

Effectiveness of Subway Advertising in Hong Kong

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Pedestrians intercepted near the exits of a subway station in downtown Hong Kong were surveyed using a questionnaire and quota sampling in October 2012. The survey sampled 408 residents and tourists aged 16 and above. The awareness of the 16 ads. ranged from 18 to 80 percent with an average 43.5 percent. The layouts of the two subway ads. received highest awareness were focused and had a clear distinction between foreground and background. Average ad awareness was comparable to that reported in two similar studies of subway ads. conducted in the 1990s. Average ad awareness of subway ads. was higher than that of outdoor advertising measured using similar methodology in 2010s. Respondents demonstrated positive attitudes toward subway advertising, and reported that subway ads. that drew their attention were those with creative ideas, vivid colors, and large-than-life size execution.

Keywords: intercept survey, advertising effectiveness, subway media, media planning, ad attitudes

Introduction

Out-of-home advertising is growing despite of the declining growth of traditional advertising (Wilson & Till, 2013). In the Internet era, it was found that respondents from China, Hong Kong, and the United Kingdom had more favorable attitudes toward outdoor advertising than Internet advertising (Cheung & Leung, 2013). The trend of digitalizing of outdoor advertising in the form of digital wall has created mass awareness and publicity (de Boer, Verleur, Heuvelman, & Heynderickx, 2010; Cheung & Leung, 2013). Subway advertising is an example of captive out-of-home settings that consumers are kept in the space for some time. They are often exposed to advertising message involuntarily. Subway advertising enjoys the benefits of huge audience size, diversified advertising formats, quality display, display at closer proximity to passengers, a captive environment, and a regular passenger base (JCDecaux, 2011a). With high speed of urban development, the subway has become an integral part of the urban landscape. The subway media is now a prominent component of advertising plans. Despite the huge amount of advertising dollars spent on the out-of-home advertising medium, little research is done on its effectiveness (Bhargava, Donthu, & Caron, 1994; Donthu, Cherian, & Bhargava, 1993), especially on subway poster advertising (Chan, 1994).

A large variety of the messages, product categories and brands were advertising in the subway medium. Advertising messages are competing with each other over the clustered environment for passengers' attention. Some posters were more successful than others in terms of the ad recall and brand recognition (Van Meurs & Aristoff, 2009). From a marketing perspective, there is a need to investigate how much processing of these subway advertisements occur among consumers and what are the factors that affecting the information

processing. The purpose of this study is to examine the passengers' awareness and attitudes toward subway advertising. The findings will provide insights to advertisers and media vendors for campaign planning and media selection.

Literature Review

Outdoor advertising is considered to be "one of the least researched mass medium" (Katz, 2003, p. 92). Some outdoor media vendors use estimated pedestrian and vehicles flow in a location as benchmarks to indicate potential media coverage of billboards at street levels (POAD, 2008). Media vendor for the subway network appointed market research companies to conduct reach and frequency studies among subway passengers. According to a study, a trackside 12 sheet package of 150 posters displaying for three weeks was able to reach 60 percent of people aged 12-64 (JCDecaux Transport, 2011b). In the following paragraphs, we shall first review two studies on subway advertising in Hong Kong, followed by review of effectiveness in outdoor billboard advertisements.

Chan (1994) conducted a face-to-face interview of household members residing near a subway station in Hong Kong. Altogether 27 poster advertisements of different sizes were tested using photos as visual prompts. Advertising awareness ranged from eight to 73 percent. The average awareness was 41 percent. Chan (1995) conducted another survey by intercepting passengers outside a subway station in Hong Kong. Altogether 42 poster advertisements of various sizes were tested. Advertising awareness ranged from 13 to 68 percent. The average awareness was 35 percent. Findings from both studies provide evidence that creative execution of the posters had more influence on advertising awareness than size of the posters or duration of display of posters. Advertising awareness was affected by age, occupation, and frequency of travel on the subway system. Young respondents, students, managers, and executives, as well as frequent subway travelers were able to report seeing more posters (Chan, 1994, 1995).

