
The effect of behavioural messaging on response rates to marketing emails.

Dissertation - MSc Behavioural Economics in Action

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Abstract

This research investigates the effect of different marketing messages informed by behavioural theory on email click through rates. The study measures response rates to various versions of the same email sent on behalf of the Mayor of London about the New Year's Eve Fireworks 2016 event. The results demonstrate that crafting marketing messages using the behavioural concepts of specificity, social proof and reciprocity can bring about an uplift in response rates to email communications. Furthermore, the study finds that these messages also delivered a more engaged customer experience as users spent more time reading the webpage once they had clicked through.

Section 1: Introduction

We live in a world where we are continuously bombarded with marketing for products and services. With the growth of digital advertising, we have seen an increase not only in the variety of advertising formats and number of communication channels, but also in intelligent targeting. More and more, marketers are adopting empirical, data-driven approaches to reduce wastage in advertising and deliver a more impactful customer experience. However, for all this sophistication, they still need to communicate their messages using words and images. The aim of all marketing is to cut through the noise of other advertising which competes for the audience's attention, and for this reason it is important not only to choose wording and visuals carefully, but also to test which is most effective in bringing about the desired response.

This study investigates how the use of behavioural triggers in marketing messaging can affect response rates. Whilst there has been much lab research conducted to form a theoretical foundation around the behavioural triggers chosen for testing, the opportunities to compare them in a ‘real world’ setting are limited. This experiment was focused to some extent on the priorities and objectives of the Mayor of London and City Hall, but its broader contribution is to assess the effectiveness of widely accepted ‘nudge techniques’ using actual communications to the general public rather than recruited experimental subjects. Of course, what works in one scenario may not translate to another, but this research demonstrates how behavioural theory can be applied to improve the impact of marketing communications. The methodology and findings can also be used to inform similar trials elsewhere, not just in the public sector but also for commercial purposes.

The experiment was conducted around the Mayor of London’s New Year’s Eve Fireworks 2016, a high profile event with complex priorities in terms of the messaging. This, combined with the online process and large sample size of prospective ticket buyers, presented the opportunity to trial different communication approaches in a way that was easily trackable and free to implement. Behavioural theory was used to formulate messaging that takes into account how people make decisions and their levers to action, with the aim of positively influencing response rates to the emails. Stage One of the trial aimed to encourage clicks to a specific webpage and Stage Two to encourage ticket purchases. Each of the treatments therefore presented the same choice in different ways that have been proven by existing research to bring about an uplift in engagement.

The study finds that, in Stage One of the trial, all the experimental treatments brought about a significant uplift both in total clicks on the email and proportion of clicks to the desired page. The results also demonstrate that encouraging this behaviour proved worthwhile for customers, as they stayed on the desired page for longer and were much less likely to go to another page on the site afterwards. Unfortunately, Stage Two was severely affected by website and tracking problems, so the lack of observed effect on ticket purchases is inconclusive as to whether it is attributable to the interventions themselves or the issues that impacted the trial.

The remainder of the dissertation is structured as follows: Section 2 reviews the related literature, Section 3 describes the experimental design, Section 4 discusses the results, Section 5 gives the conclusion and Section 6 the appendix.

Section 2: Related literature

One of the central theories in Behavioural Economics research is the idea that the human brain is not a calculating machine that can weigh up the costs and benefits of every action. In order to survive, it places bets and takes shortcuts, relying on established patterns of behaviour because they reduce cognitive effort (Shah & Oppenheimer 2008). This gives rise to an instinctive, automatic mode of operation known as System 1 (Kahneman 2012). It is this ‘thinking fast’ which influences many of our everyday actions, often including our response to marketing messages and consumer decision making (Samson & Voyer 2012).

There has been growing interest in recent years in applying behavioural theory to public policy design and there have been many successful behaviour change projects carried out by various social purpose organisations. However, behavioural theory is not just applicable to these larger scale interventions but also to something as simple as the act of clicking on an email, which is the behaviour of interest in this study. Various trials conducted by the UK's Behavioural Insights Team are relevant here, in particular their email trial to drive uptake of the government's Growth Vouchers programme in 2015.

