

MANAGING POINT OF PURCHASE ADVERTISING: EFFECTIVENESS IN TERMS OF RECALL AND RECOGNITION

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1. Introduction

Point-of-purchase (POP) advertising includes stands, posters, displays, and other physical media containing commercial messages occupying visible surfaces in a retail outlet. The significance of retail makes the point of purchase both a means of communication and a source of information for consumers (Horstmann, 2017). The importance given to POP advertising in advertisers' marketing strategies stems from the belief that many final purchase decisions are made or changed at the POP and that there is thus an opportunity to create stimuli that condition the purchase (Silveira and Marreiros, 2014). Although in cluttered markets, POP advertising materials have been reported to be a good technique to attract consumers' attention, little to no research has been conducted to find out how or why (Jansson, Bointon, and Marlow, 2002).

POP advertising causes the various product shelves and spaces to actively impact consumer decisions (Umit Kucuck, 2011). The five most common point-of-purchase communication objectives are: (a) to attract consumers' attention and differentiate the products; (b) to remind consumers of previous and ongoing communication actions; (c) to inform consumers about product attributes; (d) to create an image with positive associations; and (e) to persuade consumers to make impulse buys (De Pelsmacker, Geuens, and Van den Bergh, 2004).

Bookstores have to fight hard for consumers of their books (Leitão, Amaro, Henriques and Fonseca, 2018). Bookstores have been strongly affected by the rise of electronic commerce. Sales of e-books in the United States increased at triple-digit rates after Amazon introduced the Kindle e-reader, reaching 20.8 percent of revenues and 23.8 percent of unit sales of trade books in both print and electronic formats in 2013 (Gilbert, 2015). Although e-book introduction benefits the publishing industry, it hurts paperback retailers. Offline bookstores experience the largest sales drop and seem to bear most of the cannibalization burden among all the retailers. Li, Lin, Xu and Swain (2015) found that 86.7% of the total paperback sales loss happens in offline bookstores. The current context is conducive to furthering the knowledge that supports the use of POP advertising as a communication tool. For book stores, it is a strategic reinforcement that helps them compete with the growing use of the Internet as a distribution channel. Furthermore, despite technological advances in in-store communication, POP signage will likely continue to play a fundamental role in advertisers' marketing strategies, as up to 70% of retail purchases are unplanned and, thus, influenced by factors related to the physical retail environment (Liljenwall, 2004).

A review of the literature shows that most authors have dealt with the subject of POP advertising effectiveness in affective terms or in terms of sales (Yim, Yoo, Till, and Eastin, 2010). Very few have sought to analyse its effectiveness not only in cognitive terms, such as recall, but also in real environments. Further research is needed to enable POP advertising planning according to criteria

similar to those used with other advertising media (Liljenwall, 2004). Conventional media planning models are not useful due to the audience conditions of in-store advertising messages. With POP advertising, the audience is difficult to measure, because shoppers are not exposed exclusively to the POP advertising materials; rather, the entire store can act as a medium for communication actions (Sorensen, 2009). Additionally, POP advertising has to compete for audience with the communication carried out by the packaging of the displayed product itself. Consequently, management models need to be developed that are specific to this medium.

The literature on the factors conditioning the recall generated by POP advertising includes individual analyses of several variables that explain variations in audience recall. However, no studies have yet sought to examine the effect of the numerous elements that can influence the cognitive effectiveness of POP advertising – and should thus be considered in its management – taken together. In this context, the present study will analyse the effect of a set of variables able to explain the recall generated by POP advertising, and, thus, its commercial effectiveness, in a real environment reflective of a typical POP advertising management scenario.

2. Theory and hypotheses development

This paper begins with the premise that advertising is more effective when it generates greater recall (Macdonald and Sharp, 2000; Jeong, Kim, and Zhao, 2011). Thus, one of the main objectives of advertising management is to generate content that attracts attention and is stored in the memory. The purpose of measuring effectiveness in terms of memory is to determine the intensity of the impact of an advertising message through the audience's ability to recall and/or recognize it, as once an individual's exposure to an advertisement has been ensured, his or her perception of it is considered essential for the other effects arising from the communication to take place (Beerli and Martín, 1999). The importance of recall as a measure of effectiveness is underscored in Rossiter and Percy (2017), in which the authors review their contributions to the subject of advertising effectiveness over the last 30 years and emphasize the need to begin measuring the effects of campaigns through techniques centred on recall.

The literature also includes studies analysing the influence of a number of variables on the recall of messages broadcast on television (e.g. Martín-Santana, Reinares-Lara, and Reinares-Lara, 2016; Jeong et al., 2011), outdoor advertising (e.g. Osborne and Coleman, 2008), and print advertising (e.g. Lohse and Rosen, 2001). Due to the relative lack of literature on this topic specifically in the context of POP advertising, the results reported in those studies were used to formulate the main theoretical hypothesis (TH) of the present research:

TH: Measures of memory are affected by the design and planning factors of a POP advertising campaign.

