

**A DECADE OF ONLINE ADVERTISING RESEARCH: WHAT WE LEARNED AND
WHAT WE NEED TO KNOW**

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ABSTRACT

Since the appearance of the first banner ad, online advertising has evolved significantly and now accounts for a substantial portion of all advertising spending. As online advertising tools proliferate, academic research in this area has also matured over time. To capture these developments, this paper offers a synthesis of over 300 articles on online advertising published in major advertising and marketing journals over the last ten years. The key literature is summarized around six themes: (1) online advertising effectiveness; (2) online advertising mechanisms; (3) creative elements in online advertising; (4) the role of context in online advertising; (5) online personalization; and (6) search advertising. Knowledge gaps in existing research are identified, and important future research questions are suggested.

Online advertising has come a long way since the first banner ad appeared in 1994 (Singel 2010). In 2017, global online advertising spending reached \$209 billion and accounted for 41% of all advertising spending (Kafka and Molla 2017). As online budget grows, the repertoire of online advertising tools has also expanded significantly beyond the initial limited options of banner ads, websites, and directory listings. Advertisers now have at their disposal more than a dozen formats that include newer inventions such as advergames, mobile advertising, and retargeted advertising.

As online advertising evolves, academic research on online advertising has also matured. The initial point of departure between online and offline advertising had been the more interactive nature of online advertising (Liu and Shrum 2002). This led to a large number of studies on interactivity in the early stages (Daugherty et al. 2017). But the increasing variety of ad formats has added much more nuance to the study of online advertising, leading to diverse streams of research ranging from econometric and big data analyses of the unique issues of keyword choice and position in search engine advertising to geo-targeting issues in mobile advertising. In an effort to capture these developments, this article provides a synthesis of online advertising research in major advertising and marketing journals over the last ten years. Over 300 articles published during this time period were reviewed to get a sense of the current state of online advertising research and more importantly, to identify specific, high-priority questions for future research.

BACKGROUND

Two reviews of online advertising research were published in 2008, one in the *Journal of Advertising* (Kim and McMillan 2008) and the other in the *Journal of Current Issues and Research in Advertising* (Ha 2008). The latter was a substantive review of online advertising

research published in major advertising journals up to that point, whereas the former involved a bibliometric analyses of online advertising research to identify influential articles, authors, and research themes. Each review identified six common themes from the literature, some of which overlapped between the two reviews, including (1) interactivity; (2) relationship between online and offline advertising; and (3) online advertising processes and the influence of executional elements. In addition to these common themes, Ha (2008) also identified general attitude toward online advertising, audience measurement, and online advertising education as key topics, while Kim and McMillan (2008) suggested e-commerce, attitude toward the site/ad/brand, and effectiveness of online advertising as additional influential areas of research.

To assess how online advertising research has evolved since these two previous reviews, I conducted a thorough search for relevant publications from 2008 to the present in the EBSCO Business Source Complete database, which indexes all main advertising and marketing journals. I included the six advertising journals used in the previous reviews, namely *Journal of Advertising*, *Journal of Advertising Research*, *Journal of Current Issues and Research in Advertising*, *Journal of Interactive Advertising*, *International Journal of Advertising*, and *Journal of Marketing Communications*. I also expanded the search to include the top four marketing journals: *Journal of Marketing*, *Journal of Marketing Research*, *Journal of Consumer Research*, and *Marketing Science* and the specialty journal, *Journal of Interactive Marketing*, which focuses on online marketing issues.

The keywords used to identify relevant papers included general keywords (online advertising, digital advertising, and Internet advertising) as well as specific keywords for major online advertising formats (display advertising, banner advertising, search advertising, email advertising, and mobile advertising). The search yielded an initial set of 438 articles. The

abstracts of these articles were then perused to root out irrelevant articles that did not have online advertising as a key component of the research. To avoid overlap with Voorveld's (2018) review of social media research in this issue, I also excluded articles that dealt with social media advertising and refer readers to that paper for insights on this important topic.

The final set used to inform this review contained 303 articles. To identify the key themes from this body of work, each article was read and was assigned descriptive keywords based on its content. The keywords were then analyzed across the entire set to identify the most frequently appeared keywords and themes. This resulted in the identification of six key research areas. Once the key areas were identified, all articles related to each theme were then read again to identify commonalities and discrepancies across the articles. Figures 1 and 2 show the distribution of articles across themes, journals and years. The section below offers a brief description of each research area, and Table 1 summarizes the key topics, findings, and representative papers in each area.

