

## **A Comparative study of paid advertising and organic marketing for service-based industries**

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### **Abstract**

Administrators can develop more precise corporate strategies by taking into consideration customers' perceptions. In order to examine the platform's optimal advertising effort and the paid App's optimal item quality with the income sharing agreement in the decentralised and coordinated frameworks, separately, this paper uses the optimal control hypothesis. It uses the reference cost and altruism of the paid App as the state factors. The outcomes demonstrate that: (1) The reference cost increases with the level of client dedication, although it has less bearing on clients who require dependability. (2) The paid App is hesitant to cover any platform advertising expenditures when the income sharing share is equal to or higher than 2/3. (3) To facilitate the decentralised framework's organisation and achieve the integrated framework's ideal goal, we suggest a reciprocal endowment agreement. (4) Most importantly, we show that the premium App and platform can both profit from the agreement given a few mild conditions.

Due to its financial viability, advanced advertising, which is a disconnected component of it, has become the subject of most general discussion. The communication between the buyer and the seller has changed in the electronic age. People are getting more and more web savvy, and as a result, the web is starting to emerge as a key media asset. In this essay, an effort has been made to illustrate the effectiveness of advanced advertising in terms of generating awareness, curiosity, and inclination while providing information about the products and motivating the purchase. Additionally depicted is the type of commercials that are most popular. According to the review, consumers find advanced advertising to be interesting and helpful.

**Keywords:** Paid Advertising, Organic Marketing, Service-Based Industries, Chain Coordination, App and Platform, Optimal Strategies.

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### **I. Introduction**

A renowned and more barely defined definition of advertising is "any compensated structure for non-individual show and advancement of thoughts, labour, and things" and "any human contact designed to persuade or affect purchasers in their buy decisions."

Advertising operates at the nexus where culture and economy intersect; its primary function is to motivate consumers to make purchases of goods and services. To accomplish this, it employs culturally-modifying methods such as setting goals and creating new desires for goods. The economy, population, culture, politics, and the body of laws in general are the key ecological factors that have an impact on advertising.

Advertising in and of itself is a social good that gradually shapes social attitudes, defines social roles, and affects social characteristics. Due to the influence of these factors, advertising created and supported a particular profile in twentieth-century western industrialised society with the aim of stimulating the use of goods produced by emerging and developing industries.

In current many years publicists from the industrialised countries have progressively identified global business sectors, extending the utilisation of unknown things and attaining far reaching societal modification. This study examines the current state of advertising in India in light of these developments, as well as the entry of foreign businesses and advertising agencies, as well as the methods employed to target the Indian market.

Over the past year, 204 billion portable apps have been downloaded from the Apple App Store and Google Play, and consumers have spent \$120 billion overall on apps in 2019. Customers use apps for an average of h per day, which shows that apps have integrated themselves into people's everyday calendars. The prominent role of the portable platform as a two-sided market in connecting Apps and users is inseparable from the rapid growth of the App industry. In a store network with an income sharing agreement, the portable platform

becomes an app retailer, and the app developer becomes an app supplier. For instance, iOS developers provide the Apple Store 30% of their revenue, and the 360 platform claims that app developers should give the platform 50% of their deal revenue.

The evolution of apps primarily takes place in two forms: a free version with advertising and a paid version. Paid apps may be more beneficial, provide better client information, and contain less advertisements than free apps. But ultimately, customers decide whether to purchase the commercial version after experiencing the features and nature of the free version. The generosity created by the prior free version's nature has consequently become a crucial motivator for customers to buy. Additionally, as advertising advancement increases, so does the level of generosity. A successful marketing strategy can boost consumer demand while also creating a positive image of the product, all of which contribute to maximising the organization's advantages.

As a result of its growth, publicists are now seen as a more desirable source for attracting customers. This condensed time period makes use of the Internet and World Wide Web to disseminate marketing messages and attract customers. Web advertising differs from traditional advertising in that consumers can easily tap on the deals and communicate with retailers for questions, additional information, and in any case, making the request. Web advertising also offers sponsors the benefit of focusing precisely and precisely on the target audience. Internet advertising examples include contextually relevant ads for web crawler results pages, banners, websites, interstitial promotions, online ordered advertising, and more. An ad server transmits a large number of these types of promotions. Web advertising has grown incredibly quickly and is expected to consume a sizable portion of advertisers' media budgets. The benefits of online advertising include its scalability, better demographics, targeted messages, and cost-effectiveness. Following and estimation in great detail, with the imagination serving as the final touch.