Based on this main hypothesis, the present study aims to examine in depth each of the variables affecting the cognitive effectiveness of POP advertising with regard to two measures of memory: recall and recognition. Despite the complexity involved in the use of multiple measures of memory in a single study, the simultaneous measurement of both recall and recognition was considered appropriate as they provide complementary data that increases the reliability of the results. The joint use of both measurements is recommended in the relevant literature (Bagozzi and Silk, 1983; Leigh, Zinkhan, and Swaminathan, 2006). Consequently, to assess the cognitive effectiveness of the POP advertising campaigns analysed in this paper, unaided recall, aided recall, total recall, and visual recognition were measured. Thus, for each of the six variables considered to influence effectiveness (advertising pressure, the use of colour to differentiate the advertising materials from the environment, the inclusion of a promotional message, prior awareness of the content of the POP advertising material, audience affinity with the product featured in the POP advertising material, and the influence of the in-store experience), two hypotheses will be formulated, the first related to recall and the second to recognition.

With regard to advertising pressure, understood as the number of POP advertising elements used in the store, the repetition or frequency of a given advertisement has been shown to influence its impact on an individual. Haugen and Weems (2001) focused on size of POP displays. In their study the size of display positively affects the activation of attention in point of purchase. Saíz, Baqués and Saíz (1999) found that the 'right number of repetitions' facilitates the evocation or retrieval of the memory. Advertising

pressure is also an important factor for recall. The effectiveness of POP advertising is related to the percentage it occupies of the entire surface area of the shelves on which the product is displayed (Sorensen, 2009). Based on these findings, the following two sub-hypotheses are proposed:

H1.1: Higher advertising pressure (measured in terms of the number of posters displayed at the point of purchase) positively influences the recall generated in consumers.

H1.2: Higher advertising pressure (measured in terms of the number of posters displayed at the point of purchase) positively influences the recognition generated in consumers.

Research in visual attention and decision-making emphasizes the link between visual saliency like brightness or color and fixation durations (Clement, Aastrup and Forsberg, 2014). With regard to the use of colour as an element to achieve differentiation from the environment, in this case, applied to the POP advertising material, some authors have found that colour is able to attract attention and, thus, lift the associated levels of memory (Van Meurs and Aristoff, 2009; Vera, 2010). However, others have found that in a predominantly colourful environment, black and white posters generate greater recall; it is thus the contrast, rather than the colour itself, that is key (Donthu, Cherian, and Bhargava, 1993). Additionally, some authors have found that a brand is better recalled and recognized when it is advertised on a creative medium rather than a traditional one (Rauwers et al., 2018). In light of these findings, the following sub-hypotheses are proposed:

H2.1: Posters that are differentiated from the environment (through the use of conspicuous colours) generate more recall than similar posters that do not include such colours.

H2.2: Posters that are differentiated from the environment (through the use of conspicuous colours) generate more recognition than similar posters that do not include such colours.

The content of the messages conveyed in the POP advertising also affects recall (O'Donnell and Brown, 2011). Messages about promotional actions generate more recall than merely informative ones (Donthu et al., 1993). However, some authors have argued that poster recall is not affected by the inclusion of messages about promotional actions, but rather that differences in recall are due to the effect of moderating variables such as the audience's involvement with the product or product type (Crespo-Almendros and Del Barrio-García, 2014). Based on these findings, the following sub-hypotheses are formulated:

H3.1: Posters at the point of purchase whose messages include promotional actions generate more recall than similar posters that do not include such messages.

H3.2: Posters at the point of purchase whose messages include promotional actions generate more recognition than similar posters that do not include such messages.

With regard to the influence of awareness of the content of the POP advertising (brand, advertised product, etc.) on the recall of that stimulus, audience familiarity with the brand (i.e. prior awareness) has been shown to influence the recall of advertising messages (Pieters, Warlop, and Wedel, 2002; Byun and Jang, 2018). In an outdoor advertising context, where the opportunity to process advertising is limited, brand familiarity's influence on information processing can be especially beneficial as it promotes more complete processing of the ad, leading to direct effect on brand recognition rates (Wilson, Baack and Till (2015). Various studies (e.g. Osborne and Coleman, 2008) have found that product knowledge generates higher levels of recall in the context of both POP and outdoor advertising. In light of such findings, the following sub-hypotheses are formulated:

H4.1: Prior awareness of the elements contained in poster-based POP advertising (familiarity) positively influences recall.

H4.2: Prior awareness of the elements contained in poster-based POP advertising (familiarity) positively influences recognition.

As for audience affinity with the product that is the subject of the POP advertising, several studies have shown that when individuals are motivated to process the message, due to their engagement with the subject being addressed, they make a greater cognitive effort and develop a larger number of thoughts related to the message (Turley and Shannon, 2000). High-involvement products to be more likely to

generate increased levels of attention to advertisements for those products. With greater attention to the ad, we expect higher recognition rates (Pieters and Wedel, 2004). Based on these findings, the following sub-hypotheses are proposed:

H5.1: Recall levels of poster-based POP advertising are higher when the product category depicted in the poster is related to the consumer exposed to the advertising stimulus.

