



# “Moderating impact of billboard location and quality on the relationship between advertisement elements and its goals”

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# MODERATING IMPACT OF BILLBOARD LOCATION AND QUALITY ON THE RELATIONSHIP BETWEEN ADVERTISEMENT ELEMENTS AND ITS GOALS

## Abstract

The study aims to detect the relative impact of the basic advertising elements on attaining advertisement objectives. It also seeks to determine if the location and quality of billboards have an essential moderating impact on the effectiveness of advertising elements concerning their ability to achieve desired advertisement objectives in a developing country such as Jordan.

A quantitative survey methodology and an online questionnaire were used to a convenient sample of 450 university students from different academic years and their family members and acquaintances in Amman, Jordan, to achieve the study goals. IBM SPSS version 25 and Smart PLS 3 were used to test the hypotheses. The study revealed a statistically significant impact ( $p \leq 0.05$ ) of three billboard advertising elements in achieving the goals of promoting advertisements, namely: headline ( $t = 3.483$ ), color ( $t = 2.308$ ), and the number of elements ( $t = 2.418$ ). However, the study failed to prove the effectiveness of other two elements in achieving these objectives. The analysis did not confirm the effect of moderation of billboard locations and quality between independent variables and billboard's advertising objectives; however, the location of billboards (independent variable) directly affects the achievement of advertising objectives. The study came up with a set of conclusions, the most important of which is that the billboard still has an important impact on customers' purchasing behavior or power, regardless of the location and the quality of billboards as a moderator variable.

## Keywords

advertising, billboard ads, effectiveness of billboard ads, advertisement objectives, Jordan, Amman

## JEL Classification

M30, M37

## INTRODUCTION

Billboard advertisement refers to one type of (out of home) advertising that is considered one of the most common (Ang, 2014). It is estimated that spending on this type of billboard is approximately 55% of the total outdoor advertising budget (OAAA, 2014); spending in 2024 is anticipated to reach \$54.13 billion, with a compound annual growth rate of 5.1%, for the period from 2020 to 2024 (Globe Newswire, 2020). Meanwhile, the effectiveness of billboards has increased despite the dominance of electronic means (Lopez-Pumarejo & Bassell, 2009).

In the Jordanian capital of Amman, it is found that the dependency of advertisers on billboards is due to the control of small and medium-sized businesses with service nature. It is characterized by their weak financial resources and the localization of their businesses in specific geographical areas. In addition, their markets are regarded as overcrowding which leads to congestion in the streets. Finally, the increased use of mobile phones, the internet, and social networking



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sites at home has weakened the role of all advertising media that individuals used to receive at home or in the workplace (Al Adwan et al., 2021; Zamil et al., 2021; Al Adwan, 2019). However, at the same time, the importance of billboards has increased.

The availability of appropriate conditions for the use of billboard advertisements and the increased spending on them does not necessarily mean that billboard advertisements in Amman work with the required effectiveness and efficiency, and thus perform their important role and functions to the fullest. This was indicated by Suditu et al. (2016), who emphasized that the effectiveness of a billboard depends on what is communicated and how that communication is provided. Furthermore, when it is not based on scientific bases, spending on advertising is considered a curse on small and medium-sized businesses, especially in developing economies such as Jordan. Therefore, the search for an accurate measure of the effectiveness of billboards according to their specificity is deemed important. Moreover, it is necessary to determine the success of this type of advertising in achieving its objectives (Rosewarne, 2090). Otherwise, it is considered not only lost spending, but a loss of its necessary and important impact on the business of such companies. Therefore, in light of the previous discussion, this paper tries to answer the following question: What are the basic advertisement elements that may affect the effectiveness of achieving advertising objectives regarding quality and location as moderating factors?

## 1. LITERATURE REVIEW

The success of billboard advertising design is primarily related to understanding the characteristics and limitations of this advertising medium. The most important characteristic is that viewing the advertisement takes place in motion mode and the short time available for individuals to absorb and place the advertisement in a surrounding environment with many sensory stimuli (Celsi & Olson, 1988). Therefore, an advertiser's ability to succeed in meeting the goals of billboard advertising is primarily related to his ability to understand the specificity and limitations of billboard advertising. These features require unique methods for communicating advertising messages and a creative design approach (Lopez-Pumarejo & Bassell, 2009). It simultaneously requires careful selection of billboard locations and billboard quality checks. The main advertising elements are designed very efficiently and comprehensively complement and support each other. They form a complete, innovative, and unified image capable of attracting attention and maintaining the interest of passers-by and thus, effectively presenting a high advertising claim in a short time and from the farthest distance (Chan & Cheng, 2012; Till & Baack, 2005).

### 1.1. Essential advertisement elements

**The headline on the billboard advertisement** is considered one of the leading and important el-

ements (Belch & Belch, 2004; Pieters et al., 2010; Ang, 2041). It should be written in large and clear handwriting using a few words written in a creative and effective way that attracts attention and can be understood in the shortest time possible. A viewer of the billboard has only 6 seconds on average to perceive the advertisement and integrate with the rest of the advertisement elements; especially the image conveys the idea of the advertisement. In this regard, Grigaliūnaitė et al. (2016) concluded that consumers better perceive the ad with a large font title. On the other hand, Tian and Pan (2015) concluded that it became more noticeable only when the written portion is short and brief enough. In addition, the ad can be understood quickly, easy to remember, and potentially stimulates interest and generate a desire to buy.

**The billboards usually contain bold colors** because they will be more visible from long distances. The contrast of colors on the billboard helps improve the readability of the advertisement. Thus, colors should be bright, have a saturated contrast, and be high and attractive (Pieters et al., 2010; Zhang et al., 2009). At the same time, one should not over-diversify the use of colors and limit to only a group of colors that serve the design of the advertisement. Designers should invest the strong influence of color on individuals' emotional and mental feelings to make others remember the brand in the billboard advertisement (Panigyrakis & Kyrousi, 2010; Elliot et al., 2007). In this regard,

Cheng and Chan (2014) found that color clearly affects consumers' attention to billboards. In addition, Balkafl et al. (2005) and Hussain and Nizamani (2011) concluded that color in billboard ad design significantly attracts consumers' attention to the billboard and their perception of the ad. Panigyrakis and Kyrousi (2010) found the relative order of colors in terms of their effect on improving memory implicitly. At the same time, Taylor et al. (2006) and Donthu et al. (1993) found that the strong and contrasting colors in advertising play a significant role in the success of billboard advertisement and lead to better brand memory.