[INSERT FIGURE 1 AND FIGURE 2 ABOUT HERE]

[INSERT TABLE 1 ABOUT HERE]

KEY LITERATURE

Online Advertising Effectiveness

As a main research theme identified in the previous reviews, online advertising effectiveness continues to be an important topic. The consensus is that online advertising produces positive returns, but the magnitude varies significantly by product category, customer segment, and ad format. Unlike the conclusive superiority of online advertising over traditional (print) media recognized in Ha (2008), recent research shows more complexities, possibly due to the more diverse online and offline advertising formats examined. The lack of visual attention is

often cited as the reason why online advertising may sometimes be less effective (e.g., Steele et al. 2013). However, the superiority of offline over online advertising is often found in lab experiments, where the attention deficit disadvantage of online ads is likely accentuated. In a real-world setting, offline advertising may suffer from similar inattentiveness.

Studying online advertising effectiveness is incomplete without considering its indirect effects through cross-media synergy (Assael 2011), a topic also identified in previous reviews. Most of the studies on cross-media synergy involving online media have concluded a positive synergistic effect (e.g., Snyder and Garcia-Garcia 2016). However, negative synergy or no synergy has been found in some studies too (e.g., Sridhar et al. 2016). More nuanced investigations suggest that the sequence of exposure to different media matters in the synergistic effects observed, and that the optimal sequence depends on the type of products and consumers (Klapdor et al. 2015, Micu and Thorson 2008).

Online Advertising Mechanisms

Research investigating the mechanisms of online advertising tends to focus on either engagement or mere exposure effects. Engagement comes in different forms such as clicks and emotional engagement. High engagement has been shown to increase online ad effectiveness (e.g., Calder, Malthouse and Schaedel 2009, Teixeira, Wedel and Pieters 2012). Studies showing an engagement effect tend to focus on online ad forms that claim consumers' focal attention at the time of exposure, such as websites and mobile apps. This implies the circumstances under which engagement may be necessary.

On the other end of the spectrum is the mere exposure effect (Zajonc 1968). Research finds robust support for this in online advertising, showing more favorable attitudes under less attention (e.g., Goodrich 2014) and increased implicit memory but not explicit memory (e.g.,

Yoo 2009). Duff and Faber (2011) explored the boundary conditions of mere exposure effects and found it less likely when the main task is complex and the ad is visually and spatially close to the focal content. They argue that actively ignoring a distracting ad has a distractor devaluation effect, leading to negative attitudes.

Creative Elements in Online Advertising

The creative elements of online ads captured the attention of the most articles. Based on the different paths that online advertising can affect consumers, creative elements examined in the literature can be classified into three broad categories: (1) attention-getting devices such as size, format, and animation; (2) engagement tactics such as emotional appeals; and (3) creative coordination across multiple ads.

Attention-getting elements are double-edged swords. On one hand, larger ads and rich media ads can enhance brand recognition and recall (e.g., Baron, Brouwer and Garbayo 2014). On the other hand, they are considered more intrusive and annoying (Goldstein et al. 2014). These two opposing effects often neutralize each other, resulting in a null effect on attitudes. These findings suggest that attention-getting devices may be suitable when memory is the main goal, or when immediate traffic is desired.

Among engagement tactics, emotional appeal plays an important role. Research shows that effective emotional appeals tend to be more positive (Eckler and Bolls 2011), high arousal (Belanche, Flavián and Pérez-Rueda 2017), and feature more complex emotions such as humor (Campbell et al. 2017). Furthermore, consumers are influenced by not only the level of emotions but also the dynamic variation of emotions in an ad (Teixeira, Wedel and Pieters 2012). In addition to emotional appeals, interactivity continued to receive some attention, mostly on active control and two-way communication (e.g., Siemens, Smith and Fisher 2015).

As consumers are often exposed to a brand's ads repeatedly, researchers tried to examine the effectiveness of repeating the same ad creative vs. using varied creatives across exposures. While repetition can increase brand recall and click intention (Yaveroglu and Donthu 2008), frequent repetition can also increase perceived intrusiveness (Ying, Korneliussen and Grønhaug 2009). Content variation across exposures can help counter the negative effects (Kim 2018) and may be particularly effective when the host website is not cluttered and when it is not relevant to the content of the ad (Yaveroglu and Donthu 2008).

The Role of Context in Online Advertising

The effect of an online ad depends on its context. A recent review suggests that context affects ad processing mainly through either attention transfer or a priming/halo effect (Stipp 2018). A significant amount of research reviewed was related to context effects, the most common topic being ad-context congruence. Earlier research finds congruent ads to be superior to incongruent ads (Yaveroglu and Donthu 2008, e.g., Yoo 2009). But recent research shows more nuance in congruence effects, contingent on ad arousal (Belanche, Flavián and Pérez-Rueda 2017), position (Li and Lo 2015), and goal relevance (van 't Riet et al. 2016, Zanjani, Diamond and Chan 2011). Furthermore, congruence interacts with creative elements such as ad complexity to determine their effects (e.g., Chun et al. 2014). Besides congruence, a few other contextual characteristics have also been examined such as contextual arousal (e.g., Duff and Sar 2015), ad clutter (e.g., Yaveroglu and Donthu 2008), and contextual valence (Yoo and Eastin 2017).

