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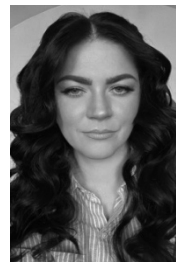
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LOGO PLACEMENT AND CENTRE BIAS: IMPLICATIONS FOR BRAND VISIBILITY

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ABSTRACT:

Visual brand communication faces the challenge of effectively capturing viewers' attention in a crowded media environment. This study investigates the impact of a logo's position and movement in an advertising video on its visibility and attention distribution. In a laboratory eye-tracking experiment ($N = 24$), two conditions were compared: a static logo fixed in the corner and a moving logo displayed dynamically throughout the commercial. The results showed that moving logos achieve significantly higher visibility ($p < .001$) and maintain visual attention for longer periods. At the same time, attention in fixed spots remains more central (with a higher centre-grid share), which does not imply higher visibility of the corner logo. The time to first fixation did not differ significantly between conditions, suggesting that the advantage of movement lies primarily in retention, rather than in the speed of capture. The findings provide recommendations for advertising creation, including the use of short micro-animations, contrasting backgrounds, and trajectories that affect the central zone, which can significantly increase the visual accessibility of the logo.

KEYWORDS:

brand visibility, centre bias, eye-tracking, logo placement, TTFF, visual attention

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1 Introduction

An important role of visual brand communication is not only to attract attention, but also to ensure that dominant elements such as the logo, brand name, or product symbol are captured, processed, and remembered by the recipient. In an environment crowded with advertising noise, where consumers are overwhelmed with information and have shorter attention spans, digital marketers face considerable difficulties in attracting and retaining customer attention (Almourad et al., 2025). Attention is one of the key limited resources, which is why techniques based on neuromarketing, which can objectively capture consumers' unconscious responses and reveal the mechanisms of visual stimulus processing in real-time, are increasingly being used in marketing practice and research (Teixeira et al., 2010; Casado-Aranda et al., 2020). In this context, particular importance is attached to the study of visual elements of brands, especially logos as carriers of identity, emotion, and attention.

One of the most commonly used tools is eye tracking, which allows for the quantitative monitoring of gaze trajectories, fixations, and the intensity of visual engagement (Cheorghie et al., 2023). Eye-tracking technology helps reveal which visual areas attract attention, how long the eye lingers on them, and in what order individual elements are perceived, thereby enabling the optimisation of brand component placement in digital advertising to maximise their processing efficiency and perceptual importance (Almourad et al., 2025).

At the same time, eye-tracking technologies, in combination with other neuromarketing tools such as facial expression analysis and electroencephalography (EEG), enable an integrated assessment of the visual, emotional, and cognitive components of advertising perception (Stasi et al., 2018; Šola et al., 2025). Such multidimensional approaches provide a deeper insight into how the design and placement of visual elements, including logos, shape consumer behaviour in the digital environment.

It is known from visual perception theory that the human visual system tends to focus attention on the central area of the visual field (centre bias) and that the position of a visual element in a composition can significantly influence the likelihood of it being noticed (Almourad et al., 2025). However, in addition to position, dynamics also play a key role – movement and change can elicit higher visual salience, lead to longer fixations, and increase brand memorability (Šola et al., 2025).

Although the number of studies focusing on logo placement in commercials is still limited, there are indications that the interaction between logo position, centre bias, and movement can significantly influence its visual availability and perception effectiveness. The aim of this study is therefore to experimentally verify the extent to which the position and movement of a logo in an advertising video increase its visibility and the speed at which it is captured by the eye.

2 The Logo as a Visual Stimulus: Position, Movement, and Attention in the Advertising Environment

The visual identity of a brand constitutes a significant part of its value, because it is the logo and symbols used by the brand that distinguish it from its competitors and give it a competitive advantage (Matúšová, 2021). From a marketing communication perspective, a logo is not only an identifying feature but also a strategic element that conveys meaningful, aesthetic, and emotional information about the brand. Brand logos are amongst the main distinguishing features of a given product or service (Diktaş & Akgün, 2021). A logo contributes to the value of a brand (Abratt & Kleyn, 2012) and, simultaneously, to its recognition (Erjansola et al., 2021). A logo can be understood as a work of art that, in addition to its aesthetic value, must comply with the principles of visual communication, capture the brand's identity and message, and respect marketing objectives (Matúšová, 2021). Erjansola et al. (2021) define a logo as a brand management tool used in a carefully planned process to create brand

value, customer commitment, and competitive differentiation. On this basis, it can be argued that a logo is a key identifying element of a brand, conveying associations, facilitating recognition, and contributing to overall brand equity.

