

Article

Evaluation Expediency of Eco-Friendly Advertising Formats for Different Generation Based on Spanish Advertising Experts

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Abstract: The advertising industry is also responsible for promoting a sustainable future for our planet. Besides launching messages of environmental respect, it is essential to choose and use advertising tools that will leave the lightest footprint in the environment. While environmental issues are indeed relevant, in any way, the need remains to spread the word about the products/services and make rational decisions that will maximize the reach of potential consumers. In other words, support measures are needed to reach the target market more effectively. Based on the above considerations, the article presents the research results of evaluating the expediency of eco-friendly advertising formats to different generational cohorts in the Spanish media scene. The MCDM method defined the structure of the research and was used to summarize the results of the expert study. This method's choice is based on motive related to the purpose of the evaluation and the applicability of the research results in practice. Research results are helpful guidelines for decision-makers of advertising agencies or their clients in the campaign planning process. They show that generational differences are a determining factor for reaching the target market.

Keywords: eco-friendly advertising formats; generations; MCDM; determination of expediency



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1. Introduction

The circumstances that have influenced the evolution of the audiovisual media landscape and its advertising formats are varied. Some of them are the digitization and increased number of communication channels, the global crisis in the advertising sector, or the phenomenon of hybridization, which mixes commercial messages with entertainment or fiction content [1–5]. These are factors present in the Spanish scenario but equally applicable from a world perspective [6]. However, if desired, for the advertising industry to play an effective and committed role in the challenge of sustainability, it is necessary to find out which eco-friendly advertising tools are the most appropriate to reach the desired target audiences. This transformation would not refer to visual pollution, widely studied in the impact that outdoor advertising generates in cities [7]. The change to a more sustainable industry should come from developing advertising formats that do not use polluting and waste-generating products. Paper, ink, and plastic are heavily used in above the line (ATL) media, such as the daily press and magazines and outdoor advertising, as well as in below the line (BTL) communications, like merchandising [8,9]. The energy consumed to produce these formats, the polluting nature of these industries, the materials used, and the generation of waste support the worrying reflection that the environmental cost of producing these forms of advertising is too high [10]. In this sense, using other advertising formats, eco-friendly ones, could make a significant achievement in pursuing the sustainable development objectives (SDO) that all countries, industries, and societies must fulfill [11]. In short, the challenge is to find eco-friendly advertising formats that,

in addition to offering a more sustainable alternative, continue to meet the promotional objective of reaching the target audience.

This idea would link with the growing concern that consumers and producers in various industries express about the environmental issue. Sustainability has become a factor that generates added value; it is relevant for consumers and pursued by producers [12]. This research transfers this approach to the advertising sector, where the audience can better accept eco-friendly advertising formats if we make them aware of their sustainability. In turn, advertisers and agencies have the opportunity to exercise their responsibility and take full advantage of the role that sustainability plays in organizations as a lever that drives innovation [13].

In a landscape in which advertisers have numerous opportunities to showcase their brands, they must make rational and scientifically valid decisions to choose the most appropriate option for their specific case [14]. In practice, media planners use different types of mathematical tools and metrics obtained from the results of previous campaigns. They estimate the performance results that each media and format has achieved and assess expediency based on these data. However, in the scientific literature, these data are presented very fragmentarily. In other words, there is a need to make rational decisions that maximize the reach of potential consumers; there are needed tools to reach the target market more effectively. So far, in scientific literature, the methodical basis designed for the expedient selection of advertising media is insufficient and immature for its practical use in business. Given this shortcoming, this article presents research results evaluating the expediency of nine eco-friendly advertising formats to six generational cohorts in the Spanish media scene. Based on the MCDM (Multi-criteria decision-making) method, a panel of seventeen experts were surveyed. The research results will help ad agency decision-makers answer the question: which advertising format is most appropriate for a particular generation? The research results will be helpful guidelines for decision-makers of advertising agencies or their clients in the campaign planning process and show that generational differences are a determining factor for reaching the target market.

2. Literature Review

Media planning is a field that belongs to the discipline of advertising. Its mission is selecting the media and formats to broadcast adverts most effectively and efficiently. That means the campaign must reach the target audience, and the budget invested to achieve this objective must be the minimum possible [14]. In this sense, media planners consider the interaction of different factors and decide how to distribute the advertiser's budget among the diverse media channels and formats in the market [15].

Traditionally, media planning works in terms of reach and budget optimization. In other words, it is considered that the expediency of advertising media and formats depends on their capability to reach the highest percentage of the target audience and at a lower cost. Media planners use different types of mathematical tools (arithmetic, linear algebra, differential equations, algorithms) and metrics obtained from the results of previous campaigns. They estimate the performance results that each medium and format has achieved and assess expediency based on these data [4,16–18]. There are other methodologies based on reliability. The experimental project developed in Ukraine to make decisions about the expediency of advertising media in the pharmaceutical sector's campaigns is worth mentioning. In this case, a complex statistical methodology was proposed, which combined "methods of content analysis, monitoring, system analysis, logical generalization, cluster analysis, discriminant analysis and Ward's method" [19].

Torres-Romay and García-Mirón (2020) [20], and Sánchez-Blanco (2010) [21] highlight that numerical methods determine the formats' expediency based on their predicted performance results estimations. However, these authors claim that to know the formats' expediency is also necessary to analyze their effect on the audience. At this point, it would reopen a topic with a long tradition in the scientific study of advertising, that of the effects it generates on the audience. It has been studied from the Frankfurt School's perspec-

tive [22] and, at present, with particular relevance from the neuromarketing field [23] and the research on the audience's emotions [24].

In the current scenario, the media planning process is increasingly complicated: a greater variety of media, audience fragmentation, and transmedia communication are just some of the challenges that advertisers face. Therefore, media planners need to be more creative when looking for tools that help them measure the expediency of each medium or format. Above all, they have to know the audience's interests and motivations in greater depth. "They need more than a calculator or good software. They need good judgment, a solid thought process, and imagination" [25] (p. 247). Even in digital media planning, where mathematical tools and metrics become more precise and sophisticated every day [26], the need to have complementary information sources is appreciated when deciding on the expediency of each medium or format. In the Spanish scenario, Perlado-Lamo-de-Espinosa et al. (2019) [27] argue that the role of the experts is indispensable since they have a global vision of the media market and the audience. Hence, experts' opinion is a worthy complement to enrich the numerical information. Prvulović et al. (2008) [28] developed a hypothetical case to test the validity of a technique inspired by the MCDM method to measure the convenience of four advertising media: press, posters, e-mail, and television. The hypothetical nature of their research, without a description of the geographic settings or audience segments, left new avenues of research open to reach more concrete conclusions. Moreover, it would be an innovative approach in advertising, as the scientific literature provides little evidence on applying this methodology. On the other hand, the MCDM method has proven its usefulness when approaching researching projects related to the inclusion of sustainability as one of the key factors in industrial management and reconciling it with other more traditional ones such as quality, time, cost, and performances [13]. Both the support of the researchers' opinion for the use of expert opinions for advertising planning decisions; the modest use of MCDM methods in this field; as well as the prevalent use of MCDM methods to address the sustainability issue [13] and solve management [29,30], economics [31], construction [32,33], and other scientific subjects, became the motive for adopting the MCDM method for decision-making by choosing eco-friendly advertising formats.

With the help of a literature analysis, some eco-friendly advertising formats were selected (see Table 1), and a description of each of them is provided below. All ad formats listed in the table were used for the research.

Table 1. Set of eco-friendly advertising formats based literature analysis.

Authors	Advertising Formats and Their Symbols								
	A	B	C	D	E	F	G	H	I
	Search Engine Marketing	Online Behavioral Advertising	Advertising in Applications	Location-Based Services	Product Placement on TV	Video Masked Advertising and Hybrid Messages	AdvergAMES	In-Game Advertising	Merchandising of Famous Figures in a Virtual World
Aguilera-Moyano et al. (2016) [34]						x			
Aiolfi et al. (2021) [35]		x							
Alonso-Mosquera and Sánchez-Martínez (2011) [36]		x							
Álvarez (2020) [37]					x				

Table 1. Cont.

Authors	Advertising Formats and Their Symbols								
	A	B	C	D	E	F	G	H	I
	Search Engine Marketing	Online Behavioral Advertising	Advertising in Applications	Location-Based Services	Product Placement on TV	Video Masked Advertising and Hybrid Messages	Advergaming	In-Game Advertising	Merchandising of Famous Figures in a Virtual World
Aswani et al. (2018) [38]	x								
Bernritter et al. (2021) [39]				x					
Bertola et al. (2021) [40]								x	
Chang (2010) [41]								x	
Daems et al. (2019) [42]	x	x	x	x	x	x	x	x	x
Dehghani et al. (2016) [43]					x	x			
Fernández-Camacho (2020) [44]		x				x			
Hao et al. (2017) [45]			x						
Ištvančić et al. (2017) [46]	x								
Lee (2018) [47]									x
Martínez-Pastor (2019) [48]						x			
Martínez-Pastor and Vizcaíno-Laorga (2019) [49]						x			
Meyer (2018) [50]			x						
Navarro and Guerrero (2018) [51]					x	x			
Niño-González et al. (2019) [52]								x	
Ortiz-López (2016) [53]		x							
Ramos-Gutiérrez and Fernández-Blanco, 2021 [54]						x			
Rowell et al. (2014) [55]									x
Sánchez-Olmos et al. (2019) [56]					x	x			

Table 1. Cont.