A newer contextual element is the consumers' location, which is key to mobile advertising (Grewal et al. 2016). Research on location effects shows that mobile ads thematically relevant to the consumer's present location and goal lead to more purchases than those not

congruent with the location (van 't Riet, Hühn, Ketelaar, Khan, König, Rozendaal and Markopoulos 2016). This is even true for ads delivered to consumers near a competitor's location if deep discount is offered (Fong, Zheng and Luo 2015). As further support for the importance of location, Zubcsek, Katona and Sarvary (2017) show that consumers at the same location tend to respond to ads similarly, suggesting some underlying homogeneity attributable to location. Similar conclusions can be drawn from Goh, Chu and Wu (2015), where consumer search after receiving mobile ads about an event varied systematically based on their spatial distance to the event.

Online Personalization

Personalization is a newer issue that emerged as advertisers increasingly embrace micro-targeting tactics. Personalization can be based on consumers' past behavior (e.g., retargeted ads), current behavior (e.g., contextual ads), or knowledge about consumer identity (e.g., personalized emails) and location (mobile ads). Personalization enhances advertising effectiveness by increasing personal relevance, reducing ad skepticism, and inducing more attentive processing (Baek and Morimoto 2012, Maslowska, Smit and van den Putte 2016, Sahni, Wheeler and Chintagunta 2018). When a behaviorally targeted ad is relatively accurate, it can also influence subsequent behavior by changing consumers' self-perception (Summers, Smith and Reczek 2016).

Research shows that a personalization strategy can have significant positive impact on both advertiser revenue and consumer welfare (Song and Mela 2011). But its effectiveness tends to decrease as consumers get closer to a purchase decision, suggesting a higher impact when information is the main goal (Bleier and Eisenbeiss 2015). The effectiveness of personalization is

also contingent on other executional elements of an ad such as its visibility (Goldfarb and Tucker 2011) and content (Bruce, Murthi and Rao 2017).

Some forms of personalization such as behavioral targeting and geo-targeting trigger significant privacy concerns (Kim and Huh 2017, Limpf and Voorveld 2015), as consumers are often unaware of being tracked. This concern may be amplified by the presence of social cues such as a human-like recommendation agent (Puzakova, Rocereto and Kwak 2013). A few articles discuss the ethical and legal implications of behavioral targeting and advise advertisers on how to navigate the issues of consumer consent and data protection (Matwysyn 2011, Nill and Aalberts 2014).

Search Advertising

Exposure to online ads is typically incidental, where consumers are engaged in an unrelated activity at the time of exposure (e.g., browsing a website, watching a video, etc.), and they do not actively influence the ads that appear. However, in some situations the consumers are purposefully searching for something that an ad is directly related to. The most common form of this is search advertising, where the main information and the ads are simultaneously defined by the consumers' search keywords. Research in this area has formed a rather distinct school of thought from other online advertising research that warrants its separate examination. Instead of building on psychology research, research on search advertising draws heavily from economic theories and methods. Quantitative methods such as game theoretic model and Bayesian models are dominant, and empirical data more often than not come from real-world campaigns. Search advertising papers are also more heavily concentrated in marketing instead of advertising journals.

As an advertising format, search advertising involves a unique combination of keyword, ranking, and bidding price considerations. On the keyword selection issue, research shows that clicks tend to be higher for less common and more specific keywords (Jerath, Ma and Park 2014, Rutz and Trusov 2011) and for keywords containing the advertiser's name (Klapdor et al. 2014). Regarding ranking and bidding price, researchers argue that bidding a high price to gain a top position may not always be wise. Although a higher position can increase clicks, the gain may not cover the overall cost increase (e.g., Xu, Chen and Whinston 2011). Furthermore, there are conflicting findings on whether a higher rank increases (Rutz, Bucklin and Sonnier 2012) or decreases (Xu, Chen and Whinston 2011) conversion rate. Research on these search advertising issues also highlight the heavy impact of competitor actions (e.g., Chiou and Tucker 2012, Simonov, Nosko and Rao 2018).

FUTURE RESEARCH DIRECTIONS

In this section, I offer some observations on important future research questions in each of the areas identified earlier. These research questions were derived from discrepancies and inconclusive findings from existing studies, future research areas suggested by the reviewed articles, cross-reference with related research areas, and general intuitions based on the evolution of online advertising theory and practice.