A number of studies have documented a significant impact of framing on participants' behaviour (see, for example, Mannetti et al., 2013; Miller et al., 2016; Sanders, 2016; Sanders and Smith, 2016; Yang et al., 2013). Brañas-Garza (2007) has also found that behavioural messaging calling the subject's attention to a particular moral rule increases the generosity of participants in the dictator game.

Arguably, clicking on an email requires very little thought, and considering the volume of meaningless emails that most people receive on a daily basis, we may conclude that the probability of either clicking or not clicking might be close to random. Alternatively, it may be assumed that the location of links in the email is the principal determinant of click volume (Murphy, Hofacker, & Mizerski 2006). However, research shows that there are many 'nudge techniques' (Thaler & Sunstein 2008) that can be used to influence these quick decisions and make the desired behaviours and outcomes more likely. By making small alterations to the text of the email, it is possible to 'frame' the consumer decision in a different, more appealing,

way (Kahneman & Tversky 1981), and a particular focus on attribute framing or goal framing (Levin, Schneider, & Gaeth 1998) may prove effective in this case.

This experiment takes inspiration from a range of well-documented ‘nudges’, and the central research question is to test the effectiveness of these approaches in a ‘real world’ context. What might prove successful in the lab may not hold once set against the background of the constraints that modern living places on time and attention.

The behavioural triggers selected for testing are:

- *Social proof* - descriptive social norms signal appropriate behaviour and are likely to be followed (Dolan et al., 2012), so highlighting patterns of behaviour around New Year’s Eve ticket purchasing may have a powerful influence on the decision to buy. The influence is likely to take the form of informational cues rather than normative, which imply conformity for the purpose of social acceptance (Aronson, Wilson, & Akert 2005).
- *Scarcity* - if a resource is in short supply it is perceived to be more valuable (Cialdini, 2008). For New Year’s Eve the tickets are both limited and in high demand, so it will be important to draw attention to this.
- *Reciprocity* - social exchanges can be positive or negative (Fehr & Gächter, 2000), but in this case a sense of ‘returning the favour’ or obligation to respond to a concession made (Cialdini et al., 1975) might be created by emphasising the hard work City Hall puts into making the fireworks an enjoyable and safe experience.

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- *Anticipated happiness/ regret* - if people fear their decision may turn out to be wrong in hindsight, they can exhibit regret aversion (Seiler et al., 2008), but behaviour can also be driven by anticipation of future feelings of happiness (Baumeister et al., 2007). Asking people to imagine how they will feel in the future about New Year's Eve also draws upon the 'risk-as feelings' hypothesis (Loewenstein et al., 2001) and may influence the decision to attend as it draws upon emotional as well as cognitive factors.

Marketing communications can take the form of several different channels, of which email is just one. There is relatively little experimental economic research investigating the effect of the communication channel on people's behaviour (Conrads & Lotz 2015; Brosig, Weimann, & Ockenfels 2003). The scope of this study does not encompass this aspect, but it is important to keep in mind that the findings may only be applicable to this specific channel and that further research is needed to determine external validity across other methods of communication.

Section 3: Experimental design

The experiment was conducted via email communications to a database of subscribers to New Year's Eve ticket alerts. An email experiment was preferred to a website experiment as it is more easily controllable. A website experiment may be confounded by different sources of traffic, as individuals would be included in the experiment whether they had come from a Facebook advert, another website, an email or had just typed in the web address. By sending emails, we were able to keep track of which advertising formats the subject had been exposed to immediately prior to their actions.

The database size was approximately 90,000 (before it was filtered by the email system to remove any invalid addresses), and subjects were randomly allocated to treatments before each stage. This ensured that the probability of any given email address receiving a certain treatment was equal and there were no other variables which would impact upon this e.g date of subscription.

Although this is a self-selecting sample, analysis suggests there is no particular demographic trend to this data and it reflects the overall profile of New Year's Eve ticket buyers. Therefore, there is no cause for undue concern that using this database will introduce bias.