The design elements of a brand, specifically the shape and design of the logo, brand name, typography, and colour scheme, systematically shape how consumers perceive the brand, influence their preferences, and translate into the consumer value of the brand. Empirical studies also show that these elements not only construct the general “personality” of the brand, but also its perceived gender dimension (brand gender); masculine vs. feminine connotations evoked by the shape of the logo, font, name, or colour subsequently significantly predict preferences and components of brand equity beyond other personality dimensions of the brand (Lieven et al., 2015). These results suggest that the visual elements of a logo are not just an aesthetic addition, but a significant cognitive and emotional stimulus that shapes the identity and value of a brand.

In this context, research is increasingly shifting its focus from the aesthetics of the logo itself to questions of its perception, placement, and dynamics in the advertising environment. Attention, as a psychological process, plays a crucial role in whether the consumer notices the logo at all and retains it in their memory. For this reason, techniques based on neuromarketing are increasingly being used in marketing practice and research, as they enable the objective capture of unconscious visual perception and brand stimulus processing processes (Teixeira et al., 2010; Casado-Aranda et al., 2020).

On this basis, research has begun to focus on specific characteristics of visual brand elements, particularly the position and movement of logos in advertising environments. The position of a logo is a key visual parameter that fundamentally influences whether a consumer notices a brand at all, how quickly they register it, and to what extent they remember it. From the perspective of visual perception and neuromarketing, this involves the interaction between the spatial position of the logo in the image field, the natural tendency of the visual system to focus attention on the centre of the scene (centre bias), and the contextual salience of other elements (movement, contrast, meaning).

The position of the logo within the scene, for example, central versus corner, is significant because the visual system tends to favour the centre of the image. As Higgins et al. (2014) point out, when viewing advertisements and visual stimuli, fixations are distributed according to which areas of the scene attract attention more effectively (based on position, salience, or significance). Empirical research has repeatedly shown that viewers’ visual attention is most often focused on the central area of the screen, even without a specific task. This so-called centre bias is strongly demonstrated in both static and dynamic visual scenes (Tseng et al., 2009; Hayes et al., 2020). Therefore, logos placed in the central zone, or those that pass through the centre in their trajectory, are more likely to be fixated on and have longer visual contact.

Conversely, corner positions for logos, which are often preferred in practice for aesthetic or text legibility reasons, are at a visual disadvantage. As Higgins et al. (2014) point out, peripheral elements tend to be fixated on later and for a shorter time unless they are supported by contrast or movement. Almourad et al. (2025) added that the central placement of branding elements, including logos, significantly increases the number of fixations and the duration of views compared to corner placement. These findings are consistent with the existing knowledge about the distribution of attention in advertisements, which suggests that central placement leads to faster gaze capture and higher brand recognition (Myers et al., 2020).

Eye tracking, as a research tool, enables precise monitoring of visual attention distribution and consumer behaviour during the processing of visual stimuli. In a marketing context, it is used to analyse advertisements, web interfaces, and decision-making processes in an online environment. Štefko et al. (2025) conducted an experimental study examining consumer behaviour during online flight searches using eye tracking. The results showed that participants focused their attention mainly on the central and information-dominant parts of the screen, while peripheral elements (e.g., advertisements) remained outside their field of interest. The authors point to the importance of clear visual layout and design clarity for effective information processing. These findings confirm that visual attention naturally concentrates on semantically relevant areas, which is also of fundamental importance in optimising the placement of logos in advertising visuals.

Changes in consumers’ digital behaviour also influence the way they perceive the visual elements of advertising. Fedorko et al. (2025) note that consumers’ increasing digital literacy and online experience are altering their

attention patterns – younger users process visual information more quickly but more selectively. This is of fundamental importance for marketing practice, as logos and brand elements must not only be aesthetically striking, but also optimally placed and timed to capture attention in a short time window.

In research by Zhang & Yuan (2018) on video ads, it was found that views of brand elements (including logos) are associated with the effectiveness of advertising in relation to memory, brand attitude, and purchase intent – with different eye-tracking metrics (e.g., average gaze duration, number of fixations) differed depending on the type of element (product, brand, ambassador).

