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Effects of link placements in email newsletters on their click-through rate

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ABSTRACT

Firms adopting email marketing strategy often complain about low click-through rate (CTR). Scarcity of attention in this digital economy requires including psychological aspects of consumer behavior into the design considerations of digital contents. In this study, we propose differential effects of link placements in email newsletter on their CTR. We explain the observed effects of link placements on CTR drawing concepts from psychology and visual heuristics. The empirical analysis confirms that when it comes to clicking on the links of a newsletter, the click-through follows a U-pattern, i.e. as users traverse the links placed on a U-path their responsiveness decreases gradually. Thus, links placed in the left region of an email newsletter have higher impact than those placed in the right region with links in the top-left region having highest impact. Insights gained from this study can be used in the design consideration of email newsletters.

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Email marketing; link placement; visual heuristics; SNARC effect

Introduction

Digital advertising is important for firms in dissemination of marketing messages using the Internet. This is due to the improvements in digital media as they have become more efficient in their communication capabilities that include engagement, interaction, control, and mutual coordination (Voorveld, Neijens, and Smit 2011). However, along with these efficiencies, there comes a complexity where abundance of information has created scarcity of attention in this digital environment (Simon 1971; Lanham 2006; Davenport and Beck 2013). This causes either wasted efforts or less than expected results for the firms' digital advertising strategies. On the one hand, firms are enjoying the global consumer reach due to the Internet, on the other hand, they find it difficult to keep these consumers engaged and interested in their digital messages (Baek and Morimoto 2012). Therefore, it is important for firms to make their digital contents not only relevant but also interesting to draw as much consumer attention as possible. This requires focusing not only on digital contents but also the design aspects of organizing the information within a digital medium and a particular format.

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Firms use various types of digital media such as website, email, mobile, and online social media among others to convey the same kind of marketing message (Peters, Amato, and Hollenbeck 2007; Voorveld, Neijens, and Smit 2011; José-Cabezudo and Camarero-Izquierdo 2012; Fernando, Suganthi, and Sivakumaran 2014). However, at the same time, consumers' responses to the marketing message may vary as the same information is organized in distinct ways across these digital formats (Micheaux 2011). Therefore, while choosing a particular digital medium, the design considerations of organizing the information become critical. Given most of the digital contents are visual in nature spacing, position, and order of information will influence consumers' responses towards them (Tourangeau, Couper, and Conrad 2004). Furthermore, in a visual environment, our visual perception can be affected by region of the visual scene (Veneri et al. 2010). Effectiveness of advertisements in terms of grabbing consumer attention is affected by brand, pictorial and textual elements of ads (Pieters and Wedel 2004). Furthermore, research has shown that it is not just the contents but also the position or the layout of the contents that affect consumers' attention (Janiszewski 1998; Chae and Hoegg 2013; Sundar and Noseworthy 2014; Leonhardt, Catlin, and Pirouz 2015). In this research, we focus on how 'region of visual sight' or 'location of information' in a digital medium influences consumers' interaction with them. We combine information processing theory with visual heuristics to show the differential impact of 'region of visual sight' or 'location of information' on consumers' responses towards the visual digital contents within a context of firms' email marketing strategy. The empirical results support our propositions of differential impact of 'location of information' on consumer responses, thereby suggesting 'location' or 'visual sight' as an important design consideration in organizing digital contents.

The rest of the paper is organized as follow: first, we do relevant literature review which is followed by our conceptual framework. Then, we describe the data used for the analysis and propose our model. This is followed by results and discussion sections. Finally, we conclude with summary, limitations, and future research directions.

Background

In 2012, the estimated total digital advertising expenditure in the United States was $37.31 billion (*eMarketer* 2012) with 0.6% accounted by email marketing. According to a report by *The Pew Internet & American Life Project* (2009), checking emails is one of the most popular online activities of American Internet users. Thus, firms are quick to adopt email marketing into their advertising plan to tap into the opportunities provided by this indispensable digital medium to connect and interact with their consumers with 60% firms planning to increase email marketing budget (*StrongMail* 2012). However, firms have realized suboptimal return on their marketing investment due to low consumer responses despite the opportunities provided by email marketing (Micheaux 2011; José-Cabezudo and Camarero-Izquierdo 2012; Baek and Morimoto 2012; *M+R Strategic Services* 2013).