The trial was carried out at City Hall on behalf of the Mayor of London. There were two main overall objectives:

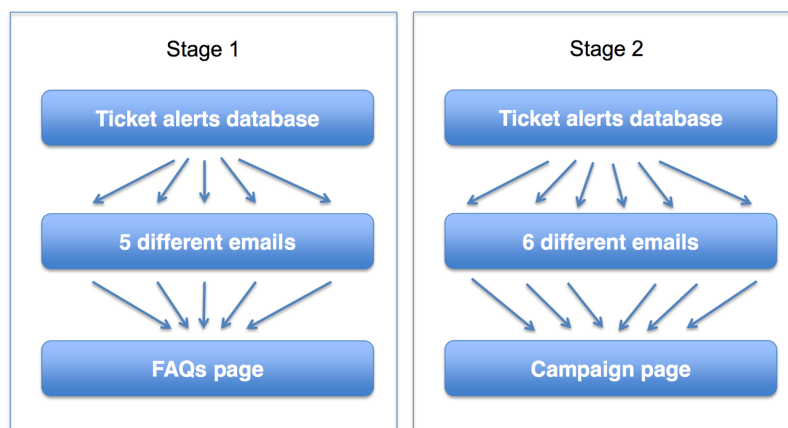
- To minimise the burden on social media and public liaison teams of queries from members of the public by pre-emptively directing individuals to the comprehensive list of Frequently Asked Questions (FAQs) available.
- To help to ensure that all tickets are sold quickly for the event. This ensures greater public safety by allowing the marketing campaign to focus as early as possible on communicating that people without a ticket should not attend the event.

Both of these objectives could be met by encouraging a higher click through rate on email communications for the event. The experiment therefore used behavioural theory to formulate messaging that takes into account how people make decisions and their levers to action, presenting

the same choice in different ways that have been proven by existing research to impact response rates.

The experiment was conducted in two stages:

- **Stage One:** One week before the New Year’s Eve tickets went on sale, we sent an email which reminded people of the date of the ticket release and encouraged them to click through to the FAQs section of the website to read more about the event. City Hall had approved two versions of the text for this email, one formal and one informal. We kept these two versions and then used the formal text as a control to compare against three further versions, giving a total of five different emails. We varied the FAQ ‘call to action’ to test whether slight changes in wording would make people more likely to click the link.
- **Stage Two:** On the day of the ticket release, we sent a second email to the ticket alerts database, encouraging them to click the ‘Buy tickets’ link and complete the transaction on the See Tickets website. There was only one version of approved text for the ‘now on sale’ emails which we used as the control. We then created five further versions by varying the ‘call to action’ text.

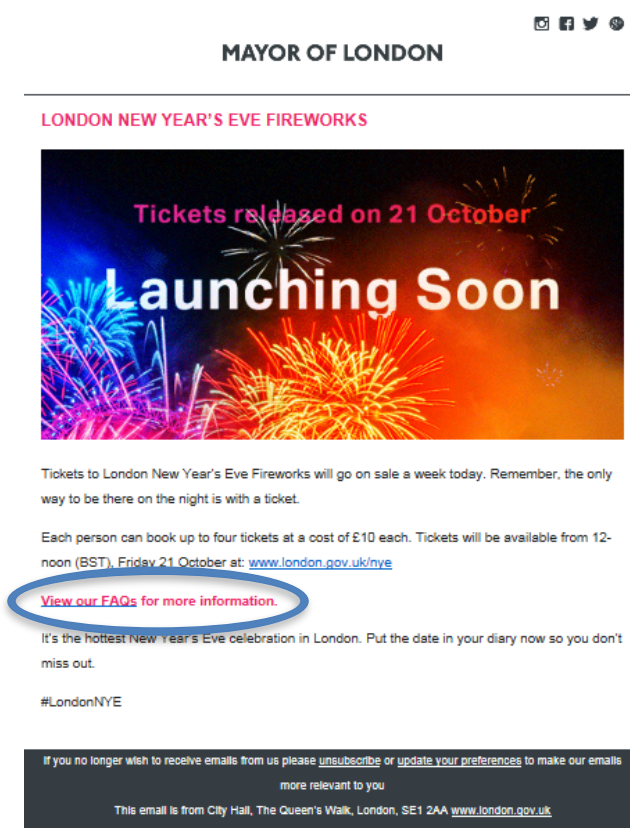


The email versions were as follows:

STAGE ONE

Four of the emails were identical apart from the variation in the ‘call to action’ text (see table below).

