

# Exploring the Impact of Mobile App Marketing Models on Consumers' Purchase Intentions

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**Abstract:** Mobile apps have gradually matured and become loved on people's cell phones with years of development and always affect people's learning, work, and life. Mobile apps are changing traditional corporate marketing methods, giving people joyment and convenience to use. This study mainly explores the impact of four mobile app marketing models: brand apps, affiliated apps, app advertisement insertion, and app advertising input on consumers' purchase intentions, and builds a research model using the mobile app marketing model as an independent variable, the consumer's purchase intention as a dependent variable, and consumer cognitive value as mediation. For collecting data, this study conducted a survey through online, and we collected 597 samples (the gender distribution consisted of 290 males (48.6%) and 307 females (51.4%). Moreover, this study analyzed the data using the SPSS 27.0 version. Results of the study revealed that app advertising insertion, app advertising expenditure, brand app, and affiliate app have a significant impact on consumer perceived value and consumer purchase intention. The results offered the following suggestions for businesses considering adopting mobile app marketing strategies: (1) including effective app advertising insertion to boost product awareness, (2) using precise app advertising allocation to unearth consumer demands, (3) leveraging brand app development to convey brand concepts, (4) utilizing affiliate apps to gain platform popularity, (5) and executing actionable marketing proposals to enhance consumer perceived value. It is concluded that mobile app marketing will enhance consumer consumption. The findings suggested that it is essential for companies to grasp the influence of mobile app marketing models on consumer purchase intention. This understanding is crucial for developing successful mobile app marketing strategies, enhancing user experiences, and boosting sales and market share. This valuable research aids businesses in gaining a deeper comprehension of consumer needs, enabling them to thrive in the fiercely competitive mobile app market.

**Keywords:** Mobile App Marketing, Consumers' Purchase Intention, Consumer Cognitive Value, Brand App, App Advertising Insertion

## 1. Introduction

Mobile apps have gradually matured and become loved on people's cell phones with years of development and always affect people's learning, work, and life[1]. The global mobile application market size was valued at approximately USD 228.98 billion in 2023 and is expected to grow at a

Received: August 31, 2023; 1<sup>st</sup> Review Result: October 04, 2023; 2<sup>nd</sup> Review Result: November 06, 2023  
Accepted: November 25, 2023

compound annual growth rate (CAGR) of 13.8% from 2023 to 2030. In 2022, Google Play contributed 110.1 billion downloads, while iOS acquired 32.6 billion app downloads. China, India, and the USA were the leading countries in terms of app downloads. Mobile apps are changing traditional corporate marketing methods, giving people fun and convenience[2]. Mobile apps have become an important communication and interaction platform between businesses and consumers. Studying the impact of mobile app marketing models on purchase intention provides practical guidelines and suggestions to companies[3]. By understanding consumers' needs and preferences for mobile apps, companies establish more effective marketing strategies, improve user experiences, increase purchase intentions, and gain commercial benefits. The mobile app market is highly competitive, and understanding marketing models' impact on purchase intentions provides market insights to companies[2]. By studying changes in consumer response and purchase intention to various marketing strategies, companies understand the advantages and disadvantages of competitors and establish more competitive market strategies[3].

However, by classifying the existing literature, it can be seen that research on the current mobile app marketing model is still in its early stages. To fill the gap in this research field, this paper studied the impact of mobile app marketing models (advertising insertion, app advertising, brand app, and affiliate app) on consumers' purchase intentions, selects four different models of mobile app marketing as independent variables, and studies consumers' purchase intentions using consumer cognitive profits as mediation. In analyzing the process of forming consumers' purchasing behavior and purchase intention in mobile apps, it is essential to deeply understand consumers' decision-making process, behavioral motivation, and psychological factors. In addition, the mobile app marketing model is an important part of the digital marketing field. Studying the impact of mobile app marketing models on purchase intention enriches and develops digital marketing theory.

The theoretical implications of the research meaning of the text are as follows. In the past few years, the rapid development of smartphones and mobile Internet technologies has accelerated the development of mobile apps. Although mobile app marketing is becoming a very attractive research field in academia, research is still in its infancy, and scholars often study smartphone users' willingness and usage behavior based on technology acceptance models.