Billboard advertisement has to tell a story about a company using thought-provoking images and very few words to accompany the pictures.

**Picture/Drawing in billboard advertisement** could attract attention and maintain interest in viewing the remaining elements of the advertisement (Negm & Tantawi, 2015). Also, the picture can create the first enjoyable experience for the consumer and might be the reason why consumers often buy a product based on experience. Further, Sharma et al. (2012) found that the erotic picture of motives and instincts in advertising influences attitude, interest, and attention. Negm and Tantawi (2015) and Hussain and Nizamani (2011) found that the images in the advertisement affect consumers' perception, increasing their recall and enhancing attitude toward the advertising, and affecting behavioral intentions.

On the other hand, Grigaliūnaitė et al. (2016) concluded that consumers better perceive advertising in which visual elements are dominated. Pieters et al. (2010) and Pieters and Wedel (2004) found that the effect of visual objects on advertising plays a significant role in attracting attention to advertising, but that does not mean selling. Cook (2001) concluded that a picture attracts consumers before the headline and helps provide hidden verbal information. Kayode (2015) said that the entire burden of getting potential customers' attention and getting them to read the copy rests on the headline without the image.

**The words of the advertisement** should be limited, clear, understandable, and attractive to the billboard as to the color, size, and thickness of the letters (Taylor et al., 2006). The separations

between the words also should be appropriate to graphic design criteria (Balkafl et al., 2005) with the ability to be perceived as far away as possible. On the other hand, the type of letters should be narrowly defined, easy to read, and understandable to be read from the farthest possible distance. In addition, the typed words are mainly related to the nature of the product and the targeted audience (Balkafl et al., 2005). It is also concluded that letters and words within the design of the billboard advertisement have a great influence on attracting consumers' attention and their awareness of this advertisement. On the contrary, Donthu et al. (1993) argued that the fewer words on the billboard, the better. Taylor et al. (2006) also found that the typeface should be well spaced and legible.

It is asserted that **any element that does not add value to the rest of the advertisement** elements should be deleted, especially in the billboard advertisement. There is no time to move between the elements of the advertisement beyond the capacity of the human being to absorb the advertisement at the required speed (Nyarko et al., 2015). That is why necessary elements of the advertisement should be linked and integrated to help the viewer's eye move from one element to another in a planned way. This can increase the ability to attract attention and maintain interest to continue examining all these elements (Sharma et al., 2012). Therefore, Balkafl et al. (2005) stressed the effective use of white spaces within the billboard to determine which elements should be highlighted. For example, Grigaliūnaitė et al. (2016) concluded that the billboard containing many elements would be perceived better. This contradicts the aforementioned rule and interpretation of this result as those billboards are intended in crowded, slow-moving markets for pedestrians. However, Pilelienė and Grigaliūnaitė (2016) concluded that the complexity of the advertising layout negatively influences the visual attention to the brand in the printed advertisement.

## 1.2. Billboard location and quality

**The location of the billboard** plays a vital role in light of two aspects. The first is the good location (regarding the size of the billboard), which has a fundamental role in attracting attention to the billboard itself and its ability to be noticed by pas-

sers (Wilson & Casper, 2016; Wilson & Till, 2011). The second is the ability to absorb the advertisement (Helmer, 2016). Hence, location is crucial in ad awareness within the time available while people are moving. Thus, advertising elements of high quality can distort the viewer's ability to perceive the ad correctly if the billboards are located in places where the confusing elements are present (Tucker et al., 2005; Wilson & Till, 2012). Accordingly, the location of the billboard should play an important role in isolating the billboard from the elements of interference that can hinder it for the longest possible time to be visible.

It is worth mentioning that the advertiser's ability to use creativity – associated with some studied ambiguity – in the billboard is non-existent due to insufficient time for the viewer to decode that advertising message and to be easier to understand by their targeted audience (Iqbal & Batool, 2016). On the other hand, when the billboard is placed correctly according to the targeted market for advertisers, its viewership is more significant, and advertisers can target the customers who want to reach them (Lopez-Pumarejo & Bassell, 2009). For example, Iqbal and Batool (2016) concluded that the positioning of the billboard has a significant impact on the purchasing behavior of customers. Bhargava and Donthu (1999) indicated that the location of exposure influences the sales' response to billboards. Hussain and Nizamani (2011) found that the locations selected matter in gaining the customers' attention.

Considering **quality**, the advertiser must consider different types and shapes of billboards that vary in terms of their physical characteristics (e.g., shape and size) before designing the advertisement and its various elements. Consequently, any ad design that does not fit with the nature and specificity of the type of billboard hinders the ability of that design to realize the planned effect. Moreover, the quality of the billboard in terms of physical aspect may be reflected negatively or positively on the ability of the ad design to have the planned effect. In this regard, Ephron (2004) described outdoor advertising as a unique case in which the medium is the message that allows the advertiser to invest this creativity in designing the ad. In this context, Taylor et al. (2006) confirmed that billboards can have a great potential for attracting attention due to their physical size and creativity.

Although printing is the last step before the billboard is displayed, the entire implementation process that includes printing and its quality must be considered to achieve a clear vision of the billboard advertisement. Likewise, when choosing between the types of billboard shape, one must consider the weather, lighting sources, and the area where the billboard will be located since they affect the visibility of the advertisement. The correct utilization of the appropriate lighting in terms of its quality and intensity has a significant impact on the visibility of the advertisement by showing the true colors of the billboard.

### 1.3. Billboard advertisement objectives

Billboard's advertisement is characterized by its influence to achieve its objectives, some of which are shared with various other advertising media, and others are distinguished from the rest of the media. The most important issue is represented in the ad ability to introduce new goods, remind the audience of the product, and create awareness of the brand in the local markets. It also urges consumers to purchase in places close to billboard advertising.