Authors	Advertising Formats and Their Symbols								
	A	B	C	D	E	F	G	H	I
	Search Engine Marketing	Online Behavioral Advertising	Advertising in Applications	Location-Based Services	Product Placement on TV	Video Masked Advertising and Hybrid Messages	Advergaming	In-Game Advertising	Merchandising of Famous Figures in a Virtual World
Segarra-Saavedra and PlazaNogueira (2012) [57]					x				
Selva (2009) [58]							x		
Sharma et al. (2020) [59]							x		
Schultz (2018) [60]	x								
Smit et al. (2014) [61]		x							
Spann et al. (2016) [62]				x					
Tur-Viñes et al. (2019) [63]						x			
Wojdyski and Evans (2020) [64]						x			

Search engine marketing (SEM) presents a differential characteristic compared to the traditional nature of marketing actions: in SEM, the advertisement responds to a previous search query of a user. Imagine that Paul lost his home keys and he needs to call a locksmith. When he searches “locksmith near me” on the Internet, some brands appear in the first positions of the browser, labeled with a sign saying “advertising” [42]. For these brands that have paid the browser for being in this preferential position, “it is vital to know which business-related keywords people type while searching” [46] (p. 69). Nevertheless, some authors warn that getting the first positions is not a synonym for maximizing the brand’s sales [38,60].

Online behavioral advertising (OBA) is a specific sort of target advertising. Thanks to the cookies, our navigation on the Internet can be tracked. That means that the browser and the advertisers know our interests and needs. For this reason, after searching for information about flights to Lisbon, numerous banners promoting flights or hotels in Lisbon started to appear [42,61]. This segmentation strategy raises controversial opinions among the public and the experts. On the one hand, thanks to online behavioral advertising, the users receive advertisements that match their interests and needs. On the other hand, their privacy is at risk since this technique monitors their behavior [35]. Following the European legislation, Spain deployed a broad legislative framework around this form of advertising to protect users’ privacy. It is mandatory to get the users’ informed consent about cookies’ existence. On the other hand, this format cannot address minors without parental authorization [36,53].

Advertising in applications usually include ads, with a higher prevalence in free ones [50]. Some of these ads are personalized according to the interests expressed by the user. For example, if Sally has an app with a music quiz, this app will learn about her music likes, and the app will show Sally ads promoting her favorite groups and singers [42]. It is an advertising business model with two parties involved: the app developer, who sets

the price for the app, and the platform owner, who sets the sale price to the advertiser and establishes the developer's profit percentage [45].

Location-based services (LBS) are very well described in this promotional action with a very clarifying example: "Robin is walking down Oxford Street and receives a push notification on her cell phone exclaiming, 'Hi Robin! You are near Starbucks on Oxford Street. Currently, there is 50% off on Your favorite drink: Vanilla Latte!'" [39] (p. 677). As we can see in this case, location-based services work with situational variables and directly impact users through their smartphones. They are used regularly in shopping centers, congresses, or places of tourist interest, among other types of venues and events [62].

Today, product placement on TV is a widespread format on television, either on traditional channels or video on demand (VOD) platforms. Product placement consists of inserting a brand in a movie, series, or television program. For example, a character drinks a Coca-Cola; walks along a street where the sign of a McDonald's restaurant is visible; or uses a Nespresso coffee machine. The brand looks contextual, but its appearance is not casual since it has paid for being shown [37,42]. Due to this supposed naturalness of the placement into fictional content, the audience tends to be more receptive; in turn, advertising brands benefit from this significant permeability manifested by the public [43].

The terms video-masked advertising and hybrid messages describe the frequent practice of some advertisers paying an individual or influencer to upload videos that refer discreetly to their brands. For example, Disney pays a father to upload a video showing his family watching the latest Disney movie to YouTube. It is not considered as an ad and does not include the Disney logo. Nevertheless, it has an advertising purpose [42]. In this type of advertising, YouTube plays a determinant role. It has changed negotiation and media planning rules as a platform for the mass consumption of audiovisual content, moving numerous advertisers to design new strategies [37].

It is a widespread format among YouTubers to test products and offer advice to their followers. Even minors upload their videos playing with certain toys and acting as prescribers of the brands [48,49]. These videos show a hybridization strategy since they mix messages of different types and intentions, generally informative or entertainment content with advertising interests [34,51,56]. Spanish normative establishes the obligation of including an explicit warning about the advertising content in these videos. Otherwise, we would face a case of covert advertising, an illegal practice in the Spanish and European media arenas [44,48,64]. Prevention against covert advertising is not only carried out from the regulatory framework or public institutions. The role of self-regulation in the industry is decisive. AUTOCONTROL is the Association for the Self-Regulation of Commercial Communication in Spain. Its Advertising Code of Conduct insists on the obligation to include a particular indication in the communications of influencers where the advertising nature of the content is not clear, manifest, and evident, with text labels that warn of advertising content [54].

The primary purpose of advergames is to promote a particular brand. As a result, the brand becomes a main character in the game and its logo's relevant appearance is guaranteed. For example, a brand of cereals launches a game consisting of eating as many bowls of cereals as possible [42,58]. The success of these formats lies in the hybridization between the commercial interest and the playful content, composing a whole where it is difficult to isolate the advertising component from the rest. This lack of definition gives rise to debate on the ethical nature of this format, especially since children and young people are its core target [59].

In-game advertising (IGA)—this type of advertising places brands in video games, more often in video games played online. For instance, in Sega's racing games, the cars have visible brands, including Marlboro billboards in the race circuit [41,42]. We are not only referring to the incorporation of brands through an accurate representation of their logos. In recent years, the brands' visual identities present in video games have tended to become more flexible and adopt slight modifications adapted to the nature of each game, acquiring a more ludic role, but without renouncing to being recognized by the public [40].

Placing the brand next to crucial elements in the game's narrative or choosing moments in which the action is not too fast can contribute to favor the reception of the message of advertising intention in the users [52].

Merchandising of famous figures in a virtual world: some games inspired in a virtual world include famous actors or media figures. These celebrities also appear in TV programs, amusement parks, or merchandising products [42]. An example is the game *Call of Duty: Infinite Warfare*, where some famous faces appear, among them Kit Harington, Brian Bloom, and David Hasselhoff [55]. It is an increasingly implanted practice that is not exempt from legal conflicts between the right to advertise and the personality rights of these famous people [47].

Different factors influence the expediency of an advertising format, and one of these factors is generational differences. The generational profiles define a generalized behavior of people who have lived the exact historical moment, influenced by the same events, social responses, and technological advances. From the perspective of research, it is of particular interest to know how they react to specific advertising tools and eco-friendly advertising formats.

With the help of a literature analysis, six generational profiles were detected and selected (see Table 2). A brief description of each of them is provided below.

Table 2. Set of generational profiles based literature analysis.

Author's	Silent Generation (1925–1945)	Baby Boomers (1945–1964)	Generation X (1965–1979)	Generation Y (1980–1994)	Generation Z (1995–2009)	Generation Alpha (≥ 2010)
Bakewell and Mitchell (2003) [65]			x	x		
Brosdahl and Carpenter (2012) [66]	x					
Duffett (2020) [67]					x	
Kumar and Lim (2008) [68]		x				
Reisenwitz and Iyer (2009) [69]			x			
Thomas et al. (2020) [70]		x	x	x	x	x

The Silent Generation was born between 1925 and 1945 and felt the influence of dramatic historical events, such as the Great Depression, the First World War, the Korean War, and even the beginning of the Vietnam War. It is a generation with conventional solid values. Most of them married very young and worked hard to raise their families. Their access to information technology (IT) is minimal. People in this generation are more familiar with traditional media, such as the press, radio, or television [66].

The Baby Boomers were born between 1945 and 1964 and grew up in the flourishing development after World War II. People in this generation felt committed to changing the world into a peaceful place with a positive lifestyle [70]. Regarding technology, Baby Boomers witnessed a revolutionary change. Nowadays, they have more technical skills than the Silent Generation, but still few compared with the younger generations. For example, their typical smartphone use is only for making calls; however, they seldom send text messages or e-mails and download data [68].

Generation X was born between 1965 and 1979 and borrowed this cohort name from *Generation X: Tales for an Accelerated Culture*, a Douglas Coupland novel [69,70]. Their

shopping behavior tends to be planned and rational, and they are responsive to conventional advertising media [65]. However, they are also used to digital marketing, mainly e-mail marketing and questionnaires about their lifestyle and consumer interests [70]. Their loyalty to brands is lower than in older generations, so Generation X is sensitive to price promotional campaigns that encourage brand switching [69].

Generation Y was born between 1980 and 1994 and grew up with broad access to IT during the transformation from analogical to digital [70]. People in Generation Y consider consumption as a leisure and social activity. Moreover, they are interested in collecting others' opinions about brands since this point is relevant in their decision-making when buying. For this reason, social networks influence them more than traditional advertising media [65].

Generation Z was born between 1995 and 2009 and are considered the tech-savvy generation since their relationship with technology is more fluent and fruitful than in all the previous cohorts [70]. For Generation Z, IT is the means to solve every kind of task as a source of instant gratification. They have replaced traditional TV with VOD platforms and have become heavy consumers of audiovisual content. Apps are also a strategic medium to reach this segment of the target [67].

Generation Alpha was born in 2010. Technology "is important and intrinsic" to the life of children in Generation Alpha [70] (p. 76). They are digital natives, often multitasking, who learn faster and with enthusiasm. They have swapped books and boards for smartphones and tablets. They usually use chatbots and will be fond of artificial intelligence. However, their favorite medium is still television, although they watch it on VOD platforms and use their gadgets, as their tablet on which they can also play video games.