In Hong Kong, subway advertising ranked top in the out-of-home media in terms of advertising expenditure. The ad expenditure on the subway was HK\$416 million, accounting for 5.5 percent of the total advertising expenditure in 2012 (admanGo, 2013). Subway advertising has the potential to reach more than 3.4 million unique passengers, or about 47 percent of the Hong Kong population, on a weekly basis (AC Nielsen, 2010). At present, there is very little empirical data about how people process subway advertisements. Other related research findings on outdoor advertising media are able to shed light on the topic.

Advertising Effect of the Outdoor Medium

Previous studies have examined the effectiveness of outdoor advertising in terms of its ability to create brand awareness and advertising message recall (e.g., Bhargava et al., 1994; Donthu et al., 1993; Fortenberry & McGoldrick, 2011; King & Tinkham, 1990; Van Meurs & Aristoff, 2009; Osborne & Coleman, 2008). Donthu and colleagues (1993) tested 10 outdoor billboards placed along a highway and its neighboring streets among drivers who passed the location regularly. Aided and unaided recall was found to be higher for billboards located on the right hand side of the highway, with fewer words, and in black and white. Aided and unaided recall for billboards located on the left hand side of the highway, with more words, and in full color was lower. Furthermore, billboards located on the neighboring streets linked to the highway were less likely to be recalled (Donthu et al., 1993). The authors attributed the results to the American setting of driving on the right, as well

as limited time in processing of billboard messages.

Osborne and Coleman (2008) compared the advertising recall of traditional billboards and a tri-vision board among highway drivers. The results showed that the tri-vision board was recalled the best (with 66 percent recall) followed by the traditional standard billboards (from 15 percent to 64 percent recall). Respondents with higher incomes recalled fewer ads. than respondents with lower incomes, and males recalled more ads. than female respondents (Osborne & Coleman, 2008). Based on a focus group study and a survey of over 1,600 users of health service facilities in Louisiana, Black Americans were found more receptive to outdoor billboard advertising than White Americans (Fortenberry & McGoldrick, 2011).

Several studies found that advertising execution cues such as size, color, location of billboards, and images used in the billboards affect the viewers' attention, brand attitudes, memory of the brand information, as well as purchase intention (Alba & Hutchinson, 1987; Maclnnis, Moorman, & Jaworski, 1991; Sheppard, Hartwick, & Warshaw, 1988). Recent studies found that respondents held positive attitudes toward outdoor advertising (Chan & Cheng, 2012; Cheung & Leung, 2013). The understanding of the attitudes toward subway advertising and the way viewers recall the ad are important attributes for effective advertising.

Most of the studies mentioned in the above sections measured recall of billboards among highway drivers. Competition for the advertising messages of highway billboards and other distractions are relatively low. In Hong Kong, subway advertisements are clustered and compete fiercely for attention. Distraction comes from other activities such as checking email on the mobile phone, listening to music, or watching video on mobile devices. This suggests that the effectiveness of subway advertising in an urban setting will be different from that of outdoor advertising in the highway setting (Veloutsou & O'Donnell, 2005). This study intends to examine the ad awareness and consumers' attitudes toward subway advertising. In addition, the impact of demographic variables and frequency of travelling on the subway on ad awareness and attitudes will be investigated. Findings of this study will provide useful information for advertisers in creative design and media planning.

Research Objectives

This study attempts to examine:

- (1) Awareness of subway advertisements;
- (2) Consumers' attitudes toward subway advertising;
- (3) How demographic variables and frequency of travelling on the subway influence ad awareness and attitudes.

Methodology

Sampling of Advertisements

A sample survey using face-to-face methodology was conducted. A week before the data collection day, a researcher visited three subway stations and took a total of 50 advertisements displayed at the tracksides, the concourse areas, and along the escalators. One of the authors selected 16 posters that representing a variety of product categories and advertising appeals. The 16 posters were divided into two batches. In each batch, there were three 12-sheet posters located at the trackside, two 4-sheet posters located at the concourse areas, and three posters displayed along the escalators. In terms of size, 12-sheet posters were the biggest, followed by 4-sheet posters, followed by escalator posters.