H5.2: Recognition levels of poster-based POP advertising are higher when the product category depicted in the poster is related to the consumer exposed to the advertising stimulus.

Finally, with regard to the influence of the **user's in-store experience** on measures of memory, several authors have demonstrated the influence of the physical attributes of the store environment (atmospheric effects) (Turley and Milliman, 2000). Literature on recall concluded that the environment in which an advertisement was seen exerted a significant effect on recall levels. If the surrounding environment was perceived favourably, this resulted in higher recall scores (Bennett (1998). For instance, Morrin and Ratneshwar (2000) demonstrated the influence of environment on consumers, specifically, on their recall of the brands and products on display. Consequently, the following two sub-hypotheses are formulated:

H6.1: Recall of poster-based POP advertising is greater when the consumer's in-store experience is more satisfactory.

H6.2: Recognition of poster-based POP advertising is greater when the consumer's in-store experience is more satisfactory.

3. Method

In order to measure the effectiveness of POP advertising in terms of memory, as well as the influence of the chosen variables on this effectiveness, an experiment was designed in a real environment. External factors were kept constant so as to overcome some of the methodological limitations reported in the literature. Table 1 shows the technical specifications of the study, which was conducted at an establishment of an international retailer (Fnac). Data were gathered by means of a survey.

Experimental design	Creation of 7 scenarios on 7 different days, each with differentiated stimuli
Material used (POP advertising)	Posters advertising books by two writers. Three different sizes were used: <ul style="list-style-type: none"> • Large: 50 x 180 cm • Medium: 80 x 120 cm • Small: 30 x 30 cm The same number of posters were used per author in each scenario.
Universe	People over the age of 14 visiting the book section of Fnac Plaza Norte (Madrid)
Actual sample size	1,252 individuals in all Control scenario: 106 Other scenarios: between 204 and 216
Average duration of the survey	4 minutes
Date of the fieldwork	9-28 February 2017
Memory measures	<ul style="list-style-type: none"> • Unaided recall • Aided recall • Yes/no visual recognition
Variables influencing effectiveness	<ul style="list-style-type: none"> • Advertising pressure • Advertising creativity • Existence of a sales promotion • Respondent's familiarity with the author • Respondent's interest in reading • Respondent's in-store experience

Table 1 Technical specifications of the research

3.1. Advertising format

In this experiment, posters were chosen as the POP advertising medium, as they are a basic element in this type of communication. The posters announced the launches of two books by two different authors,

targeted at the most general audience possible, i.e. that for international fiction. The books were *Thus Bad Begins* by Javier Marías and *Blood Wedding* by Pierre Lemaitre. To control for bias due to familiarity with the author in the results, a very well-known author in Spain (Javier Marías) and a little-known one (Pierre Lemaitre) were chosen. The similarity of the posters in terms of content and design (preponderance of image and text, picture of the book cover, similar typographies, etc.) was also taken into account.

3.2. Scenarios

The experiment consisted of seven exposure scenarios designed based on the quantity, location and specific characteristics of the POP advertising material used (in this case, posters), including one control scenario or group (without advertising material). Individuals were randomly assigned to one or the other scenario. Three different sizes of posters were used in the study to accommodate management practices. The creative content of the posters was identical in Scenarios 2, 3, 4, and 5. In Scenarios 6 and 7, the posters were altered to include a colourful frame (Scenario 6) or a colourful frame and a promotional message (Scenario 7).

In Scenario 1, all POP advertising was removed, leaving only the signage of the POP itself.

In Scenarios 2, 3, 4 and 5, the advertising pressure was reduced proportionally, such that Scenario 2 had the highest possible advertising saturation for the POP in question. The percentage of the total surface area of the section under study covered by the POP advertising material was calculated for each scenario. These calculations are related to another widely used coefficient in merchandising: the floor occupancy coefficient (Navarro and Díez de Castro, 2003). The value expresses the percentage of the total surface area of the section covered by POP advertising material. Thus, in Scenario 2, 16 posters were put up in all (8 for Javier Marías and 8 for Pierre Lemaitre): 4 large posters, 2 medium ones, and 10 small ones. In this case, the percentage of the surface area covered by the POP advertising materials was 39.22%. In the least saturated scenario, this figure was 4.31%.

Scenarios 6 and 7 had the maximum advertising saturation (the same as in Scenario 2), but a coloured frame was added to the poster in both scenarios and, in Scenario 7, a promotional message as well ('free briefcase with the purchase of the book'). The colourful frames were added to test the influence of what is here called 'POP advertising differentiated from the environment', as the chromatic range of the store environment consisted of predominantly cold, dark colours. Scenario 7 was designed to evaluate the effect on recall of the inclusion of a promotional message. Given that the only difference between Scenarios 6 and 7 was the inclusion of the promotional message, any differences in recall could be attributed to the poster's promotional content.