Online Advertising Effectiveness

Most of the research reviewed on online advertising effectiveness has focused on the short-term effects of an ad campaign. However, as the review of advertising effectiveness research by Tellis (2014) suggests, the carryover and long-term effects of advertising differ significantly from its short-term effects. With significant use of online advertising in practice for strategic brand building purposes (Hollis 2005), the field needs a better understanding of how

online ad campaigns affect consumers in the long run. One important question in this area is how the effect of an online ad exposure decays over time. Preliminary research suggests that the rate of decay may differ by ad format (Breuer and Brettel 2012, Huh et al. 2015). More systematic investigation of the decay pattern is needed.

In addition, although existing research's comparison between online and offline advertising on the same effectiveness measures is illuminating, recent work suggests the possibility that they may excel in reaching very different goals (Chan, Chen and Tse 2018). Advertising researchers can help build a repertoire of what online vs. offline advertising may be superior in achieving. Finally, existing evidence points to problems with commonly used metrics such as clicks (Fulgoni and Mörn 2009, Schwartz, Bradlow and Fader 2017). Research on the effectiveness of online advertising needs to examine what metrics should be used in a given situation and how the choice of metrics affects advertisers' decisions.

Online Advertising Mechanisms

On the inner mechanisms of online advertising, existing research has a good grasp of engagement and mere exposure effects from a single ad exposure. Much less understood is the cross-over effects from multiple ad exposures by the same advertiser. Besides the typical consideration of frequency and repetition, existing research suggests that the sequence of ad exposure matters (e.g., Becker, Linzmajer and von Wangenheim 2017). Future research needs to examine consumer response to a sequence of online ads rather than a single ad and to understand how variations in the previous ad affect consumer responses to subsequent messages.

Relatedly, as consumers move along the purchase process from the start of information search to the eventual purchase decision, their needs and goals are likely to change. We need to better understand the inner workings of online advertising across different stages. How does the

relative role of attention vs. engagement change along the way? What informational and emotional appeals may be most relevant to consumers in different stages? How does online advertising help transition consumers from one stage to the next?

Another important area for future research is the effect of online advertising on children. Most of the work reviewed here have focused on adult samples. But as a generation born into the digital age, children may view online advertising quite differently from adults (Kirk et al. 2015). Limited research in this area already suggests significant differences and reveals children's vulnerabilities (e.g., Rifon et al. 2014, van Reijmersdal, Rozendaal and Buijzen 2012). Future research needs to go beyond the current focus on persuasion knowledge to uncover deeper differences in cognitive processing and affective reactions.

Creative Elements in Online Advertising

Among the three topics reviewed earlier on creative elements, attention and engagement remain elusive for advertisers, despite the various executional elements aimed to achieve these goals. Existing research exploring consumers' attitude toward online advertising shows that consumers are less tolerant of intrusion and less understanding of the need for advertising in the online environment than in the offline setting (Logan 2011, Logan 2013). This leads to increased mental avoidance of online ads and a reluctance to engage (Baek and Morimoto 2012). To counter this trend, advertisers are increasingly using gamification to make advertising more entertaining for the audience (Terlutter and Capella 2013). This has prompted more research on advergames in the last five years. Existing research on advergames has focused mostly on the effects of in-game brand salience (e.g., van Reijmersdal, Rozendaal and Buijzen 2012), brand-game fit (e.g., Lewis and Porter 2010), and gamer engagement (e.g., Rifon, Quilliam, Hye-Jin, Weatherspoon, Soo-Kyong and Smreker 2014). But as Hofacker et al. (2016) point out, many

other game components can influence consumer response, such as game reward structure, visual design, and narrative story. More research is needed on these more complex elements of advergames.

Another common strategy for engaging consumers online is through authentic dialogues with consumers in social media. Although this paper does not address the issue of social media advertising, its importance cannot be ignored. Advertising in social media requires a very distinct style of communication from “traditional” online advertising. How should the very different creative styles be coordinated to convey a consistent message across different online channels? How do advertisers incorporate consumer side of the brand story into the creation of their messages? At a more strategic level, these issues pose new challenges to how creative processes should be structured within advertising departments and agencies. Future research needs to investigate new creative processes that help maximize strategic creativity.

The Role of Context in Online Advertising

So far, research on ad-context congruence reviewed here has mostly focused on context effects in a relatively simplified environment (a single device or platform). But as media multitasking becomes more common practice, the context in which an online ad appears can become more complex. For example, besides the website that an ad is embedded in, the consumer may also be watching a show on TV or tablet where an ad from the same advertiser or a competing advertiser may appear. As the complexity of context increases, it is necessary for future research to define and examine context in a broader scope that involves what the consumer is doing and what other devices he or she may be using at the time of exposure. Although we now know much more about media multitasking behavior (see Duff and Segijn 2018), more research is needed to understand how such behavior translates into coordinated or

disparate advertising responses from consumers, and how advertisers should coordinate messages across such simultaneous exposures to achieve maximum effectiveness.