There was a ‘call to action’ to the main campaign page above this link – the aim was to get people to click the FAQs instead.



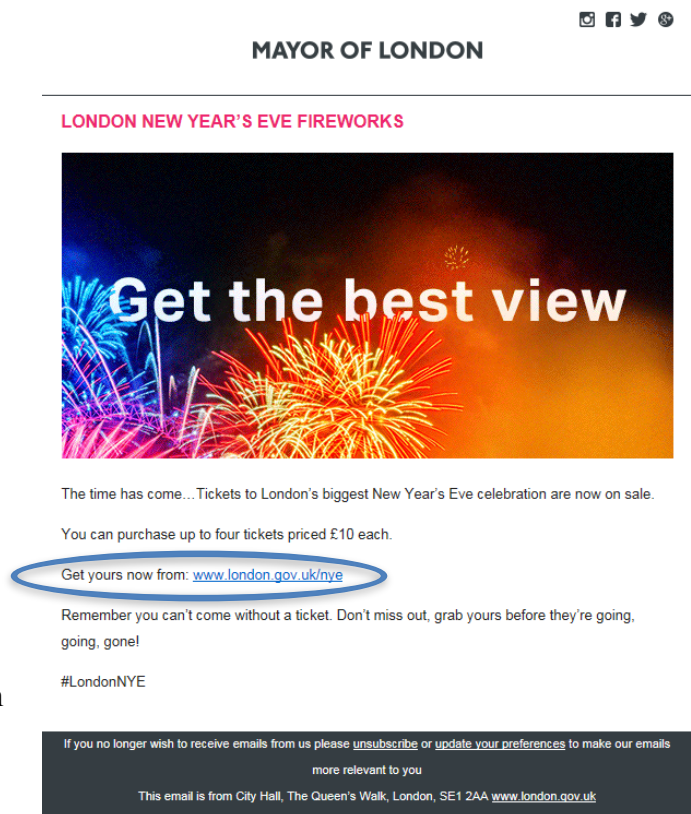
Treatments	Call to action text variation	Rationale
1 (Control)	View our FAQs for more information.	Approved copy.
2 (Informal)	View our FAQs for more information.	Approved copy (NB this version varied in tone but the call to action was the same).
3 (Specific)	View our FAQs for answers to questions like ‘can I bring my own food and drink’ or ‘what happens if it rains?’	May help to close the gap between intentions and actual behaviour by prompting people to identify barriers to action and develop a plan to address them.
4 (Social)	View our FAQs for information on the five viewing areas to decide which is most convenient for you and your friends.	Social relationships strongly influence behaviour. Drawing attention to networks may encourage collective action.
5 (Reciprocity)	View our FAQs: We want you to have the best possible NYE, so we’ve spent time putting together answers to questions you might have about the event.	People have a strong instinct for reciprocity, mutual support and fairness – we are more likely to give back when we have received something ourselves.

The Informal treatment was added at the request of City Hall staff, and therefore it was not a designed aspect of the experiment. In addition to the variation in tone, this email also had a different subject line; again, this was outside of the control of the experiment.

STAGE TWO

The six emails were identical apart from the variation in the ‘call to action’ text (see table below).

This time there was only one ‘call to action’ so all clicks were directed to the main campaign page.



Treatments	Call to action text variation	Rationale
1 (Control)	Get yours now from: www.london.gov.uk/nye	Approved copy.
2 (Scarcity)	NYE tickets are limited and will sell out quickly. Get yours now from www.london.gov.uk/nye	We are more attracted to goods if we believe supply is limited.
3 (Social)	A significant number of people will book NYE tickets over the first weekend of release. Get yours now from www.london.gov.uk/nye	We are heavily influenced by the behaviour of other people.
4 (Easy)	It's quick and easy to book NYE tickets. Get yours now from www.london.gov.uk/nye	We are more likely to take action when it's easy for us to do so.