## **II. Literature Review**

One is to focus on the practical store network coordination tool, and the other is to discuss the platform and app's best practices.

### **II.1. Supply Chain Coordination**

The writing on the retail network focuses on implementing various tools to strengthen channel coordination and, finally, work on the framework's productivity. The amount rebate, income sharing agreement, respective interest or cost-sharing agreement, value markdown, and two-section taxes are all related coordination components. Though a few publications address a special model setting in discrete opportunity to achieve channel coordination, the most of the material is based on static model assumptions. Using the optimal control hypothesis and production network coordination, we create a reciprocal sponsorship arrangement in this paper's persistent time dynamic model setting to achieve channel coordination between the platform and the sponsored App.

Achieving production network coordination has been made possible by the amazing corporate and scholarly interest in the dynamic pleasant advertising programme. The ward demand model established by Nerlove and Arrow serves as the driving force behind a key component of the exploration stream. In this model, the job of advertising, which animates a progression of important investigation, includes the choices of cost, quality, and the advertising in a store network, or in a level contest setting, will ultimately affect the item generosity's influence on demand.

A few people focus on useful advertising models that take the reference cost into account. Most customers have a reference cost for a certain item, and when the actual cost of the item is less than the reference value, the customers will feel rewarded, which promotes the sale of the item, especially the reference cost impact. The estimation process is at the heart of the reference cost model. Zhang et al. address the problem of beneficial advertising in store network coordination with the reference cost in connection with this paper. In any case, they have not explicitly said that, in principle, the two-way appropriation technique can benefit both the producer and the retailer based on the specific conditions. Lu et al. only focus on the reference cost and ignore the distinctive effects of generosity. The coordination of the production network is not examined, and the model is not constructed in accordance with the income sharing agreement.

In order to obtain the best interest in the item nature of the paid App and the best advertising effort of the platform in promoting the paid App, we foster a perpetual time dynamic model driven by the item generosity and the reference cost of customers, taking into account the impacts of the reference cost and the altruism. In contrast, our methodology takes into account the agreement for sharing profits between the platform and the premium App. Importantly, we make the supposition that, under a few mild conditions, the platform and the premium App can both profit from the respective sponsorship arrangement.

## **II.2. Optimal Strategies of App and Platform**

Research on the generation of business decisions via portable platforms and apps has drawn growing attention as a result of the flexible Internet's rapid development. Sun et al. use the effects of visits and openness to choose the best arrangement of blending promos shown to customers. The meaning of the APIs provided by computerised platforms to the original Apps and App copycatting is examined by Xue et al. Guo et al. conduct a financial analysis of the premium content and advertising in game Apps' prize advertising section. The ideal security level of the monopolistic web-based platform under the substance and advertising model is examined by Nan et al. In spite of unconnected and App channels, Tao et al. study the best methods for item estimation and delivery for a local vendor. However, the aforementioned written works all start off from a single point of view, ignoring the relationship between the platform and App.

Wang et al. suggest a reciprocal investment contract that compels the platform and App to fund each other's advertising costs in order to capture the interest link between the platform and App under the particular environment. Ji et al. use the rate of in-App promotion impressions as a control variable while discussing in-App advertising method. Their findings indicate that a combined plan of revenue sharing and advertising expense sharing should be implemented simultaneously in order to arrange the framework. Liu and Liu expand the model to include a single platform and several Apps, and they take into account the possibility that Apps can share and display advertisements among one another. Likewise, Wang et al. study the intelligent connection between the live decorations and the associations of the platform according to the perspective of compensation system.

Further examination of the business system options for premium Apps is definitely warranted. Avana de et al. focus on how the platform should define the ideal level of income sharing and how the App engineer should choose the interest in quality and the selling price of the App when confronting the various gamble views of App engineers. The aforementioned approach is further expanded into a single standard platform and numerous important Apps. In addition to providing the states of offering free and paid renditions, Chen et al. nurture an enlightening system for app makers. In order to decipher the ideal advertising income sharing arrangement, Hao et al. take into account the techniques of jointly providing in-App promotions and premium Apps. Their findings suggest that the platform owner should fund app developers through advertising channels, which serves to maximize the advantages of both the platform and the app. However, the static model parameters are what all of the aforementioned investigations on the premium Apps are built on.