Separately, the importance of location as a contextual cue based on existing research demonstrates the particularly important role of context in mobile advertising, where consumers can be in a wide variety of places when they see an ad (see Grewal, Bart, Spann and Zubcsek 2016). We need a deeper understanding of how physical and task contexts influence mobile ad response. Besides physical location, other characteristics of the physical environment matter as well (e.g., Andrews et al. 2016). Future research needs to better understand the influence of other environmental elements such as weather, setting, and social context at the time of mobile ad exposure.

Online Personalization

Existing research on online personalization demonstrates the importance of personal relevance to balance the loss of privacy (Kim and Huh 2017). This requires an accurate understanding of consumer needs and desires. The increasing availability of consumer information online can help in this regard. However, the sheer volume of data also presents significant challenges (O'Neal 2016). Not all information is helpful in creating more relevant ads for consumers. On one hand, future research needs to devise more efficient ways of real-time analysis of big data. On the other hand, it needs to address more systematically what types of information can make ads more personally relevant and what information should be disregarded.

Another key issue related to personalization is the personal and social impact of such advertising tactics. Existing research discussed earlier has voiced concerns regarding privacy and ethical issues in this area, especially with regard to behavioral targeting. As personalized advertising forms such as retargeted ads become more common, the field needs a more

systematic understanding of the macro- and micro-level effects of such practices. Does personalization contribute positively to consumer welfare? Does that gain justify the loss of privacy? What are the proper requirements for consumer consent? What is the best regulatory model to simultaneously protect consumer interests and promote healthy business practice? Answering these questions will ensure that personalization becomes a mutually beneficial tool for both advertisers and consumers.

Search Advertising

The research on search advertising reviewed in the last section has mostly dealt with aggregate-level effects (e.g., keyword-level or firm-level responses). In reality, individual consumers may respond in very diverse ways (Rutz and Trusov 2011), which could be masked by aggregated effects. In addition, while aggregate results reveal what works and what does not work, they do not tell us *why* things work or not work. From a theoretical perspective, search advertising represents a unique situation where the consumers' purposeful information search drives both main content consumption and the offering of potentially highly relevant ads. A deeper investigation of the underlying psychological processes of attention and persuasion in this context can help us better understand advertising in information intensive and goal-oriented environments. Experimental studies at the individual level will be needed to generate such deeper insights. Some important research questions are:

- How do consumers determine the relevance of a search engine ad among various alternatives?
- What heuristics do consumers employ in this information intensive environment?
- How is ad processing different in this goal-oriented setting versus in more accidental exposure environments?

- What content design factors are important to consumer reactions?
- How do consumers' specific search goals interact with ad design factors?

GENERAL DISCUSSION

In this paper, I have summarized relevant research over the last decade to identify key topics in online advertising research. As in two previous reviews published in 2008 (Ha 2008, Kim and McMillan 2008), the advertising field continued to explore the effects of online advertising and its underlying processes, as well as the roles played by executional elements. However, the newer research offered both more breadth and more depth in these areas. For example, instead of focusing heavily on interactivity as a key mechanism, online advertising research now also examines other forms of engagement such as emotional and social engagement as well as less intentional processes through mere exposure. Furthermore, more recent research suggests additional nuances not considered in previous findings, such as the impact of information sequence and consumer purchase stage in cross-media synergy, and the role of physical location in consumer responses to online ads. In addition to overlaps with the previous reviews, new topics emerged as well, most notably issues related to personalized advertising and advertising in the search environment. Both are likely driven by the more common use of these advertising forms in practice. Evolutions in practice also prompted the addition of new settings in online advertising research, with an increasing number of studies using mobile advertising, online videos, and advergames as the backdrop.

Besides taking stock of existing research, I have suggested important future research topics within each of the six research areas identified. Before concluding this review, I would like to propose three additional future research directions that are more broadly scoped and do not fit neatly into one of the six themes discussed earlier. First, there is a great need for more

theory development in the fast-changing field of online advertising. As a paradigm, online advertising is still in its nascent stages of development (Daugherty, Djuric, Hairong and Leckenby 2017). While new advertising formats emerge frequently with evolving technology, the discipline needs to recognize the need for online advertising to develop stronger roots by advancing unifying theories that are not easily swayed by trendy developments. Relatedly, more systematic efforts are needed to test theories developed in the offline environment for their appropriateness in the online setting.