Boerman et al. (2015) demonstrated in their eye-tracking experiment (N = 149) that the form of visual brand representation in audiovisual content significantly influences how viewers process and remember it. The combination of textual information (“This programme contains product placements”) with the brand logo resulted in the highest level of ad recognition, whereas the logo alone had the weakest effect. This effect was mediated by visual attention – the more viewers focused on the logo and its display, the higher the brand memory, but at the same time, slightly more negative attitudes towards the brand emerged as a result of awareness of the advertising intent. These results confirm that capturing attention with a logo is not just a matter of aesthetics or placement, but also of cognitive processing and conscious interpretation of the brand signal.

These findings suggest that the logo signal in a video should not only be visible but also timed to have a chance to gain fixation – meaning that the exposure time of the logo (how long it is visible) and the moment of its appearance in the video (e.g., at the beginning vs. the end) can influence whether attention is directed to it or to other elements.

In addition to its position, the dynamics of the logo also play a crucial role. The movement of the logo is an important factor that influences visual attention, emotional response, and brand recall in audiovisual advertising. While traditional approaches to branding in commercials preferred static logo placement – most often in the corners or at the end of the commercial – current findings from neuromarketing and cognitive psychology confirm that movement is one of the strongest visual attention attractors (Itti & Koch, 2001; Hayes & Henderson, 2020).

Teixeira et al. (2010) demonstrated in their study of TV advertising that the movement of brand elements within a commercial (e.g., pulsing, transitioning, changing size) reduces ad avoidance and increases visual engagement. Dynamics thus act as an “attention-maintaining mechanism” that helps the brand remain in the centre of the field of vision. Recent neuromarketing research suggests that, in addition to increased attention, logo movement also increases emotional activation and perceptual brand recall. A study by Šola et al. (2025) found that animated logos elicited a stronger emotional response (as measured by FaceReader and EEG) and a longer viewing time compared to static logos. The author emphasises that movement contributes to the logo’s higher “visual energy” and activates areas of the brain associated with attention and motivation.

Similarly, Almourad et al. (2025) confirmed in their research, which focused on the placement and movement of brand elements in digital advertising using eye tracking, that dynamic logos showed a higher number and length of fixations compared to static ones. The effect was most pronounced when the logo moved along a trajectory passing through the central area of the screen. From a neuromarketing perspective, these results can be interpreted as indicating that logo movement broadens the distribution of visual attention and activates an orienting response, leading to a rapid redirection of gaze. This increases the chance that the logo will be noticed even in a competitive visual environment.

The current research, therefore, builds on studies that examine how the position, movement, and familiarity of visual elements influence viewer’s attention. Rumpf et al. (2020) developed a simulation model based on eye-tracking data that shows that dynamic marketing stimuli are more likely to be visually captured. Almourad et al. (2025) confirmed that the central placement of elements increases the number and duration of fixations, while Kim (2025) emphasised the importance of initial gaze capture for brand memorability. Casado-Aranda et al. (2020) highlights the need for standardised metrics, while Pinhal et al. (2025), in conjunction with Salarifar et al. (2020), emphasise the synergistic effect of centre bias and movement on increased visual attention.

Based on the above theoretical findings, it can be assumed that placing a logo in the central area and presenting it dynamically increases the likelihood of it being captured by the gaze and the overall level of visual attention. At the same time, it can be expected that centre bias, a natural tendency of the visual system, interacts with the spatial and motion aspects of the logo and influences its effectiveness in perception. Considering these theoretical principles,

empirical research was designed to experimentally verify the influence of position, movement, and central tendency of gaze on the visual visibility of logos in audiovisual advertisements.

3 Methodology

The aim of the research is to verify the extent to which the placement and dynamics of a logo in an advertising video increase its visibility and speed of detection, while controlling for the central tendency of gaze and varying display durations. We examine whether a moving logo has an advantage over a fixed one and whether centre bias, alone or in interaction with position and movement, increases attention to the logo. We evaluate the conclusions using normalised metrics that allow for fair comparisons across videos and logo timing. The following research questions arise from the research design:

RQ1: Does the position of the logo in the video affect its visibility and the time it takes to capture the gaze?

RQ2: Does a moving logo offer an advantage over a static one in terms of visual attention?

RQ3: How does centre bias affect the probability of fixation on the logo alone and in interaction with its position and movement?

RQ4: What are the differences in the duration and timing of logo display, and how do they affect normalised observation metrics?