4. Results

4.1. Cognitive effectiveness

4.1.1. Unaided recall

Of the 1,252 individuals exposed to one of the scenarios with advertising (2, 3, 4, 5, 6, and 7), 20.1% recalled having seen an advertising poster related to an author or a book, i.e. 252 individuals. Of these 252 individuals, 33.7% recalled the name of the writer and/or specific aspects of the Javier Marías poster, 20.6% recalled the name of the writer and/or specific aspects of the Pierre Lemaitre poster, and 54.0% recalled having seen a poster in the section they had just left but were unable to cite any details of it. Only 8.3% recalled both posters unaided.

4.1.2. Aided recall

Given that unaided recall is a very strict measure of memory, due to the high level of mnemonic effort required of the respondents, this study also used aided recall as a measure of cognitive effectiveness. Specifically, respondents were asked whether or not they recalled a poster after being given a 'cue', in this case, the author's name. Obviously, the questions related to aided recall were not posed to respondents who recalled the Javier Marías or Pierre Lemaitre poster, as applicable, without any aid and moreover expressly cited the author to whom the poster referred. In accordance with this criterion, 1,182

individuals were asked the questions related to aided recall of the Javier Marías poster, and 1,236 individuals were asked the questions related to the Pierre Lemaitre poster.

With regard to the Javier Marías poster, 16.6% of the 1,182 individuals who were asked the aided recall question recalled having seen a poster referring to this author. Of this group, 50.5% said they remembered some aspect of the poster. As for the aided recall of the Pierre Lemaitre poster, of the 1,236 respondents asked the questions related to this type of recall, 6.8% recalled having seen a poster referring to that author.

4.1.3. Verified recall

Verified recall refers to the quality of the recall, i.e. to those aspects related to the poster mentioned by the respondents. Based on the responses, these aspects were grouped according to the following variables related to the tested posters: (1) colour (reference to one of the colours used in the poster or aspects related to opinions of it); (2) aspects related to the author (name, nationality, photo or any other aspect related to the author); (3) aspects related to the book (book cover, references to images featured on it, book title, etc.); (4) aspects related to the location of the poster; (5) aspects related to the promotion; and (6) other aspects. Table 2 shows the results obtained according to this scheme:

ASPECT	Javier Marías poster (%)			Pierre Lemaitre poster (%)		
	UNAIDED (N=126)	AIDED (N=142)	TOTAL (N=269)	UNAIDED (N=82)	AIDED (N=45)	TOTAL (N=116)
Colour	28.6	30.3	29.4	37.8	22.2	18.1
Author	15.9	18.3	17.1	3.6	6.7	6.9
Book	40.5	47.2	43.9	51.2	68.9	50.0
Promotion	10.3	2.8	6.7	6.1	---	---
Location	2.4	1.4	1.9	---	2.2	0.9
Other	2.4	---	1.1	1.2	---	0.9
Total	100	100	100	100	100	100

Table 2 Verified recall of the posters by author

4.1.4. Yes/no visual recognition

The purpose of measuring the advertising effectiveness of a campaign is to determine whether it has left a mark in the mind of the individual. Given that recall is a measure of cognitive effectiveness that requires a considerable mnemonic effort on the part of the respondent, it is very common, especially with print media, to measure recognition as well. In the present study, due to the need to minimize the length of the questionnaire in order to maximize the number of individuals willing to participate, yes/no visual recognition was considered the most suitable measure of recognition. This measure consists in showing respondents the advertising stimulus being tested and asking them whether they saw it in the section they had left. As with the previous measures of recall, the level of recognition of the Javier Marías poster was higher than that of the Pierre Lemaitre poster (43.9% and 39.9%, respectively).

4.2. Factors affecting the measures of memory

This section will analyse the extent to which the advertising pressure to which the individuals visiting the Fnac section were exposed, the creativity of the poster, and the existence of a sales promotion announced in the posters influenced the advertising effectiveness in terms of memory. To this end, first, a chi-square test was performed to test the association between each measure of memory (unaided recall, aided recall, total recall, and visual recognition) and the six scenarios that included advertising. The results, provided in Table 3, reveal clear differences in the levels of unaided recall and visual recognition of both posters depending on the scenario to which the respondent was exposed. As these results were obtained for both posters, it can be firmly concluded that measures of memory are indeed affected by the design and planning factors of a poster-based POP advertising campaign.