## **III. Model Development**

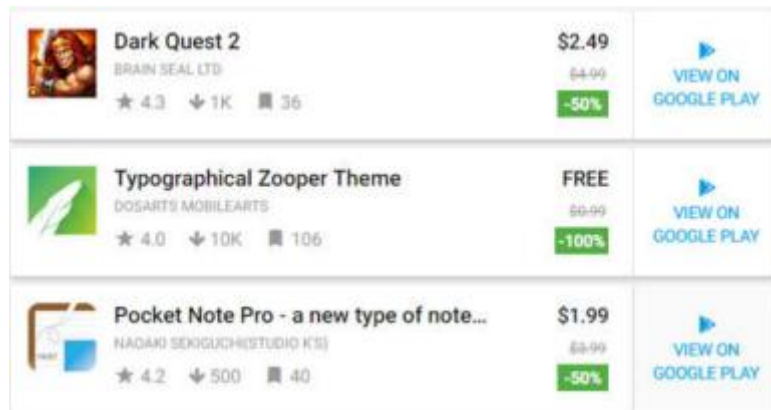
This essay examines a system made up of a paid app and a portable platform (we refer to the app as "he" and the platform as "her"). The engineers of the paid app sincerely try to improve the item nature of the paid app in order to increase downloads. Additionally, the platform will use advertising to promote the paid App in an effort to get users eager to purchase the best Apps. We refer to the long-term  $t$  as  $q(t)$  0 item nature of the paid App and the platform's long-term  $t$  as  $e(t)$  0 advancement advertising effort.

Customers' perceptions will evolve over time as they deal with a wide variety of Apps in the portable App store. Each customer, in particular, has a reasonable price range for a particular type of paid App. Customers will weigh the continuous cost of the app against the cost to them when deciding whether to pay to download an ideal app. The clients' historical value recollection of the purchased App will then affect the reference cost. Additionally, the reference pricing is significantly influenced by the premium App's item nature as well as the platform's promotional efforts to promote the App. Identify the reference cost of the paid app over time  $t$  as  $R(t)$  0 and the app's continuous cost as  $P$  0. Particularly, the underlying authority cost of the paid Apps or the clients' use of the paid Apps for free for a brief period of time can affect the reference cost. For instance, Figure 1's underlying authority cost for paid apps Can be regarded as the reference cost, whereas the continued selling price of the premium apps is the limited cost. We anticipate that the reference cost modification cycle for the paid app will be as follows:

$$0, (1)\varepsilon R_0 = 2e(t), R(0) [+1q(t) [+ R(t)] \square [P \textcircled{=} (t) 2R$$

Where 1 and 2 equal 0,  $R_0$  is the underlying reference cost, and  $R'(t)$  is the subordinate with respect to time  $t$ . The boundary  $> 0$  reflects how the paid app's reference cost changes as a result of the cost comparison. A larger indicates that the cost hole has a significant impact on the reference cost, indicating that this group should be identified as clients that require consistency. Similar to this, when  $P > R(t)$ , clients will appropriately incorporate the reference cost into their souls, when  $P < R(t)$ , the reference cost will be appropriately discounted, and when  $P = R(t)$ , the reference cost is assumed to be equal to the continuing cost and the cost comparison is irrelevant. The two items  $1q(t)$  and  $2e(t)$  separately discuss the effects of the quality of the paid App and the platform's advertising on the reference cost's long-term cycle of change. Higher item quality and more

advertising effort can raise the paid app's reference price. We anticipate that the continued cost of the paid App, P, will be stable because the authority cost has demonstrated specific strength over a significant period of time.



**Figure: 1.** Low-cost Apps

Additionally, both the outstanding features of the paid App, such as a lovely point of interaction, many capabilities, solid execution, few bugs, ease of use, and so forth, and the attractive platform advertising allow users to develop a certain level of benevolence toward the paid App. The free app's variables include things like customer reviews and surveys that are submitted to the app on the platform. Customers submit surveys and evaluations, as seen in Apple's App Store, to provide feedback on the experience after using the Apps for a while.

#### IV. Objective of the Study

1. To learn the importance of online advertising as a unique tool.
2. To evaluate the effectiveness of online advertising on consumer behavior.
3. To determine which types of online advertising are preferred by consumers.