Due to their age, children of the Alpha Generation are a particularly vulnerable target, considering their inability to differentiate commercial interest in entertainment content on digital media [71]. Hence, instruments for parental control are promoted [72]. Moreover, legislation tries to be more protective with them; in the case of the Spanish one, it emphasizes prohibiting formats of covert advertising [63].

On the other hand, it is difficult to limit their access to specific advertising formats since minors usually consume content that exceeds children's programming classification, such as movies, series, or entertainment programs that include product placement, a format that, according to the General Law of Audiovisual Communication of Spain, is prohibited in children's programming [57]. Nevertheless, not only the formats are relevant but also the contents. Experts warn about the risk in gambling advertising [49] or in the promotion of unhealthy eating products that cause childhood obesity [73].

3. Materials and Methods: The Determination Process, the Concordance of Data, and Expediency of Advertising Formats

MCDM methods can be adequate tools for decision-making processes [74] and are a branch of operations research [75]. The selection of the MCDM method was established by the motive related to the goal of evaluation—quantify the expediency of eco-friendly advertising formats for different generations and measure the significance of nine eco-friendly advertising formats for six generational cohorts in the Spanish scene.

The set of elements, in this case a set of ad formats, is the foundation to establish the significance of formats using the MCDM methods [29]. The set of formats were developed based on a literature review dedicated to the advertisement formats and six different generational profiles were identified by the same principle (Tables 1 and 2). Afterwards, the set of ad formats were used as the research tool to establish the significance (alternative concept—weights) of these formats for different generational profiles based on expert opinions [76]. For the determination of the significance of the elements, experts are considered professionals who have extensive experience in relation to the research object and, based on this experience, are able to determine the cause-and-effect relationship. The surveyed experts were selected considering: (1) practical and academic experience (minimum 10 years) in the

media planning and control process; (2) taking into account the geographic factor—work experience in Spain. With reference to the developed set of advertising formats, an expert evaluation questionnaire was designed, providing concept explanation for every format. Questionnaires were sent to the experts by e-mail, and they were subsequently contacted by phone to explain the details of the study in detail. In the next step, the experts expressed their positions on the significance of the formats in a set of advertising formats for each generational profile separately. They were asked to express their position, distributed 100% among the formats, giving the highest percentage for the most significant format and for the least important, the least. In this way, an expert survey was conducted, and the data obtained for the detection expediency of advertising formats for each generation. Twenty experts were interviewed; however, seventeen questionnaires were completed correctly: eight from the media planning academic field and nine from practitioners in the advertising industry. In Tables 3–14, the experts from the academic field are represented by the symbols E2, E3, E6, E9, E10, E11, E15, and E16. The practitioners are E1, E4, E5, E7, E8, E12, E13, E14, and E17.

Table 3. Determination of significance/expediency of ad formats for Silent Generation (1925–1945).

Ad. Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Eval.	g_i
A	75	10	46.5	21	9	38	10	18	24	29	19	37	28.5	54	18	23	10	499.00	0.2765
B	18	10	1	10	9	43	10	29	24	29	19	10	15	14	38	23	10	341.00	0.1835
C	1	14	1	10	9	5	1	10	24	3	10	5	15	14	1	1	28	146.50	0.0894
D	1	40	1	15	15	1	38	29	10	2	10	10	28.5	5	38	39	38	281.50	0.1885
E	1	5	1	12	40	5	19	1	10	29	38	5	5	5	1	10	10	193.00	0.1159
F	1	10	46.5	20	15	5	19	10	5	5	1	30	5	5	1	1	1	179.00	0.1062
G	1	5	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	20.00	0.0141
H	1	5	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	20.00	0.0141
I	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	20.00	0.0118
																		1700.00	1.00

Table 4. Ranking of experts’ research results for Silent Generation (1925–1945).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Ranks
A	1	4	1.5	1	5	2	4.5	3	2	2	2.5	1	1.5	1	3	2.5	4	41.50
B	2	4	6	5.5	5	1	4.5	1.5	2	2	2.5	3.5	3.5	2.5	1.5	2.5	4	53.50
C	6	2	6	5.5	5	4	7.5	4.5	2	5	4.5	5.5	3.5	2.5	6.5	7	2	79.00
D	6	1	6	3	2.5	7.5	1	1.5	4.5	6	4.5	3.5	1.5	5	1.5	1	1	57.00
E	6	7	6	4	1	4	2.5	7.5	4.5	2	1	5.5	5.5	5	6.5	4	4	76.00
F	6	4	1.5	2	2.5	4	2.5	4.5	6	4	7.5	2	5.5	5	6.5	7	7.5	78.00
G	6	7	6	8	8	7.5	7.5	7.5	8	8	7.5	8	8	8	6.5	7	7.5	126.00
H	6	7	6	8	8	7.5	7.5	7.5	8	8	7.5	8	8	8	6.5	7	7.5	126.00
I	6	9	6	8	8	7.5	7.5	7.5	8	8	7.5	8	8	8	6.5	7	7.5	128.00
																		$e_i = 765.00$

Table 5. Determination of significance/expediency of ad formats for Baby Boomers (1945–1964).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Eval.	g_j
A	47	20	19	20	34	38	10	29	24	15	10	40	29	53	23	24	38	473.00	0.28
B	28	5	19	9	19	47	15	29	24	15	10	10	19	19	43	19	19	349.00	0.21
C	1	10	1	11	10	9	5	9	24	15	10	5	10	10	1	5	19	155.00	0.09
D	1	20	19	15	10	1	15	20	10	10	24.5	7	24	5	28	29	1	239.50	0.14
E	1	10	19	13	10	1	29	1	10	15	24.5	15	10	5	1	10	1	175.50	0.10
F	19	15	20	20	14	1	19	9	5	15	10	20	5	5	1	10	19	207.00	0.12
G	1	10	1	4	1	1	1	1	1	5	5	1	1	1	1	1	1	37.00	0.02
H	1	5	1	4	1	1	1	1	1	5	5	1	1	1	1	1	1	32.00	0.02
I	1	5	1	4	1	1	5	1	1	5	1	1	1	1	1	1	1	32.00	0.02
																		1700.00	1.00

Table 6. Ranking of experts’ research results for Baby Boomers (1945–1964).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Ranks
A	1	1.5	3.5	1.5	1	1	5	1.5	2	3	4.5	1	1	1	3	2	1	34.50
B	2	8	3.5	6	2	2	3.5	1.5	2	3	4.5	4	3	2	1	3	3	54.00
C	6.5	5	7.5	5	5	3	6.5	4.5	2	3	4.5	6	4.5	3	6.5	6	3	81.50
D	6.5	1.5	3.5	3	5	6.5	3.5	3	4.5	6	1.5	5	2	5	2	1	7	66.50
E	6.5	5	3.5	4	5	6.5	1	7.5	4.5	3	1.5	3	4.5	5	6.5	4.5	7	78.50
F	3	3	1	1.5	3	6.5	2	4.5	6	3	4.5	2	6	5	6.5	4.5	3	65.00
G	6.5	5	7.5	8	8	6.5	8.5	7.5	8	8	7.5	8	8	8	6.5	8	7	126.50
H	6.5	8	7.5	8	8	6.5	8.5	7.5	8	8	7.5	8	8	8	6.5	8	7	129.50
I	6.5	8	7.5	8	8	6.5	6.5	7.5	8	8	9	8	8	8	6.5	8	7	129.00
																		$e_i = 765.00$

Table 7. Determination of significance/expediency of ad formats for Generation X (1965–1979).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Eval.	g_j
A	38	10	20	18	38	38	15	19	15	15	20	30	24	29	25	20	33	407.00	0.24
B	19	10	10	8	24	47	15	19	15	15	20	10	10	25	20	15	19	301.00	0.18
C	1	10	10	15	5	9	10	19	15	15	15	5	10	10	5	15	10	179.00	0.11
D	1	15	10	14	10	1	10	10.5	15	10	15	5	20	10	15	15	1	177.50	0.10
E	9	15	10	15	10	1	29	19	15	15	10	25	15	10	15	20	15	248.00	0.15
F	29	10	10	18	10	1	10	10.5	19	15	5	14	10	5	5	4	19	194.50	0.11
G	1	10	10	4	1	1	1	1	4	5	5	5	5	5	5	1	1	65.00	0.04
H	1	10	10	4	1	1	5	1	1	5	5	5	5	5	5	5	1	70.00	0.04
I	1	10	10	4	1	1	5	1	1	5	5	1	1	1	5	5	1	58.00	0.03
																		1700.00	1.00

Table 8. Ranking of experts' research results for Generation X (1965–1979).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Ranks
A	1	6	1	1.5	1	2	2.5	2.5	4	3	1.5	1	1	1	1	1.5	1	32.50
B	3	6	5.5	6	2	1	2.5	2.5	4	3	1.5	4	5	2	2	4	2.5	56.50
C	7	6	5.5	3.5	6	3	5	2.5	4	3	3.5	6.5	5	4	7	4	5	80.50
D	7	1.5	5.5	5	4	6.5	5	5.5	4	6	3.5	6.5	2	4	3.5	4	7.5	81.00
E	4	1.5	5.5	3.5	4	6.5	1	2.5	4	3	5	2	3	4	3.5	1.5	4	58.50
F	2	6	5.5	1.5	4	6.5	5	5.5	1	3	7.5	3	5	7	7	8	2.5	80.00
G	7	6	5.5	8	8	6.5	9	8	7	8	7.5	6.5	7.5	7	7	9	7.5	125.00
H	7	6	5.5	8	8	6.5	7.5	8	8.5	8	7.5	6.5	7.5	7	7	6.5	7.5	122.50
I	7	6	5.5	8	8	6.5	7.5	8	8.5	8	7.5	9	9	9	7	6.5	7.5	128.50
$e_i = 765.00$																		