MEASURE OF MEMORY	Javier Marías			Pierre Lemaitre		
	TOTAL	SCENARIO (%)	χ^2	TOTAL	SCENARIO (%)	χ^2

		N	%	2	3	4	5	6	7	(p)	N	%	2	3	4	5	6	7	(p)
Unaided recall	YES	85	6.8	7.7	5.4	5.3	2.4	7.4	12.3	18.058	52	4.2	6.7	2.9	1.4	1.5	7.9	4.3	19.186
	NO	1167	93.2	92.3	94.6	94.7	97.6	92.6	87.7	(0.003)	1200	95.8	93.3	97.1	98.6	98.5	92.1	95.7	(0.002)
Aided recall	YES	196	16.6	20.3	16.6	13.8	13.5	19.2	16.1	5.516	84	6.8	7.4	6.5	9.8	5.4	7.0	4.8	4.998
	NO	986	83.4	79.7	83.4	86.2	86.5	80.8	83.9	(0.356)	1152	93.2	92.6	93.5	90.2	94.6	93.0	95.2	(0.416)
Total recall	YES	266	21.2	24.9	21.1	18.4	15.6	24.1	23.2	8.103	100	8.0	10.0	8.3	10.6	5.9	7.9	5.2	6.688
	NO	986	78.8	75.1	78.9	81.6	84.4	75.9	76.8	(0.151)	1152	92.0	90.0	91.7	89.4	94.1	92.1	94.8	(0.245)
Visual recognition	YES	550	43.9	42.1	42.2	36.2	33.7	59.3	49.3	37.371	499	39.9	31.1	37.3	34.3	24.4	69.0	41.7	107.121
	NO	702	56.1	57.9	57.8	63.8	66.3	40.7	50.7	(0.000)	753	60.1	68.9	62.7	65.7	75.6	31.0	58.3	(0.000)

Table 3 Measures of memory by scenario with advertising

Nevertheless, to test the hypotheses proposed in the present study, additional analyses were performed to compare those scenarios that, due to their characteristics, were comparable.

4.2.1. Influence of advertising pressure on measures of memory

To analyse the influence of the advertising pressure of the POP advertising on measures of memory, Scenarios 2, 3, 4, and 5 were selected, as all of them used the same poster design. A new variable was created and assigned a value of 1 in the high-pressure scenarios (Scenarios 2 and 3), a value of 2 in the medium-pressure scenario (Scenario 4), and a value of 3 in the low-pressure scenario (Scenario 5). The results, which are provided in Table 4, show that the levels of unaided recall and recognition were greater for both posters in the scenarios with the highest advertising pressure. Furthermore, in the case of the Javier Marías poster, advertising pressure also influenced the total recall. These results indicate that the higher the advertising pressure is, the greater the cognitive effectiveness of poster-based POP advertising. Thus, support was found for sub-hypotheses H1.1 and H1.2.

MEASURE OF MEMORY		Javier Marías (%)				Pierre Lemaitre (%)			
		High pressure	Medium pressure	Low pressure	χ^2 (p)	High pressure	Medium pressure	Low pressure	χ^2 (p)
Unaided recall	YES	6.5	5.3	2.4	4.664	4.8	1.4	1.5	7.749
	NO	93.5	94.7	97.6	(0.097)	95.2	98.6	98.5	(0.021)
Aided recall	YES	18.5	13.8	13.5	3.404	6.9	9.8	5.4	3.010
	NO	81.5	86.2	86.5	(0.182)	93.1	90.2	94.6	(0.222)
Total recall	YES	23.0	18.4	15.6	5.145	9.2	10.6	5.9	3.180
	NO	77.0	81.6	84.4	(0.076)	90.8	89.4	94.1	(0.204)
Visual recognition	YES	42.1	36.2	33.7	4.776	34.1	34.3	24.4	6.833
	NO	57.9	63.8	66.3	(0.092)	65.9	65.7	75.6	(0.033)

Table 4 Measures of memory based on advertising pressure

4.2.2. Influence of advertising creativity on measures of memory

To analyse how advertising creativity influences measures of memory, Scenarios 2 and 6 were chosen as both scenarios involved the same level of advertising pressure. The only difference was that, in Scenario 6, the posters included a colourful frame (green in the case of the Javier Marías poster and orange in the case of the Pierre Lemaitre poster). As can be seen in Table 5, this change only led to significant improvements in visual recognition. Therefore, no support was found for sub-hypothesis H2.1, whilst partial support was found for H2.2.

MEASURE OF MEMORY		Javier Marías (%)			Pierre Lemaitre (%)		
		Poster without frame	Poster with frame	χ^2 (p)	Poster without frame	Poster with frame	χ^2 (p)
Unaided recall	YES	7.7	7.4	0.009	6.7	7.9	0.216
	NO	92.3	92.6	(0.923)	93.3	92.1	(0.642)
Aided recall	YES	20.3	19.2	0.075	7.4	7.0	0.023
	NO	79.7	80.8	(0.784)	92.6	93.0	(0.881)
Total recall	YES	24.9	24.1	0.037	10.0	7.9	0.619
	NO	75.1	75.9	(0.847)	90.0	92.1	(0.432)
Visual recognition	YES	42.1	59.3	12.506	31.1	69.0	60.973
	NO	57.9	40.7	(0.000)	68.9	31.0	(0.000)

Table 5 Measures of memory based on advertising creativity**4.2.3. Influence of the existence of a sales promotion on measures of memory**

To determine the positive impact on measures of memory of the announcement of a sales promotion on a poster, Scenarios 6 and 7 were chosen. In both cases, the advertising pressure was the same, and the only difference between them was that in Scenario 7 the posters for both authors announced the giveaway of a briefcase with the purchase of the book. The results, shown in Table 6, indicate that the inclusion of a promotion did not yield better results. In fact, the inclusion of this information had the opposite effect in the case of visual recognition. Therefore, no support was found for sub-hypotheses H3.1 and H3.2.