## 2. Literature Review

### 2.1 Mobile App Marketing Model and Cognitive Profit

#### (1) App advertising input and consumer awareness profit

In mobile app marketing, advertising insertion refers to an advertising form in which advertisers strategically integrate brand or product information into the app to impress users and create a certain advertising effect. App advertisement insertion has achieved good marketing effects by implementing advertisements in mobile app content beyond the limitations of existing promotions. Consumers have some psychological expectations and expected negative results when contacting app advertisement insertion, which has a certain impact on consumers' cognitive profits and cognitive risks, for example, when viewing advertisement insertion in mobile apps. Moreover, Chen and Haley[4] studied game users' attitudes toward ad insertion in the game and established an SNS ad insertion theory model, and found that ad insertion in SNS games makes consumers feel appropriate, interactive, and useful and ultimately affects consumers' purchasing behavior. Lee and Jin[5] investigated the effect of gamification in brand app experience. Moreover, Sung[6] tested the augmented reality mobile app advertising by adopting social experiences. Therefore, the following hypothesis was proposed in the text.

H1-1 App advertising insertion will have a direct impact on consumer cognitive profits.

## (2) App advertising input and consumer awareness profit

App advertising input allows advertisers to insert product information into mobile apps in the form of advertisements. When users click on advertisements, they view product details, inquire about products, and purchase and use products on designated sites. When consumers use mobile apps, they recognize the psychological impact behind them and gain information and cognitive benefits by clicking on advertising links, and there may be negative factors such as personal information exposure and virus infection. This is closely related to the effect of app advertisement input, which affects consumers' purchase intention. Alalwan et al.[7] studied consumers' willingness to click on mobile app advertisements based on the UTAUT theoretical model and found that consumer utility expectations, social effects, risk perception, and privacy security directly affect mobile app advertisement click intentions, followed by utility expectations. Therefore, this study proposed the following hypothesis.

H1-2 app advertisements will have a direct impact on consumer cognitive profits.

## (3) Brand apps and consumer awareness profits

Brand apps refer to companies developing and promoting their apps according to their characteristics, and consumers understand the company's products and services and strengthen their brand image through the apps. To attract consumers, many brands design one or more features such as app entertainment, interaction, social, and shopping to better show consumers information about brand products and promotions, affect consumers' interests and risk perception, and affect consumers' purchase intentions. Kim et al.[8] conducted an empirical study on the impact of entertainment, functions, and social on brand communication effects through consumer brand app experience, and according to the study, brand app experience has a positive impact on brand communication effects and ultimately affects consumers' purchase intention. Therefore, this article proposes the following hypothesis.

H1-3. Brand apps will have an impact on consumers' cognitive profits.

## (4) Affiliate Apps and Consumer Cognitive

Affiliate apps refer to marketing activities jointly conducted by several operators based on one software platform, such as Taobao apps and public review apps. Affiliate apps combine with many merchants in various industries to search for information on nearby merchants in real-time through location-based service (LBS) functions, allowing consumers to find various merchants' characteristics anytime, anywhere. Based on the TAM theoretical model, Wang[9] conducted an empirical analysis of consumers' joint purchase app information adoption behavior using joint purchase apps such as Rasu and Meituan. According to the research results, consumer cognitive usefulness, information efficiency, payment safety, and privacy risk significantly impact consumers' joint purchase app use. Therefore, the following hypothesis was proposed in the text.

H1-4 Affiliate apps have an impact on consumers' cognitive profits.

## 2) Consumer Cognitive Profit and Consumer Purchase Intention

Cognitive profit refers to the profit perceived by consumers in products or services and is a subjective sense that meets consumers' specific needs and realizes values. When accessing mobile app marketing, consumers create specific psychological expectations and make purchase decisions by measuring the benefits and risks that may arise from the use process and results.

The higher the cognitive profit, the higher the likelihood that consumers will purchase products or services; the higher the cognitive risk, the lower the possibility that consumers will purchase products or services. Khan et al.[10] conducted an empirical study on factors affecting online consumer satisfaction and repurchase intention in Korea, and as a result, consumer cognitive price profit, cognitive convenience profit, and cognitive return policy profit all had a positive effect on consumer satisfaction and repurchase intention. However, consumer awareness of cognitive product, financial, and logistics

risks negatively affects consumer satisfaction and repurchase intention. Therefore, the following hypothesis was proposed in the text.

H2 Consumer cognitive profit will affect consumers' purchase intention.

## 2.2 Consumer Cognitive Profit Mediating Effect

The mediating effect of consumer cognitive profit indicates how the consumer's cognitive profit on the product or service affects the purchasing behavior through some parameters. These parameters may include product prices, brand images, marketing activities, and the like. Specifically, these cognitive benefits affect purchasing decisions through some parameters when consumers sense that a product or service, such as better quality, higher performance, better features, etc., provides certain benefits. One example is when a company's products are considered high quality. In that case, consumers may be willing to buy them at a higher price because they think they get better product quality and performance. In addition, consumers may purchase a product due to the good or bad brand image or to participate in a discount event. Therefore, the mediating effect of consumer cognitive profit means how a consumer's cognitive profit on a product or service affects purchase decisions through some parameters. This process is critical to a company's marketing strategy because it helps it understand consumer needs and preferences and develop more accurate and effective marketing strategies to improve sales and market share of products or services.