Sampling of Respondents

The Tsim Sha Tsui district of Hong Kong's Kowloon region was selected for data collection. It is one of the busiest commercial and residential spots in Hong Kong. It houses several museums, tourist attractions, and shopping malls. The choice of the location facilitates us to sample a variety of demographic groups (see Table 1). The current study adopted the quota sampling, with equal numbers of males and females, and with equal numbers of respondents from the age groups of 15-24, 25-34, 35-44, and 45 or above. A group of students from a local university in Hong Kong was recruited as interviewers. They were assigned to intercept pedestrians and interview them at seven designated locations near the subway exits. All the interviews were conducted on the same weekday morning in October 2012 from 10 am to 12 noon. The interviews were conducted in the language spoken by the respondent, in either Cantonese, Mandarin, or in English. Respondents who did not speak these languages were not interviewed.

Questionnaire

The questionnaire consisted of three parts. The first part collected data about advertising awareness of eight posters (either batch A posters or batch B posters). Each of the eight posters was shown to the respondents one by one in the size of "3 × 4" full color printed images. Respondents were asked if they had seen the advertisements. The eight advertisements were presented in a fixed sequence with no randomization of the presentation order. The characteristics of the posters are summarized in Table 2.

The second part of the questionnaire collected respondent's general attitudes toward subway advertising using eight statements, such as "subway advertisements give me information about things in fashion". The statements were modified from a previous study of outdoor advertising in Hong Kong (Chan & Cheng, 2012). The respondents were asked to rate these statements on a six point scale (6 = strongly agree; 1 = strongly disagree).

The third part of the questionnaire asked for demographic information, including sex, age group, educational level, occupation, number of times they had travelled on the subway in the previous week, whether they were tourists, and if so their country of origin. The questionnaire was first developed in Chinese and then translated into English. Back-translation into Chinese was not conducted since the questions were simple and straightforward. Two bilingual investigators checked to ensure that the translation was accurate.

Findings

Respondent Profile

Altogether 408 respondents completed the questionnaires. Among them, 223 respondents were asked about the awareness of advertisements in Batch A, and 185 respondents were asked about the awareness of advertisements in Batch B. Table 1 shows the demographic profile. There were roughly numbers of male and female respondents and approximately equal distribution of respondents in the four age groups. Over half of the sample reported to have completed secondary education, while the remaining half reported a tertiary qualification. One quarter of the sample described themselves as students, and one quarter described themselves as office workers. Nearly two-thirds of the sample said they earned less than HK\$14,999 (about 2,000 US dollars) a month. Over 90 percent of the samples were Hong Kong residents, and eight percent were tourists. The tourists were mainly travel from the Mainland China. About half of the sample reported travelled on the subway one to five times in the previous week. Nearly 13 percent reported travelled in the subway 11 times or more.

Table 1

Demographic Characteristics and Frequency of Travelling on the Subway (N=408)

Category	Classification	Number	Frequency (%)
Sex	Male	195	47.8
	Female	213	52.2
Age	16-24	118	28.9
	25-35	100	24.5
	35-44	81	19.9
	45 or above	109	26.7
Education level	Primary	25	6.1
	Secondary	173	42.4
	Tertiary	210	51.5
Occupation	Office worker	104	25.5
	Professional/Managerial	52	12.7
	Factory worker	31	7.6
	Student	100	24.5
Personal monthly income	Others	121	29.7
	No income	77	18.9
	Below HK\$14,999	189	46.3
	HK\$15,000-29,999	108	26.5
	Above HK\$30,000	33	8.1
Residents or tourists	HK residents	375	91.9
	Tourists	33	8.1
	(from Mainland China)	(18)	(4.4)
	(from Asian countries)	(4)	(1.0)
Travel on subway past week	(from other countries)	(11)	(2.7)
	1-2 times	68	16.7
	3-5 times	127	31.1
	6-10 times	162	39.7
	11 times or above	51	12.5