MEASURE OF MEMORY		Javier Marías (%)			Pierre Lemaitre (%)		
		Poster without promotion	Poster with promotion	χ^2 (p)	Poster without promotion	Poster with promotion	χ^2 (p)
Aided recall	YES	7.4	12.3	2.907 (0.088)	7.9	4.3	2.426 (0.119)
	NO	92.6	87.7				
Unaided recall	YES	19.2	16.1	0.674 (0.412)	7.0	4.8	0.965 (0.326)
	NO	80.8	83.9				
Total recall	YES	24.1	23.2	0.043 (0.836)	7.9	5.2	1.230 (0.267)
	NO	75.9	76.8				
Visual recognition	YES	59.3	49.3	4.276 (0.039)	69.0	41.7	32.152 (0.000)
	NO	40.7	50.7				

Table 6 Measures of memory based on the existence of a sales promotion**4.2.4. Influence of the respondent's familiarity with the author on measures of memory**

The respondents' familiarity with the author was quite uneven. Of the 1,252 respondents exposed to any of the scenarios that included advertising, 38.3% said they were familiar with the author Javier Marías, whereas only 6.9% said they were familiar Pierre Lemaitre. To determine the influence of familiarity with the author on the measures of memory, a chi-square test was performed regardless of the scenario with advertising to which the respondent was exposed (2, 3, 4, 5, 6, or 7). This decision was made because the small sample sizes for familiarity in each scenario made it impossible to perform this analysis by scenario type.

The results shown in Table 7 indicate that familiarity with the author is a highly determining factor for measures of memory, which explains the low levels obtained in general for the Pierre Lemaitre poster. Support was thus found for sub-hypotheses H4.1 and H4.2.

MEASURE OF MEMORY		Javier Marías (%)			Pierre Lemaitre (%)		
		Knows the author	Does not know the author	χ^2 (p)	Knows the author	Does not know the author	χ^2 (p)
Unaided recall	YES	13.6	2.6	56.369 (0.000)	16.3	3.3	34.107 (0.000)
	NO	86.4	97.4				
Aided recall	YES	39.7	4.0	247.234 (0.000)	40.5	4.6	141.499 (0.000)
	NO	60.3	96.0				
Total recall	YES	47.6	4.9	322.015 (0.000)	48.8	5.0	209.674 (0.000)
	NO	52.4	95.1				
Visual recognition	YES	64.1	31.4	128.039 (0.000)	68.6	37.7	31.838 (0.000)
	NO	35.9	68.6				

Table 7 Measures of memory based on the respondent's familiarity with the author

4.2.5. Influence of the respondent's interest in reading on measures of memory

Of the 1,252 respondents exposed to any of the scenarios with advertising (2, 3, 4, 5, 6, or 7), only 9.6% said they did not enjoy reading. Based on these results, the respondents were divided into two groups of readers: (1) 'Those who are not passionate about reading', who gave their passion for reading a score of between 1 and 3 (9.6%) and (2) 'Those who are passionate about reading', who gave it a score of between 5 and 7 (78.1%). As in the previous cases, a chi-square test was performed. The results included in Table 8 show that a passion for reading was a determining factor in the measures of memory. With the exception of unaided recall of the Javier Marías poster, the levels of recall or recognition were higher in the second group for all measures of memory. Therefore, support was found for sub-hypotheses H5.1 and H5.2.

MEASURE OF MEMORY		Javier Marías (%)			Pierre Lemaitre (%)		
		Not passionate about reading	Passionate about reading	χ^2 (p)	Not passionate about reading	Passionate about reading	χ^2 (p)
Unaided recall	YES	3.3	7.9	3.224	1.7	4.6	2.247
	NO	96.7	92.1	(0.073)	98.3	95.4	(0.134)
Aided recall	YES	2.6	19.1	19.935	2.5	7.7	4.263
	NO	97.4	80.9	(0.000)	97.5	92.9	(0.039)
Total recall	YES	5.0	24.3	23.120	3.3	9.0	4.468
	NO	95.0	75.7	(0.000)	96.7	91.0	(0.035)
Visual recognition	YES	16.7	47.4	41.074	21.7	40.9	16.651
	NO	83.3	52.6	(0.000)	78.3	59.1	(0.000)