Table 9. Determination of expediency/expediency of ad formats for Generation Y (1980–1994).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Eval.	g_j
A	30	10	20	17	48	30	15	10	10	5	20	20	20	20	20	20	10	325.00	0.19
B	9	15	4.5	7	15	30	15	10	20	5	20	10	10	15	15	10	10	220.50	0.13
C	9	10	10	15	1	14	15	19	20	5	5	10	10	20	10	15	29	217.00	0.13
D	1	15	10	14	1	1	5	1	20	15	15	5	20	10	5	15	1	154.00	0.09
E	10	10	4.5	14	5	5	10	24	5	15	5	30	15	10	20	10	14	206.50	0.12
F	38	10	10	18	19	5	10	15	5	10	10	10	10	10	10	5	24	219.00	0.13
G	1	10	20	5	1	5	10	1	5	15	5	5	5	5	5	5	1	104.00	0.06
H	1	10	20	5	5	5	10	19	5	15	10	5	5	5	5	15	10	150.00	0.09
I	1	10	1	5	5	5	10	1	10	15	10	5	5	5	10	5	1	104.00	0.06
1700.00																		1.00	

Table 10. Ranking of experts' research results for Generation Y (1980–1994).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Ranks
A	2	6	2	2	1	1.5	2	5.5	4.5	8	1.5	2	1.5	1.5	1.5	1	5	48.50
B	4.5	1.5	7.5	6	3	1.5	2	5.5	2	8	1.5	4	5	3	3	5.5	5	68.50
C	4.5	6	5	3	8	3	2	2.5	2	8	8	4	5	1.5	5	3	1	71.50
D	7.5	1.5	5	4.5	8	9	9	8	2	3	3	7.5	1.5	5	8	3	8	93.50
E	3	6	7.5	4.5	5	6	6	1	6	3	8	1	3	5	1.5	5.5	3	75.00
F	1	6	5	1	2	6	6	4	7	6	5	4	5	5	5	8	2	78.00
G	7.5	6	2	8	8	6	6	8	8	3	8	7.5	8	8	8	8	8	118.00
H	7.5	6	2	8	5	6	6	2.5	9	3	5	7.5	8	8	8	3	5	99.50
I	7.5	6	9	8	5	6	6	8	4.5	3	5	7.5	8	8	5	8	8	112.50
$e_i = 765.00$																		

Table 11. Determination of significance/expediency of ad formats for Generation Z (1995–2009).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of the Eval.	g_j
A	19	15	10	15	34	30	10	9	5	5	5	15	10	10	15	5	5	217.00	0.13
B	1	15	10	7	14	19	10	9	10	5	15	2.5	10	10	15	5	9	166.50	0.10
C	1	10	10	15	10	19	10	25	20	5	10	15	10	20	10	15	20	225.00	0.13
D	1	10	1	10	1	1	5	1	5	15	15	5	15	10	5	5	1	106.00	0.06
E	1	15	10	11	19	5	5	25	5	15	10	32.5	15	10	20	10	20	228.50	0.13
F	38	10	10	18	15	10	15	20	10	15	20	10	15	15	10	15	30	276.00	0.16
G	19	10	10	8	1	10	15	1	15	15	5	10	10	5	5	15	5	159.00	0.09
H	10	10	19	8	1	1	15	9	15	15	10	5	10	10	10	15	5	168.00	0.10
I	10	5	20	8	5	5	15	1	15	10	10	5	5	10	10	15	5	154.00	0.09
																		1700.00	1.00

Table 12. Ranking of experts’ research results for Generation Z (1995–2009).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Ranks
A	2.5	2	5.5	2.5	1	1	6	5	8	8	8.5	2.5	6	5.5	2.5	8	6.5	81.00
B	7.5	2	5.5	9	4	2.5	6	5	5.5	8	2.5	9	6	5.5	2.5	8	4	92.50
C	7.5	6	5.5	2.5	5	2.5	6	1.5	1	8	5.5	2.5	6	1	5.5	3	2.5	71.50
D	7.5	6	9	5	8	8.5	8.5	8	8	3	2.5	7	2	5.5	8.5	8	9	114.00
E	7.5	2	5.5	4	2	6.5	8.5	1.5	8	3	5.5	1	2	5.5	1	6	2.5	72.00
F	1	6	5.5	1	3	4.5	2.5	3	5.5	3	1	4.5	2	2	5.5	3	1	54.00
G	2.5	6	5.5	7	8	4.5	2.5	8	3	3	8.5	4.5	6	9	8.5	3	6.5	96.00
H	4.5	6	2	7	8	8.5	2.5	5	3	3	5.5	7	6	5.5	5.5	3	6.5	88.50
I	4.5	9	1	7	6	6.5	2.5	8	3	6	5.5	7	9	5.5	5.5	3	6.5	95.50
																		$e_i = 765.00$

Table 13. Determination of significance/expediency of ad formats for Generation Alpha (≥ 2010).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Eval.	g_j
A	1	15	1	5	15	20	4	1	5	5	5	1	5	10	1	1	1	96.00	0.06
B	1	15	1	8	5	25	4	1	5	10	2.5	1	5	15	1	1	1	101.50	0.06
C	46.5	10	1	15	1	10	10	28	5	5	15	10	20	10	19	38	29	272.50	0.16
D	1	10	1	8	1	0	1	1	5	1	2.5	1	10	5	5	1	1	54.50	0.03
E	1	15	1	10	5	5	1	10	15	5	35	15	10	10	10	10	1	159.00	0.09
F	46.5	10	8	15	24	10	20	15	15	14	10	19	20	15	30	38	29	338.50	0.20
G	1	10	29	13	24	20	20	10	15	20	10	19	10	10	19	5	10	245.00	0.14
H	1	10	29	13	15	5	20	15	15	20	10	19	10	15	10	5	14	226.00	0.13
I	1	5	29	13	10	5	20	19	20	20	10	15	10	10	5	1	14	207.00	0.12
																		1700.00	1.00

Table 14. Ranking of experts' research results for Generation Alpha (≥ 2010).

Form.	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	Sum of Ranks
A	6	2	7	9	3.5	2.5	6.5	8	7.5	7	7	8	8.5	6	8.5	7.5	7.5	112.00
B	6	2	7	7.5	6.5	1	6.5	8	7.5	5	8.5	8	8.5	2	8.5	7.5	7.5	107.50
C	1.5	6	7	1.5	8.5	4.5	5	1	7.5	7	2	6	1.5	6	2.5	1.5	1.5	70.50
D	6	6	7	7.5	8.5	9	8.5	8	7.5	9	8.5	8	5	9	6.5	7.5	7.5	129.00
E	6	2	7	6	6.5	7	8.5	5.5	3.5	7	1	4.5	5	6	4.5	3	7.5	90.50
F	1.5	6	4	1.5	1.5	4.5	2.5	3.5	3.5	4	4.5	2	1.5	2	1	1.5	1.5	46.50
G	6	6	2	4	1.5	2.5	2.5	5.5	3.5	2	4.5	2	5	6	2.5	4.5	5	65.00
H	6	6	2	4	3.5	7	2.5	3.5	3.5	2	4.5	2	5	2	4.5	4.5	3.5	66.00
I	6	9	2	4	5	7	2.5	2	1	2	4.5	4.5	5	6	6.5	7.5	3.5	78.00

$e_i = 765.00$

The obtained results can be applied in practice if sufficient concordance of expert opinion is established. Usually, concordance is determined by the concordance coefficient W [77], which varies from 0 to 1 ($0 < W < 1$), but when the number of objects (formats) $m > 7$, then the concordance is established using criterion χ^2 . To calculate the criterion χ^2 , only the results of ranking by experts are suitable. Ranking is a procedure when the most critical format is provided with the rank equal to 1, the second format according to importance is given 2, etc. The last format, according to significance, takes rank m . Equivalent formats are provided with an equal value—the arithmetic average of ordinary ranks. Kendall (1955) [77] proved that expert evaluations were in concordance when value χ^2 was higher than χ^2_{kr} , taken from the distribution table of χ^2 where the degree of freedom $\nu = m - 1$ and the selected reliability level α were close to zero (in practice $\alpha = 0.05$ or 0.01) [78]. χ^2 is calculated according to the provided formula:

$$\chi^2 = Wr(m - 1), \quad (1)$$

where W —concordance coefficient; r —number of experts; m —number of compared factors. Concordance coefficient W is calculated according to the formula [77]:

$$W = \frac{12S}{r^2m(m^2 - 1)} \text{ in this case } \chi^2 = Wr(m - 1) = \frac{12S}{rm(m + 1) \sum_{j=1}^p T_j}, \quad (2)$$

where S —dispersion analogue calculated according to the formula:

$$S = \sum_{i=1}^m (e_i - \bar{e})^2 \quad (3)$$

The sum of ranks in terms of all experts e_i is calculated according to the formula:

$$e_i = \sum_{j=1}^r e_{ij}, \quad (4)$$

where e_{ij} —the j -th factor evaluated by the j -th expert.