Advertising Awareness

Table 2 summarizes the awareness as well as the characteristics of the selected advertisements. Advertising awareness ranged from 18.4 percent for a 4-sheet poster ad featuring MCS clothing to 79.8 percent for a 12-sheet poster ad featuring Samsung Galaxy Note mobile phone. The ad with the second highest awareness of 66.5 percent featured Watsons water using celebrity appeal. The average advertising awareness was 43.5 percent for the 16 selected advertisements. Figure 1 shows the two advertisements with the highest awareness.

The average advertising awareness for the 12-sheet, 4-sheet, and escalator posters were 55 percent, 28 percent, and 43 percent respectively. Advertising awareness depended on type of the advertisement (F -statistics = 5.0, $p < 0.05$). Duncan post-hoc analysis found that average awareness of 12-sheet posters was significantly higher than that of 4-sheet posters. However, the average awareness among 12-sheet posters and escalator posters had no significant difference.

Overall awareness was measured by counting total number of advertisements respondents reported having seen. It ranged from zero to eight as respondents were exposed to either Batch A or Batch B advertisements. Eight percent of the respondents could not recall having seen any of the eight selected advertisements. Three percent reported having seen all of them shown in Batch A and B. The mean number of advertisements seen was 3.5 (out of 8).

Independent sample t -tests were conducted to compare the advertising awareness of males and females. Three out of the 16 advertisements recorded a significant gender difference. Male respondents were more likely

to report that they had seen the posters for University of New South Wales and the MCS clothing. Female respondents were more likely to report that they have seen the Kao detergent advertisements. *F*-tests were conducted to compare the advertising awareness by educational level, and no significant differences were found. Four out of the 16 advertisements recorded a significant age difference. Respondents aged 16-34 were more likely to report having seen the advertisements for the Kao detergent, Samsung Galaxy Note, Nu Pharm Liver Pills, and the WeChat than respondents aged 35 or above. The total number of advertisements recalled did not depend on sex, education, age, or residential status.

Table 2

Advertising Awareness and Characteristics of the Posters

	Ad awareness %	Orientation (Landscape or Portrait)	Main language used	Type/size	Human character	Number of words
Batch A						
Watsons water	66.5	L	Chi	12-sheet	√ (Celebrity)	95
Ngong Ping 360	53.0	P	Chi	Escalator	√	22
AXA insurance	47.6	L	Chi	12-sheet	×	83
Kao	41.1	P	Chi	Escalator	√	31
Panadol	36.2	P	Chi	Escalator	√	22
Tiger shoes	34.1	L	Eng	12-sheet	×	30
University of NSW	25.9	P	Chi	4-sheet	√	310
MCS	18.4	P	Eng	4-sheet	√	9
Batch B						
Samsung Galaxy Note II	79.8	L	Chi	12-sheet	×	14
WeChat	61.0	L	Chi	12-sheet	√	12
Nu Pharm liver pills	57.8	P	Chi	Escalator	√ (Celebrity)	25
Swatch watch	38.1	L	Eng	12-sheet	√	8
Clinique cosmetics	37.2	P	Chi	Escalator	×	23
Guizhou	35.0	P	Chi	4-sheet	√	101
Pizza Hut	32.3	P	Chi	Escalator	×	19
Muji	31.4	P	Chi	4-sheet	×	42

Attitudes Toward Subway Advertisements

Respondents were asked about their general attitudes toward subway advertisements. Table 3 summarizes the results. Among the eight statements, three statements had mean scores over 4.0. These were “Subway ads. with creative ideas attract my attention”, “Subway advertisements with vivid colors attract my attention”, and “The larger-than-life subway advertisements attract my attention”. The statement with the lowest mean of 3.2 was “I like subway advertisements that use celebrities as spokes persons”. Cronbach’s alpha coefficient for the eight statement was 0.78, indicating that they were measuring a similar construct. In light of the high alpha, a mean score was compiled for all eight statements to represent the overall attitudes toward subway advertising.