Second, from a methodological standpoint, online advertising research needs to leverage more diverse methods and data sources to create both internally valid and externally generalizable insights. For example, the importance of physical context such as location in online advertising response suggests the need for researchers to step out of the traditional lab setting to consider more diverse environments. The availability of richer data in the online setting offers new opportunities for testing advertising theories and processes in conjunction with lab experiments (Liu-Thompkins and Malthouse 2017, Malthouse and Li 2017). Online advertising can also benefit greatly from advances in neuroscience and the decreasing costs of physiological and neuroscience instruments to gain deeper insight into consumers' reactions.

Finally, the advertising discipline needs to look more into organizational and strategic issues related to advertisers and agencies in the new technology environment. The evolving nature of online advertising brings new challenges to advertisers as well as ad agencies. How should organizational culture be adapted to this new environment? How does online advertising change the client-agency relationship (see Taylor 2017)? What are the roles and skill requirements of advertising professionals? Relatedly, how should advertising education better

prepare students for a career in the quickly evolving field? Answers to these questions can have long-term impacts on advertising as an industry and a discipline.

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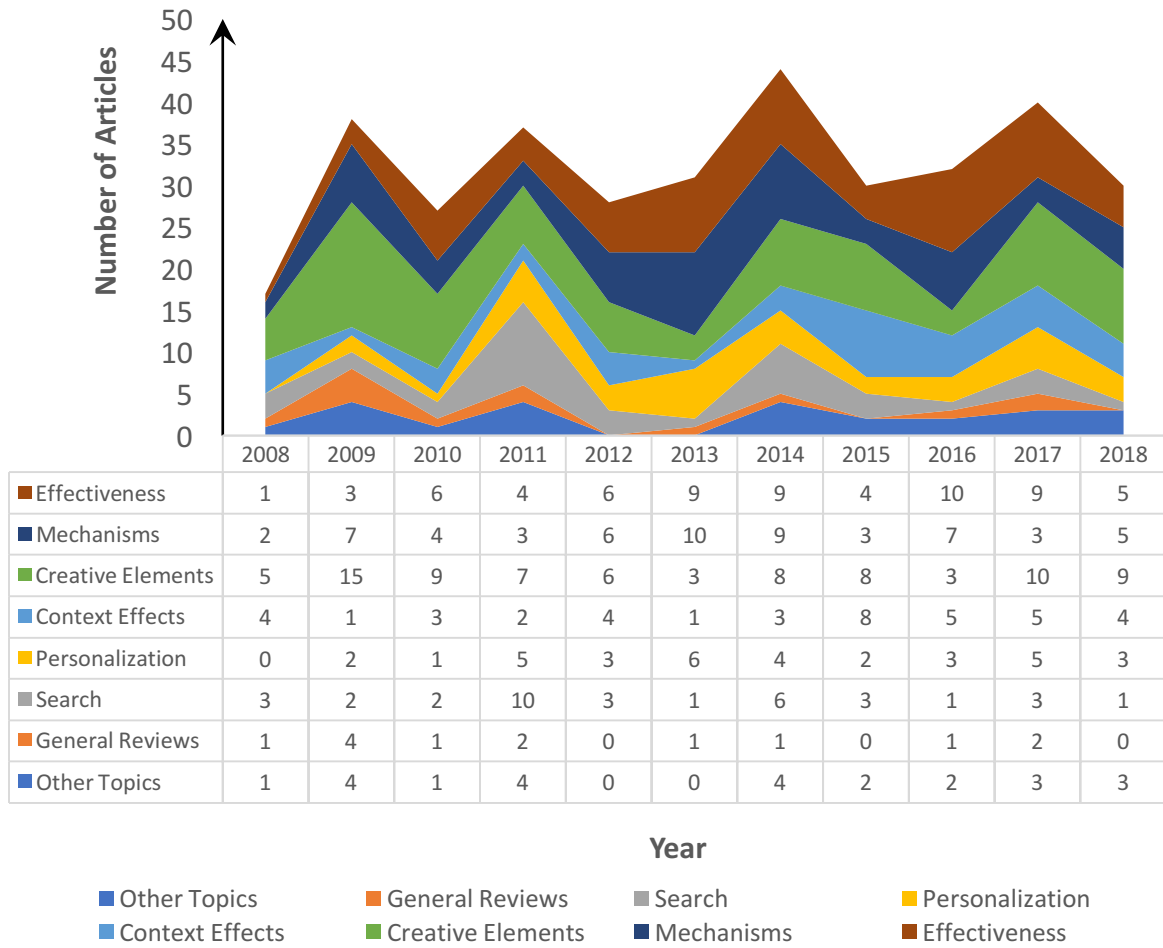
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TABLE 1. SUMMARY OF KEY LITERATURE