A study by Zhang and Zhu[11] investigated the effect of consumers' cognitive profits on purchase intention and analyzed brand images as parameters. It was found that the profits perceived by consumers affect purchase intention through brand image, and brand image plays an important mediating role in this relationship. A study by Yang et al.[12] investigated the impact of consumers' cognitive profits on purchase intentions and examined the mediating role of product prices and brand images in these effects. It was found that the profits perceived by consumers affect purchase intention through product prices and brand images, and product prices and brand images play an important mediating role in this relationship. The study of Jiang and Wei[13] investigated the impact of marketing promotional activities on consumers' cognitive profits and studied the mediating effects of product prices and promotional activities on these effects from the perspective of context theory. According to the results of the study, promotional activities affect consumer cognitive profits through product prices, and product prices play an important mediating role in this relationship. Moreover, the above study shows that the mediating effect of consumer cognitive profit is very important in marketing, and companies should increase sales and market share of products or services by establishing corresponding marketing strategies to understand consumers' needs and preferences. In this regard, the following hypotheses were formulated.

H3 Consumer cognitive profit will play a mediating role between the mobile app marketing model and the consumer's purchase intention.

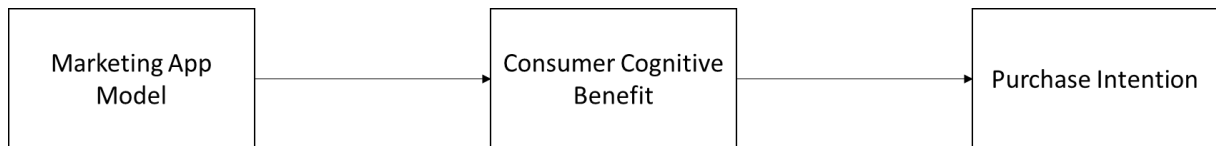
H3-1 Consumer cognitive profit will play a mediating role between app advertisement insertion and consumers' purchase intention.

H3-2 Consumer cognitive profit will play a mediating role between the input of app advertisements and consumers' purchase intentions.

H3-3 Consumer Cognitive Profit will play a mediating role between brand apps and consumers' purchase intentions.

H3-4 Consumer cognitive profit will play a mediating role between affiliate apps and consumers' purchase intentions.

Based on the abovementioned hypotheses, this study derived a research model as shown in [Fig. 1].



[Fig. 1] Reserch Model

### 3. Research Methodology

#### 3.1 Mobile App Marketing Model Measure Design

Since a mature measure of the mobile app marketing model has not been developed in the previous study, this study creates a measure of four mobile app marketing models: app advertising insertion, app advertising input, brand apps, and affiliated apps based on in-depth interview results and a small number of documents.

#### 3.2 Consumer Cognitive Profit Measure

The measure of consumer cognitive profit in this text was revised by collecting and classifying related maturity measures and combining them with the characteristics of mobile app marketing, and the specific measurement indicators are as follows. The measure of consumer cognitive profit includes three measurement items and a total of nine measurement items in each model, and the measure of consumer cognitive profit constitutes a questionnaire in the text. In this study, consumer cognitive profit refers to the value perceived when consumers use mobile apps to promote brand products. Through in-depth interview results, it was concluded that consumer cognitive profit includes three aspects in mobile app marketing: cognitive economic profit, cognitive functional profit, and cognitive-emotional profit following by Koufaris& Hampton-Sosa[19]. Recognizing cognitive economic profit means that consumers enjoy and feel more comfortable.

#### 3.3 Consumer Purchase Intention

In the current study, there are already very mature measures of consumer purchase intention, and this study mainly refers to the measures of Dodds et al.[14], and Bagozzi et al.[15] combined with the actual situation of mobile app marketing to measure purchase intention.

For all measurement instruments, see [Table 1]. The questionnaire scoring grade uses a Likert 5-point scale to measure the index, with 1 point indicating " Strongly disagree" and 7 showing "Strongly agree".