This low response towards digital contents can be attributed partly due to the lack of consumer attention. Wealth of information in a digital world creates poverty of attention (Simon 1971; Falkinger 2007; Huberman and Wu 2008). In such information-rich economy, firms are competing for consumer attention as it has become a scarce resource (Falkinger 2008). Therefore, digital advertisers have to strive hard for making their contents relevant and interesting to draw optimal consumer attention in this online marketing environment.

This requires understanding of psychological aspects of human attention that can be incorporated into the design and execution of digital contents.

When it comes to visual scene, humans use context to process information by directing their attention or eyes to different diagnostic regions of a visual sight (Oliva et al. 2003). The well-established psychological phenomenon of left- and right-hand responses to small and large numbers, respectively, termed as Spatial-Numerical Association of Response Codes (SNARC) effect (Dehaene, Bossini, and Giraux 1993) has also been reported in visual responses (Fischer and Hill 2004; Fischer et al. 2003). Furthermore, similar effects have been studied in consumers' numerical perception about physical distance between regular and sales prices (Coulter and Norberg 2009), and effects of image location (left vs. right) in ads on consumer attitude towards advertised products (Chae and Hoegg 2013). We utilize this theory to divide email newsletter's visual region into four parts: top-left (north–west), top-right (north–east), bottom-left (south–west), and bottom-right (south–east), to investigate their differential impacts on consumers' responses towards email newsletters measured through their clicks (which is operationalized as CTR) in email links.

Note that email characteristics and email activities also have significant influence on consumers' responses towards email newsletters. For example, consumer interaction with emails may diminish due to un-subscription rate (Cases et al. 2010); also the design of an email campaign, the content and the layout, could substantially influence the click-through rate (Zviran, Te'eni, and Gross 2006). Therefore, design of email newsletter that consider email characteristics should also include psychological aspects of human attention and visual heuristics into the design considerations, given the impact of email newsletter on various consumer activities such as channel choice decision (Martin et al. 2003), customer lifetime value (Kumar et al. 2008), and customer relationship management (Lewis, Whitler, and Hoegg 2009).

In this study we investigate the effects of link placements in emails on their click-through rate. We propose a conceptual framework where a link placement is divided into four regions namely: top-left (north–west), top-right (north–east), bottom-left (south–west), and bottom-right (south–east) and propose the differential impact of them on click-through rate. We test our propositions using an empirical analysis controlling for the effects of email characteristics and email activities.

Conceptual framework

Consumer attention is very critical consideration in designing the interactive digital contents. In an online marketing environment where information is produced and consumed at no cost, the primary currency that firms are vying for is consumer attention (Mandel and Van Der Leun 1996). Abundance of interactive digital information far exceeds the available attention, thereby making its allocation increasingly difficult and arbitrary (Thorngate 1988). Therefore, attention has become a scarce resource in this digital economy (Goldhaber 1997). Thus, it is very important for digital advertisers to consider not only 'what' but also 'where' when it comes to making their digital contents relevant and interesting to draw consumer attention (Rheingold 2000). Therefore, firms using digital media to interact and engage with their consumers have to find a middle ground between media-centric and user-centric approach in dissemination of their digital contents. This requires blending design consideration of digital content with psychological aspects of human attention.

In this research, we focus on dissemination of digital contents to those recipients who have given prior consent to receive them, for example, recipients of email newsletters who give their permission through opt-in process before firms start sending them. Therefore, the onus is on the firms to make their digital messages relevant and interesting in such an online environment so that receptive segment of consumers responds to the message favorably by active interaction. Such active interaction often involves consumers' response in terms of their specific action towards the contents which is often challenging. For example, the success of email newsletters is measured in terms of click-through rate which captures consumers' clicking behavior (Micheaux 2011). Therefore, only the relevance of information in digital contents is not a sufficient criterion to draw consumers' attention, but also it has to be interesting in order to influence their actions or behaviors. Hence, various facets of design considerations for the digital content are crucial to draw maximum consumer attention. One of the design considerations is the location of the information in the digital message. For example, location of the links in email newsletter may influence consumers' clicking behavior. We conceptualize effects of link location on influencing email click-through rate based on cognitive psychology and visual heuristics.