Eye-tracking studies typically involve a small sample of participants ($\approx 20 - 30$ participants (Hummel et al., 2021; Vozzi et al., 2021; Gruden et al., 2022; Puprediwar & Tapas, 2024). The sample in our study consisted of 24 participants. Representation: 14 women (58.33%) and 10 men (41.67%). The average age was 25.6 years (SD = 8.5; range, 19 – 50 years). Most participants were students (68.2%); 22.7% reported full-time employment, and the rest were in other forms of employment or part-time employment. The most common level of education was a high school diploma (63.6%), followed by a Bachelor's degree (18.2%), a doctoral degree (9.1%), a Master's/engineering degree (4.5%), and a secondary school education without a high school diploma (4.5%). In terms of nationality, Slovak (86.4%) predominated, followed by Ukrainian (13.6%). The sample was purposefully selected to represent the younger consumer population with regular contact with online advertising, which is one of the key target groups for sports brands.

Before the measurement, participants signed an informed consent form in accordance with ethical standards (voluntary participation, the option to withdraw at any time, anonymity, and processing for research purposes only). The study was conducted in accordance with the Ethical Code of Research of the University of Prešov, the Ethical Code of the Neuromarketing Laboratory of the Faculty of Management, Economics and Trade, and the recommendations of the NMSBA (Neuromarketing Science & Business Association).

The presentation of stimuli, data collection, and synchronisation occurred in laboratory conditions using the iMotions platform. The experiment had a predefined structure, consisting of an initial calibration, viewing four videos, and a brief post-exposure phase. The order of the videos was randomly rotated to eliminate the order effect.

Four video spots from well-known sports brands were used to experimentally verify the influence of logo position on visual attention. These brands were deliberately chosen because they are globally recognisable and have a high visual identity, which also represents different approaches to logo placement in an advertising environment. All videos were of comparable length, approximately 29 – 30 seconds, to minimise the impact of different exposure durations on attention metrics.

Two videos had the logo fixed in the corner for the entire duration of approximately 30 seconds, and the other two videos contained a moving logo that was only visible in certain sections. This created two conditions:

- Fixed with the logo static in the corner for the entire duration.
- Moving with a logo that moves and is only present occasionally.

For each video stimulus, an AOI (Area of Interest) corresponding to the logo was defined, with its position and size dynamically adjusted to accommodate the logo’s movement in each condition.

Table 1: Overview of the parameters of the advertising videos used as stimuli

Video	Length (s)	Logo type	Logo Position	Logo Movement	Experimental Condition	Presentation Description
A	29	Static	Upper left corner	No movement (fixed)	Fixed	The logo was visible throughout the entire video in a fixed position and size; there was no distracting movement around the logo.
B	30	Static	Upper left corner	No movement (fixed)	Fixed	The logo was displayed continuously throughout the video and remained in the same position in all frames.
C	30	Dynamic	Variable	Appears repeatedly, moves across the scene	Moving.	The logo appeared several times during key dynamic scenes, accompanied by motion and transition effects.
D	30	Dynamic	Variable	Appears repeatedly, moves across the scene	Moving	The logo appeared and disappeared several times using animation, sometimes moving towards the centre of the screen; it was only present in certain parts of the video.

Source: Own processing, 2025

Participants sat in front of a Smart Eye AI-X desktop eye tracker integrated into the iMotions environment. After calibrating the device, they were instructed to watch the videos passively and naturally. During exposure, participants were not given any tasks or questions to maximise the ecological validity of the viewing.

To prevent bias caused by differences in logo display time and video length, we used multi-level normalisation. We evaluated attention to the logo exclusively during its actual presence on the screen and conservatively limited the calculations to avoid overestimation in multiple segments.

For a fair comparison between conditions and videos, we used on-screen normalisation of attention to the logo (calculated only during its actual presence on the screen, with conservative capping at 1) and took into account the different lengths of stimuli and centre bias (centre-grid share). We calculated centre-grid share over a fixed 3×3 grid (centre cell = centre ±1/3 width/±1/3 height). Fixation belonged to the centre if at least 50% of its duration fell within the centre cell. We tested the difference between the Fixed and Moving conditions using a paired t-test, with robustness control using the Wilcoxon test for paired measurements and normality control of paired differences using the Shapiro–Wilk. We evaluated the differences between the four stimuli using the Kruskal–Wallis test. We analysed the time to first fixation on the logo (TTFF) using the Kaplan–Meier estimate with a comparison of curves using the log-rank test. We compared centre bias using the McNemar test (Fixed vs. Moving) and Cochran’s Q across the four stimuli. The relationship between centre bias and logo visibility was verified using Spearman’s correlation.

Data analysis was performed using iMotions, with subsequent export to SPSS, and statistical significance was set at $\alpha = 0.05$. All tests were two-tailed.