Topic	Sample Papers	Key Findings
<i>Online Advertising Effectiveness</i>		
<ul style="list-style-type: none"> • Direct effects of online advertising 	Breuer and Brettel (2012); Hoban and Bucklin (2015); Steele, Jacobs, Siefert, Rule, Levine and Marci (2013)	Although online advertising leads to positive business outcomes, the magnitude of such effects varies significant by product category, customer segment, and ad format.
<ul style="list-style-type: none"> • Indirect effects through cross-media synergy 	Klapdor, Anderl, Schumann and Von Wangenheim (2015); Snyder and Garcia-Garcia (2016); Sridhar, Germann, Kang and Grewal (2016)	Mixed finding on cross-media synergy between online and offline channels and within online channels. Cross-media synergy depends on the sequence of exposure to different channels.
<i>Online Advertising Mechanisms</i>		
<ul style="list-style-type: none"> • Engagement effects 	Calder, Malthouse and Schaedel (2009); Shehu, Bijmolt and Clement (2016); Teixeira, Wedel and Pieters (2012)	High engagement increases online ad effectiveness. This is more likely for ad forms that claim consumers' focal attention such as websites and mobile apps, and when consumers have sufficient cognitive and affective resources.
<ul style="list-style-type: none"> • Mere exposure effects 	Duff and Faber (2011); Goodrich (2014); Yoo (2009)	Online ads frequently work through mere exposure effects. In such situations, lower attention leads to more favorable attitudes, and implicit memory increases without a corresponding increase in explicit memory. Mere exposure effect is moderated by the ad's relationship with the consumers' focal task at hand.
<i>Creative Elements</i>		
<ul style="list-style-type: none"> • Attention-getting devices (e.g., size, format, and animation) 	Baron, Brouwer and Garbayo (2014); Bruce, Murthi and Rao (2017); Goldstein, Suri, McAfee, Ekstrand-Abueg and Diaz (2014)	Attention-getting devices enhance brand recognition and recall but are perceived as more intrusive and annoying. The opposing effects tend to neutralize each other on attitudinal outcomes. Such devices may be more suitable when memory is the main goal or when immediate traffic is desired.
<ul style="list-style-type: none"> • Engagement tactics such as emotional appeals 	Campbell, Thompson, Grimm and Robson (2017); Eckler and Bolls (2011); Siemens, Smith and Fisher (2015)	Effective emotional appeals in online ads tend to be more positive, high arousal, and feature more complex emotions. Dynamic variations of emotions in an ad are important predictors of consumer response. The effects of interactivity dimensions such as active control and two-way communications are generally positive but depend on the ad exposure context.

<ul style="list-style-type: none"> • Creative coordination across ads 	Kim (2018); Yaveroglu and Donthu (2008)	Varying ad creatives across exposures can reduce the perceived intrusiveness of the ads and lead to positive attitudes. This may be particularly true when the host website is not cluttered and when the ad and the website content are not related.
Context Effects		
<ul style="list-style-type: none"> • Ad-context congruence 	Belanche, Flavián and Pérez-Rueda (2017); Yaveroglu and Donthu (2008); Zanjani, Diamond and Chan (2011)	Whether an ad works better in a congruent or incongruent context depends on factors such as goal relevance and ad position. Congruence moderates the effects of creative elements in an ad.
<ul style="list-style-type: none"> • Location effects 	Fong, Zheng and Luo (2015); van 't Riet, Hühn, Ketelaar, Khan, König, Rozendaal and Markopoulos (2016); Zubcsek, Katona and Sarvary (2017)	At least some consumer homogeneity in advertising response can be attributed to their physical location. Mobile ads that target relevant locations tend to be more effective than irrelevant locations.
Personalization		
<ul style="list-style-type: none"> • Effects of personalization 	Baek and Morimoto (2012); Bleier and Eisenbeiss (2015); Summers, Smith and Reczek (2016)	Personalization enhances advertising effectiveness by increasing personal relevance, reducing ad skepticism, and inducing more attentive processing. Its effect is stronger at earlier stages of the consumers' shopping process, when information is the main goal. The effect of personalization also depends on other ad execution elements such as visibility and content.
<ul style="list-style-type: none"> • Ethical and legal concerns 	Kim and Huh (2017); Nill and Aalberts (2014)	Consumers' frequent unawareness of being tracked causes serious privacy concerns and ethical issues. Consumer consent and data protection are important to successful personalization. There is a need for clearer regulation of personalization practices.
Search Engine Advertising		
<ul style="list-style-type: none"> • Keyword strategy 	Jerath, Ma and Park (2014); Klapdor, Anderl, von Wangenheim and Schumann (2014); Rutz and Bucklin (2011); Xu, Chen and Whinston (2011)	Click-through rate is higher for less common and more specific keywords and for keywords containing the advertiser's name. Allowing competitors to use a focal firm's trademark as keywords has both positive and negative effect on the focal firm's search ad performance.
<ul style="list-style-type: none"> • Bidding price and ranking 	Agarwal, Hosanagar and Smith (2011); Rutz, Bucklin and Sonnier (2012)	Although top position leads to more clicks, the gain may not offset the overall increase in costs. The optimal price and position strategy depends to a great extent on competitor actions and the firm's position in the marketplace.