#### V. Methodology

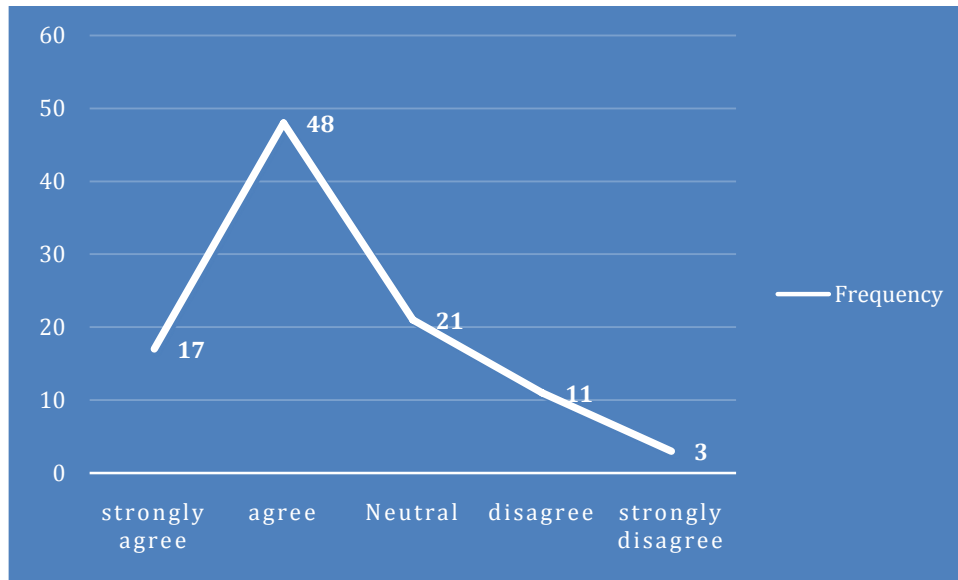
This investigation is transparent. The following example, based on 100 respondents, is drawn using the comfort testing technique: With the use of a planned survey that includes, in a sense, tightly finished questions, primary data has been acquired. The sources of the secondary data collection include literature reviews, websites on the internet, prior studies, and so forth.

#### VI. Data Analysis and Interpretations

The outcomes and their interpretations are provided below following data analysis.

**Variable.1:** Internet-User

Frequency Statistics		
Having accounts on various websites		
N	valid	100
	missing	0
Mean		2.32
		Frequency
Valid	strongly agree	17
	agree	48
	Neutral	21
	disagree	11
	strongly disagree	3
	total	100



**Figure: 2.** Frequency of Internet-user

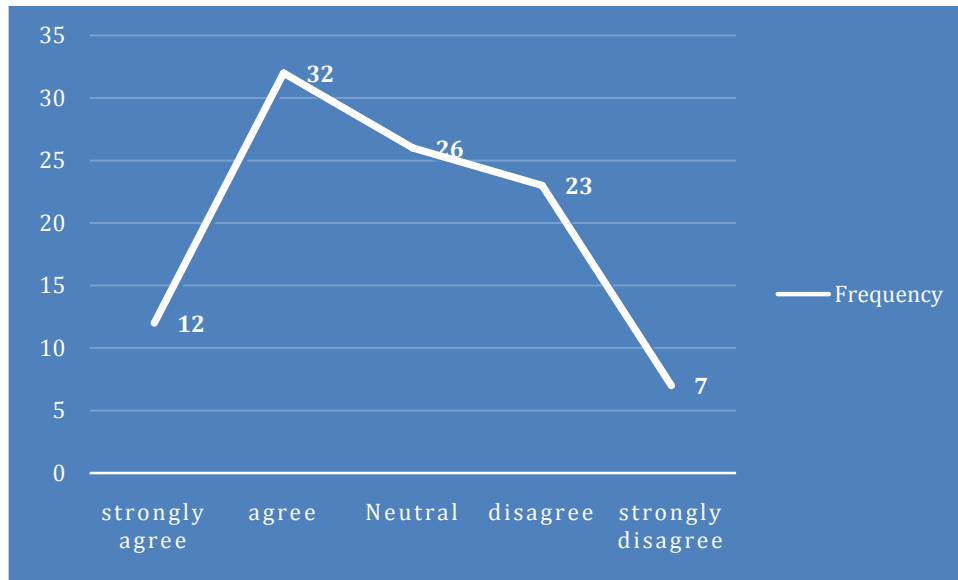
It is clear from the table above that 25% of people have accounts on multiple websites. 20% of people have neutral on the statement, while 20% of people are nonusers, which mean they don't have any online profiles.

