied. Further research is required to explore such limits of the effects.

Our work has several other implications for future research. Our mechanism implies that the personalization content enhances the consumers’ processing of the ad message. This implies that inclusion of such content may increase the consumer’s retention of the advertised information over time, and may be consequential in the long-term effects of advertising. This mechanism also

has implications for the placement of personalization content. Because it draws a consumer's focus, such content might be most useful preceding information that is most important for a firm to convey. Such implications exist in theory, but need empirical support. Further, even though we measured several behavioral outcome measures, research using eye-tracking techniques can shed more light on the underlying mechanism, which may have important implications for designing advertising messages. Further research is also needed to extend our findings to other kinds of textual components of ads (e.g., stories, humor) and other non-textual elements of the content.

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Experiment 1:	Show the existence of the main effect of non-informative personalization (name of the recipient).
Experiment 2 & 3:	Show the generalizability of the results in experiment 1 to other empirical contexts, collaborating with other companies.
Experiment 4:	Show the generalizability of the results in experiment 1 to other pieces of content (name of the recipient's company).
Experiment 5:	Provide additional evidence of the mechanism driving the effects.

Table 1: Flow of the experiments in the paper.

	(1) Opens		(2) Leads		(3) Unsubscribes		(4) Leads/Open		(5) Unsubscribes/Open	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
Mean	10.80%	9.05%	0.51%	0.39%	1.00%	1.20%	4.72%	4.29%	9.24%	13.28%
Standard error	(0.15%)	(0.16%)	(0.04%)	(0.04%)	(0.05%)	(0.05%)	(0.35%)	(0.36%)	(0.48%)	(0.61%)
N	33,322	34,766	33,322	34,766	33,322	34,766	3,599	3,146	3,599	3,146
p-value	< 0.01		0.02		0.01		0.39		< 0.01	

Table 2: Results from experiment 1: For each experimental group we report (a) averages across individuals, (b) standard errors (in parentheses) and (c) p-value testing whether the means are equal across the two conditions.

Experiment 2										
	(1) Opens		(2) Clicks		(3) Unsubscribes		(4) Click/Open		(5) Unsubscribes/Open	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
Mean	23.07%	21.78%	2.25%	2.10%	0.049%	0.055%	9.75%	9.62%	0.21%	0.25%
Standard error	(0.06%)	(0.06%)	(0.02%)	(0.02%)	(0.003%)	(0.003%)	(0.04%)	(0.04%)	(0.01%)	(0.01%)
N	555,541	555,589	555,541	555,589	555,541	555,589	128,187	121,010	128,187	121,010
p-value	< 0.01		<0.01		0.17		0.27		0.04	
Experiment 3										
	Opens		Clicks		Unsubscribes		Click/Open		Unsubscribe/Open	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
Mean	15.8%	12.8%	1.96%	1.48%	0.72%	0.84%	12.44%	11.53%	4.57%	6.54%
Standard error	(0.7%)	(0.7%)	(0.28%)	(0.24%)	(0.17%)	(0.17%)	(1.66%)	(1.78%)	(1.05%)	(1.38%)
N	2,500	2,500	2,500	2,500	2,500	2,500	394	321	394	321
p-value	< 0.01		0.19		0.63		0.71		0.25	

Table 3: Results from experiments 2 & 3: For each experimental group we report (a) averages across individuals, (b) standard errors (in parentheses) and (c) p-value testing whether the means are equal across the two conditions.

	(1) Opens		(2) Leads		(3) Unsubscribes		(4) Leads/Open		(5) Unsubscribes/Open	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
Mean	10.88%	10.94%	0.23%	0.11%	3.66%	3.88%	2.11%	1.01%	33.64%	35.47%
Standard error	(0.14%)	(0.14%)	(0.02%)	(0.02%)	(0.08%)	(0.09%)	(0.19%)	(0.13%)	(0.63%)	(0.65%)
N	50,964	50,029	50,964	50,029	50,964	50,029	5,545	5,473	5,545	5,473
p-value	0.76		< 0.01		0.06		< 0.01		0.04	

Table 4: Results from experiment 4: For each experimental group we report (a) averages across individuals, (b) standard errors (in parentheses) and (c) p-value testing whether the means are equal across the two conditions.

(A) Name not mentioned in the email body; No Discount	(C) Name not mentioned in the email body; Discount mentioned
(B) Name mentioned in the email body; No Discount	(D) Name mentioned in the email body; Discount mentioned

Table 5: The 2×2 design of experiment 5.

