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The Antecedents of Smartphone Advertising Towards Consumers' Purchase Intention

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Abstract: The aim of the study is to examine the key antecedents of smartphone advertising on consumer purchase intention. Although the importance of smartphone advertising has been rising very rapidly, but this study finds a very limited amount of research on the field that are able to focuses on the ultimate objectives of advertising. So, it has great importance for marketers and academic researchers to find out the issues which influence the consumers' interaction with smartphone advertising and motivate to purchase after noticing messages from smartphone. This study uses Ducoffe's web advertising model and flow experience theory for developing theoretical model. A quantitative survey was carried out by collecting 387 valid responses. The study model was analyzed with Partial Least Squares based Structural Equation Modeling (PLS-SEM). This research considered five antecedent variables that affect advertising value, flow experience, and purchase intention. The findings of this study claimed that informativeness, credibility, promotional offers, and personalization are key antecedents of advertising value, which significantly and positively influence smartphone advertising value and, in turn, consumers' purchase intention. The outcomes of this study have a number of noteworthy contributions to the theoretical (advertising value) and practical contexts that are discussed in this research. The article is recapitulated by mentioning the limitations of this study as well as outlining future research directions.

Keywords: *Smartphone advertising, Personalization, Purchase Intention, Advertising value, Flow experience.*

Introduction: Smartphones allow organizations to target customers with customized advertising which treated as an important advertising platform for organizations to build relationships with their customers [1]. The way businesses engage and communicate with their clients has changed due to the extraordinary growth of digital marketing. [2]. Smartphone advertising is a part of digital advertising which is based on smartphone. In general, smartphone advertising means the way of design advertising messages and delivers through the users of smartphone. According to MMA, "mobile advertising define a form of advertising technique that is conveyed to the target consumers via a handset" [3]." The development of first handheld wireless (Motorola) mobile phone 1973 was a milestone in the history of wireless technology by which people efficiently communicate with each other as part of their daily life. After that, smartphones were developed in the late 2000s due to the continuous improvement of technology. Since smartphones are more convenient and have a greater global reach, organizations have initiated to use them as useful tools of advertising [4].

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The global diffusion rate of smartphone users exceeds 6.7 billion in 2024 as well as smartphone diffusion at present has come to more than 71 percent. In the year of 2024, the total global expenditure on mobile advertising has converted 402 billion U.S. dollars, 59.6% of total global advertising budgets. However, the number of Internet users has extended to almost 5.52 (68% of world population) billion around the globe which suggests the importance of this quickly expanding advertising channel [5]. According to the BTRC, there were 186.64 million mobile device users in Bangladesh as of April 2025, with 41.82% of them using smartphones. By the end of the year, that number is expected to rise to 63%. As of April 2025, there were 130.86 million internet users in Bangladesh [6]. However, Bangladesh Government is under the slogan of Digital Bangladesh delivering of services to the citizens of Bangladesh through maximum use of technology [7]. For the reason, most of the organizations as well as people of Bangladesh are now habituated to smart devices. Therefore, it can be claimed that organizations are allowing huge budgets on smartphone advertising which in turn motivates researchers to look into the efficacy of smartphone advertising campaigns.

The advertising outcomes depend on how well it captures the attention of target audiences, regardless of advertising budget. Given the current competitive and expensive advertising landscape, it is imperative that advertising messages and content must be appropriate towards target consumers. Using mobile advertising tools, marketers may more successfully reach their target audience and make their offers and campaigns more compelling [8]. Researchers should focus on the efficiency of smartphone advertising in order to ensure consumer purchase intention, since the primary goals of advertising are to boost sales [9].

Ducoffe established and elucidated the notion of advertising value [10]. Initially, researchers mainly interested to smartphone advertising literature to find out the antecedents of advertising value and flow experience that influenced consumer's attitude or intention to read or click on advertising [11,12]. However, few studies on mobile advertising have only concentrated on how it affects sales of the advertised goods or services [8, 13, and 14]. There are few studies conducted in Bangladesh that mainly focuses on consumer attitude toward mobile advertising without focusing purchase intention which are the main focus of smartphone advertising to measure its effectiveness (7, 15, and 16).

However, studies found some customers irritated by unwanted advertisement and they want to block the functionality of smartphone advertising even they want to pay for the blocking of advertisements [8, 12]. To articulate the above problem it can be claimed that researchers to date are not able to find out the appropriate mechanism of smartphone advertising which facilitates advertising value and enhancing sales of the company's products. Thus, the key challenges to research on smartphone advertising are to identify the appropriate antecedents that can lead to advertising value and favorable experience which in turn consumers' purchase intention. Therefore, this study articulated the key research question as (i) *what are the antecedents of smartphone advertising that effectively influence advertising values which in turn influence consumer purchase intention by mitigating irritation?* In response to the above research question, this study will apply advertising value theory and flow theory to develop an appropriate mechanism (framework) of smartphone advertising that can influence consumer's purchase intention (see figure 2.1).