4 Experiment Results: The Impact of Logo Position and Movement on Visual Attention

The results section presents the empirical findings of an experiment that compared the effectiveness of static (Fixed) and dynamic (Moving) logos in audiovisual advertisements. The data presented is based on normalised eye-tracking metrics, which allow for comparing the level of visual attention between different types of stimuli independently of the length of exposure and the position of the logo.

The results are presented in accordance with the analytical framework and with an emphasis on on-screen normalised visibility metrics. First, we present paired comparisons of the Fixed and Moving conditions. The primary variable monitored was the on-screen-normalised logo share metric, which expresses the proportion of visual attention directed at the logo during its actual presence on the screen. The first tables report on-screen-normalised logo share (capped; Fixed vs. Moving) as the primary visibility metric.

Table 2: On-screen-normalised logo share (Fixed vs. Moving)

Condition/ Contrast	n	Mean [95% CI]	t	p (t)	Cohen's	p (Wilcox)	Shapiro p (Δ)
Fixed	24	0.033 [0.029, 0.038]					
Moving	24	0.624 [0.552, 0.697]					
(Moving - Fixed)	24	0.591 [0.519, 0.664]	16.00	< .001	3.27	< .001	0.721

Source: Own processing, 2025

Notes: The 95% CI replaces separate SD/SE reporting. Wilcoxon confirms the paired difference; Shapiro-Wilk tests normality of the paired differences (Δ = Moving - Fixed).

The visibility of the logo is clearly higher in a moving presentation than in a fixed corner placement. The average difference in the on-screen metric is large and accurately estimated (95% CI for contrast Moving - Fixed: 0.519 to 0.664), which signals not only statistical but also practical significance. The paired t-test confirms a very strong effect ($p < .001$), and the same conclusion is reached by the nonparametric robustness check (Wilcoxon $p < .001$), while the normality of the paired differences was not violated (Shapiro-Wilk $p = .721$). In terms of attention, this means that for the same amount of time on screen, a moving logo receives a significantly larger share of viewers' gaze. In practical terms, it is therefore advantageous to work with short, distinct movements or micro-animations of the logo. These results support the assumption that the dynamics of the logo serve as a visual trigger for attention, thereby increasing its perceptual dominance within the scene.

Table 3: On-screen-normalised logo share (four stimuli)

Stimulus (Neutral)	Condition	n	Mean [95% CI]	Median	Min-Max
Fixed-A	Fixed	24	0.025 [0.018, 0.031]	0.024	0.000-0.061
Fixed-B	Fixed	24	0.042 [0.036, 0.049]	0.041	0.019-0.085
Moving-A	Moving	24	0.366 [0.230, 0.502]	0.254	0.000-1.000
Moving-B	Moving	24	0.883 [0.823, 0.943]	0.954	0.595-1.000

Notes: Omnibus (Kruskal-Wallis): $\chi^2(3) = 60.54, p < .001, \epsilon^2 = 0.606$.

Source: Own processing, 2025

The breakdown into four stimuli confirms the significant heterogeneity of on-screen visibility (Kruskal-Wallis $\chi^2(3) = 60.54, p < .001, \epsilon^2 = 0.606$). Both Moving versions achieve higher visibility than Fixed, with Moving-B having consistently high values (ceiling effect), while Moving-A is more variable across participants. This suggests

that, beyond the condition itself (Moving vs. Fixed), creative parameters of the stimulus also play a role, e.g. (proximity to the centre, timing of exposure, local contrast). The visual structure and design of advertisements therefore influence the logo capture rate as much as the dynamics themselves, confirming the need to control creative factors in future experiments.

The following tables present the logo attention rate per minute (Fixed vs. Moving) as a secondary metric of effectiveness, which complements the primary on-screen-normalised share and evaluates the attention gained in relation to the duration of the entire video.

Table 4: Logo attention rate per minute (Fixed vs. Moving)

Condition/ Contrast	n	Mean [95% CI]	t	p (t)	Cohen's	p (Wilcox)	Shapiro p (Δ)
Fixed	24	1.906 [1.642, 2.170]					
Moving	24	9.926 [8.976, 10.875]					
(Moving – Fixed)	24	8.020 [7.035, 9.005]	15.955	< .001	3.26	< .001	0.756

Notes: The 95% CI replaces separate SD/SE reporting. Wilcoxon confirms the paired difference; Shapiro–Wilk tests normality of the paired differences (Δ = Moving – Fixed).