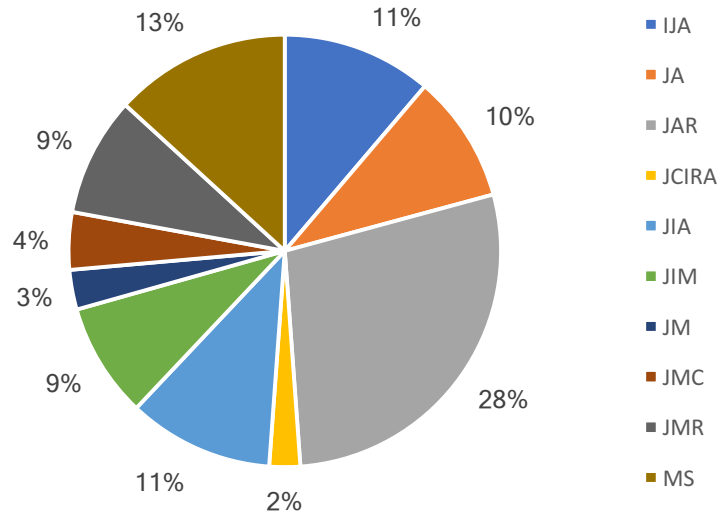
Figure 1. Distribution of Articles by Theme and Year



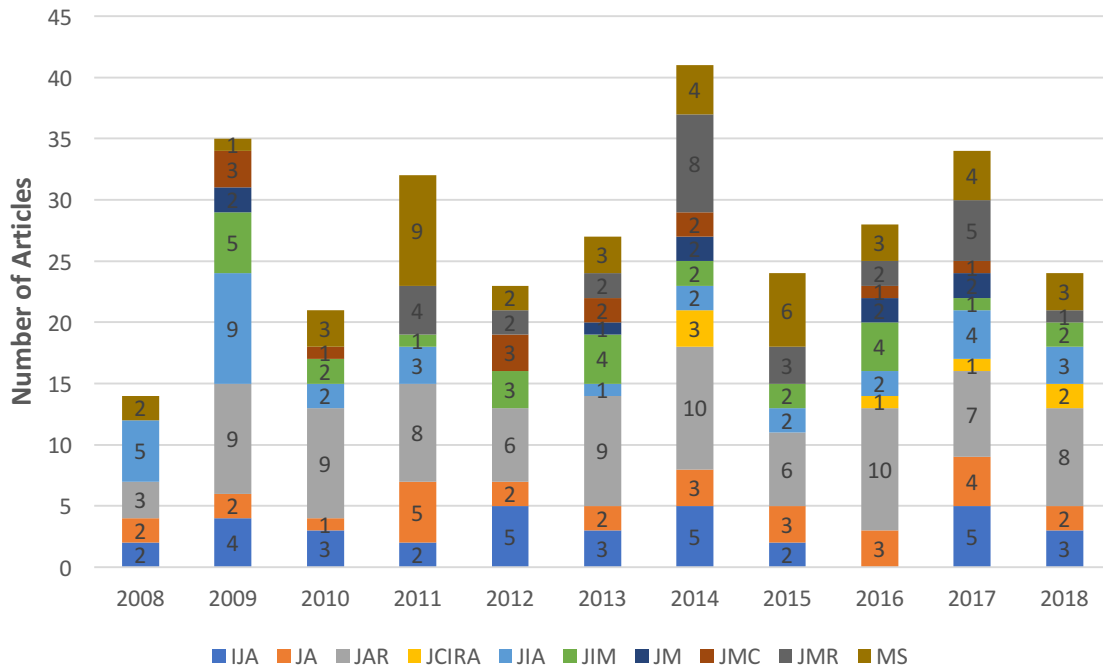
Note: Since some articles focused on multiple themes, the total count from the table above is higher than the number of articles reviewed.

Figure 2. Distribution of Articles and Themes by Journal

(a) Distribution of Articles by Journal



(b) Distribution of Articles by Journal and Year



Note: IJA = *International Journal of Advertising*; JA = *Journal of Advertising*; JAR = *Journal of Advertising Research*; JCIRA = *Journal of Current Issues and Research in Advertising*; JIA = *Journal of Interactive Advertising*; JIM = *Journal of Interactive Marketing*; JM = *Journal of Marketing*; JMC = *Journal of Marketing Communication*; JMR = *Journal of Marketing Research*; MS = *Marketing Science*