	(A)	(B)	(C)	(D)
N	352,722	353,099	352,615	353,074
Number of emails opened	10,780	10,749	10,120	10,429
Opens	3.06% (0.03%)	3.04% (0.03%)	2.87% (0.03%)	2.95% (0.03%)
Leads	0.024% (0.002%)	0.021% (0.002%)	0.028% (0.003%)	0.032% (0.003%)
Unsubscribe	0.17% (0.007%)	0.16% (0.007%)	0.15% (0.007%)	0.16% (0.007%)
Leads/Opens	0.56% (0.07%)	0.51% (0.07%)	0.68% (0.08%)	0.88% (0.09%)
Unsubscribe/Open	1.51% (0.12%)	1.48% (0.12%)	1.58% (0.12%)	1.48% (0.12%)

Table 6: Results from experiment 5. For each experimental group we report (a) averages across individuals, (b) standard errors (in parentheses).

<i>p</i> -values from testing the null hypothesis: lead opening the email is equal across the pair of conditions in experiment 5			
	(A)	(B)	(C)
(B)	0.61		
(C)	0.26	0.11	
(D)	<0.01	<0.01	0.09

Table 7: Experiment 5 – Testing the equality of of leads conditional on opening the email for each pair of conditions (a total of six comparisons).

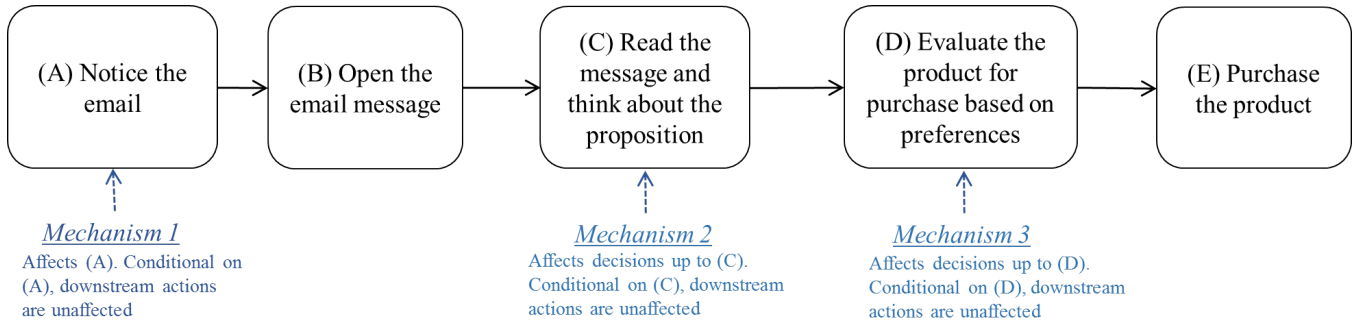


Figure 1: An *example* decision-making process of a consumer. The figure illustrates the stages at which the different mechanisms operate. Mechanism 1 increases the chance of the consumer noticing the message. Mechanism 2 operates by increasing the consumer's interest in the message. Therefore, Mechanism 2 can increase chances of (A), (B) and (C). Conditional on (C), it does not affect the later steps in decision-making. Mechanism 3 operates by enhancing the consumer's evaluation of the product. Therefore, it can increase the chances of all steps up to (D).

Subject: Learn Financial Modeling & Business Analytics from Industry Experts in Sydney

Dear %%First Name%%:

Greetings,

This e-mail is in regards to our upcoming Financial Modeling 4 Days Intense Classroom Training in Sydney this month.

This course will help you ...

Our offerings include:

- 4 days of classroom training
- ...
- 1 year online training (accredited best content)

Course Outline and Learning Outcomes:

- Techniques, tips & tricks to use Microsoft Excel to build financial models
- ...
- Macros and VBA to implement Monte Carlo Simulation

Standard Course Price: USD 1197

Register on or before 25th October 2014 to avail USD 1077 (Exam fee included).

Workshop Dates: 15th, 16th, 22nd, 23rd November 2014

I apologize if this course is not of your interest. You can easily reply back to this e-mail or click on the unsubscribe link below.

Best Regards,

%%Sender's Name%%

[Unsubscribe](#) me from this list

Figure 2: A typical email message sent by our main collaborator company (C).