Table 8 Measures of memory based on the respondent's interest in reading

4.2.6. Influence of the respondent's in-store experience on measures of memory

Of the 1,252 respondents exposed to any of the scenarios with advertising (2, 3, 4, 5, or 6), 66.5% said their experience in the store section in which the survey was conducted had been satisfactory, rating it 5 or higher on a scale of 1 to 7. Based on these results, the respondents were divided into two groups: (1) 'Those who were not satisfied with the experience', who gave it a score of between 1 and 3 (6.1%); and (2) 'Those who were satisfied with the experience', who gave it a score of between 5 and 7 (66.5%). The results of the chi-square analysis, shown in Table 9, indicate that the in-store experience did influence the measures of memory. With the exception of the unaided recall of both posters and the total recall of the Pierre Lemaitre poster, all memory measures were greater in the second group. Therefore, support was found for sub-hypotheses H6.1 and H6.2.

MEASURE OF MEMORY		Javier Marías (%)			Pierre Lemaitre (%)		
		Unsatisfied with the experience	Satisfied with the experience	χ^2 (p)	Unsatisfied with the experience	Satisfied with the experience	χ^2 (p)
Unaided recall	YES	3.9	8.1	1.650	5.3	4.6	0.076
	NO	96.1	91.9	(0.199)	94.7	95.4	(0.782)
Aided recall	YES	8.1	20.1	6.322	2.8	8.3	2.784
	NO	91.9	79.9	(0.012)	97.2	91.7	(0.095)
Total recall	YES	10.5	25.6	8.593	7.9	9.6	0.240
	NO	89.5	74.4	(0.003)	92.1	90.4	(0.624)
Visual recognition	YES	22.4	47.0	17.069	27.6	37.5	2.920
	NO	77.6	53.0	(0.000)	72.4	62.5	(0.087)

Table 9 Measures of memory based on the respondent's in-store experience

5. Discussion

The main contribution of this research is to assess and analyse the effect exerted on the cognitive effectiveness of POP advertising by a broad set of variables related both to the design of the POP advertising materials and to the product and target audience. Planning variables have not been sufficiently studied in real environments, possibly due to the technical challenges involved in doing so.

The explanatory factors considered in this in-store experiment were: advertising pressure, the use of colour to differentiate the advertising material from the environment, the inclusion of a sales promotion, familiarity with (prior awareness of) the elements featured in the material, affinity with the advertised product or service, and the customer's in-store experience. The results of the study show that factors related to the design and planning of a POP advertising campaign influence those memory measures (total recall and visual recognition) that correspond to the measures of advertising effectiveness that guarantee, to a certain extent, that the objectives have been, or can be, achieved, depending, of course, on what the campaign is pursuing.

The results of this study for the variable 'advertising pressure' (number of POP advertising elements used) confirm that the more POP advertising used, the greater the recall (both unaided and aided). Scenario 2 (largest amount of POP advertising) yielded the highest levels of recall (unaided and aided), in keeping with the findings of previous studies on advertising pressure (e.g. Haugen and Weems, 2004; Sorensen, 2009). As for the two types of recall studied, i.e. unaided and aided, regardless of the author, the aided recall levels were higher. This could be due to the greater difficulty involved in unaided recall for the advertising recipients, as they are not provided with any cues to facilitate recall. Of the analysed memory measures, the highest levels were found for visual recognition. This indicates that advertising pressure influences, above all, the visual recognition of the advertising. This finding is consistent with those of similar studies that have tested both measures (Beerli and Martin, 1999b). It further shows that there is no need to invest large sums to achieve high levels of unaided recall, as purchase decisions concerning these types of products are usually made in-store.

With regard to the inclusion of a colourful frame to differentiate the POP advertising from its environment (creativity), no significant changes in recall levels were found. This finding is contrary to those reported elsewhere (Van Meurs and Aristoff, 2009; Vera, 2010). However, significant improvements were found in the visual recognition of the poster. These results can be explained taking into account the difference between recall and recognition proposed by Tulving and Thomson (1973). These authors proposed the encoding specificity principle, which posits that there is a relationship between how elements are encoded in memory and the possibility of their subsequent retrieval. As any cue associated with an element during the encoding stage may facilitate its later retrieval, context plays a key role. These authors argue that memories are more easily evoked in the place where they were acquired. This explanation could explain why the results obtained for visual recognition were more favourable than those for recall, since, in the present study, the stimuli were encoded at the place where they were to be evoked (the point of purchase).

As for the effects on memory of the inclusion of a sales promotion in the content of the POP advertising material, the results of this research show that the addition of a promotion (with the characteristics of the tested promotion) does not lead to better results for the memory measures (except for unaided recall in the case of the Javier Marías poster). Nevertheless, the existence of the promotion was the aspect most often cited by the respondents in the verified recall. These results, which are inconclusive and contrary to those of other studies (e.g. Donthu et al., 1993), may reflect the effect of moderating variables such as the audience's involvement with the product type highlighted by Crespo-Almendros and Del Barrio-García (2014). Given the sampling limitations affecting the interpretation of this variable, these findings should be evaluated with the statistical reliability indicated in the relevant tables.