Treatments	Call to action text variation	Rationale
5 (Anticipated regret)	Imagine how you will feel if you miss the opportunity to be at the London New Year's Eve Fireworks. Get your tickets now from www.london.gov.uk/nye	We are loss averse and are able to feel regret before it happens – asking people to picture how they would feel if they made the ‘wrong decision’ can influence the choice they make.
6 (Anticipated happiness)	Imagine yourself looking back on an unforgettable experience at the London New Year's Eve Fireworks. Get your tickets now from www.london.gov.uk/nye	We think of our future as anticipated memories, and when we make decisions the ‘remembering self’ is in control.

As with all ‘real world’ trials, there were various issues with the implementation due to factors which were largely out of our control:

- When the tickets went on sale, the City Hall website crashed due to the very high volume of traffic. This meant that the second round of emails were not able to be sent until 2.5 hours after the tickets went on sale, and also that the tracking links were not working properly.
- The result of this was that many people went ahead and purchased without receiving the alert – analysis shows that over 50% of those in our sample who purchased tickets on the day of the trial launch did so before the emails were sent. This may have affected the efficacy of the trial since it impacted upon purchase behaviour, and it also affected our ability to track activity.
- Taking definitive measurements was difficult due to there being no way to end the trial as such. The email performance statistics were constantly changing as more people opened or clicked on the email, and it was hard to effect a ‘cut off point’ after which the final measurements were taken. However, the impact of these slight changes was relatively insignificant as a week after the emails were sent (when the measurements were taken) the ongoing activity level was very low.

- As the ticket transaction took place on another website (See Tickets), it was not possible to track the user journey right through to the final conversion. The goal completion specified was therefore a click to the See Tickets website, indicating an intention to buy, rather than an actual confirmation of purchase.

Section 4: Results and discussion

Table 1. Summary data from Pure 360, the email service provider.

	Treatment	Data count (sent)	Total opens	Open rate	Total clicks	Click through rate
STAGE ONE	1 (Control)	13,207	6,157	46.66%	1,262	20.50%
	2 (Informal)	13,100	5,499	41.98%*	1,316	23.93%
	3 (Specific)	13,162	6,144	46.68%	1,412	22.98%
	4 (Social)	13,190	6,102	46.26%	1,415	23.19%
	5 (Reciprocity)	13,118	5,981	45.59%	1,346	22.50%
STAGE TWO	1 (Control)	11,492	4,731	41.17%	1,768	37.37%
	2 (Scarcity)	11,522	4,743	41.16%	1,798	37.91%
	3 (Social)	11,611	4,819	41.50%	1,773	36.79%
	4 (Easy)	11,584	4,749	41.00%	1,787	37.63%
	5 (Anticipated regret)	11,508	4,766	41.41%	1,736	36.42%
	6 (Anticipated happiness)	11,542	4,674	40.50%	1,772	37.91%

*different subject line

Table 2. Treatment effects compared to the control for each stage, calculated using a chi-squared test

	Treatment	Relative change	Lower 95% confidence interval	Upper 95% confidence interval	P value
STAGE ONE	2 (Informal)	+16.8%	1.0907	1.2499	< 0.0001
	3 (Specific)	+12.1%	1.0484	1.1992	<0.0001
	4 (Social)	+13.1%	1.0579	1.2099	<0.001
	5 (Reciprocity)	+9.8%	1.0257	1.1753	0.007
STAGE TWO	2 (Scarcity)	+1.4%	0.9631	1.0684	0.589
	3 (Social)	-1.5%	0.9344	1.0373	0.558
	4 (Easy)	+0.7%	0.9559	1.0606	0.795
	5 (Anticipated regret)	-2.5%	0.9247	1.0273	0.34
	6 (Anticipated happiness)	+1.4%	0.9631	1.0687	0.534

Stage One

In the first round of emails, the propensity to click on the email (either of the links) was significantly increased by all of the experimental treatments. The open rates did not vary much between the emails (apart from the Informal condition which had a different subject line), but this was to be expected since influencing open rates was not an objective of the experiment.