Psychology and neuroscience propose that information processing is organized hierarchically where lower level of the hierarchy represents detailed stimulus information, whereas higher level represents more integrated information (Rauss and Pourtois 2013). While the top of the hierarchy contains high-level, abstract, and encompassing knowledge representation driven by concepts, the bottom of the hierarchy contains low-level, concrete, and specific knowledge representation driven by the data. Though these two processes differ in their approach in information processing, they are indispensable in thinking and learning process. Bottom-up processing draws conclusions from a particular example, whereas top-down processing infers from a generalization. Given the highly interactive nature of digital contents in an online environment where consumers are very transient in their approach towards receiving and processing information, their actions will be guided by generalization rather than concrete analysis. Therefore, as consumers receive an email newsletter, they would process the information based on abstraction without paying attention to the details which will make links placed at the top of the email more likely to be clicked than those that are at the bottom of the email. However, this will be moderated by the region of visual sight which is divided between left and right, the direction of individuals scanning visual information on screen. Thus, we divide email newsletter into four regions considering it as a coordinate plan, top-left region (north–west), top-right region (north–east), bottom-left region (south–west), and bottom-right region (south–east).

Abundance of information in a visual environment which is more than the processing capability of human brain causes selective orientation of human attention to specific regions of visual fields. Therefore, consumer responses to digital contents which are mostly presented in visual formats will be affected by the spatial feature of the information. In psychological science, researchers have shown that small numbers are associated with faster left-hand responses, and larger numbers with faster right-hand responses, the phenomenon which is also termed as SNARC effect (Spatial-Numerical Association of Response Codes; Dehaene, Bossini, and Giraux 1993). The SNARC effect has also been reported in other human responses such as pointing (Fischer 2003a, 2003b), eye movements (Fischer et al. 2003; Fischer and Hill 2004), and grasping (Andres et al. 2008). In the context of eye movement, Schwarz and Keus (2004) have shown that saccadic SNARC effect has similar characteristics as the standard SNARC effect establishing support for

the role of space-related representation on response preparation and execution of visual attention. This has also been termed as attentional-SNARC (Dodd et al. 2008). We scan information in various digital contents displayed on screens (such as mobile, tablet, and computer) from left to right. Therefore, we expect consumer scanning through the email newsletter will pay more visual attention to 'left' region as compared to 'right' region, thereby eliciting their responses more to the links placed in left region.

Combining these two concepts together, in an email newsletter between the two divisions of left region into top-left (north–west) and bottom-left (south–west), we expect links placed in the former region to elicit higher consumers' response than those placed in the latter region in terms of their clicks. However, as consumers' attention shifts to the right region of email newsletter, we expect their response to require in-depth processing of information. Therefore, between the two divisions of right region of an email newsletter into top-right (north–east) and bottom-right (south–east), we expect links placed in the southeast region, i.e. bottom-right likely to be more responsive. Overall, we expect links placed in the left region of an email newsletter to be more clicked than those placed in the right region.

Data

The data-set for this research comes from an email service provider firm in Finland called Liana Technologies[1] which provides email marketing solutions through LianaMailer™ tool used for managing clients' email marketing program. Tasks of this tool include creating, sending, and tracking of email newsletters for its clients that includes B2B and B2C firms from various countries. The email marketing database managed by the company consists of detailed information on various aspects of emails newsletter. However, the data-set provided by the firm for this study excludes or masks some of the private and sensitive information such as recipients' email ids.

The email marketing database consists of information pertaining to various email activities such as email send (total number of recipients to whom a particular email campaign was sent to), email open (total number of unique recipients who actually opened a particular email campaign for the very first time), email unsubscribe (total number of unique recipients who after opening an email campaign decided to unsubscribe from the email list), and click-through details (total number of clicks divided across all the links present in the email newsletter). The database also provides actual email newsletters.