A deviation from general average \bar{e} is calculated according to the formula:

$$\bar{e} = \frac{\sum_{i=1}^m e_i}{m} = \frac{\sum_{i=1}^m \sum_{j=1}^r e_{ij}}{m} \quad (5)$$

The experts evaluated the significance/expediency of formats for different generations (Tables 3, 5, 7, 9, 11 and 13) in the conducted research. Based on determined the signifi-

cance for the formats, ranks were provided (Tables 4, 6, 8, 10, 12 and 14) and calculations were performed:

The experts were asked to express their position on the significance, distributed 100% among the formats, for the Silent Generation (1925–1945) profile. In this way, an expert survey was conducted, and the data was obtained for the detection expediency of advertising formats for each generation (Table 3).

Ranking is a procedure when the most critical format is provided with the rank equal to 1, the second format according to importance is given 2, etc. The last format, according to significance, takes rank m . With reference to the findings of the conducted investigation (Tables 3 and 4) and Formulas (1)–(5), the following results were obtained: $e_i = 765.00$; $\bar{e} = 85.00$; $S = 9045.50$; $W = 0.52$; $\chi^2 = 79.29$; $\nu = 8$; $\alpha = 0.01$; $\chi_{kr}^2 = 20.09$. When χ^2 exceeds χ_{kr}^2 , this proves that experts' opinions are concordant, and the significance of the formats detected based on expert evaluation can be applied in practice.

The experts expressed their positions on the significance/expediency formats in the set, taking into account the specifics of the Baby Boomer (1945–1964) generation. They were asked to express their position on the significance, distributed 100% among the formats, for Baby Boomer (1945–1964) generational profile. In this way, an expert survey was conducted. The data obtained were used to detect the expediency of the advertising formats for this generation (Table 5).

The ranks were determined based on the significance of the advertisement formats (Table 5). With reference to the findings of the conducted investigation (Tables 5 and 6) and Formulas (1)–(5), the following results were obtained: $e_i = 765.00$; $\bar{e} = 85.00$; $S = 9946.50$; $W = 0.57$; $\chi^2 = 87.19$; $\nu = 8$; $\alpha = 0.01$; $\chi_{kr}^2 = 20.09$. When χ^2 exceeds χ_{kr}^2 , this proves that experts' opinions are concordant, and the significance of the formats detected on the basis of expert evaluation can be applied in practice.

In Table 7 can be seen the experts' position on the significance/expediency of formats in the set when taking into account the specifics of Generation X (1965–1979). The data obtained were used for the detection expediency of the advertising formats for each generation (Table 7).

The ranks were set based on the significance of the advertisement formats (Table 8). Ranking is a procedure when the most critical format is provided with a rank equal to 1. The last format, according to significance, takes rank m . With reference to the findings of the conducted investigation (Tables 7 and 8) and Formulas (1)–(5), the following results were obtained: $e_i = 765.00$; $\bar{e} = 85.00$; $S = 9230.50$; $W = 0.53$; $\chi^2 = 80.91$; $\nu = 8$; $\alpha = 0.01$; $\chi_{kr}^2 = 20.09$. When χ^2 exceeds χ_{kr}^2 , this proves that experts' opinions are concordant, and the significance of the formats detected based on expert evaluation can be applied in practice.

An expert survey was conducted and the data was obtained for the detection expediency of advertising formats for Generation Y (1980–1994) (Table 9). The experts expressed their positions on the significance/expediency of formats in the set, taking into account the specifics of Generation Y.

With reference to the findings of the conducted investigation (Tables 9 and 10) and Formulas (1)–(5), the following results were obtained: $e_i = 765.00$; $\bar{e} = 85.00$; $S = 4063.50$; $W = 0.23$; $\chi^2 = 35.62$; $\nu = 8$; $\alpha = 0.01$; $\chi_{kr}^2 = 20.09$. When χ^2 exceeds χ_{kr}^2 , this proves that experts' opinions are concordant, and the significance of the formats detected on the basis of expert evaluation can be applied in practice.

The experts expressed their positions on the significance/expediency of formats in the set, taking into account the specifics of Generation Z (1995–2009). They were asked to express their position on the significance, distributed 100% among the formats, for each generational profile. In this way, an expert survey was conducted. The data was obtained to detect the expediency of advertising formats for each generation (Table 11).

The ranks were determined based on the significance of the advertisement formats (Table 11). With reference to the findings of the conducted investigation (Tables 11 and 12) and Formulas (1)–(5), the following results were obtained: $e_i = 765.00$; $\bar{e} = 85.00$; $S = 4069.00$;

$W = 0.14$; $\chi^2 = 21.64$; $\nu = 8$; $\alpha = 0.01$; $\chi_{kr}^2 = 20.09$. When χ^2 exceeds χ^2_{kr} , this proves that experts' opinions are concordant, and the significance of the formats detected on the basis of expert evaluation can be applied in practice.

The experts were asked to express their position on the significance, distributed 100% among the formats, for the Generation Alpha (2010≤) profile. In this way, an expert survey was conducted. The data was obtained to detect the expediency of advertising formats for each generation (Table 13).

The ranks were determined based on the significance of the advertisement formats (Table 13). Ranking is a procedure when the most critical format is provided with the rank equal to 1, the second format according to importance is given 2, etc. The last format, according to significance, takes rank m . With reference to the findings of the conducted investigation (Tables 13 and 14) and Formulas (1)–(5), the following results were obtained: $e_i = 765.00$; $\bar{e} = 85.00$; $S = 5704.00$; $W = 0.329$; $\chi^2 = 50.00$; $\nu = 8$; $\alpha = 0.01$; $\chi_{kr}^2 = 20.09$. When χ^2 exceeds χ^2_{kr} , this proves that experts' opinions are concordant, and the significance of the formats detected based on of expert evaluation can be applied in practice.

After the calculations were made, it became clear that all the results of the expert evaluations could be applied in practice for decision making. The data in Tables 3, 5, 7, 9, 11 and 13 were used to assess the expediency of advertising formats for six generations.

4. Results: Expediency of Advertisement Formats for Different Generations

A general idea of evaluation presents that the most important format has determined the maximum significance, and usually calculated significances are normalized, i.e.,

$$\sum_{i=1}^m g_i = 1, \quad (6)$$

where m —number of formats; g_i —the significance of the i -th format.

Next, the evaluation of the direct significance of the formats determined by the experts is applied. The sum of all formats considered by every expert and formats assessment makes 100%. The significance g_i of the formats are calculated according to the formula:

$$g_i = \frac{\sum_{k=1}^r c_{ik}}{\sum_{i=1}^m \sum_{k=1}^r c_{ik}}, \quad (7)$$

where r —number of experts; c_{ik} —expert evaluation; i —number of the series of the format; k —number of the expert series.

The carried out evaluation (Figure 1) has established that the highest value of the expediency evaluation is 0.2782 and the lowest is 0.0118, so the medium expediency level is considered the average between the maximum and minimum evaluation $(0.2782 - 0.0118)/2 = 0.1332$.

For the Silent Generation (1925–1945), the most expedient advertising format is A = 0.2765, and the value of this format is the second-highest for all generations and formats. The formats D = 0.1885 and B = 0.1835 are also in a high position. The closest to average are formats E = 0.1159, F = 0.1062, and C = 0.0894. Experts gave the lowest place to the format I = 0.0118, taking into account all generations and formats. The H = G = 0.0141 formats have slightly higher positions than format I.

For Baby Boomers (1945–1964), the most expedient advertising format is A = 0.2782, and the value of this format is the highest of all generations for all formats. The format B = 0.2053 is also in a high position. Formats D = 0.1409, E = 0.1032, and C = 0.0912 found themselves at the average position. Experts gave the lowest place to the I = H = 0.0188 and F = 0.0218 formats.