It may be the case that the different subject line for the Informal condition caused the percentage of clicks to be skewed by self-selection, since we saw a 10% reduction in opening the email compared with the control group ($p < 0.0001$).

In addition to increasing the total number of clicks, all but one of the treatments were successful in encouraging a higher proportion of clicks to the FAQs page rather than the campaign page (see appendix for additional data). Clicks to the FAQs page were significantly higher in the Specific, Social and Reciprocity conditions, and the most successful in this regard was treatment 4 which drew attention to the viewing areas and the social aspect of the event. The Informal treatment did not show a significant increase in clicks. This may be because the ‘call to action’ text was the same as the control, demonstrating that the variation in tone did not influence the decision to click the FAQs link rather than the campaign page link.

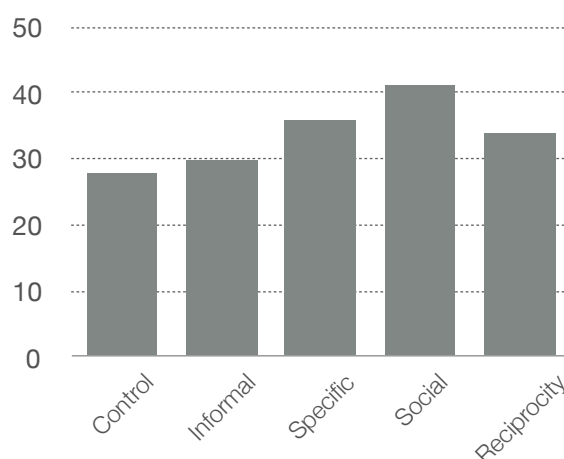


Figure 1. *Clicks to the FAQs page as a percentage of total clicks on the email*

This indicates that those interventions which were informed by behavioural theory were successful in altering preferences; more people chose to perform the desired action as a result of the Specific, Social and Reciprocity treatments. This is direct evidence that small changes in wording can cause a choice to be presented in a way that makes it more appealing to select the option that the ‘choice architect’ (Thaler & Sunstein 2008) wants to encourage.

The most effective message in Stage One was the ‘Social’ condition. This reminded people of the social aspect of the event and the need to consider the logistics of attending with friends. It may have been the reference to networks and collective action which encouraged a higher response to this message, or simply that the mention of viewing areas was particularly interesting. Either way, it provides a helpful indication for the marketing and events team of what information should be foregrounded in ongoing communications about the event and for next year’s campaign.

The overall result was that the interventions contributed an estimated 491 additional clicks to the FAQs page. If just the most successful ‘Social’ copy had been used for all emails, we can estimate that we would have seen 862 additional clicks to the page.

In practical terms, the outcome of this is that prompting potential customers to spend time reading the FAQs at this early stage in the campaign should significantly reduce the number of queries City Hall receives about the event. The experiment has therefore been successful in a wider sense, fulfilling the overall objectives of the Mayor of London and saving taxpayers’ money.

The results also demonstrate that encouraging this behaviour proved worthwhile for customers, since on average, people spent 4 mins 14 secs longer on the FAQ page than the campaign page (see appendix for additional data from Google Analytics).