The access of actual email newsletters in HTML format allows us to code various aspects of email characteristics, such as email size, number of images, number of links, link locations, and subject line length. Consistent with our conceptual framework, we divide the coordinate plane of email newsletter into four regions by drawing *x-axis* and *y-axis* at right angles to each other crossing through the center of the newsletter. This divides the newsletter into four quadrants which are labeled as north–east (top-right), north–west (top-left), south–west (bottom-left), and south–east (bottom-right) for first, second, third, and fourth quadrant, respectively. Availability of actual emails in the form of HTML allows us to perform this task automatically using computer codes once the algorithm is implemented. The details of the algorithm and process are provided in the Appendix A. The information pertaining to click-through rate (CTR) consists of information about the clicks received by the individual links in each email newsletter; furthermore, with actual email newsletter, we can also observe the locations of these links, combining these information together allow us to operationalize

Figure 1. Division of email newsletter into four regions of visual sight.

region-specific click-through rate. A typical email newsletter with such divisions into four regions and region associated links' click-through rates are shown in Figure 1.

The duration of the data-set used in this study is for six months from January 2012 to June 2012. We randomly approached 80% of the company's clientele asking for the use of their email data. After successfully signing the non-disclosure agreement, the sampling scheme yielded 12 different companies from four different countries. During this period, we randomly select those email newsletters from these companies for which there is at least one link present in all the four identified regions. This yielded 110 different email newsletters from 10 different companies. The key variables, their description and operationalization along with summary statistics of the data-set are provided in Table 1.

The average click-through rate of email is 16% with an open rate of almost 20%. The un-subscription rate is low at 0.22%. Among the various characteristics of email newsletters, we find average numbers of words in the subject line and in the body of an email are 6 and 208, respectively. On an average, emails contain 18 images and 9 links. Among the

Table 1. Definition and summary statistics of the data.

Variable	Definition	Mean	SD
CTR	Click-through rate of an email newsletter is the ratio of total number of clicks to the total number of recipients who received it successfully. This is expressed in %	16.52	10.65
UnsubRate	Unsubscribe rate of an email newsletter is the ratio of total recipients who opted out from the email list to the total number of recipients who received it successfully. This is expressed in %	0.22	0.47
OpenRate	Open rate of an email newsletter is the ratio of unique total recipients who opened it to the total number of recipients who received it successfully. This is expressed in %	19.98	17.11
SubLen	Length of subject line of an email newsletter. It is operationalized as total number of words in the subject line	5.55	3.00
BodyLen	Length of the body of an email newsletter. It is operationalized as total number of words in the body of an email (excluding the words in subject line)	207.74	187.14
NoImage	Total number of images in an email newsletter	18.52	16.90
NoLinks	Total number of links in an email newsletter	9.24	5.44
PageLen	Total length of an email newsletter. This is measured in number of pixels	1727.93	804.21
		Percentage (%)	
NEClickR	Email newsletters with clicks in northeast (NE) region. This is binary variable with value of 1 if an email newsletter receives click in NE region otherwise 0	67.27	
NWClickR	Email newsletters with clicks in northwest (NW) region. This is binary variable with value of 1 if an email newsletter receives click in NW region otherwise 0	58.18	
SWClickR	Email newsletters with clicks in southwest (SW) region. This is binary variable with value of 1 if an email newsletter receives click in SW region otherwise 0	61.82	
SEClickR	Email newsletters with clicks in southeast (SE) region. This is binary variable with value of 1 if an email newsletter receives click in SE region otherwise 0	59.09	

identified four regions, we find uniform distribution of clicks across the regions with most clicks received by northeast region (67%) and northwest region (58%) receiving least clicks. It seems that the top half of the email, i.e. north region, tends to get more clicks than bottom half or southern part of the email. We caution the readers that the use of secondary data refrain us from making any causality claim. In order to establish causal claim, we need to conduct experiments. The experimental setup will randomize the link placement within different layouts of email newsletter and will track the click-through rate for each layout setup. The significant differences in the click-through rate across layouts then can be attributed to the positioning of the links. We approached the companies in our sample with this experimental setup in mind; however, we were unable to secure their approval for such experiment.