Figure 1. The ads. with the highest awareness.

Independent sample *t*-tests were conducted to compare the attitudes among different demographics groups. Four out of the eight statements recorded a significant gender difference. Female respondents agreed more to the statement “I like to pay attention to subway advertisements”, “The larger-than-life subway advertisements attract my attention”, “Subway advertisements with vivid-colors attract my attentions”, and “I like subway advertisements that use celebrities as spokespersons” than male respondents. *F*-tests were conducted to compare attitudes toward outdoor advertising among respondents of different educational levels. Three out of

eight statements reported significant educational difference. Respondents with university education agreed more to the statement “I like to pay attention to subway advertisements”, “Subway advertisements give me information about things in fashion”, and “Subway advertisements with creative ideas attract my attention” than respondents with primary education. *F*-tests were also conducted to compare the mean scores of statements by age group. Three out of eight statements reported significant age group difference. Respondents aged 16-34 hold more positive attitudes toward subway advertisements than respondents’ aged 35 or above. The three statements were the same that registered educational difference.

Table 3

Attitudes Toward Subway Advertising

Statement	Mean	Std. deviation
Subway ads. with creative ideas attract my attention	4.5	1.2
Subway ads. with vivid colors attract my attention	4.3	1.1
The larger-than-life subway ads. attract my attention	4.2	1.3
Subway ads. give me information about things in fashion	3.8	1.2
I like to pay attention to subway ads.	3.8	1.2
Subway ads. help alleviate boredom when waiting inside the stations	3.7	1.3
There are too many subway ads. and they make people confused	3.6	1.4
I like subway ads. that use celebrities as spokespersons	3.2	1.3

Note. 6-point scale with 1= strongly disagree and 6= strongly agree.

Frequency of travelling on the subway had positive correlation with the total number of advertisements reported seen ($r = 0.28, p < 0.001$), as well as attitudes toward subway advertising ($r = 0.15, p < 0.01$). Those who travelled more frequency on the subway were able to see more advertisements, and hold more positive attitude toward subway advertising. Total number of ads. seen and attitudes toward subway advertising was also positive related ($r = 0.11, p < 0.05$).

Discussion

Before discussing the implications of these findings, some limitations need to be mentioned. First, the sample used in this study was a convenient sample. The findings cannot be generalized to the entire Hong Kong population. Second, this study reflected awareness among the demographic profile captured at a particular time frame and location. Third, respondents’ reported frequency of seeing specific ads. arises from a combination of exposure, attention, memory retrieval, and reporting. It is impossible to untangle them in the current research design. Fourth, some subway advertisements were supported by advertising on television and the print media. There is possibility that respondents cannot recall what they have been exposed, or they recall wrongly what they have not been exposed. Therefore, future research targeting a larger sample size, and perhaps covering a longer period of time, is needed to address the limitations in the current study.

Limitations aside, this study found that subway advertising can reach mass consumer groups. Advertising awareness ranged from 18 percent to 78 percent for the 16 selected advertisements. The average advertising awareness was 43.5 percent.

The 43.5 percent average awareness measured in this study was higher than the average aided recall of 36 percent of billboard advertisements on the highway. It was also higher than motorists’ average aided recall of 23 percent for billboard advertisements on ordinary streets (Donthu et al., 1993). It was also higher than the

average awareness of 35 percent for outdoor billboards displayed at the streets of a prime outdoor location in Hong Kong (Chan & Cheng, 2012). In other words, the subway advertisements in Hong Kong created higher awareness than outdoor billboard advertisements. It suggests that the captive environment of the subway has advantage over the open areas on the street in getting viewers' attention. Furthermore, the pattern of constant route and repetitiveness of travelling between work place and home secures adequate frequency of seeing certain ads. arrangement. Thus such ads. arrangement provides strategically integration possibilities, when the ads. are collaborated with other media in order to affect and enhance viewers' experiences further toward the overall information processing experiences.