It is asserted that to evaluate the effectiveness of the billboard advertisement fully and objectively, it must be measured by its ability to achieve a set of its most critical main objectives. From the customer's point of view, it is the best assessment of the feasibility of spending on advertising. Several studies focused on measuring the effectiveness of advertising through its impact on consumers' behavior (attracting attention or remembering the advertisement and recalling it). Moreover, several research papers studied the influence of billboard ads on purchasing, loyalty, or their influence on the brand. However, no study is found that highlight the effectiveness of the advertisement in terms of its familiarity with most of the advertising objectives of the billboard in this study.

## 2. AIMS AND HYPOTHESES

This study aims to investigate the impact of the essential or basic elements of the billboard advertisement on its effectiveness. In addition, it critically assesses whether introducing billboard quality

and location as moderating variables on the relationship between the independent variable (ads basic elements) and the dependent variable (billboard ads effectiveness).

Several studies were carried out seeking to analyze the feasibility and effectiveness of spending on advertising by identifying several internal or external factors that have a direct impact, from their perspective, on the effectiveness of advertising on billboards. However, this study proposes a model that involves all basic elements that are integrated to achieve the effectiveness of the advertisement and according to the privacy of the advertisement on the billboards (independent variables). Furthermore, taking into account variables that may hinder or help in the delivery of that influence (modified variables), this paper measures the effectiveness of the advertisement through a more specific and objective scale (billboard's advertisement objectives). In general, this was highlighted in previous studies, which gives a complete and plain image to measure the effectiveness of billboards more accurately.

Therefore, the main aim of the proposed research model is to find out an inclusive measure that focuses on all essential factors and any external factors that may enhance or hinder the effect of those factors on the dependent variable scale that determines the effectiveness of the advertisement

accurately. After the review of literature related to the effectiveness of advertising in Jordan and the world, it was found that some papers tried to focus on one or some individual factors that determine the effectiveness of advertising from the viewpoint of each researcher separately. It was found that there is no consensus on these factors among researchers. For example, Hussain and Nizamani (2011) examined the impact of the size, color, location, celebrity, and images of the billboard advertisement on its ability to attract customers' attention. However, Iqbal and Batool (2016) examined the impact of billboard location, words, product recognition, simple, easy, understandable message, and uniqueness on consumer buying behavior.

Nonetheless, Akhtar (2019) studied the size, color, images, location, and the models used in billboard advertisement and its impact on customers' purchasing behavior. In addition, Donthu et al. (1993) studied the factors influencing the recall of outdoor advertising, such as location, position, color, number of words, and subjects' experience. On the other hand, Grigaliūnaitė et al. (2016) focused on the influence of headline font size, the number of elements in the advertisement, and dominating elements in the advertisement (visual or textual) on outdoor advertising effectiveness.

In line with these peripheral factors (modified variables), no study adopts these two variables as

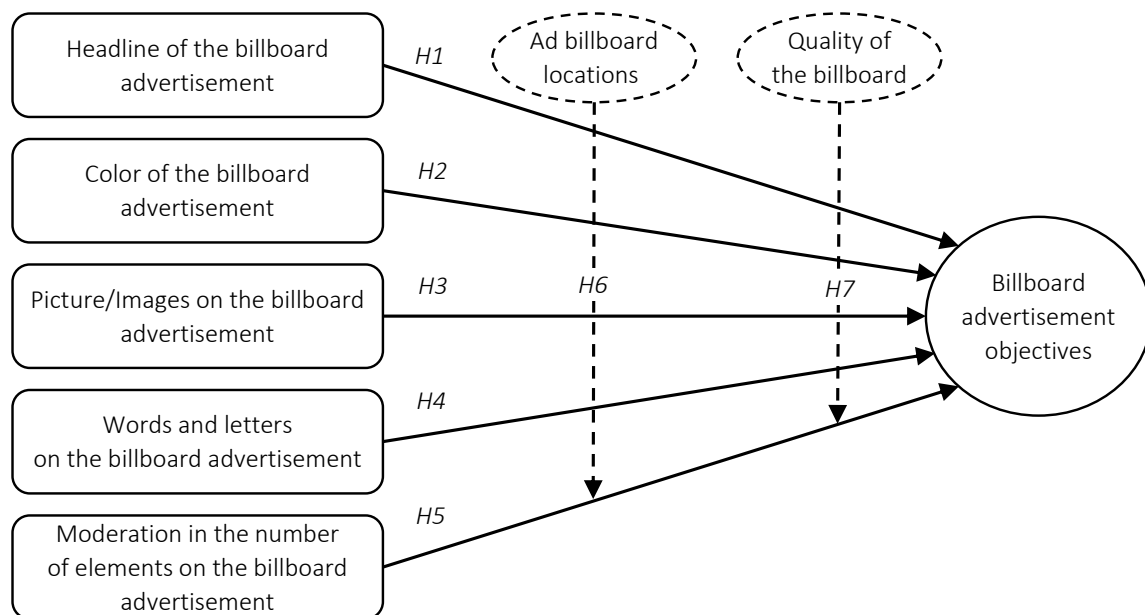


Figure 1. Proposed research model

moderated variables. On the one hand, studies focused on the locations of the billboard as the main independent and sole variable. For example, Wilson and Till (2011) questioned the impact of billboard placement on advertising effectiveness. Hussain and Nizamani (2011), Donthu et al. (1993), and Bhargava et al. (1994) also considered this impact among the factors affecting the billboard as an independent variable. On the other hand, no study considered the quality and the shape of the billboard as independent or modified variables.

Similarly, there is a lack of literature that measures the effectiveness of the advertisement based on an evaluation of the ability of the billboards to achieve most of their goals altogether, which can effectively measure the success or failure of any advertisement.