Method

Drawing from our conceptual framework, we model click-through rate of email newsletter as a function of email activities, email characteristics, and regions of clicks. Thus, pooling the email newsletter data across the panel of firms, we model for each email *e* launched at time period *t* by the firm *f* as follow:

$$\begin{aligned} CTR_{fet} = {} & \alpha_f + \beta_1 UnSubRate_{fet} + \beta_2 OpenRate_{fet} + \beta_3 SubLen_{fet} + \beta_4 BodyLen_{fet} + \\ & \beta_5 NoImage_{fet} + \beta_6 NoLinks_{fet} + \beta_7 PageLen_{fet} + \beta_8 NEClickR_{fet} + \\ & \beta_9 NWClickR_{fet} + \beta_{10} SWClickR_{fet} + \beta_{11} SEClickR_{fet} + \varepsilon_{eft} \end{aligned} \quad (1)$$

The dependent variable in the above equation *CTR* refers to click-through rate. Consistent with prior literature (Winer 2001; Chandon, Chtourou, and Fortin 2003), click-through rate (*CTR*) is operationalized as ratio of total clicks to the total impressions[2] (i.e. the total number of individual users to whom a particular email campaign was sent to). The independent variables of the model pertaining to email activities are *UnSubRate* and *OpenRate* that refer to un-subscription and open rate, respectively. Unsubscribe rate (*UnSubRate*) is operationalized as ratio of total users who unsubscribe after receiving an email newsletter to total numbers of users the campaign was sent to (Stewart 2007). Email open rate (*OpenRate*) is operationalized as ratio of total users who open the email to total users the email campaign was sent to (Castronovo and Huang 2012). Variables pertaining to email characteristics are *SubLen*, *BodyLen*, *NoImage*, *NoLinks*, and *PageLen* that refer to number of words in subject line, number of words in the email body, number of images, number of links, and length of the email, respectively, finally *NEClickR*, *NWClickR*, *SWClickR*, and *SEClickR* refer to north–east (top-right), north–west (top-left), south–west (bottom-left), and south–east (bottom-right) regions of clicks, respectively. They are operationalized as dummy variables taking value 1 if that particular region receives at least one click otherwise it is 0.

The error term of the model is distributed normal with $\varepsilon_{eft} \sim N(0, \sigma^2)$. In the model, we account for the heterogeneity across firms by incorporating firm-level fixed-effects. Note that our dependent variable *CTR* is proportional whose values fall between zero and one. Therefore, we use generalized linear model (GLM) with a logit link and the binomial family.

Results

The results of our model are presented in Table 2. We find significant effects of email activities on click-through rate. Specially, unsubscribe rate (−0.08) negatively affects click-through rate (CTR), whereas open rate (0.01) has positive effect. With respect to email characteristics, we find subject number of images in the email newsletter has no effects on CTR. Images enhance our perception but may lead to action dilemma due to information load (Townsend and Kahn 2014). However, among other email characteristics, we find number of links (0.03) and email body length (0.001) have positive effects on CTR. In addition, we find that the subject line length of email (−0.01) and email length (−0.0002) measured in terms of number of pixels have negative effects on CTR. Therefore, it is important for firms to make their email newsletters clutter free by providing succinct and precise contents using links to increase the CTR.

We find significant effects of location or placement (region of visual sight) of links in email newsletter on its CTR. Specifically, we find that links placed in the left region of email have larger impact on CTR than those placed in the right side with top-left (north–west) region (0.29) having highest impact followed by bottom-left (south–west) region (0.26). Links placed in the right region of email tend to have smaller effect on CTR with top-right (north–east) region (0.02) having the least effect which is followed by the bottom-right (south–east) region (0.04). These results highlight the importance of region of visual sight on consumers' interaction with the digital content supporting our propositions. The effects of layout, location, shape, size, and contents on ad effectiveness is very well-researched topic in marketing (Danaher and Mullarkey 2003; Kuisma et al. 2010). For example, using eye movement pattern, Lohse (1997) in the context of yellow page advertising finds that users scan listings in alphabetical order and ads with color have higher recall than ads without color. Chandon et al. (2009) find that brands placed in top- and middle-shelf positions gain more attention

Table 2. Parameter estimates of the model.