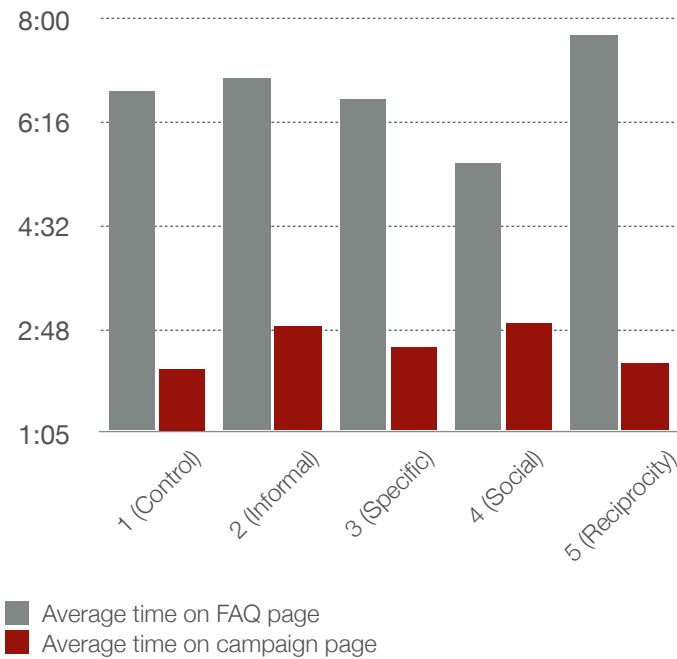


Figure 2. *Minutes spent on FAQs page compared to campaign page*

The bounce rate (customers who did not navigate to another page after landing on the page they had clicked through to) was a lot higher for the FAQs page, but this suggests that people were satisfied with the information they had read and didn't need to go elsewhere in the site.

In summary then, not only did those who clicked on the FAQs link stay on the page far longer, but they were also much less likely to go to another page on the site afterwards; both of these indicate a more engaged and satisfying customer experience.

Stage Two

In Stage Two, no significant effect was observed in any of the interventions in terms of propensity to click the ticket link.

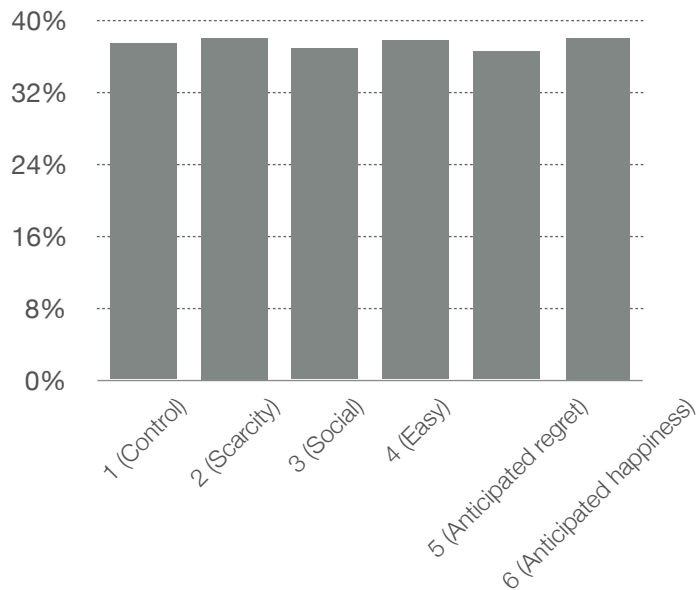


Figure 3. Click through rate (i.e. as a percentage of total opens) to the 'Buy tickets' link

In addition to the data gathered via the email service provider, we were able to compare email addresses of ticket purchasers with the original distribution lists. This did not track the exact user journey, meaning the sale was not directly attributable to the email, but nevertheless this provided a useful additional source with which to corroborate the main findings.

Looking at the data from See Tickets, we still find no significant effect in any of the treatments on the proportion of those who purchased a ticket having opened the email.