In light of the previous discussion, a dependent variable was adopted to collect most of the advertising objectives of the billboard. They are characterized by their ability to achieve and express in depth the extent of the success of the advertisement to achieve the desired effect. It is the best evidence of the feasibility and effectiveness of spending on advertising, as types of printed and audio-visual advertising. Moreover, it is easier for respondents to evaluate more accurately. According to the previous discussion, the following hypotheses are proposed:

- H1: There is a statistically significant impact of the headline of the billboard advertisement on achieving billboard advertisement objectives.*
- H2: There is a statistically significant impact of the color of the billboard advertisement on achieving billboard advertisement objectives.*
- H3: There is a statistically significant impact of the picture/images of the billboard advertisement on achieving billboard advertisement objectives.*
- H4: There is a statistically significant impact of the words and letters in the billboard advertisement on achieving billboard advertisement objectives.*

*H5: There is a statistically significant impact of the moderation of billboard advertisement elements on achieving billboard advertisement objectives.*

*H6: Billboard locations moderate the positive relationship between headline, color, images, words, and the number of billboard advertisement elements and achieving billboard advertisement objectives.*

*H7: Billboard quality moderates the positive relationship between headline, color, images, words, and the number of billboard advertisement elements and achieving billboard advertisement objectives.*

### 3. METHODS

The descriptive and analytical approach was applied in this study, taking into account the theoretical framework and previous studies. It was based on collecting data using a questionnaire that included many items related to the study variables. The data were analyzed statistically to test the validity of the hypotheses.

#### 3.1. Population, sample, and tools

The population of the study consisted of all students (and their family members or acquaintances) of the College of Business at Al-Ahliyya Amman University. After the approval of the Student Affairs Department, it was found that Al-Ahliyya Amman University students reside in different areas in Amman, which is a small city.

The study was conducted using the quantitative methodology and the empirical support for the hypotheses. The empirical analysis was carried out using a survey on the data collected from 450 students (and their family members or acquaintances) who answered the questionnaire published on the university's website for one week on June 5, 2021. It is a facilitated sample that gives students who are interested and willing to answer the questions the complete freedom to give their answers objectively. Considering the accuracy aspect, 74 question-

**Table 1.** Sample characteristics

Measure	Value	Frequency	Percentage (%)
Gender	Male	214	56.9
	Female	162	43.1
Age	18-23 years	292	77.7
	29-24 years	62	16.5
	30-60 years	18	4.8
	More than 60 years	4	1.1
Education	High school or less	25	6.6
	Bachelor	343	91.2
	Higher education	6	1.6
	Other	2	.6
Total		376	100%

naires were not considered since they were invalid for analysis, and only 376 questionnaires were analyzed (83.5%).

The study tool is a questionnaire that consists of four main sections to achieve research objectives. 450 questionnaires were collected, and 376 questionnaires were analyzed; 56.9% were males and 43.1% females. 77.7% of the respondents are aged 18 -23 years, and 16.5% are aged 29-24. An overwhelming number of the respondents have bachelor's degrees – 343 (91.2%), and those with a diploma or less are 25 (6.6%), and 6 (1.6%) are higher degree holders (Table 1).

IBM SPSS version 25 and Smart PLS 3 were applied on the collected data to conduct structural equation modeling (SEM) for diagnosing not only the measurement model but also the structure of the variables. SEM investigates the relationship between dependent and independent variables concurrently and provides statistical procedures to deal with research models (Hair et al., 2006). In addition, SEM was chosen because it is convenient for investigating a research model with a moderation relationship where another method like regression cannot cover such a relationship (Raykov & Traynor, 2016).

**Table 2.** Alpha, CR, and AVE

Construct	Alpha	CR	AVE
Headline of the billboard advertisement	0.773	0.845	0.523
Color of the billboard advertisement	0.830	0.876	0.542
Picture/images on the billboard advertisement	0.885	0.910	0.592
Words and letters on the billboard advertisement	0.838	0.886	.610
Number of elements on the billboard advertisement	0.843	0.888	0.614
Billboard advertisement objectives	0.902	0.923	0.630
Billboard locations (moderator)	0.845	0.890	0.618
Quality of the billboard (moderator)	0.827	0.885	0.659

## 4. RESULTS AND DISCUSSION

Convergent validity was examined by calculating factor loadings for all instrument items. All factor loadings ranged from 0.683 to 0.841 and exceeded the minimum recommended level of 0.5 (Steenkamp & Van Trijp, 1991; Hair et al., 2010). Cronbach's alpha was applied to investigate internal consistency. The values of the alpha test ranged between 0.773 and 0.902, which is considered an acceptable level of reliability, according to Sekaran and Bougie (2019). The average variance extracted (AVE) for each latent variable was above 0.50, which shows a good level of convergent validity, according to Hair et al. (2010). Moreover, composite reliability (CR) was also applied to check internal reliability. It indicates good internal reliability if the CR value is higher than 0.7 (Hair et al., 2006). CR values ranging from 0.845 to 0.923 indicate good internal reliability. Table 2 summarizes these results.

Discriminant validity through correlation coefficients between research variables ranged from 0.456 to 0.794. This increased the confidence in the discriminant validity as Kline (2005) noted that correlation coefficients that are less than 0.80 suggest evidence of discriminant validity. Table 3 summarizes the result of the correlation test.



**Table 3.** Correlations of study variables

No.	Variables	1	2	3	4	5	6	7	8
1	Billboards advertisement objectives	0.794							
2	Color of the billboard advertisement	0.627	0.736						
3	Billboard locations	0.632	0.676	0.786					
4	Quality of the billboard	0.604	0.661	0.787	0.812				
5	Words and letters on the billboard advertisement	0.533	0.663	0.588	0.582	0.781			
6	Picture/images on the billboard advertisement	0.545	0.722	0.642	0.643	0.679	0.770		
7	Number of elements on the billboard advertisement	0.548	0.624	0.545	0.479	0.466	0.456	0.783	
8	Headline of the billboard advertisement	0.610	0.656	0.650	0.595	0.580	0.608	0.569	0.723

The previous findings reveal discriminant and convergent validity for the proposed model. It indicates that the paper can move ahead with further analysis. Accordingly, the bootstrapping method was conducted to test the research hypotheses. Against this framework, this study tries to provide more understanding concerning the relationship among these variables. The results are presented in Tables 4 and 5 and Figure 1.

The analysis result reveals that three advertisement elements (headline, color, and a number of

billboard advertisement elements) significantly impact advertisement objectives. In detail, the results show that headline of the billboard advertisement as an advertisement element has a significant impact on advertisement objectives ( $t = 3.483, p \leq 0.05$ ). Thus, *H1* is supported. This is consistent with Hussain and Nizamani (2011), Ara et al. (2015), Zekiri (2019), Hartanto et al. (2021), Siddiqui et al. (2016), and Khan et al. (2016). In addition, color of the billboard advertisement as an advertisement element has a significant impact on advertisement objectives ( $t = 2.308, p \leq 0.05$ ).