<b>Chi-Square</b>	<b>98.991<sup>a</sup></b>
<b>Df</b>	<b>4</b>
<b>Asymp. Sig.</b>	<b>.000</b>

The aforementioned table shows that the Chi-Square value is 98.991 with 4 degrees of freedom, which is significant at 0.01 levels. The alternative hypothesis, specifically that "many people have accounts on various long-distance informal communication sites and other business/non-business sites," is acknowledged as a result.

**Variable 2:** Attention-Grabbing

Frequency Statistics		
<b>pay advertising catches attention</b>		
<b>N</b>	<b>Valid</b>	<b>100</b>
	<b>Missing</b>	<b>0</b>
<b>Mean</b>		<b>2.17</b>
		<b>Frequency</b>
<b>valid</b>	<b>Strongly Agree</b>	<b>12</b>
	<b>Agree</b>	<b>32</b>
	<b>Neutral</b>	<b>26</b>
	<b>Disagree</b>	<b>23</b>
	<b>Strongly Disagree</b>	<b>7</b>
	<b>Total</b>	<b>100</b>



**Figure 3.** Frequency of Attention-Grabbing

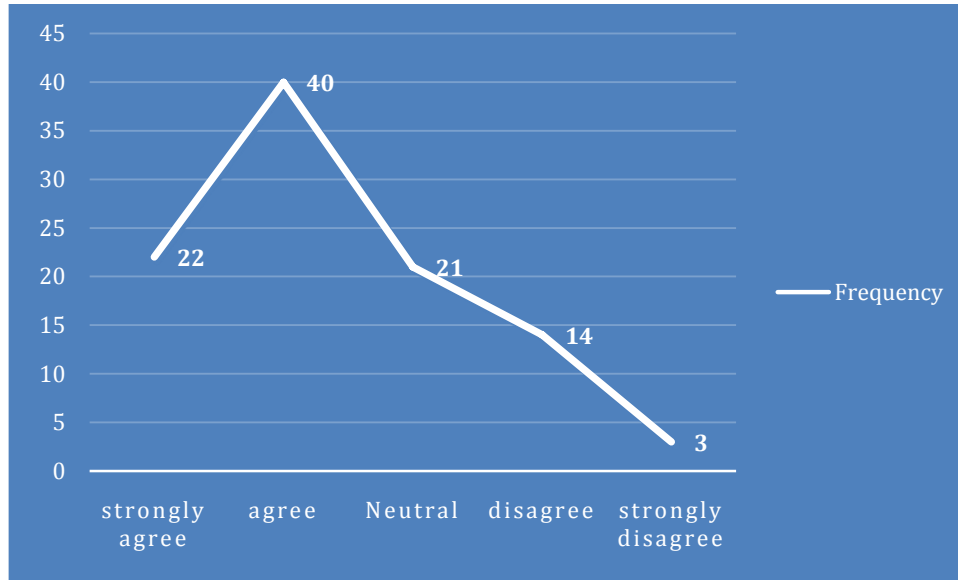
According to the mean frequency table above, 32% of respondents agree with the statement, 26% of respondents are neutral, and 7% of respondents disagree.

	pay advertising catches attention
Chi-Square	98.877 <sup>a</sup>
Df	4
Asymp. Sig.	.000

As can be seen from the table above, the Chi-Square value is 98.877 with a degree of freedom of 4, which is significant at a level of 0.01. This acknowledges the alternative hypothesis, in particular that "Internet Advertising Catches Attention."

**Variable 3: Awareness**

Frequency Statistics		
source of knowledge about various products and services		
N	Valid	100
	Missing	0
Mean		2.17
Valid		Frequency
	Strongly Agree	22
	Agree	40
	Neutral	21
	Disagree	14
	Strongly Disagree	3
	Total	100



**Figure: 4.** Frequency of Awareness

It can be observed from the above table that 40% of respondents agree with the statement, 21% agree but are neutral, and 14% disagree.