The 43.5 percent average awareness is also comparable to the 35 percent and 41 percent figures compiled in two previous studies of subway advertising in Hong Kong (Chan, 1994, 1995). Some advertisers worry that with advertising cluttered environment, audience may have their minds shut-off from the advertising messages. Our findings did not support this speculation. As 48 percent of the respondents in this study reported that they travelled on MTR five times or less in the previous week, the average awareness of 43.5 percent was considered moderate to high level. People in Hong Kong pay much attention to subway advertisements.

In this study, respondents reported that they would pay attention to subway ads. that were creative, vivid in color, or larger-than-life in size. In other words, creative ideas in subway advertising are important in attracting audience attention. Another finding of the study suggests the importance of creativity in subway advertising. It was found that there is a lack of correlation of advertising awareness with the size of the ad. This finding is consistent with that in previous studies of subway ads. in Hong Kong (Chan, 1994, 1995). Creative execution is apparently more important in creating awareness. Because of the limited number of advertisements investigated, it is not able to conclude if advertising awareness is influenced by product category, use of human characters, or color. The two ads. with the best recall shared three common features. First, the products were shown in larger-than-life size. Second, the layouts were focused, sharp, and with a clear distinction of foreground and background. Third, the two brands are familiar to the audience (see Figure 1). Further research is needed to elucidate the creative factors that influence subway advertising awareness.

Past studies found that creative and novel ideas (Till & Baack, 2005), use of color (Beattie & Mitchell, 1985; Fernandez & Rosen, 2000; Lohse, 1997), prominent pictorial and ad size (Finn, 1988; Hanssens & Weitz, 1980), the use of celebrity (Atkin & Block, 1983), and relevance of ad or brand information (Fernandez & Rosen, 2000; Mitchell, 1981; Petty & Cacioppo, 1979) enhance motivation on ad information processing. In this study, the finding supports that creative visual design is more likely to draw audiences' attention. In addition, the frequency of travel is positively related with the awareness and positive attitude towards subway ads.. In short, the increase amount of ad exposure leads. to increase in awareness and concealment of more in-depth ad information, thus more efficient ads. outcomes. The unfamiliarity of brands is more likely resulted in low awareness. However, passengers with higher educational level tend to pay attention to subway ads.; and agree to the statement that subway ads. provide information about things in fashion. These findings not only support the competence attributes discussed earlier, which higher level of intelligence, product knowledge, experience, and understanding promote information processing level, it is also consistent with other studies reported (Chan & Cheng, 2012; Chan, 1994, 1995).

Whether the use of celebrities may enhance awareness of subway advertisement is non-conclusive. Chan, Ng, and Luk (2013) found that celebrity endorsements in advertisements were able to draw attention, establish a positive image, and to rejuvenate an established brand. In the current study, respondents agreed moderately to

the statement “I like subway ads. that use celebrities as spokespersons”. The reason may be that subway ads. using celebrities may not have sufficient interaction with the audience in a short exposure time to create advertising effect.

Conclusion

A study was conducted to investigate advertising awareness of subway advertisements among passengers. The results indicated moderate to high awareness of subway advertising. Awareness ranged from 18 to 80 percent. Awareness level was comparable than that of outdoor advertisements along highways and was higher than that displayed at street level. Advertising awareness in general did not differ by sex or educational level. Younger respondents reported seeing more ads. than older respondents. Respondents held positive perception of subway poster ads.. Advertising awareness and attitudes toward subway advertising were positively correlated with the frequency of travelling on the subway. These findings confirm that subway advertisements need vivid colors, large size, and above all creativity. The high awareness of the top two posters suggests that the adoption of a clear and focused visual layout is beneficial. Familiar brands may benefit more from subway advertising than unfamiliar brands.

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