**Table 4.** Research hypotheses results (direct path)

Hypotheses	Beta	t-value	P	Results
<i>H1</i> : Headline of the billboard advertisement will affect achieving billboard advertisement objectives	0.186	3.483	0.001	Supported
<i>H2</i> : Color of the billboard advertisement will affect achieving billboard advertisement objectives	0.169	2.308	0.021	Supported
<i>H3</i> : Picture / Images in the billboard advertisement will affect achieving billboard advertisement objectives	0.008	0.123	0.902	Rejected
<i>H4</i> : Words and letters in the billboard advertisement will affect achieving billboard advertisement objectives	0.040	0.712	0.477	Rejected
<i>H5</i> : Moderation of billboard advertisement elements will affect achieving billboard advertisement objectives	0.180	2.418	0.016	Supported

**Table 5.** Research hypotheses results (indirect path)

Hypotheses	Moderator	Beta	t-value	P	Results
Headline of the billboard advertisement will affect achieving billboard advertisement objectives	Quality	-0.036	0.405	0.686	Rejected
Color of the billboard advertisement will affect achieving billboard advertisement objectives	Quality	0.160	1.276	0.203	Rejected
Picture/images in the billboard advertisement will affect achieving billboard advertisement objectives	Quality	0.001	0.011	0.991	Rejected
Words and letters in the billboard advertisement will affect achieving billboard advertisement objectives	Quality	-0.108	1.194	0.233	Rejected
Moderation of the billboard advertisement elements will affect achieving billboard advertisement objectives	Quality	-0.059	0.582	0.561	Rejected
Title of the billboard advertisement will affect billboards advertisement objectives	Location	-0.013	0.141	0.888	Rejected
Color of the billboard advertisement will affect achieving billboard advertisement objectives	Location	-0.194	1.427	0.154	Rejected
Picture/images in the billboard advertisement will affect achieving billboard advertisement objectives	Location	0.044	0.386	0.700	Rejected
Words and letters in the billboard advertisement will affect achieving billboard advertisement objectives	Location	0.168	1.691	0.091	Rejected
Moderation of billboard advertisement elements will affect achieving billboard advertisement objectives	Location	-0.003	0.023	0.982	Rejected

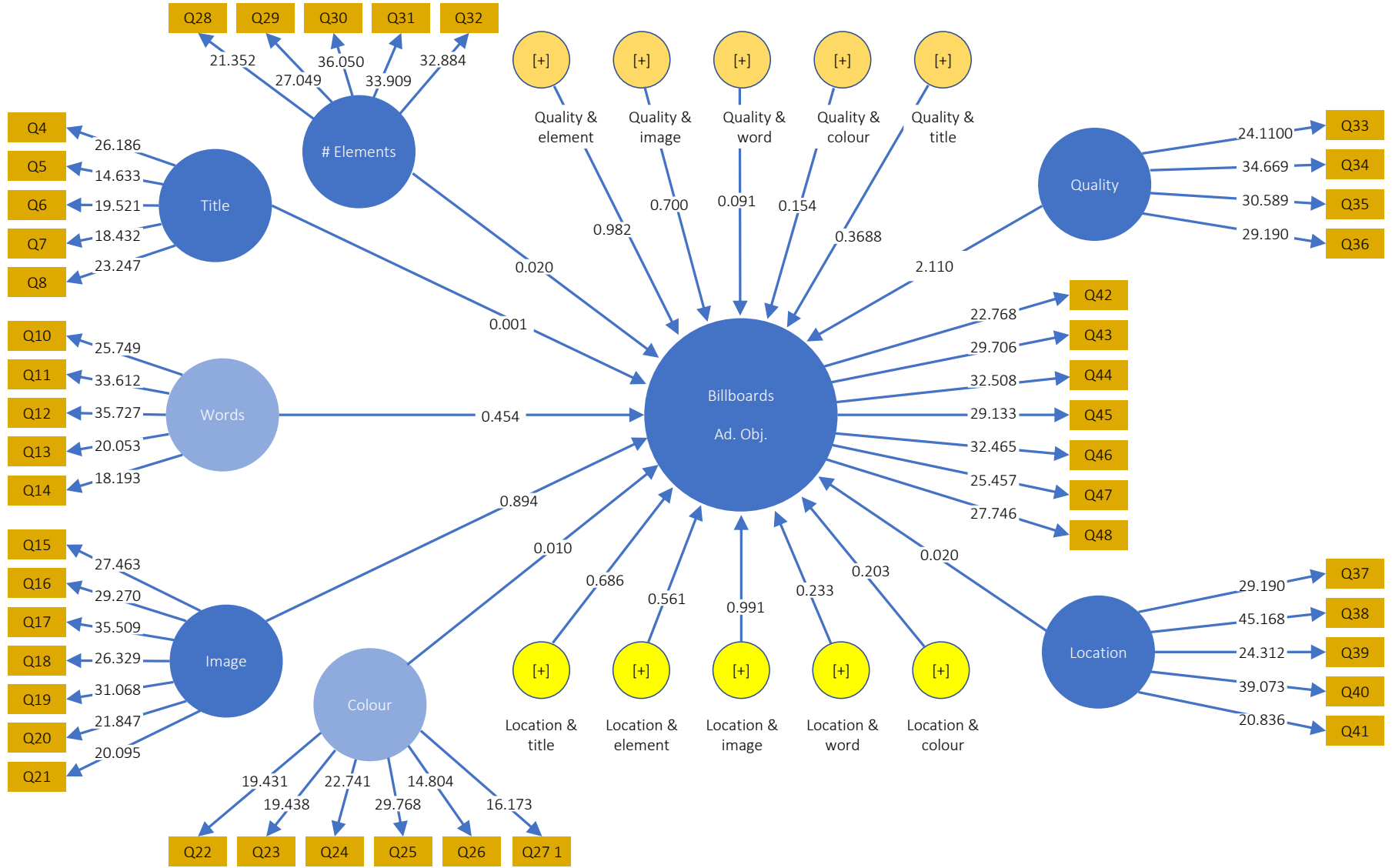


Figure 2. Research path model

Thus, *H2* is supported. This is consistent with Nowghabi and Talebzadeh (9102), Zekiri (2019), Taylor et al. (2006), Everlin and Erlyana (2020), Akhtar (2019), Hussain and Nizamani (2011), Ara et al. (2015), and Khan et al. (2016).