Variable	Parameter	SD
UnsubRate	−0.0767***	0.0102
OpenRate	0.0054*	0.0032
SubLen	−0.0121*	0.0065
BodyLen	0.0012***	0.0005
NoImage	0.0012	0.0110
NoLinks	0.0344*	0.0186
PageLen	−0.0002*	0.0001
NEClickR	0.0223**	0.0104
NWClickR	0.2885***	0.1062
SWClickR	0.2617**	0.1214
SEClickR	0.0467***	0.0161
Fixed Effect	Yes	

*$p \leq 0.10$; **$p \leq 0.05$; ***$p \leq 0.01$.

than low-shelf positions. In the context of digital environment, based on visual hierarchy,[3] the layout of digital ads can be grouped into three distinct patters: Gutenberg diagram, the *z*-pattern layout, and the f-pattern layout (Eldesouky 2013). Gutenberg diagram divides the layout into four quadrants, similar to ours, with top-left area being primary focus area, top-right being strong fallow area, bottom-left weak fallow area, and bottom-right terminal area. The *z*-pattern layout follows the shape of letter Z where user attention diminished as they follow the *z*-layout, this is sometimes also called reverse-s-pattern. There are some variations of *z*-pattern, namely golden triangle and zigzag patterns which recommend best positions for information to be placed in advertisements. Finally, the f-pattern follows the shape of letter F where information placed in top-left corner again gets prominent user attention. Our empirical findings corresponds to the layout design consistent with Gutenberg diagram. First, the empirical results confirm that links placed in the left region of emails have higher effect than those in the right region on their CTR. Second, based on top-down processing of information where consumers often tend to take actions based on generalization as against based on detailed analysis in bottom-up processing makes links placed in the top-left part of emails to be most responsive in terms of their effects on CTR. Thus, unlike well-established Z-pattern of reading and web design, we find that when it comes to online action, it is more like U-pattern, i.e. as users traverse the links placed on U-path, their responsiveness decreases gradually. These results are consistent with findings of Drèze and Hussherr (2003), who study the effects of size, shape, content, and location of internet display ads on the ability to attract user attention. In the context of banner ads, authors find that vertically placed ads are more effective than horizontally placed ads. These results provide valuable insights into the placement of links in emails. E-newsletter designers can use these insights from the differential impacts of link locations on CTR to optimize the effectiveness of emails. It can also guide them to place the links according to the content of the email newsletter by placing familiar and general links at the top-left region, whereas unfamiliar links at the bottom-left region. We discuss the insights and managerial implications from these results next.

Discussion

Digital environment provides abundance of information that demands consumer attention. Therefore, today the biggest challenge in digital communication is not only about the content but it's about getting the attention of the intended audience. Hence, in line with

previous studies on digital contents design (Tourangeau, Couper, and Conrad 2004; Kuisma et al. 2010), this research also proposes that in designing the digital contents, advertisers should take into account the psychological and visual heuristic aspects of human attention among others in order to increase their effectiveness. Firms' email marketing campaign often suffers from low click-through rate that quantifies recipients' interaction with its contents. Email recipients are very transient in their decision whether to click on a link or not. Therefore, it is an important consideration in email marketing strategy to optimize the location or placement of links in email newsletter that facilitates drawing consumer attention, thereby increasing the likelihood of further interaction with its contents. Specially, when the goal of email marketing strategy is to drive the web traffic to a specific website or influence consumers' purchase behaviors then the link placement becomes crucial element of email design.

In this research, we address the importance of location or region of visual sight in affecting consumer attention in digital advertising. Especially in the context of email marketing, we find empirical evidence of differential impact of link placement on the click-through rate of email newsletter. We find links placed in the left region of an email newsletter are more likely to be clicked than those that are placed in the right region, and furthermore links placed in the top region drives click-through rate more than those that are placed in the bottom region. There is plenty of research that guides online advertising in general (Danaher and Mullarkey 2003; Goldfarb and Tucker 2011) and website design in particular (Cyr et al. 2009), similarly based on the results of this study, we provide guidelines for newsletter designers and the digital advertisers that they should consider not only altering the contents of the email newsletters in their design but also the link placement that facilitates or supports drawing optimal consumer attention. Based on our empirical evidence, it is also our recommendation to place links in the top-left region of an email newsletter for the information that is more familiar and general to its recipients, whereas for unfamiliar information, links should be placed in the bottom-left region. Such design considerations that take into account the psychological aspects of human attention would help increase the click-through rate of emails that is used to measure their effectiveness.