[Table 1] Measurement

Variable	Label	Measure (content)	Reference
Brand App	P1	If the design of a brand app is interesting and practical, I will be interested in the brand product.	Zhang et al. [16]; Liu & Yang [17]; Wang & Lu [18]
	P2	Participating in brand app events (such as daily attendance checks) receive incentives accordingly.	
	P3	The brand philosophy and corporate culture embodied by the brand app deepened my understanding of the brand.	
	P4	I interact with the company through the brand app and get the information I want anytime.	
Affiliate app	L1	When I need to buy a product, the affiliate app recommends a different	

		product brand, so I have more options.	
	L2	The shopping experience shared by other consumers of the affiliate app allows me to have a deeper understanding of the product.	
	L3	When I use the affiliate app, I receive promotions, draws, etc. anytime, anywhere.	
	L4	The number of partners in the affiliated app is large, covers each industry, and basically satisfies my daily consumption demand.	
Insert App Ad	Z1	For me, it is easy to determine the product brand with the mobile app advertisement inserted.	
	Z2	The insertion of mobile app advertisements is a kind of cover-up advertisement that does not affect the use of mobile apps.	
	Z3	The higher the suitability of advertising insertion content and mobile apps, the better the brand product be accepted.	
	Z4	If the product being advertised in the mobile app catches me, I will follow the information about the brand product.	
App advertising input	T1	For me, the advertising input of mobile apps provides me with the latest product information.	
	T2	If you are interested in the product that is being used for mobile app advertisements, I will click the advertisement link and watch it.	
	T3	I like, comment, or share fun mobile app ads.	
	T4	Through the use of mobile app advertising, I understand the information about this product very comprehensively.	
Cognitive economic benefits	J1	Mobile app marketing allows me to enjoy lower prices when I purchase products.	
	J2	Mobile app marketing allows me to get more discounts when I purchase products.	
	J3	Mobile app marketing allows me to receive coupons or points when I purchase products.	
cognitive functional benefits	G1	Mobile app marketing helps me get product information or purchase products.	Koufaris& Hampton-Sosa [19].
	G2	Mobile app marketing saves me time and energy to get product information or purchase products.	
	G3	Mobile app marketing allows users to view and purchase desired product information anytime, anywhere, away from time and space restrictions.	
cognitive and emotional benefits	Q1	It makes me very happy to pay attention to the product information of the mobile app.	
	Q2	Paying attention to the product information of the mobile app gives me a lot of pleasure.	
	Q3	If you pay attention to the product information of the mobile app, you feel joy and immersion.	
consumer purchase intention	x1	If the product or service promoted by the mobile app is good, I will share it with my friends and recommend it.	Dodde et al. [14]; Bagozzi et al.[15]
	x2	I will consider purchasing products that I promote on mobile apps if I need them or if I am interested in them.	
	x3	When I purchase the same product, I choose the product recommended by the mobile app first.	

### 3.4 Sampling and Data Collection

This research was distributed in the form of an electronic survey, and the research questionnaire was

created using the Wenjuanxing website, a specialized survey platform. Then, the survey link address was distributed through platforms like WeChat and Weibo. At the same time, the community feature of the Wenjuanxing website was utilized to create surveys for other respondents and invite them to reciprocate by completing the questionnaire. Distributing electronic surveys has certain advantages. Firstly, electronic surveys allow surveying mobile app users from different regions without time and space constraints. Secondly, setting survey items as mandatory avoids issues like missing responses. Additionally, downloading answer sheets directly from the Wenjuanxing website ensures the generation of answer sheet data and prevents errors during manual data entry, thereby ensuring data validity. Lastly, electronic surveys contribute to environmental conservation.

This study took measures to guarantee the anonymity of willing participants and the thorough analysis of research outcomes. Moreover, adherence to national legal regulations indicated that no supplementary ethical approval was mandated, as the study did not involve the collection of identifiable or private information. It can be affirmed that this study complied with the principles outlined in the Helsinki Declaration.

In total, 687 questionnaires were collected. After removing invalid questionnaires with completion times of less than 60 seconds, nonsensical answers, or cases where the same answer choice was selected repeatedly in large numbers, the final number of valid questionnaires remaining was 660, resulting in a valid questionnaire response rate of 96%.

## 4. Empirical Analysis

### 4.1. Descriptive Analysis

As shown in [Table 2], the descriptive statistics of the sample data for this study indicate that out of the 597 respondents who participated in the survey, the gender distribution consisted of 290 males (48.6%) and 307 females (51.4%). In terms of age distribution, those under 40 years old accounted for 42.2% of the sample. Given that this survey focused on mobile app marketing, the target audience primarily included the younger demographic, who are more exposed to mobile app marketing. Regarding educational background, the majority of respondents had completed undergraduate studies at a university, making up 72.9% of the sample. Among the commonly used types of mobile apps, video streaming had the highest usage rate at 37.2%, followed by system security at 23.1%, and transportation/navigation apps at 6.1%. These three types of mobile apps reflect entertainment, system safety, and smart functionality within the realm of mobile apps and are closely related to the lifestyles of modern young consumers.