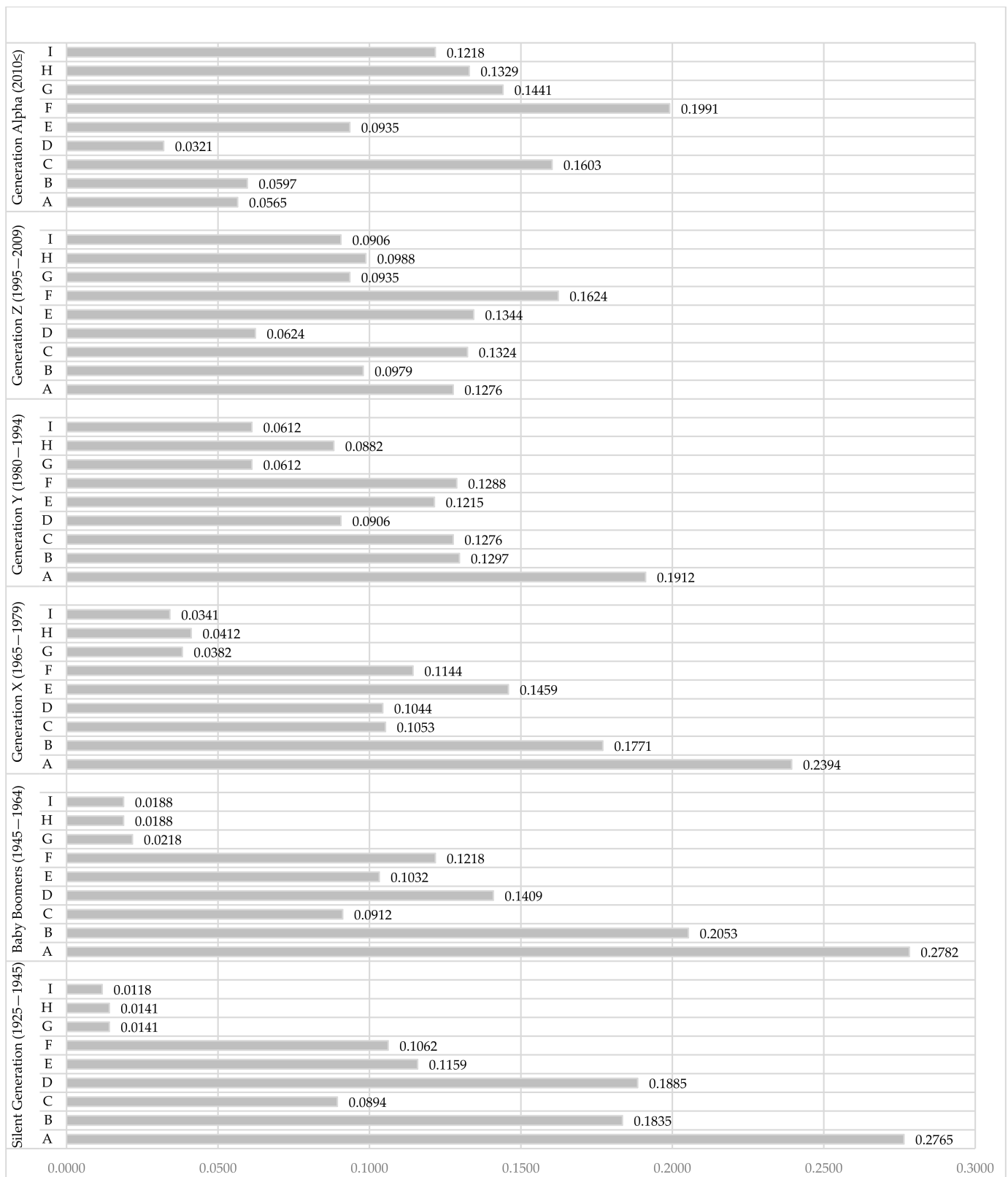


Figure 1. The expediency of advertisement formats for different generations.

The most expedient advertising format for Generation X (1965–1979) is format A = 0.2394, and it stands out for its very high expediency level concerning other formats. In the slightly lower position is the format B = 0.1771. The closest to average are formats E = 0.1459,

F = 0.1144, C = 0.1053, and D = 0.1044, and formats I = 0.0341, G = 0.0382, and H = 0.0412 are closest to the minimum.

For Generation Y (1980–1994), the format A = 0.1912 is the most expedient, and it stands out for its very high expediency level concerning other formats. The formats B = 0.1297, F = 0.1288, C = 0.1276, and E = 0.1215 found themselves at the average position. Experts gave the lowest place to the G = I = 0.0612 format and a slightly higher place to the formats H = 0.0882 and D = 0.0906.

In determining the appropriateness of advertising formats for Generation Z (1995–2009), minor differences in significance were found for different advertising formats, which means that Generation Z is the most flexible. The format F = 0.1624 is the most expedient advertising format. Formats E = 0.1344, C = 0.1324, and A = 0.1276 found themselves at the average position. The lowest place was given by experts to the format D = 0.0624 and slightly higher to the formats I = 0.0906, G = 0.0935, B = 0.0979, and H = 0.0988.

For Generation Alpha (2010≤), the most expedient advertising format is (F = 0.1991). The formats C = 0.1603, G = 0.1441, H = 0.1329, and I = 0.1218 were a little less expedient and found themselves at the average. The lowest place was given by experts to the D = 0.0321 format, and A = 0.0565, B = 0.0597, and E = 0.0935 formats had slightly higher positions.

If we compare the expediency of formats across all generations, the most significant differences are seen between the two groups. The first group consists of Generation Alpha (2010≤) and Generation Z (1995–2009) and the second group consists of Generation Y (1980–1994), Generation X (1965–1979), Baby Boomers (1945–1964), and the Silent Generation (1925–1945). In the first group, the most expedient formats are F and the least expedient are D. In the second group, the most expedient formats are A and the least expedient are I, H, and G.

5. Discussion

So far in the scientific literature, the methodical basis designed for the expedient selection of advertising media has been insufficient and immature for practical use in business. Given this shortcoming, this article presents research results evaluating the expediency of nine eco-friendly advertising formats to six generational cohorts in the Spanish media scene. Finally, the applicability of the MCDM method is confirmed as a valuable tool when it comes to facilitating the rational and scientific decision to choose advertising media and formats. This method, which provides the opinion of experts, can serve as a valuable complement to enrich the traditional variables of media planning, which provide a purely quantitative vision.

Generational characteristics are relevant when considering the possibilities that an advertising medium or format offers. There are substantial differences in the suitability of each format for each generational cohort. In general, formats with a digital component are more akin to younger generations. However, some of them indeed occupy a significant role for generations of an older age, such as Baby Boomers.

The experts evaluated the expediency of advertising formats for different generations (Tables 3, 5, 7, 9, 11 and 13) in the conducted research. After the calculations, the expediency of the formats was given in the tables and expressed by the symbol g_i . The higher the coefficient g_i shows, the higher the expediency of the format for a particular generation. The carried out evaluation has established that for Generation Alpha (2010≤), the most expedient advertising format is video masked advertising and hybrid messages (F = 0.1991). Experts gave the lowest place to the location-based services (D = 0.0321). The search engine marketing (A = 0.0565), online behavioral advertising (B = 0.0597), and product placement on TV (E = 0.0935) formats have slightly higher positions.

In determining the appropriateness of advertising formats for Generation Z (1995–2009), minor differences in values were found for different advertising formats, which means that Generation Z is the most flexible. The video masked advertising and hybrid messages (F = 0.1624) format is the most expedient advertising format. Experts gave the lowest place to the location-based services (D = 0.0624) format and slightly higher to the merchandising

of famous figures in virtual world ($I = 0.0906$), advergaming ($G = 0.0935$), online behavioral advertising ($B = 0.0979$), and in-game advertising ($H = 0.0988$) formats.

For Generation Y (1980–1994), the search engine marketing ($A = 0.1912$) format is the most expedient, and it stands out for its very high expediency level concerning other formats. Experts gave the lowest place to the advergaming and merchandising of famous figures in a virtual world ($G = I = 0.0612$) formats.

The most expedient advertising format for Generation X (1965–1979) is the search engine marketing ($A = 0.2394$) format, and it stands out for its very high expediency level concerning other formats. The merchandising of famous figures in a virtual world ($I = 0.0341$), advergaming ($G = 0.0382$), and in-game advertising ($H = 0.0412$) formats are closest to the minimum.

For Baby Boomers (1945–1964), the most expedient advertising format is search engine marketing ($A = 0.2782$), and the value of this format is the highest of all generations for all formats. Experts gave the lowest place to the merchandising famous figures in a virtual world, in-game advertising ($I = H = 0.0188$), and video masked advertising and hybrid messages ($F = 0.0218$) formats.

For the Silent Generation (1925–1945), the most expedient advertising format is search engine marketing ($A = 0.2765$), and the value of this format is the second-highest for all generations and formats. The lowest place was given by experts to the merchandising of famous figures in a virtual world ($I = 0.0118$) format, taking into account all generations and formats. The formats in-game advertising and advergaming ($H = G = 0.0141$) have slightly higher positions than format I.

If we compare the expediency of formats across all generations, the most significant differences are seen between the two groups. The first group consists of Generation Alpha (2010 \leq) and Generation Z (1995–2009) and the second group consists of Generation Y (1980–1994), Generation X (1965–1979), Baby Boomers (1945–1964), and the Silent Generation (1925–1945). In the first group, the most expedient formats are video masked advertising and hybrid messages (F). The least expedient are location-based services (D). In the second group, the most expedient formats are search engine marketing (A), and the least expedient are merchandising of famous figures in a virtual world (I), in-game advertising (H), and advergaming (G).

Some of the formats described belong to digital media. Because of its versatility and novelty, this type of media is subject to changing legislation, which is not the same in all countries. Advertisers and agencies should exercise extreme caution in complying with the law and have the support of self-regulatory associations in the sector, such as AUTOCONTROL in Spain, the EASA (European Advertising Standards Alliance) at the European level, and ICAS (the International Council of Advertising Self-Regulation) on the international scene [44,63].

The formats described, as a whole, present a more sustainable alternative to the traditional ones used by advertising. In this sense, they focus on the need to consider formats from the perspective of sustainability, a novel approach insofar as environmental responsibility in advertising is usually addressed, mainly in disseminating messages that promote environmental awareness, without paying so much attention to the more sustainable production of advertising formats.

Advertisers can find added value in the eco-friendly advertising formats in front of their audiences by highlighting the sustainable importance of these formats. In turn, for both advertisers and agencies, this sustainable perspective supposes an innovative attitude, an indicator of the quality of the management of their companies, in line with the sustainable development objectives (SDO) that operate internationally.

On the other hand, the results obtained through the MCDM method will help create strategies in advertisers' marketing departments and for agency media planners. Moreover, beyond the results achieved in the research, the applicability of this methodology as a complement to traditional media planning techniques has been demonstrated, which leaves open new lines of study that can be treated with the same method to evaluate the

expediency of the formats, for example, in different industry sectors, or on the legality and ethics of these advertising formats.