As concerns the influence of familiarity with the author (prior awareness) on memory measures, the results show that there is a relationship between familiarity and improved levels of all recall measures. This was confirmed by the fact that the poster for the book by Javier Marías (the better-known writer for the respondents) achieved higher levels for the analysed recall measures. These results are thus in line with those reported elsewhere (e.g. Pieters et al., 2002; Osborne and Coleman, 2008; Byun and Jang, 2018).

The interest in reading (product affinity) expressed by the respondents improved the levels of all memory measures. This finding corroborates those reported elsewhere by leading authors in the field. In this regard, it is worth noting that an affinity for or link with the product (Turley and Shannon, 2000) influences individuals' response to advertising, the duration of purchase-decision processes, and even

recall and recognition levels, which are higher, the more engaged an individual is (Pieters and Wedel, 2004).

Finally, with regard to the respondents' in-store experience and its influence on memory measures, the results show that those respondents who expressed satisfaction with their in-store experience had higher levels for all memory measures. During the time customers spend engaging with the store environment, they may find themselves in situations that can generate more or less intense emotions as a result of their encounters with store employees or environmental factors (décor, music, lighting, space). These emotions will influence the recall of advertising stimuli (Bennett, 1998). In this regard, the present findings confirm that the in-store experience influences the recall and recognition levels of POP advertising material, as has been reported elsewhere (e.g. Turley and Milliman, 2000; Morrin and Ratneshwar, 2000).

6. Implications for companies

One of the main objectives of the present research was the applicability of the findings. To this end, several management-oriented conclusions can be drawn with operational implications for marketing managers facing decisions regarding the design, functionality, and effectiveness of POP advertising.

First, the research confirmed the suitability of using poster-based POP advertising (in the bookstore sector) from the point of view of cognitive effectiveness. However, as has been shown (through the use of posters referring to two new books by two different authors), the effects are not uniform in all cases. Thus, as with any advertising tool, the first step for the agents involved in planning POP advertising campaigns should always be to identify the target audience and their reasons for purchasing so as to 'tailor' each tool to the target's specific characteristics. Consequently, for the POP advertising to be successful, prior research and analyses should be conducted of the target audience for the advertising actions for which it will be used.

With regard to the formal elements of the POP advertising poster and their impact on effectiveness, emphasis should be placed on the following factors (in order of importance): those related to the book itself (cover, title, etc., i.e. the product), those related to colour (i.e., differentiating factors); and those related to the author (i.e. to the brand, as in this context the author is a brand). These factors should be taken into account in the design of advertising material for this type of product.

In addition to the aforementioned formal aspects, to maximize recall, any POP advertising campaign carried out at a bookstore should also consider the influence of factors such as the audience's familiarity with the author, the audience's interest in reading, and the need to ensure that customers have a satisfactory in-store experience.

There are two other important implications for POP advertising management. The first is the influence of advertising pressure as a means of boosting levels of recall and recognition in poster-based POP advertising campaigns. The present findings indicate that increasing the number of POP advertising materials increases the positive impact on memory. The highest level of POP advertising pressure tested (around 40%) yielded the best measures of memory (for both authors). This points to the suitability of presenting spaces in which the ratio of POP advertising to books enables high advertising pressure. This advertising pressure, in turn, should be configured taking two factors into account:

- The available space: Planners of POP actions should analyse the characteristics of the physical space available for decoration with POP advertising materials. Taking care not to impede the product display or foot traffic in the area, they should choose places that offer good visibility and do not interfere with the store's everyday operations.
- The advertised product: Again, the importance of knowing the target audience of the various POP advertising materials must be stressed. The ideal level of advertising pressure (the percentage of the surface area occupied by the POP advertising) will also depend on the audience's familiarity with and interest in the advertised product. Higher levels should be used for products that are not familiar to the target audience.

Another important factor to be considered in the planning and design of POP advertising is that the materials should attract attention. In the present study, the addition of a colourful frame to the posters increased memory levels. This ability to stand out from the environment, and its impact on attention and memory, should be taken into account when carrying out campaigns based on such tools. Therefore, additional analyses should be performed of the space where the POP advertising materials will be placed to determine how to make the materials stand out from the environment in order to better attract customers' attention. Colour theory, which has been widely studied in marketing, can help planners take the necessary decisions in this regard.

Finally, it should be noted that the measure of memory most positively affected by the increase in advertising pressure was recognition. This finding is of particular interest in stores, where recognition of a product can lead to its purchase. In conventional shopping environments, the advertising and product are positioned quite close to each other. This makes the role of recognition as a measure of memory even more important, if possible, as recognition is easier to achieve and has an immediate impact, provided the individual is able to recognize the product or service announced in the POP advertising in the aisle or on the shelves.

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