[Table 2] Sample and Descriptive Analysis

Gender				
Contents	Frequency	percentage	an effective percentage	cumulative percentage
Man.	290	48.6	48.6	48.6
woman	307	51.4	51.4	100.0
the whole thing	597	100.0	100.0	
Age				
20-29 years old	115	19.3	19.3	19.3
30-39 years old	137	22.9	22.9	42.2

40-49 years old	169	28.3	28.3	70.5
50-59 years old	176	29.5	29.5	100.0
the whole thing	597	100.0	100.0	
Education background				
High school	106	17.8	17.8	17.8
College	80	13.4	13.4	31.2
University	355	59.5	59.5	90.6
Graduate school	56	9.4	9.4	100.0
Occupation				
Employee	353	59.1	59.1	59.1
Public servant	15	2.5	2.5	61.6
Self Employee	38	6.4	6.4	68.0
Engineer	53	8.9	8.9	76.9
Housewife	64	10.7	10.7	87.6
Student	42	7.0	7.0	94.6
Other	32	5.4	5.4	100.0
What kind of mobile app do you use often?				
Communication society	36	6.0	6.0	6.0
Watching videos	222	37.2	37.2	43.2
Shopping benefits	11	1.8	1.8	45.1
Education and learning	22	3.7	3.7	48.7
System Security	138	23.1	23.1	71.9
Traffic Navigation	37	6.2	6.2	78.1
Reading a newspaper	25	4.2	4.2	82.2
Hotel tour	27	4.5	4.5	86.8
Business operations	26	4.4	4.4	91.1
Exercise health.	30	5.0	5.0	96.1
financial investment technology	9	1.5	1.5	97.7
Other	14	2.3	2.3	100.0



## 4.2 Reliability Analysis

In this section, internal consistency coefficients of the survey questionnaire sample data were measured using Cronbach's  $\alpha$  reliability coefficient method. Cronbach's  $\alpha$  coefficient, which typically ranges between 0 and 1, is a commonly used reliability analysis coefficient and is highly suitable for Likert scale measures. As the  $\alpha$  coefficient value increases, the average correlation among all items of a variable increases, indicating higher internal reliability. In empirical research, when Cronbach's  $\alpha$  value is greater than 0.8, it suggests high internal reliability and good internal consistency. When  $\alpha$  falls between 0.7 and 0.8, it signifies good internal consistency and acceptable internal reliability.

A reliability test aims to detect changes in the reliability coefficient of the entire measure after specific items are removed. Suppose the overall reliability of the measure increases after item removal compared to the original reliability coefficient. In that case, it may indicate that the item measures a different attribute from the other items and suggests that it is not highly homogeneous.

Using SPSS 27.0 software, the overall Cronbach's  $\alpha$  coefficient for the questionnaire was calculated to be 0.937, indicating that the questionnaire is fundamentally reliable. The overall reliability of the questionnaire is acceptable, and Cronbach's  $\alpha$  coefficients for each dimension and item are presented in [Table 3].

[Table 3] Cronbach's  $\alpha$  coefficient of each dimension and question

Index	Cronbach's $\alpha$ if the item is deleted	Cronbach's $\alpha$
P1	.935	.813
P2	.935	
P3	.935	
P4	.937	
L1	.935	.836
L2	.935	
L3	.935	
L4	.935	
Z1	.935	.804
Z2	.936	
Z3	.935	
Z4	.935	
T1	.934	.843
T2	.934	
T3	.934	
T4	.934	
J1	.935	.856
J2	.936	
J3	.936	
G1	.935	
G2	.934	
G3	.934	

Q1	.934	
Q2	.935	
Q3	.934	
X1	.934	.865
X2	.935	
X3	.934	

### 4.3 Validity Analysis

This study assessed the suitability of the survey measurement samples for factor analysis through the KMO (Kaiser-Meyer-Olkin) measure and Bartlett's sphericity test. A higher KMO value, nearing 1, implies that factor analysis might be a good fit. This indicates the variables have common factors and minimal random noise interference. On the flip side, a KMO value under 0.5 often means factor analysis might not be the best approach. As shown in Table 5.3, the KMO test value for the survey measures is 0.923, exceeding the KMO criterion tested at 0.924 by Kaiser. Additionally, the chi-square value from Bartlett's sphericity test is less than 0.001 significance level, indicating that the survey measures are suitable for factor analysis.

The rotational component matrix of the measurement is shown in Table 5.5, and since the factor load of each measurement item is greater than 0.6, it indicates that the research measure has excellent structural validity (See [Table 4]).