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References

1. Arrazola, M.; De Hevia, J.; Reinales, P. Which New Forms of Television Advertising Are Most Strongly Recalled? A Quantitative Analysis. *J. Media Econ.* **2016**, *29*, 153–166. [\[CrossRef\]](#)
2. Davtyan, D.; Candidate, I.; Cunningham, P.D. An investigation of brand placement effects on brand attitudes and purchase intentions: Brand placements versus TV commercials. *J. Bus. Res.* **2017**, *70*, 160–167. [\[CrossRef\]](#)
3. Palomo-Domínguez, I. Del mito a la viralidad: El caso de la campaña de Cruzcampo que resucitó a Lola Flores. *aDRresearch ESIC* **2021**, *26*, 38–58. [\[CrossRef\]](#)
4. Papí-Gálvez, N. Los medios online y la ¿crisis? de la planificación de medios publicitarios. *adComunica* **2014**, *7*, 29–48. [\[CrossRef\]](#)
5. Segarra-Saavedra, J.; Tur-Viñes, V.; Del-Pino-Romero, C. Branded Web Series as an Advertising Strategy. The #EncuentraTuLugar case. *Rev. Lat. Comun. Soc.* **2017**, *72*, 883–896. [\[CrossRef\]](#)
6. Broughton-Micova, S.; Jacques, S. *The Playing Field in Audiovisual Advertising. What Does It Look Like and Who Is Playing?* CERRE, Centre on Regulations in Europe: Bussels, Belgium, 2019; pp. 16–40.
7. Chmielewski, S.; Lee, D.J.; Tompalski, P.; Chmielewski, T.J.; Wężyk, P. Measuring visual pollution by outdoor advertisements in an urban street using intervisibility analysis and public surveys. *Int. J. Geogr. Inf. Sci.* **2016**, *30*, 801–818. [\[CrossRef\]](#)
8. Basu, S.; Roy, M.; Pal, P. Corporate greening in a large developing economy: Pollution prevention strategies. *Environ. Dev. Sustain.* **2019**, *21*, 1603–1633. [\[CrossRef\]](#)
9. Pachajoa Londoño, B.; Calderón Vargas, J.; Tobar Gómez, A. *La Publicidad Impresa y Exterior, un Impacto Ambiental*; Fundación Universitaria Unipanamericana: Bogotá, Columbia, 2020.
10. Vallejo Vélez, J.C. Iniciativas de mercadeo ambiental y digital signage en las ferias comerciales como aporte al desarrollo sostenible. *Pensam. Gestión* **2018**, *44*, 155–189. [\[CrossRef\]](#)
11. Gracia-de-Rentería, P.; Ballesteros-Olza, M.; Pérez Zabaleta, A. Los objetivos de desarrollo sostenible: Una agenda para transformar el mundo. *Economistas* **2019**, *162*, 205–209.
12. Fagnoli, M.; Costantino, F.; Tronci, M.; Bisillo, S. Ecological profile of industrial products over the environmental compliance. *Int. J. Sustain. Eng.* **2013**, *6*, 117–130. [\[CrossRef\]](#)
13. Bertoni, M. Multi-criteria decision making for sustainability and value assessment in early PSS design. *Sustainability* **2019**, *11*, 1952. [\[CrossRef\]](#)
14. Lobo, M.Á.G.; Carrero, E.; Mariñas, G. *Manual de Planificación de Medios*, 5th ed.; ESIC: Madrid, Spain, 2018; pp. 34–450.
15. Frutos-Torres, B. *Los Medios Publicitarios: Investigación, Planificación y Gestión*; Editorial Síntesis: Madrid, Spain, 2018; pp. 11–66.
16. García-Uceda, M. *Las Claves de la Publicidad*; ESIC: Madrid, Spain, 2011; pp. 265–365.
17. Belenky, A.S. An approach to planning an advertising campaign of goods and services. *Comput. Math. Appl.* **2001**, *42*, 993–1008. [\[CrossRef\]](#)
18. Kelley, L.D.; Jugenheimer, D.W.; Sheehan, K.B. *Advertising Media Planning: A Brand Management Approach*; Routledge: London, UK, 2015; pp. 1–82.
19. Olkhovska, A.B.; Malyi, V.V.; Milevskiy, S.V. Scientific and practical approaches to optimization of expenses of pharmaceutical companies on marketing communications with the use of statistical methods. *Pharm. Innov. J.* **2018**, *7*, 53–58.
20. Torres-Romay, E.; García-Mirón, S. Medición de la Eficacia Publicitaria en Redes Sociales. Panorama Actual y Creación de un Modelo. In *Las Redes Sociales Como Herramienta de Comunicación Persuasiva*; Liberal, S., Mañas, L., Eds.; McGraw-Hill: Madrid, Spain, 2020; pp. 13–34.

21. Sánchez-Blanco, C. Aportación de los planificadores estratégicos españoles a la eficacia publicitaria. *Rev. Lat. Comun.* **2010**, *65*, 278–290.
22. Adorno, T.W.; Horkheimer, M. *Dialectic of Enlightenment*, 1st ed.; Stanford University Press: Stanford, CA, USA, 2002; pp. 94–136.
23. Varan, D.; Lang, A.; Barwise, P.; Weber, R.; Bellman, S. How Reliable Are Neuromarketers' Measures of Advertising Effectiveness?: Data from Ongoing Research Holds No Common Truth among Vendors. *J. Advert. Res.* **2015**, *55*, 176–191. [[CrossRef](#)]
24. Tellis, G.J.; MacInnis, D.J.; Tirunillai, S.; Zhang, Y. What drives virality (sharing) of online digital content? The critical role of information, emotion, and brand prominence. *J. Mark.* **2019**, *83*, 1–20. [[CrossRef](#)]
25. Parente, D.; Strausbaugh-Hutchinson, K. *Advertising Campaign Strategy: A Guide to Marketing Communication Plans*; Cengage Learning: Boston, MA, USA, 2014; pp. 247–286.
26. García-Prado, E. *Plan de Medios de Comunicación e Internet*; Ediciones Paraninfo: Madrid, Spain, 2018; pp. 31–117.
27. Perlado-Lamo-de-Espinosa, M.; Papí-Gálvez, N.; Bergaz-Portolés, M. Del planificador de medios al experto en medios: El efecto digital en la publicidad. *Comun. Rev. Cient. Comun. Y Educ.* **2019**, *27*, 105–114. [[CrossRef](#)]
28. Prvulović, S.; Tolmač, D.; Živković, Ž.; Radovanović, L. Multi-criteria decision in the choice of advertising tools. *Facta Univ.-Ser. Mech. Eng.* **2008**, *6*, 91–100.
29. Yazdani, M.; Zarate, P.; Zavadskas, E.K.; Turskis, Z. A combined compromise solution (CoCoSo) method for multi-criteria decision-making problems. *Manag. Decis.* **2019**, *57*, 2501–2519. [[CrossRef](#)]
30. Zemlickienė, V.; Turskis, Z. Evaluation of the expediency of technology commercialization: A case of information technology and biotechnology. *Technol. Econ. Dev. Econ.* **2020**, *26*, 271–289. [[CrossRef](#)]
31. Mohammadian, A.; Heidary Dahooie, J.; Qorbani, A.; Zavadskas, E.K.; Turskis, Z. A New Multi-Attribute Decision-Making Framework for Policy-Makers by Using Interval-Valued Triangular Fuzzy Numbers. *Informatica* **2021**, *32*, 583–618. [[CrossRef](#)]
32. Erdogan, S.A.; Šaparauskas, J.; Turskis, Z. A Multi-Criteria Decision-Making Model to Choose the Best Option for Sustainable Construction Management. *Sustainability* **2019**, *11*, 2239. [[CrossRef](#)]
33. Fallahpour, A.; Wong, K.Y.; Rajoo, S.; Olugu, E.U.; Nilashi, M.; Turskis, Z. A fuzzy decision support system for sustainable construction project selection: An integrated FPP-FIS model. *J. Civ. Eng. Manag.* **2020**, *26*, 247–258. [[CrossRef](#)]
34. De-Aguilera-Moyano, J.; Baños-González, M.; Ramírez-Perdiguero, F.J. Los Mensajes Híbridos en el marketing postmoderno: Una propuesta de taxonomía. *Icono* **2016**, *14*, 26–57. [[CrossRef](#)]
35. Aiolfi, S.; Bellini, S.; Pellegrini, D. Data-driven digital advertising: Benefits and risks of online behavioral advertising. *Int. J. Retail. Distrib. Manag.* **2021**, *49*, 1089–1110. [[CrossRef](#)]
36. Alonso-Mosquera, M.H.; Sánchez-Martínez, M. Estrategias de comunicación interactivas en los sitios web de marcas de alimentación dirigidas al público infantil/Interactive communication strategies in food brands websites targeted to children. *Pensar. Public.* **2011**, *5*, 119–138. [[CrossRef](#)]
37. Álvarez, V. Tipos de product placement: Una visión teórica. *IROCAMM* **2020**, *1*, 7–22. [[CrossRef](#)]
38. Aswani, R.; Kar, A.K.; Ilavarasan, P.V.; Dwivedi, Y.K. Search engine marketing is not all gold: Insights from Twitter and SEO Clerks. *Int. J. Inf. Manag.* **2018**, *38*, 107–116. [[CrossRef](#)]
39. Bernritter, S.F.; Ketelaar, P.E.; Sotgiu, F. Behaviorally targeted location-based mobile marketing. *J. Acad. Mark. Sci.* **2021**, *49*, 677–702. [[CrossRef](#)]
40. Bertola Garbellini, A.; Polo Serrano, D.; Martín Ramallal, P. Fake brand gamification. Ludificación de las marcas visuales cómo estrategia de advertisement. *adComunica* **2021**, *22*, 163–188. [[CrossRef](#)]
41. Chang, Y.; Yan, J.; Zhang, J.; Luo, J. Online in-game advertising effect: Examining the influence of a match between games and advertising. *J. Interact. Advert.* **2010**, *11*, 63–73. [[CrossRef](#)]
42. Daems, K.; De Pelsmacker, P.; Moons, I. Advertisers' perceptions regarding the ethical appropriateness of new advertising formats aimed at minors. *J. Mark. Commun.* **2019**, *25*, 438–456. [[CrossRef](#)]
43. Dehghani, M.; Niaki, M.K.; Ramezani, I.; Sali, R. Evaluating the influence of YouTube advertising for attraction of young customers. *Comput. Hum. Behav.* **2016**, *59*, 165–172. [[CrossRef](#)]
44. Fernández-Camacho, J.J. Publicidad Encubierta en Las Redes Sociales. Master's Thesis, Universidad Internacional de La Rioja, La Rioja, Spain, 2020; pp. 33–43.
45. Hao, L.; Guo, H.; Easley, R.F. A Mobile Platform's In-App Advertising Contract Under Agency Pricing for App Sales. *Prod. Oper. Manag.* **2017**, *26*, 189–202. [[CrossRef](#)]
46. Ištvančić, M.; Crnjac Milić, D.; Krpić, Z. Digital marketing in the business environment. *Int. J. Electr. Comput. Eng. Syst.* **2017**, *8*, 67–75. [[CrossRef](#)]
47. Lee, Y.H. Putting a face to the game: The intellectual property implications of using celebrity likenesses in videogames. *J. Intellect. Prop. Law Pract.* **2018**, *13*, 143–153. [[CrossRef](#)]
48. Martínez-Pastor, E. Menores youtubers en el ecosistema publicitario de los juguetes: Límites normativos. *Rev. Espac.* **2019**, *40*, 5–17.
49. Martínez-Pastor, E.; Vizcaíno-Laorga, R. Menores y publicidad de juegos de azar en internet: Nuevos formatos, contenidos publicitarios y retos en la protección de los menores. *Prof. Inf.* **2021**, *30*, e300420. [[CrossRef](#)]
50. Meyer, M.; Adkins, V.; Yuan, N.; Weeks, H.M.; Chang, Y.J.; Radesky, J. Advertising in young children's apps: A content analysis. *J. Dev. Behav. Pediatr.* **2019**, *40*, 32–39. [[CrossRef](#)]