Source: Own processing, 2025

In terms of “logo attention rate per minute”, Moving achieves significantly higher performance than Fixed: the average rises from 1.906 with a 95% CI [1.642, 2.170] to 9.926 [8.976, 10.875]. The paired contrast Moving – Fixed = 8.020 with 95% CI [7.035, 9.005], $t(23) = 15.955$, $p < .001$, with a very large effect ($d_{CZ} = 3.26$). The normality of paired differences is acceptable (Shapiro–Wilk $p = .756$) and confirmed by the Wilcoxon test ($p < .001$). For every minute of video duration, moving logos receive significantly more attention than fixed corner logos. These findings are consistent with the results in Table 2. The Moving condition outperforms Fixed in terms of on-screen-normalised share, i.e., during the actual presence of the logo on the screen, as well as in terms of rate per minute, which expresses performance per unit of time for the entire video. Both independent metrics point to the same conclusion: logo movement significantly increases its visual availability, while capturing different aspects of the effect, including exposure quality and time efficiency. This result shows that the effect of logo movement is reflected not only in its relative visibility during its presence, but also in its overall time efficiency within the entire commercial.

Table 5: Logo attention rate per minute (four stimuli)

Stimulus	Condition	n	Mean [95% CI]	Median	Min–Max
Fixed–A	Fixed	24	1.283 [0.962, 1.604]	1.278	0.000–3.216
Fixed–B	Fixed	24	2.528 [2.143, 2.914]	2.460	1.128–5.076
Moving–A	Moving	24	4.476 [2.815, 6.137]	3.102	0.000–12.255
Moving–B	Moving	24	15.376 [14.333, 16.419]	16.629	10.326–17.458

Notes: Omnibus (Kruskal–Wallis): $\chi^2(3) = 61.918$, $p < .001$, $\epsilon^2 = 0.620$

Source: Own processing, 2025

The level of attention to the logo per minute varies significantly between the four stimuli, as confirmed by Kruskal–Wallis $\chi^2(3) = 61.918$, $p < .001$, $\epsilon^2 = 0.620$. Moving–B achieves the highest performance with a narrow confidence interval and a high median, indicating a consistently high volume of attention across participants; this distribution also exhibits a partial ceiling effect. Although Moving–A is above both fixed stimuli, it shows significantly greater interindividual variability, indicating different effectiveness depending on the course and timing of exposures. The finding is consistent with Table 2, which shows that stimulus parameters such as proximity to the centre, timing of exposures, and local contrast also play a role beyond the condition, although these mechanisms were not directly

operationalised in the study. The finding confirms that even within the dynamic presentation of a logo, specific visual and temporal factors such as contrast, duration, and movement trajectory can significantly influence the effectiveness of brand perception.

The results are supplemented by a centre bias analysis, which complements the previous indicators by evaluating the spatial distribution of gaze within the area. This indicator measures the extent to which participants' attention is focused on the central area, allowing us to assess whether differences in logo visibility are also related to the natural tendency of the visual system to favour the centre of the image.

Table 6: Centre-grid share (Fixed vs. Moving)

Condition/ Contrast	n	Mean [95% CI]	t	p (t)	p (Wilcox)	Shapiro p (Δ)
Fixed	24	0.836 [0.814, 0.857]				
Moving	24	0.678 [0.641, 0.715]				
(Moving - Fixed)	24	-0.158 [-0.197, -0.119]	-7.950	< .001	< .001	0.627

Notes: The 95% CI replaces separate SD/SE reporting. Wilcoxon confirms the paired difference; Shapiro-Wilk tests normality of the paired differences (Δ = Moving - Fixed).

Source: Own processing, 2025

The proportion of views directed towards the central area of the image was significantly lower in the Moving condition than in the Fixed condition, $t(23) = -7.950$, $p < .001$, which was also confirmed by the Wilcoxon test ($p < .001$). The normality of differences was satisfied ($p = .627$). This result suggests that dynamic stimuli lead to a more dispersed spatial distribution of attention, as views move more frequently outside the central zone. Conversely, with fixed logos, attention naturally remains closer to the centre of the image, reflecting the typical centre bias of the visual system. In terms of interpretation, this means that while the movement of the logo increases its visibility, it also disrupts the central focus of attention, spreading the distribution of visual fixations across a larger part of the image.

Table 7: Centre bias: First fixation to centre (McNemar and Cochran's Q tests)

Test	Comparison/ Level	b (Fixed=1, Moving=0)	c (Fixed=0, Moving=1)	χ^2	df	p
McNemar (Fixed vs. Moving)	Paired conditions	1	9	4.900	1	0.021
Cochran's Q (4 stimuli)	Overall differences			59.667	3	< .001

Notes: Cochran's Q tests all four stimuli; McNemar is a paired Fixed vs. Moving comparison of first fixation to centre.