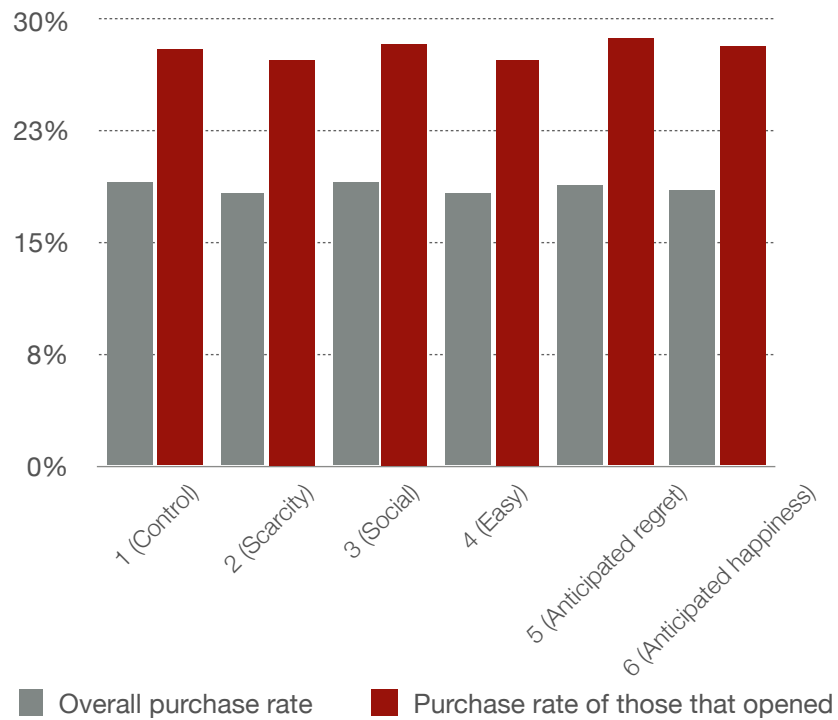


Figure 4. Comparison in purchase rate between those who were sent the email and those who opened it

It is difficult to draw conclusions about these results due to the website and tracking problems outlined previously. Although we did not see an effect, we cannot conclude whether this was due to the interventions themselves or the issues that impacted the trial. Analysis shows that the disruption caused over half the sample's ticket purchases to be missed as many buyers did not wait for the delayed email; if these subjects had been exposed to the email messaging before purchase, the sample for analysis would have been greatly increased and an effect may have been observed.

Section 5: Conclusion

To sum up, this research shows that behavioural influences can be brought about by changes in wording that are simple and free to implement. Results from the first stage of the experiment demonstrate that the experimental treatments not only encouraged a higher overall response rate to the emails, but the small alterations in wording also influenced a greater proportion of clicks to the FAQs page rather than the main campaign page. Given the issues that affected Stage Two of the trial, it would be worth testing these messages again to see whether a difference in their effectiveness emerges.

This research has already been proven to have a positive impact on the work of City Hall, where it was conducted, since it helped achieve the objectives of encouraging customers to read the FAQs page for the event. However, this work could easily be applied to almost any ‘real world’ scenario where a purchase is being made and a marketing email being sent to encourage this action. Using the same theory based ‘nudges’, response rates to the emails can be improved and in this way the effectiveness of marketing communications can be improved.

Section 6: Appendix

STAGE ONE

Proportion of FAQ clicks - data from Pure 360, the email service provider:

Email	Unique FAQ link clicks	FAQ clicks % of total
1 (Control)	429	28%
2 (Informal)	472	30%
3 (Specific)	609	36%
4 (Social)	720	41%
5 (Reciprocity)	552	34%

Dwell time and bounce rate - data from Google Analytics via tracked links in the email:

Email	Average time on FAQs page	Bounce rate FAQs page	Average time on campaign page	Bounce rate campaign page
1 (Control)	6:46	78.25%	2:08	58.52%
2 (Informal)	7:00	74.84%	2:52	62.32%
3 (Specific)	6:39	77.55%	2:29	64.21%
4 (Social)	5:35	75.18%	2:53	57.64%
5 (Reciprocity)	7:44	76.52%	2:14	62.86%

STAGE TWO

Ticket purchasers - email address data from See Tickets:

Email	Ticket purchasers (total)	Overall purchase rate	Ticket purchasers (of opens)	Purchase rate of those that opened
1 (Control)	2182	18.99%	1328	28.07%
2 (Scarcity)	2117	18.37%	1290	27.20%
3 (Social)	2221	19.13%	1368	28.39%
4 (Easy)	2128	18.37%	1298	27.33%

Email	Ticket purchasers (total)	Overall purchase rate	Ticket purchasers (of opens)	Purchase rate of those that opened
5 (Anticipated regret)	2177	18.92%	1369	28.72%
6 (Anticipated happiness)	2146	18.59%	1313	28.09%

$P > 0.05$ for all comparisons versus control, therefore difference in purchase rate deemed not statistically significant.

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