[Table 4] Validity Analysis

	1	2	3	4	5	6	7	8
L2	.791	.073	.140	.138	.194	.063	.103	.144
L1	.770	.064	.227	.138	.127	.097	.167	.131
L3	.737	.045	.130	.341	.118	.103	.085	.074
L4	.656	.231	.130	.000	.163	.195	.125	.120
Q2	.090	.822	.155	.119	.103	.140	.141	.195
Q3	.144	.808	.198	.083	.137	.141	.152	.221
Q1	.119	.784	.190	.080	.160	.192	.118	.218
T2	.201	.195	.734	.074	.164	.117	.146	.118
T1	.189	.312	.710	-.039	.149	.188	.163	.112
T4	.170	.087	.709	.218	.094	.185	.182	.198
T3	.155	.101	.678	.359	.148	.194	.098	.152
J3	.139	.031	.089	.839	.065	.108	.110	.143
J2	.130	.116	.083	.817	.094	.069	.175	.070
J1	.207	.098	.221	.701	.088	.143	.126	.157
P2	.224	.175	.133	.009	.795	.149	.131	.099
P1	.153	.123	.193	.096	.740	.142	.135	.079
P3	.190	.283	.137	-.095	.732	.203	.113	.122
P4	.052	-.067	.029	.275	.664	.096	.056	.048
Z3	.048	.178	.158	.059	.156	.770	.127	.168
Z4	.147	.275	.160	-.113	.187	.716	.141	.076
Z2	.171	.080	.128	.218	.097	.702	.069	.079
Z1	.082	.011	.142	.258	.170	.664	.187	.178
G2	.199	.193	.190	.102	.130	.177	.792	.148
G1	.136	.108	.086	.170	.171	.115	.791	.160
G3	.126	.132	.245	.211	.114	.197	.738	.110

X2	.161	.209	.151	.075	.086	.160	.149	.804
X1	.162	.224	.181	.186	.118	.172	.163	.779
X3	.159	.280	.184	.221	.149	.170	.137	.709

#### 4.4 Hypothesis verification

Regression analysis is a statistical method used to explore the relationship between independent and dependent variables and establish a mathematical model to explain the association between them. The degree, direction, and importance of the independent variable on the dependent variable are determined by analyzing the collected data.

Regression analysis research is a statistical analysis technology that predicts the degree of causal relationship and interdependence between independent and dependent variables. In this study, the four dimensions of the mobile app marketing model were set as analytical variables (independent variables), consumer cognitive value parameters, and consumer purchase intention (subordinate variables), and the causal relationship between the four dimensions of the mobile app marketing model was verified using multiple regression analysis. The regression analysis results of the survey data using SPSS 23.0 software are as follows.

1) Hypothesis Verification that the mobile app marketing model has a significant impact on consumer cognitive profits

App advertising insertion ( $t=3.328 > 1.96$ ,  $p=.001 < 0.05$ ), app advertising expenditure ( $t=6.413 > 1.96$ ,  $p=.000 < 0.05$ ), brand app ( $t=6.734 > 1.96$ ,  $p=.001 < 0.05$ ), and affiliate app ( $t=9.831 > 1.96$ ,  $p=.000 < 0.05$ ) all had a positive impact on consumer perceived value, and they were statistically significant with an  $R^2$  of 0.543 and an F-change of 175.577. Therefore, research hypotheses H1-1, H1-2, H1-3, and H1-4 have all been accepted, and the hypotheses are supported.

[Table 5] Results of Multiple Regression Analysis in H1

		B	SE	Beta.	T	P			
1	(Constant)	.626	.117		5.362	.000			
	Insert App Ad	.101	.030	.113	3.328	.001			
	App advertising input	.196	.031	.222	6.413	.000			
	Brand app.	.199	.030	.232	6.734	.000			
	Affiliate app	.303	.031	.356	9.831	.000			
a model.	R	R squared	Modified R squared	Standard error of estimated value	Statistical variation				
					R2	F	df1	df2	P
1	.737a	.543	.540	.34861	.543	175.577	4	592	.000

2) Hypothesis Verification that consumer cognitive profit has a significant effect on consumers' purchase intention

Consumer perceived value ( $t=21.081 > 1.96$ ,  $p=.000 < 0.05$ ) positively impacted consumers' purchase intention, and it was statistically significant with an  $R^2$  of 0.428 and an F-change of 444.428. Therefore, research hypothesis H2 has been accepted, and the hypothesis is supported [Table 6].