Source: Own processing, 2025

The probability that the first fixation after the start of the video was directed towards the central area differed significantly between the four stimuli (Cochran's $Q(3) = 59.667$, $p < .001$). A paired McNemar test revealed that in the Moving condition, the frequency of first fixations to the centre was less than in the Fixed condition, $\chi^2 = 4.900$, $p = .021$. These results complement previous findings of a lower centre-grid share and confirm that dynamic stimuli change the typical pattern of central attention from the beginning of viewing. The results are therefore consistent across multiple indicators: movement expands the range of visual attention and changes the distribution of fixations in space.

Table 8: Correlation between centre-grid share and on-screen-normalised logo share (Fixed vs. Moving)

Scope	Spearman	p
Fixed	-0.217	0.308
Moving	0.279	0.055

Source: Own processing, 2025

In the Fixed condition, no significant relationship was found between the proportion of views in the centre and the on-screen visibility of the logo ($\rho = -0.217$, $p = .308$), which is consistent with the fact that the logo is in the corner and central attention does not systematically increase its visibility. In the Moving condition, a slight, marginally significant positive trend is observed ($\rho = 0.279$, $p = .055$), suggesting that when the moving logo overlaps more with the central area, its visibility may benefit slightly. Overall, this supports the conclusion that centre bias alone does not determine the success of logo perception, but in dynamic exposures, its alignment with the logo’s trajectory can contribute to a higher on-screen share. The correlation relationships obtained suggest that viewers’ visual strategy is complex; logo movement increases the chance of capture but does not automatically predict stronger centralisation of gaze.

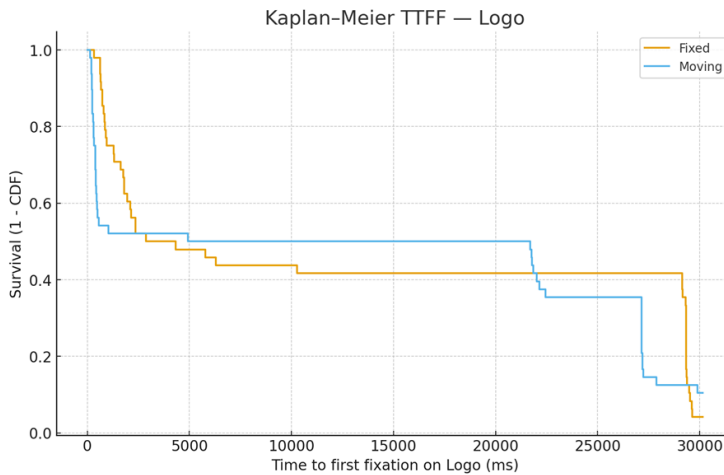


Figure 1: Kaplan–Meier Time to First Fixation (TTF) on logo

Source: Own processing, 2025

Notes: Median TTF was shorter for Fixed (2,884 ms) than for Moving (4,918 ms), but the difference was not significant, $\chi^2(1) = 1.23$, $p = .267$. This indicates comparable detection timing, with movement affecting sustained rather than initial attention.

Kaplan–Meier TTF curves (Figure 1) show that during the follow-up period, the probability of first fixation on the logo developed similarly for both conditions. Although fixed logos were detected slightly earlier (median = 2,884 ms) than moving logos (median = 4,918 ms), the difference was not statistically significant according to the log-rank test, $\chi^2(1) = 1.23$, $p = .267$. This means that although the dynamics of movement increased overall attention and visual effectiveness (see Tables 1 – 4), it did not increase the speed of first detection. The effect of movement is therefore more evident in maintaining and increasing attention than in immediately directing gaze.

In summary, it can be said that the movement of the logo significantly enhances its visual accessibility and attention engagement, while its position primarily influences the distribution of visual fixations. These results provide an empirical basis for discussion on optimising logo placement and animation in advertising spots.

5 Discussion and Conclusion

Moving logos achieve higher visibility than fixed corner logos. This is confirmed by both the primary metric, on-screen-normalised share (Fixed vs. Moving), and the secondary metric, rate per minute. The convergence of these two independent perspectives minimises the risk of bias due to video length or differences in on-screen times for logos, thereby strengthening the robustness of the findings. A supplementary centre-bias analysis showed that dynamic stimuli reduce the central focus of gaze. Attention is more dispersed in space during movement but nevertheless remains more attached to the logo. This picture is supported by the TTFF analysis, which shows that the time to first fixation did not differ statistically between conditions, suggesting that the advantage of movement is primarily manifested in the maintenance and accumulation of attention during exposure, rather than in faster initial detection. Together, these results demonstrate that the dynamics of the logo alter the spatial distribution of attention and increase the total amount of visual contact with the logo, without necessarily reducing the latency of the first hit.