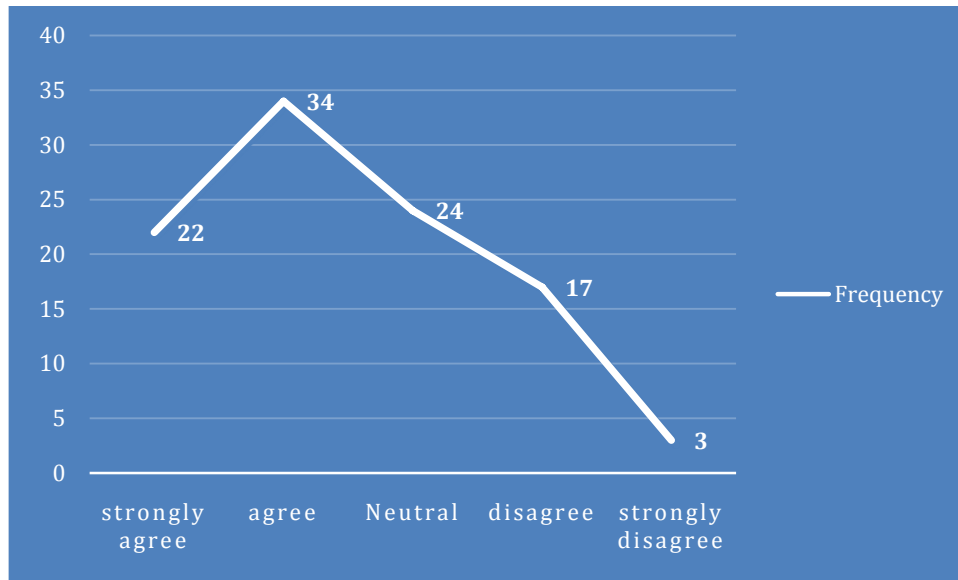
Source of Knowledge About Various Products and Services	
Chi-Square	46.566 <sup>a</sup>
Df	3
Asymp. Sig.	.000

It is clear from the preceding table that the Chi-Square value is 64.655 with Degree of Freedom 4, which is significant at a level of 0.01 the alternative hypothesis, specifically that "Online promotions are excellent sources of information about various goods and services," is acknowledged as a result.

**Variable. 4:** Trustworthy

Frequency Statistics		
In terms of making online purchases		
N	Valid	100
	Missing	0
Mean		3.68
		Frequency
valid	Strongly Agree	22
	Agree	34
	Neutral	24
	Disagree	17
	Strongly Disagree	3
	Total	100





**Figure: 5.** Frequency of Trustworthy

It can be observed from the above table that 34% of respondents agree with the statement, 24% of respondents are neutral, and 17% of respondents disagree.

	In Terms of Making Online Purchases
Chi-Square	36.362 <sup>a</sup>
Df	4
Asymp. Sig.	.000

It is clear from the preceding table that the Chi-Square value is 36.326 with Degree of Freedom 4, and that this value is significant at the 0.01 level. As a result, it is agreed that the alternative hypothesis, especially that "pay Advertising is trustworthy," is true.

## VII. Conclusion

Since useful and creative promotions are also preferred, as we have seen with flag and Internet marketing, future plans and creative deal ideas should be developed. An excellent way to achieve that is via recordings. - It is possible to use interactive flag plans where the customer can print out an item sheet from the actual standard, place an order for an item using the actual pennant's got request structure, select the button of his choice, and be directed to a specific item marketing page.

Free is just as effective in online advertising as it is in offline marketing. A simple name hotel drawing can encourage viewers to browse advertisements while they become aware of the advertisement by offering a gift. Interaction with others Websites are fantastic hotspots for placing advertisements because they stand out and are used today. The advertisements on company websites shouldn't be in the form of pop-ups or standard since people who visit these sites ignore them. Target Audience: Focusing on the core interest group first. Financial professionals won't have the chance or propensity to participate in game-style promotions. However, children adore them. Games might be the answer, assuming the target audience is made up of younger people. Plan your promotion to appeal to your target audience's preferences. Web-based advertising is incredibly beneficial and a great source of new participants and advertisers. Reviews are more highly regarded when sounds and music are used in advertisements. Considering factors such as download speed, ease of navigation, space name, publicity, and advertising campaigns that increase traffic the impact of such advertising will be felt if all such boundaries are taken into account when selecting web-based advertising sites. Web-based advertising is one medium that helps to create awareness of the brand being advertised, it can help to paint an image, it can help to educate the population, and it also helps to create intelligence and immediate response. None of this can be provided by any conventional media.

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