51. Navarro, C.; Guerrero, S. Hibridación entre contenido y mensajes publicitarios en la ficción seriada: Regulación y práctica del product placement. *Commun. Pap.* **2018**, *7*, 207–221. [\[CrossRef\]](#)
52. Niño-González, J.I.; Cuesta-Cambra, U.; Martínez-Martínez, L. Publicidad in-game (IGA): Un análisis exploratorio de patrones de personalidad y de respuesta biométrica mediante expresión facial, GSR y eye-tracking. *Rev. Prism. Soc.* **2019**, *26*, 116–130.
53. Ortiz-López, P. Aspectos legales de la gestión de datos en la publicidad digital. In *Publicidad Digital: Hacia una Integración de la Planificación, Creación y Medición*; Martínez-Pastor, E., Nicolás-Ojeda, M.Á., Eds.; Editorial ESIC: Madrid, Spain, 2016; pp. 187–202.
54. Ramos-Gutiérrez, M.; Fernández-Blanco, E. La regulación de la publicidad encubierta en el marketing de influencers para la Generación Z: ¿Cumplirán los/as influencers el nuevo código de conducta de Autocontrol? *Prism. Soc. Rev. Investig. Soc.* **2021**, *34*, 61–87.
55. Rowsell, J.; Pedersen, I.; Trueman, D. Playing as a mutant in a virtual world: Understanding overlapping story worlds in popular culture video games. *Literacy* **2014**, *48*, 47–53. [\[CrossRef\]](#)
56. Sánchez-Olmos, C.; Segarra-Saavedra, J.; Hidalgo-Marí, T. ‘Brand Placement’ en los videoclips del Billboard Hot 100: ¿integración o imposición de marcas? *Trípodos* **2019**, *44*, 63–81. [\[CrossRef\]](#)
57. Segarra-Saavedra, J.; Plaza-Nogueira, A. Actualización del estudio sobre el emplazamiento publicitario en series españolas: El caso de El Internado. In *En Comunicació i risc: III Congrés Internacional Associació Espanyola d’Investigació de la Comunicació*; Universitat Rovira i Virgili: Tarragona, Spain, 2012; p. 114.
58. Selva Ruiz, D. El videojuego como herramienta de comunicación publicitaria: Una aproximación al concepto de advergaming. *Rev. Comuun.* **2009**, *1*, 141–166.
59. Sharma, R. Effect of Advergaming on Children: A Qualitative Analysis. *Int. J. Bus. Ethics Dev. Econ.* **2020**, *9*, 24–31.
60. Schultz, C.D. The impact of ad positioning in search engine advertising: A multifaceted decision problem. *Electron. Commer. Res.* **2018**, *20*, 945–968. [\[CrossRef\]](#)
61. Smit, E.G.; Van Noort, G.; Voorveld, H.A.M. Understanding online behavioural advertising: User knowledge, privacy concerns and online coping behaviour in Europe. *Comput. Hum. Behav.* **2014**, *32*, 15–22. [\[CrossRef\]](#)
62. Spann, M.; Molitor, D.; Daurer, S. Tell Me Where You Are and I’ll Tell You What You Want: Using Location Data to Improve Marketing Decisions. *GfK Mark. Intell. Rev.* **2016**, *8*, 30–37. [\[CrossRef\]](#)
63. Tur-Viñes, V.; Núñez-Gómez, P.; Martínez-Pastor, E. YouTube, menores y cultura colaborativa. Revisión bibliográfica de la investigación académica. *Hist. Y Comun. Soc.* **2019**, *24*, 331–351. [\[CrossRef\]](#)
64. Wojdyski, B.W.; Evans, N.J. The covert advertising recognition and effects (CARE) model: Processes of persuasion in native advertising and other masked formats. *Int. J. Advert.* **2020**, *39*, 4–31. [\[CrossRef\]](#)
65. Bakewell, C.; Mitchell, V.-W. Generation Y female consumer decision-making styles. *Int. J. Retail. Distrib. Manag.* **2003**, *31*, 95–106. [\[CrossRef\]](#)
66. Brodsahl, D.J.C.; Carpenter, J.M. US male generational cohorts: Retail format preferences, desired retail attributes, satisfaction and loyalty. *J. Retail. Consum. Serv.* **2012**, *19*, 545–552. [\[CrossRef\]](#)
67. Duffett, R. The youtube marketing communication effect on cognitive, affective and behavioural attitudes among generation Z consumers. *Sustainability* **2020**, *12*, 5075. [\[CrossRef\]](#)
68. Kumar, A.; Lim, H. Age differences in mobile service perceptions: Comparison of Generation Y and baby boomers. *J. Serv. Mark.* **2008**, *22*, 568–577. [\[CrossRef\]](#)
69. Reisenwitz, T.H.; Iyer, R. Differences in Generation X and Generation Y: Implications for the Organization and Marketers. *Mark. Manag. J.* **2009**, *19*, 91–103.
70. Thomas, M.R.; Madiya, A.; Mp, S. Customer Profiling of Alpha: The Next Generation Marketing. *Ushus J. Bus. Manag.* **2020**, *19*, 75–86. [\[CrossRef\]](#)
71. Feijoo-Fernández, B.; Sádaba-Chalezquer, C.; Bugueño-Ipinza, S. ¿Nivel experto o ingenuo? Detección y confianza de los niños en la publicidad que reciben a través de sus dispositivos móviles. Perfiles de usuario. *Zer-Rev. Estud. Comun.* **2020**, *25*, 231–248. [\[CrossRef\]](#)
72. López-De-Ayala, M.C.; Martínez-Pastor, E.; Catalina-García, B. Nuevas estrategias de mediación parental en el uso de las redes sociales por adolescentes. *Prof. Inf.* **2019**, *28*, e280523. [\[CrossRef\]](#)
73. Jiménez-Marín, G.; Sanz-Marcos, P.; Elías-Zambrano, R. Uso de smartphones en la infancia y seguimiento del Código PAOS por parte de anunciantes de alimentación. *Rev. Comun. Y Salud.* **2020**, *10*, 67–86. [\[CrossRef\]](#)
74. Stojčić, M.; Zavadskas, E.K.; Pamučar, D.; Stević, Ž.; Mardani, A. Application of MCDM Methods in Sustainability Engineering: A Literature Review 2008–2018. *Symmetry* **2019**, *11*, 350. [\[CrossRef\]](#)
75. Sarkar, B. 14-Fuzzy decision making and its applications in cotton fibre grading. In *Woodhead Publishing Series in Textiles, Soft Computing in Textile Engineering*; Majumdar, A., Ed.; Woodhead Publishing: Sawston, UK, 2011; pp. 353–383. ISBN 9781845696634. [\[CrossRef\]](#)
76. Yue, Z. Approach to group decision making based on determining the weights of experts by using projection method. *Appl. Math. Model.* **2012**, *36*, 2900–2910. [\[CrossRef\]](#)
77. Kendall, M. *Rank Correlation Methods*; Hafner Publishing House: New York, NY, USA, 1955.
78. Fisher, R.A.; Yates, F. *Statistical Tables for Biological, Agricultural and Medical Research*, 6th ed.; Oliver and Boyd: London, UK, 1963; p. 156.