Furthermore, *H3* and *H4* predicted that pictures/images and words/letters in the billboard advertisement significantly affect the advertisement objectives. The result fails to confirm this prediction. Thus, *H3* and *H4* were rejected. Regarding images, this is inconsistent with Zekiri (2019), Akhtar (2019), Hussain and Nizamani (2011), Anani (2020), and Khan et al. (2016). For the words/letters, unfortunately, this variable was not studied independently of the title or text variable. The findings also represent that the advertisement number of elements has a significant impact on advertisement objectives ( $t = 2.418$ ,  $p \leq 0.05$ ). Thus, *H5* is supported. This is consistent with Hussain and Nizamani (2011) and Khan et al. (2016).

One explanation for the above-unexpected result might be that most billboards in Amman revolve around advertisements for services sectors (banks, telecommunications companies, restaurants, and hotels). On the one hand, their topic focuses on getting people's attention about a new service or new offers or prizes. Therefore, the most important element is the title, as well as the colors related to the words compared to the background color, which helps in reading the title from a suitable distance. Moreover, the use of colors indicates the personality of the brand/service company. In addition, it has an essential role in attracting attention to the advertisement from the farthest distance through which it is seen on the billboard. As for the advertisement number of elements, they are important so as not to confuse them in understanding the news-

letter's content to be delivered and what the advertised company is.

Finally, the analysis fails to confirm the moderation impact of billboard locations and quality between headline, color, images, words, and the number of billboard advertisement elements and advertisement objectives. However, the location of the billboard (when studied as an independent variable) directly affects the achievement of advertising objectives.

This study set out to investigate a conceptual model of the mechanism through which the advertising effectiveness of billboards is affected by the moderating effect of billboard location and quality. It is the first study to investigate such a mechanism. The results confirm the relevance of the research hypotheses and the literature that guided their formulation. Theoretically, this paper has sought to enhance the nuanced understanding of the advertising effectiveness of billboards. The research results shed light on both the theory and practice of billboards advertising. Specifically, the analysis revealed some basic independent advertising elements that play important roles influencing the effectiveness of billboard advertising and achieving its objectives, namely, the headline, color, and the number of billboard advertising elements.

On the other hand, the other main independent elements, namely words/letters and picture/images did not have any statistically significant effect on achieving advertising objectives. As for the answer to the second part of the purpose of this paper, the analysis revealed that the two variables modifying the relationship between the elements of advertising and the effectiveness of the advertisement that no statistically significant effects were found. However, the location of the billboard as an independent variable impacts the objectives of the advertisement.

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## CONCLUSION

The study emphasizes the need for advertisers in the Jordanian capital, Amman, to focus on improving the wording of the billboard advertisement headline by successfully communicating the advertisement claim in the fewest number of words and in a creative and readable manner from the farthest possible distance. The study also emphasized the importance of the colors used because of their strong impact on the knowledge of the advertiser's brand. In addition, it helps draw attention to the headline of the advertisement and enhances the ability to read and understand it from the farthest possible distance. Furthermore, the study also emphasized the importance of not confusing the billboard viewers with

many advertising elements, but rather placing only the number needed to focus their attention on the content of the message displayed in the advertisement title, taking into consideration the short time available to absorb the advertisement, especially when many other confusing elements surround the billboards. Finally, advertisers should also focus heavily on the location of the billboard as it is placed in the right place, which allows the viewers to pay attention to the advertisement and give them enough time to absorb the content. All this would help increase the effectiveness of advertising by creating the desired effect and achieving its goals.

It is recommended that future studies focus on applying the proposed study model in different working environments and conditions than those in the Jordanian capital, Amman. It is necessary to discover the advertising elements that most affect the effectiveness of advertising. Furthermore, it is interesting to find whether the location and quality of the billboard modify the impact of the basic advertising elements on the effectiveness of advertising.

## AUTHOR CONTRIBUTIONS

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## REFERENCES

1. Akhtar, S. (2019). Effects of Billboards on Buying Behavior of Customer in Context of Textile Products. *Journal of Economics and Sustainable Development*, 10(10). Retrieved from <https://www.iiste.org/Journals/index.php/JEDS/article/view-File/47979/49563>
2. Al Adwan, A. (2019). E-marketing strategy: to improve customer preference for local brand over foreign brand in the era of a developing country. *Marketing*, 15(3), 85-98. <https://doi.org/10.21511/im.15%283%29.2019.07>
3. Al Adwan, A., Zamil, A. M., & Areiqat, A. Y. (2021). Social media's impact on business & community. *Academy of Strategic Management Journal*, 20, 1-5.
4. Al-Adwan, A. S., Kokash, H., Adwan, A. A., Alhorani, A., & Yaseen, H. (2020). Building customer loyalty in online shopping: the role of online trust, online satisfaction and electronic word of mouth. *International Journal of Electronic Marketing and Retailing*, 11(3), 278-306. Retrieved from <https://ideas.repec.org/a/ids/ijemre/v11y-2020i3p278-306.html>
5. Anani, P. W. (2020). Influence of Advertising Billboard Images on Driver Performance. *Developing Country Studies*, 10(6). Retrieved from <https://www.iiste.org/Journals/index.php/DCS/article/view/52952>
6. Ang, L. (2014). *Principles of integrated marketing communications*. Cambridge University Press.
7. Ara, E., Akhter, A., & Hoque, M. A. (2015). Analyzing the Changes of Preference Factors of Billboard by the Gender, Age & Occupation of Customer: A Study on Dhaka City. *AIUB Journal of Business and Economics*, 12(1), 81-100.
8. Balkaf, E. E., Akbulut, N. T., & Kartopu, E. (2005). An evaluative study of billboard advertisement's attention-perception and design