Mirá la versión online | Agreganos a tu lista de contactos (moda@mercadolibre.com) | [Cancelá la suscripción](#)



Querés. Chequeá. Comprá.

Hola `$$CUS_FIRST_NAME$$`, lo mejor de la Moda está en MercadoLibre

The banner features a large image of four young people (three men and one woman) posing outdoors in swimwear. Overlaid on the right side of the image is the text "* LANZAMIENTO * NUEVAS TIENDAS OFICIALES" in a bold, white, sans-serif font, with a small blue checkmark icon to the right. Below this main image are two smaller product tiles. The left tile shows a pair of black and teal FILA sneakers with the FILA logo in the top left corner. The right tile shows a person wearing a dark blue BURTON hoodie and tan pants, sitting on wooden steps, with the BURTON logo in the top left corner. Both product tiles include a green truck icon and the text "Envío gratis" (Free shipping) and a blue circular badge indicating a discount: "Hasta -17% OFF" for FILA and "Hasta -10% OFF" for BURTON.

Figure 3: An example email message sent by Mercado Libre (M).

To unsubscribe please [use this link to remove your subscription](#).

Complimentary Newsletter from Stanford

Having trouble reading this email? [View it in your web browser](#).



COMPLIMENTARY NEWSLETTER FROM STANFORD

Welcome to the **Stanford Executive Report**—your source for exclusive information and insight you can use to enhance your business knowledge and advance your professional growth. Explore this sample of the latest research from our world-renowned faculty, learn about upcoming executive education programs and online events, and more. [Sign up now](#) to receive future issues sent to your inbox, compliments of Stanford GSB.

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Repaying favors is the norm in our personal lives, but not in the workplace.

Upcoming Programs

[The Corporate Entrepreneur: Driving Innovation and New Ventures](#)
Two-Module Program: August 2 – 7 and October 25 – 30, 2015
Application Deadline: June 22, 2015

[Managing Teams for Innovation and Success](#)
June 14 – 19, 2015
Application Deadline: May 18, 2015

[Interpersonal Dynamics for High-Performance Executives](#)
June 21 – 26, 2015
Application Deadline: May 22, 2015

[Advanced Leadership Program for Asian-American Executives](#)
August 9 – 14, 2015
Application Deadline: July 13, 2015

STANFORD BUSINESS WEBINAR SERIES

[Influencing Up: How to Gain Resources, Permission, and Support](#)
Date: Wednesday, April 15, 2015
Time: 10:00am – 11:00am Pacific Time
Learn about and register for our upcoming webinar topics, please [visit here](#).

VIDEO

[The Corporate Entrepreneur Program](#)

The Corporate Entrepreneur: Driving Innovation and New Ventures teaches essential business skills and frameworks, combined with real-world project work to translate ideas into action.

Figure 4: An example email sent by Stanford Business (S).

Control Email

Email id: name@company.com

Subject: %%Name%%, Learn Financial Modeling & Business Analytics from Industry Experts in Sydney

Dear %%Name%%

Greetings,

This e-mail is in regards to our upcoming Financial Modeling 4 Days Intense Classroom Training in Sydney this month. It is a program that **aims at adding significant value to professionals like you.**

This course will help you ...

Treatment Email

Email id: name@company.com

Subject: %%Name%%, Learn Financial Modeling & Business Analytics from Industry Experts in Sydney

Dear %%Name%%

Greetings,

This e-mail is in regards to our upcoming Financial Modeling 4 Days Intense Classroom Training in Sydney this month. It is a program that **aims at adding significant value to professionals like you, working in companies like %%Company_Name%%.**

This course will help you ...

Figure 5: Example treatment and control emails for experiment 4.

Email id: name@company.com

Subject:

%%Name%%, Learn Financial Modeling & Business Analytics from Industry Experts in Sydney

Message:

Greetings,

This e-mail is in regards to our upcoming Financial Modeling 4 Days Intense Classroom Training in Sydney this month.

This course will help you ...

...

%%Name%%,

Get more information about us from ...

...

Do reply to this email, you may be eligible for a discount.

...

I apologize if this course is not of your interest. You can easily reply back to this e-mail or click on the unsubscribe link below.

Best Regards,

Alice Bradly

[Unsubscribe](#) me from this list

Figure 6: Variation generated by experiment 5. The figure highlights the manipulation: (1) the recipient's name in the body of the email, and (2) the possibility of a discount. The 2-by-2 design of the experiment is in Table 5.