[Table 6] Regression Analysis Results in H2

Model		B	SE	Beta.	T	P				
1	(Constant)	1.134	.132		8.574	.000				
	consumer cognitive profit	.764	.036	.654	21.081	.000				
a model.	R	R squared	Modified squared	R	Standard error of estimated value	Statistical variation				
						R2	F	df1	df2	P
1	.654a	.428	.427		.45448	.428	444.428	1	595	.000

### 3) Consumer Cognitive Profit Mediated Effect Verification

The method of Baron and Kenny[20] was used for the mediation analysis. Baron and Kenny's method for mediation analysis is a widely recognized statistical approach used for testing hypotheses that involve mediation relationships. This method comprises a sequence of steps to evaluate whether a mediator variable, believed to mediate the relationship between a predictor and an outcome, significantly influences the relationship between the independent and dependent variables. This method has three steps. In the first step, the independent variables (app advertising insertion, app advertising expenditure, brand app, affiliate app) had a significant impact on consumer perceived value ( $t > 1.96$ ,  $p < 0.05$ ). In the second step, the independent variables (app advertising expenditure, brand app, affiliate app) influenced consumer purchase intention ( $t > 1.96$ ,  $p < 0.05$ ). In the final step, after introducing both the independent variables (app advertising insertion, app advertising expenditure, brand app, affiliate app) and the mediator variable (consumer perceived value), the independent variables (app advertising expenditure, brand app, affiliate app) still significantly influenced consumer purchase intention ( $t > 1.96$ ,  $p < 0.05$ ). The  $\beta$  values in the second step were greater than those in the third step, indicating that hypotheses H3-2, H3-3, and H3-4 are accepted, and the hypotheses are supported.

However, app advertising insertion does not significantly influence consumer purchase intention ( $t = 1.801 < 1.96$ ,  $p = .072 > 0.05$ ). The analysis results suggest that there is no mediating effect of consumer perceived value between app advertising insertion and consumer purchase intention. Therefore, the related hypothesis H3-1 is not accepted, and the hypothesis is not supported.

[Table 7] Results of Verification of Mediating Effects of Consumer Cognitive Profits

Model	Step 1. Independent variables → Mediation			Step 2. Independent variable → dependent variable			Step 3. Independent variable, Mediation → dependent variable		
	$\beta$	t	p	$\beta$	t	p	$\beta$	t	p
(Constant)		5.362	.000		6.213	.000		4.417	.000
Insert App Ad	.113	3.328	.001	.071	1.801	.072	.022	.585	.559
App advertising input	.222	6.413	.000	.185	4.583	.000	.087	2.261	.024
Brand app.	.232	6.734	.000	.228	5.663	.000	.126	3.251	.001
Affiliate app	.356	9.831	.000	.287	6.795	.000	.131	3.094	.002
Consumer Cognitive Profit							.438	9.879	.000
F	175.577			90.579			103.809		
R	.737a			.616a			.684a		

R <sup>2</sup>	.543	.380	.468
R <sup>2</sup> after adjustment	.540	.375	.463

## 5. Results and Discussion

### 5.1 Results and Discussion

From a corporate point of view, the implementation of mobile app marketing is a choice for companies to respond to the fierce competition in today's information age and maintain their long-term development. Today, more and more companies recognize the important role of mobile apps and regard them as a new channel to expand marketing methods, but some companies develop apps indiscriminately and do not buy them, so the practical implications of this study are mainly reflected in the following three aspects.

First, this study fully analyzes how various mobile app marketing models affect various dimensions of consumer cognitive profits based on app advertising insertion, app advertising input, brand apps, and affiliated apps, which are characteristics of the four mobile app marketing models so that corporate marketers better understand consumers' psychology, behavioral characteristics, and laws. Advertisements and promotions generally accompany mobile app marketing, and mobile app user experience and interface design influence purchase intention. As a result of investigating purchase intentions through marketing models, companies understand the tastes and demands of mobile app interfaces, functions, and interactions. These studies optimize user experience, improve user interface design, and increase user satisfaction and purchase intention for mobile apps. The results of researching purchase intentions through marketing models show which advertising forms and distribution methods of companies are more attractive to content and induce interest in consumer purchases, and these studies guide advertising and market distribution strategies in mobile apps and increase advertising and marketing effects.

Second, this study presents a method of managing the mobile app's marketing to help corporate marketers find mobile app marketing models suitable for the company's development, improve the company's marketing strategies, effectively meet the individualized needs of consumers, increase user viscosity, and increase market share. Studying the impact of mobile app marketing models on purchase intentions helps companies discover innovative and differentiated competitive advantages. Understanding consumers' purchase intentions and preferences, companies stand out in fierce market competition by providing unique values through innovative marketing models, personalized recommendation systems, and customized services.