Analyses at the level of individual stimuli reveal heterogeneity of performance within the same Moving condition. This variability is consistent with the assumption that, in addition to movement itself, implementation characteristics such as proximity to the central area, timing of short exposures, and local contrast against the background come into play. Since we did not operationalise these parameters as covariates in this study, we interpret them as probable moderators, compatible with the literature, rather than as a confirmed mechanism. The correlation between centre-grid share and on-screen share was overall insignificant, with a slight borderline tendency only in the Moving condition. This supports the interpretation that natural central focus is not in itself a sufficient condition for high visibility but may increase the effectiveness of well-timed movement.

These findings are consistent with the research of Higgins et al. (2014) and Hayes et al. (2020), who confirm that central position and salience are amongst the primary factors for rapid attention capture; however, dynamic elements can overcome this natural tendency. Similarly, Teixeira et al. (2010) and Almourad et al. (2025) note that movement in advertising enhances visual engagement and prolongs brand exposure time, findings that align with our results.

Our findings also extend those of Šola et al. (2025), who found that animated logos elicit higher emotional activation and longer fixation than static ones. The results of this study suggest that the effect of movement has not only an emotional but also a perceptual-cognitive dimension, increasing the likelihood of fixation and the proportion of visual attention over time.

From a practical point of view, the results recommend working with short, clear micro-animations and multiple exposures throughout the spot, ensuring sufficient local contrast. Additionally, in the case of movement, consider a trajectory that at least partially intersects the central zones. At the same time, it is necessary to consider that movement expands the spatial distribution of attention. The composition of the scene should therefore minimise distracting elements when the logo is displayed.

In terms of visual brand identity, these findings confirm the importance of thoughtful design and positioning of the logo as a key carrier of brand meaning (Lieven et al., 2015; Erjansola et al., 2021). Dynamic elements can be understood as a modern approach to combining the aesthetic and functional aspects of a logo, similar to Matúšová's (2021) assertion that a logo should not only represent but also communicate the personality of a brand.

From a methodological perspective, the study contributes to neuromarketing research on visual elements by demonstrating an approach that utilises standardised attention metrics, enabling accurate inter-condition comparisons. This approach supports efforts to standardise the measurement of visual attention in digital advertising, as pointed out by Casado-Aranda et al. (2020).

In the future, it would be useful to supplement the analysis with emotional indicators (e.g., using FaceReader or EEG) to investigate whether logo movement affects not only the quantity but also the quality of visual attention and emotional engagement. Another direction could be to experimentally verify the effect of different trajectories, speeds, and shapes of logo movement on brand recall and attitude towards the brand.

In conclusion, logo movement is an effective visual mechanism that enhances attention engagement without requiring central placement. Brands that can combine dynamic visual elements with both a clear identity and compositional purity are more likely to be effectively anchored in the consumer's memory.

The small sample size may limit the generalisability of the results to the wider population. Although the number of 24 respondents corresponds to common practice in laboratory eye-tracking experiments (cf. Hummel et al., 2021; Vozzi et al., 2021), in terms of statistical power and inter-individual variability, it would be appropriate to work with a larger and more heterogeneous sample in the future.

The study utilised four specific videos focused on well-known sports brands, and the identity and visual composition of the stimuli may carry characteristics that are not fully separable from the experimental condition. The creative parameters of movement execution and logo position were not explicitly operationalised as covariates, and their effect is therefore inferred from the observed heterogeneity of results, not based on direct model testing. Although TTF analysis takes censoring into account, its sensitivity to subtle differences in the timing of attention capture may be reduced without the inclusion of covariates. Normalised metrics depend on the accuracy of the AOI definition, the construction of the grid for centre bias, and the conservative restriction of the share to a maximum of 1.

Future research should therefore include a larger and more diverse set of participants, expand the range of video stimuli to include different types of brands and contexts, and explicitly operationalise logo movement and position as experimental variables or covariates. Incorporating these factors into TTF analyses could increase sensitivity to subtle variations in timing. We also recommend verifying the robustness of normalised metrics given the variability in AOI definition, grid selection, and analytical limits.

From a practical point of view, it would also be beneficial to supplement the analyses with emotional indicators (e.g., EEG or FaceReader), which would allow us to link visual attention with affective response and better understand the mechanisms of brand memorisation.

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