- criteria. *Proceeding of the 3rd International Symposium of Interactive Media Design*, 2(1), 1-5.
9. Belch, G. E., & Belch, M. A. (2004). *Advertising and promotion: An integrated marketing communications perspective* (6<sup>th</sup> ed.). New York: McGraw-Hill.
  10. Bhargava, M., & Donthu, N. (1999). Sales response to outdoor advertising. *Journal of Advertising Research*, 39(4), 7-18.
  11. Bhargava, M., Donthu, N., & Caron, R. (1994). Improving the effectiveness of outdoor advertising: Lessons from a study of 282 campaigns. *Journal of Advertising Research*, 34(2), 46-56.
  12. Celsi, R. L., & Olson, J. C. (1988). The role of involvement in attention and comprehension processes. *Journal of consumer research*, 15(2), 210-224. <https://doi.org/10.1086/209158>
  13. Chan, K., & Cheng, B. (2012). Awareness of outdoor advertising in Hong Kong. *International Journal of Consumer Research*, 1(1), 81-97.
  14. Cheng, B. K. L., & Chan, K. (2014). Tourists' awareness and liking of outdoor advertising. *Journal of Journalism and Mass Communications*, 4(5), 293-302. Retrieved from [https://www.academia.edu/8216915/Tourists\\_awareness\\_and\\_liking\\_of\\_outdoor\\_ads](https://www.academia.edu/8216915/Tourists_awareness_and_liking_of_outdoor_ads)
  15. Cook, G. (2001). *The discourse of advertising*. Psychology Press.
  16. Donthu, N., Cherian, J., & Bhargava, M. (1993). Factors influencing recall of outdoor advertising. *Journal of advertising research*, 33(3), 64-72. Retrieved from <https://www.econbiz.de/Record/factors-influencing-recall-of-outdoor-advertising-donthu-naveen/10006540289>
  17. Elliot, A. J., Maier, M. A., Moller, A. C., Friedman, R., & Meinhardt, J. (2007). Color and psychological functioning: the effect of red on performance attainment. *Journal of experimental psychology: General*, 136(1), 154-168. <https://doi.org/10.1037/0096-3445.136.1.154>
  18. Ephron, E. (2004). Visibility adjustments in audience measurement. *ADMAP*, 30-31.
  19. Everlin, S., & Erlyana, Y. (2020). Creative Strategy Analysis on the Billboard Ads of GojekAnakBangsaBisa Edition. *1st International Conference on Folklore, Language, Education and Exhibition (ICOFLEX 2019)*, 150-155. Atlantis Press.
  20. Globe Newswire. (2020). *The Global Outdoor Advertising Market: Insights, Trends and Forecast (2020-2024) report*. Retrieved from <https://www.globenewswire.com/news-release/2020/03/25/2006123/0/en/Global-Outdoor-Advertising-Market-2020-to-2024-Insights-Trends-and-Forecast.html>
  21. Grigaliūnaitė, V., Pilelienė, L., & Bakanauskas, A. (2016). The analysis of the influence of internal factors on outdoor advertising effectiveness. *Research for rural development 2016: annual 22nd international scientific conference proceedings*. Jelgava: Latvia University of Agriculture.
  22. Gurumoorthy, P. (2015). A Study About Out of Home Advertising. *International Conference on Inter Disciplinary Research in Engineering and Technology*, 92-98.
  23. Hair, F. J., Black, W. C., Babin, B. J., & Anderson, E. R. (2010). *Multivariate Data Analysis* (7<sup>th</sup> ed.). New Jersey: Pearson Hall.
  24. Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6<sup>th</sup> ed.). Hoboken.
  25. Hartanto, R. R., Mukaromah, E., Aprilia, M., Putra, R. A., & Lisdayanti, A. (2021). The Effect of Billboards and Influencer Ads on Consumer Purchase Intention with Brand Awareness as an Intervening Variable (A Survey on Prepp Studio). *Psychology and Education Journal*, 58(3), 368-376.
  26. Helmer, R. T. (2016). Outdoor billboard real property valuation. *The Appraisal Journal*, 84(1), 51-69. Retrieved from <https://www.thefreelibrary.com/Outdoor+billboard+real+property+valuation.-a0449928291>
  27. Hussain, J., & Nizamani, R. K. (2011). Factors affecting consumer attention in billboards advertising. *South Asian Journal of Management Sciences*, 5(2), 60-64. Retrieved from <http://sajms.iurc.edu.pk/paper.php?id=Fall2011V5N2P3>
  28. Iqbal, R., & Batool, S. (2016). Impact of Billboard Advertisement on Customer Buying Behavior: A study on Islamia University of Bahawalpur (IUB). *International Interdisciplinary Journal of Scholarly Research*, 2(1), 9-15.
  29. Kayode, F. (2015). Billboard Visual Design and the Inclusivity Concept: Implications for Gender Patronage of Consumer Products in Lagos State, Nigeria. *Arts and Design Studies*, 37, 15-24. Retrieved from <https://iiste.org/Journals/index.php/ADS/article/view/26861/27553>
  30. Khan, K., Hussainy, S. K., Khan, A., & Khan, H. (2016). Billboard Advertising and Customer Attention: A Pakistani Perspective. *International Journal of Scientific and Research Publications*, 6(3), 502-506. Retrieved from <http://www.ijsrp.org/research-paper-0316/ijsrp-p5177.pdf>
  31. Kline, T. (2005). *Psychological testing: A practical approach to design and evaluation*. Sage.
  32. Lopez-Pumarejo, T. A., & Bassell, M. (2009). The renaissance of outdoor advertising: From Harlem to Hong Kong. *American Journal of Business*, 24(2), 33-40. <https://doi.org/10.1108/19355181200900009>
  33. Negm, E., & Tantawi, P. (2015). Investigating the impact of visual design on consumers' perceptions towards advertising. *International Journal of Scientific and Research Publications*, 5(4), 1-9. Retrieved from <http://www.ijsrp.org/research-paper-0415/ijsrp-p4044.pdf>
  34. Nowghabi, A. S., & Talebzadeh, A. (2019). Psychological influence of advertising billboards on city sight. *Civil Engineering Journal*, 5(2), 390-397. Retrieved from <https://www.civilejournal.org/index.php/cej/article/view/1250>