Third, this study helps companies directly connect with consumers using mobile apps, converts companies' traditional marketing methods to marketing methods based on mobile Internet reasons, pays attention to consumer needs, improves consumer cognitive profits when using mobile apps, and reduces consumer cognitive risk. Studying the impact of mobile app marketing models on purchase intentions helps companies discover innovative and differentiated competitive advantages. Understanding consumers' purchase intentions and preferences, companies stand out in fierce market competition by providing unique values through innovative marketing models, personalized recommendation systems, and customized services.

## 5.2 Discussion

This research primarily investigated the effects of four mobile app marketing approaches - brand apps, affiliated apps, in-app advertisement insertions, and app advertising investments - on consumer purchase intentions. It also established a research framework that uses the mobile app marketing model as an independent variable, consumer purchase intention as a dependent variable, and consumer cognitive value as a mediating factor.

First, as demonstrated by the analysis of sample data, the model of inserting app advertisements had a significantly positive impact on consumer cognitive value, and hypothesis H1-1 was confirmed. Compared to the other three mobile app marketing models, app advertisement insertion influences consumers' perceptions and brand/product memories, shaping their initial impressions of brands and products, and consequently affecting consumers' cognitive functional profits.

Second, in the sample data analysis, it is evident that the app advertisement insertion model positively influences consumer cognitive profit, leading to the establishment of hypothesis H1-2. Since this is a relatively conventional advertising method, it appears to substantially impact consumers' perceptions. Furthermore, mobile apps are increasingly adopting this approach by widely employing personalized advertising notifications, which adversely impact consumer privacy risks.

Third, through the analysis of sample data, it becomes apparent that brand apps significantly impact consumers' cognitive profits, supporting a hypothesis. Some companies issue exclusive coupons through brand apps to attract offline consumers to the mobile platform, providing consumers with specific economic benefits while swiftly furnishing them with essential product information, as brand apps encompass all products. Additionally, brand apps influence consumers' cognitive and emotional interests by facilitating interactions between consumers and companies anytime, anywhere, allowing consumers to deeply understand corporate culture.

Fourth, sample data analysis indicates that affiliated apps exert a relatively substantial positive impact on consumers' cognitive profits, leading to the formulation of a hypothesis. These apps boast a large user base and cover a wide range of industries, enabling consumers to access the product information they require easily. Moreover, affiliated apps offer entertainment and social functionalities, enhancing users' overall experience.

## 5.3 Limitations and Further Research

First, this study validates the measurement of mobile app marketing models. The method of Baron and Kenny[20] was used for the mediation analysis. Following an exploratory factor analysis and the removal of invalid items, the researchers validated the measurement through confirmatory factor analysis, ultimately forming a measurement for mobile app marketing models. Additionally, scientific rigor and validity need further verification. It is recommended that future research should delve deeper into these models. The primary aim of this study was to investigate how the four models of mobile app marketing—app ad insertion, app ad deployment, brand apps, and affiliate apps—impact consumers' perceived value and, consequently, their purchase intentions. These mobile app marketing models can be further subdivided; for instance, app ad insertion can include game insertion, soft-text insertion, and more. Brand apps can be categorized as functional brand apps, social brand apps, and entertainment brand apps. Future research could explore alternative methods or types of marketing models in the mobile app context, allowing for a more in-depth investigation.

Second, the dimensionality of consumer perceived value was enhanced. The dimension composition of consumer perceived value in this study was derived from a literature review and in-depth interviews, focusing on dimensions such as cognitive economic value, cognitive functional value, and affective emotional value. However, there may be other cognitive value dimensions not considered. Hence, future

research can further refine the model by exploring other dimensions of cognitive value that may influence consumer purchase intentions. This research investigated how mobile app marketing models impact consumers' perceived value and purchase intentions from a consumer perspective. Future studies could explore whether these models have an impact on a company's perceived value from a corporate perspective. By examining whether the use of mobile app marketing significantly changes a company's revenue and brand equity from a corporate image perspective, future research could assist companies in selecting appropriate marketing models to support their development.

Third, sample data were collected using stratified sampling. Due to constraints such as time and human resources, the selected sample in this study may not fully represent all mobile app users, as it primarily consists of younger age groups. Younger individuals tend to adopt mobile apps early and use them frequently. However, with the proliferation of smartphones and 4G, mobile apps are becoming widely used across all age groups. Some hypotheses may not have been substantiated. Therefore, in future research, expanding the scope of sample collection and obtaining stratified sample data based on the actual demographic characteristics of smartphone users can lead to more scientifically sound empirical results and greater significance and practical impact of the study.

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