We also find significant effects of some of the email activities and email characteristics on click-through rate. Especially un-subscription rate has negative effect and open-rate has positive impact on email click-through rate. These results suggest the importance of keeping the recipients engaged so that subsequently they interact with the contents. Customer engagement is one of the pertinent issues in the digital contents design, e.g. also in social media (Chu and Kim 2011) Among email characteristics, we find number of links and email body length have positive effects on click-through rate. Insights from these results suggest that the contents of the emails should be precise and succinct with fewer redundancies.

Drawing consumer attention has become vital for the effectiveness of digital advertising. However, the abundance of information has made consumer attention scarce. Therefore, it has become a valuable commodity in this digital economy. Therefore, merely making the digital contents available to consumers will serve no purpose unless it is accompanied with clever design and execution strategies that take into account the psychological aspects of drawing attention. In this research, we have demonstrated the significance of link placement in an email newsletter on its click-through rate. We find, even after controlling for the email characteristics and email activities, there are significant effects of link locations on click-through rate with highest impact of top-left region and lowest impact of bottom-right region of an email newsletter. We hope these insights gained from the empirical analysis

that highlight the importance of psychology and visual heuristics of drawing consumer attention will lead marketing managers to include these design consideration into their digital campaigns for their optimal effectiveness.

Conclusion

In this study, we investigate the differential impact of link placement on email newsletters on their click-through rate. The empirical evidence suggests that links placed in the left region are more likely to drive click-through rate than those placed in the right region of an email newsletter with links placed in the top-left region having the highest impact. We explain this phenomenon through information processing concepts drawn from cognitive psychology and visual heuristics. The propositions drawn from conceptual framework are supported by the empirical evidence. We also find that email activities (e.g. open rate and un-subscription rate) and email characteristics (such as number of links and email length) tend to have significant impact on emails' click-through rate. Therefore, digital advertisers should combine various facets of design considerations of digital contents with human psychology and heuristics of information processing that support drawing optimal consumer attention. In this digital economy where abundance of information has made human attention scarce resource, these design considerations are critical for the effectiveness of digital contents.

The empirical results of this study are based on observational data where we don't manipulate the location of links. This is one of the limitations of our research. Future research could verify these results by conducting experiments. Furthermore, we expect types of information the links lead to in an email newsletter (e.g. links directing to purchase page vs. links directing to product information) to moderate the click-through rate (Harper et al. 2007). In an experimental setting, researcher can observe the moderating effects of types of link information by controlling them. Moreover, in an experimental setting, one can account for the individual-level differences in their clicking behavior. We leave these issues for future research investigations.

Notes

1. www.lianatech.com.
2. We also operationalize click-through rate as ratio of total number of clicks to the total opens (i.e. the total number of unique individual users who actually opened a particular email campaign). We do not find any significant difference in model parameter estimates to this alternate operationalization.
3. Visual hierarchy is the order that the human eye follows when recognizing what it observes.

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No potential conflict of interest was reported by the authors.

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Appendix A

The shape of any displayed email newsletter is always in the form of rectangle with length *l* and width *w*. Considering this rectangular form in a coordinate plane, we assign lower left corner to be the origin with coordinates (0, 0). Then, coordinate points of the center of rectangle is given by:

$$(x_c, y_c) = \left(\frac{l}{2}, \frac{w}{2}\right) \tag{A1}$$

Now, from this center coordinates x_c, y_c we draw lines perpendicular to the length and width of the rectangle that divides the rectangular emails into four quadrants with center coordinates being the origin. These four quadrants are labeled as northeast region, northwest region, southwest region, and southeast region for first, second, third, and fourth quadrant, respectively.

The availability of emails in actual HTML format allows us to automate this process by implementing this algorithm in a computer programming code. We use Perl script to implement this algorithm. The source code of the script is available upon request. Once the regions are identified, we can observe the region-specific links' click-through rate.