35. Nyarko, I. K., Tsetse, E. K., & Avorgah, S. K. M. (2015). Is Billboard Advertising an Effective Tool in The Marketing of Home Appliances? *Asian Journal of Social Sciences and Management Studies*, 2(3), 101-108. Retrieved from <https://ideas.repec.org/a/aoj/ajssms/v2y2015i3p101-108id456.html>
36. Outdoor Media Association of America (OAAA). (2014). *Outdoor media formats*. Retrieved from <https://oaaa.org/AboutOOH/OOHBasics/OOHMediaFormats/OOHMediaFormats.aspx>
37. Panigyrakis, G. G., & Kyrousi, A. G. (2010). Color Effects on Implicit Memory in a Print Advertising Context: A Process Dissociation Procedure Approach. *Enhancing Knowledge Development in Marketing*, 128-137.
38. Pieters, R., & Wedel, M. (2004). Attention Capture and Transfer in Advertising: Brand, Pictorial, and Text-Size Effects. *Journal of Marketing*, 68(2), 36-50. <https://doi.org/10.1509/jmkg.68.2.36.27794>
39. Pieters, R., Wedel, M., & Batra, R. (2010). The stopping power of advertising: Measures and effects of visual complexity. *Journal of Marketing*, 74(5), 48-60. Retrieved from <https://journals.sagepub.com/doi/10.1509/jmkg.74.5.048>
40. Pilelienė, L., & Grigaliūnaitė, V. (2016). Influence of print advertising layout complexity on visual attention. *Eurasian Business Review*, 6(2), 237-251. Retrieved from [https://ideas.repec.org/a/spr/eurasi/v6y2016i2d10.1007\\_s40821-015-0040-2.html](https://ideas.repec.org/a/spr/eurasi/v6y2016i2d10.1007_s40821-015-0040-2.html)
41. Raykov, T., & Traynor, A. (2016). Evaluation of multicomponent measuring instrument reliability in complex design studies. *Structural Equation Modeling: A Multidisciplinary Journal*, 23(2), 270-277. <http://dx.doi.org/10.1080/10705511.2014.938219>
42. Rosewarne, L. (2009). *Sex in public: Women, outdoor advertising and public policy*. Cambridge Scholars Publishing.
43. Sekaran, U., & Bougie, R. (2019). *Research methods for business: A skill building approach*. John Wiley & Sons.
44. Sharma, A., Bhosle, A., & Chaudhary, B. (2012). Consumer perception and attitude towards the visual elements in social campaign advertisement. *IOSR Journal of Business and Management (IOSRJBm)*, 3(1), 6-17. <http://dx.doi.org/10.9790/487X-0310617>
45. Siddiqui, K. A., Tarani, S. S. A., Fatani, S. A., Raza, A., Butt, R. M., & Azeema, N. (2016). Effect of size, location, and content of billboards on brand awareness. *Journal of Business Studies Quarterly*, 8(2).
46. Steenkamp, J. B. E., & Van Trijp, H. C. (1991). The use of LISREL in validating marketing constructs. *International Journal of Research in marketing*, 8(4), 283-299. [https://doi.org/10.1016/0167-8116\(91\)90027-5](https://doi.org/10.1016/0167-8116(91)90027-5)
47. Suditu, B., Valceanu, D. G., Dumbraveanu, D., Gheorghilas, A., & Tentis, M. (2016). Outdoor Advertising and Urban Landscape in Bucharest- A Reality between Planning and Economics Practices. *Urbanism. Architecture. Constructions*, 7(3), 185-198.
48. Taylor, C. R., Franke, G. R., & Bang, H. K. (2006). Use and effectiveness of billboards: Perspectives from selective-perception theory and retail-gravity models. *Journal of Advertising*, 35(4), 21-34. <https://doi.org/10.2753/JOA0091-3367350402>
49. Taylor, R., & Charles, J. P. (2006). *The Value of Exposure Provided by Outdoor Advertising: A Critique of Outdoor Advertising Visibility Adjustments*. Villanova University and Magic Media Inc. Retrieved from <http://www.matthewoutdoor.com/images/TheValueOfExposures.pdf>
50. Tian, Y., & Pan, L. (2015). Predicting short-term traffic flow by long short-term memory recurrent neural network. *2015 IEEE international conference on smart city*, 153-158.
51. Till, B. D., & Baack, D. W. (2005). Recall and persuasion: does creative advertising matter? *Journal of Advertising*, 34(3), 47-57. <https://doi.org/10.1080/00913367.2005.10639201>
52. Trehan, M., & Trehan, R. (2009). *Advertising and sales management*. FK Publications.
53. Tucker, C., Ostwald, M., Chalup, S., & Marshall, J. (2005). *A method for the visual analysis of the streetscape*. University of Newcastle. Retrieved from <http://spacesyntax.tudelft.nl/media/longpapers2/christuckerea.pdf>
54. Wilson, R. T., & Casper, J. (2016). The role of location and visual saliency in capturing attention to outdoor advertising: how location attributes increase the likelihood for a driver to notice a billboard ad. *Journal of Advertising Research*, 56(3), 259-273. Retrieved from <http://www.journalofadvertisingresearch.com/content/56/3/259.short>
55. Wilson, R. T., & Till, B. D. (2011). Effects of outdoor advertising: Does location matter? *Psychology & Marketing*, 28(9), 909-933. <https://doi.org/10.1002/mar.20418>
56. Wilson, R. T., & Till, B. D. (2012). Managing Advertising in Non-Traditional Environments. In *Advertising theory*. Routledge.
57. Zamil, A., Al Adwan, A., Areiqat, A., & Mahrakani, N. (2021). Online Retailers in Jordan Factors Influencing Jordanian Customers to Purchase Online. *Journal of Management Information and Decision Sciences*, 24(2S), 1-7. Retrieved from <https://www.abacademies.org/articles/online-retailers-in-jordan-factors-influencing-jordanian-customers-to-purchase-online.pdf>
58. Zekiri, J. (2019). The Impact of Billboard Advertising on Consumer Buying Behaviour. *Ecoforum Journal*, 8(2). Retrieved from <http://www.ecoforumjournal.ro/index.php/eco/article/view/983>
59. Zhang, J., Wedel, M., & Pieters, R. (2009). Sales effects of attention to feature advertisements: a Bayesian mediation analysis. *Journal of marketing research*, 46(5), 669-681. <https://doi.org/10.1509/jmkr.46.5.669>