Literature Review: Smartphone advertising is one type of advertising that reaches consumers on smartphone or tablet whereas mobile advertising is broad ranging category of advertising. It covers several techniques, containing SMS based, game based, app or browser based, and social media platform

based advertising. However, it also uses several forms comprising text messages (SMS, MMS), and rich media like music, voice, graphics, and videos to attain the goals of businesses [17]. Smartphone treated as distinctive smart device equipped with a vigorous processor that offers different functionalities, including the ability to answer emails, make voice calls, and perform data and Internet searches [18]. There are two types of smartphone advertising. One is push-type advertising like as SMS, MMS without customer permission that causes customer irritation. Another is pull-type advertising such as keyword search, display ads, playing mobile game, and rich media advertising by browsing mobile web due to sophisticated technology that causes customer involvement. As a result, SMS/MMS-based advertising, and internet-based advertising can be treated two broader research domains in smartphone advertising literature [4].

Advertising Value Theory: The most frequently used theories of advertising literature such as Theory of Reasoned Action, Technology Acceptance Model, Theory of Planned Behavior, Unified Theory of Acceptance and Use of Technology, Uses and Gratification Theory, Web Advertising Theory and Flow Theory. However, Ducoffe's web advertising model is concentrated on measuring advertising value of consumers. Ducoffe focused on the antecedents (Antecedents of smartphone advertising are the factors that are related to influence advertising value of consumer) of advertising value in his study web advertising model—that was, irritation, entertainment, and informativeness [10]. After that several studies had followed Ducoffe's web advertising model in their research to measure the advertising value [8, 9, 14 and 19]. This study used two additional factors personalization and promotional offer to measure the smartphone advertising value.

Informativeness: Informativeness can be described as how well the advertisement could convey essential information and messages to customers [20]. Informativeness is a crucial antecedent of smartphone advertising because of consumer respond well towards informative advertising [21]. As the primary goal of advertising is to inform customers about new products, consumers often relying on advertising for this information [14]. Therefore, marketers should focus on enhancing the informativeness of smartphone advertising [9]. Accordingly, informativeness positively influences consumers' flow experience as informativeness leads to consumer concentration. As a result, informativeness helps consumer to concentrate more on product details and exclude irrelevant feelings [22].

Credibility: Credibility defines as the perception of consumer about the advertisement that is believable, and truthful [14]. Consumers are irritated by watching incredible or exaggerate advertising which in turn are not repeatedly acceptable to the consumer. Advertising credibility indicates a positive belief about the authenticity and sincerity of advertisers which in turn leads to play a significant role in ascertaining the effectiveness of advertising and creating favorable relationships with consumers [12]. Therefore, advertising credibility favorably influence the advertising value. If customers feel advertising message as credible and trustworthy, then they will pay more concentration towards the advertising message. Accordingly, credible messages of advertising are able to facilitate flow experience [12, 14]

Personalization: Consumers are presumably to pay attention to advertising that are distinguished to be more personalize but avoid advertising that are considered to have less customized [11]. Personalization refers the ability of smartphone advertising is to deliver targeted and customized messages on the basis of place, interests, and behavior. Businesses can target individual audiences with their advertising and boost interaction rates by employing geolocation capabilities and data analytics [17]. Therefore, it is required

for advertisers to follow customer needs, profiles, and consumption patterns. As smartphone is very much personal device; by using smartphone advertising marketers can provide customized advertising which may produce the value of advertising [9].

Irritation: Devaluation of advertising usefulness may result from irritative contents of smartphone advertising. [23]. Ducoffe (1995) states irritation as the unwelcome, annoying aspects used by advertisers to annoy, manipulate, offend, or insult customers. Irritation has a negative effect on consumers' advertising value [10]. As a result, the effectiveness of smartphone advertising is reduced when users are annoyed by it [11, 12]. According to a number of studies [13, 14], consumers will be reluctant to be exposed to, pay attention to, or feel negatively about an advertisement if they believe that the messages are boring regardless. An advertisement's abundance of information and interactive elements may divert viewers' focus and impair their ability to follow the flow of the transaction [8].

Promotional Offer: The advertising offering of marketers influence the responses of consumers and may involve non-financial rewards as well as financial rewards like coupons, discounts, gifts, and lotteries [14]. Advertising that offer certain financial incentives or deals are accepted by consumers [24]. On the other hand, Milne and Gordon (1993) claimed that people are concerned in saving money from marketing offerings [25]. Customers will become more absorbed on smartphone advertising as they don't want to miss out on chances for advertising messages that take into account their wants [22]. Few studies, however, have provided evidence that the growing incentives of smartphone advertising help consumers understand the value of advertising and the customer flow experience [8, 14].

Advertising Value: Value refers as ‘relative benefit, importance, or utility’ of something [14]. Accordingly, Zeithaml (1988) defined advertising value as the total assessment of benefits from advertising [26]. Ducoffe (1995) also argued value as consumers' subjective appraisal on relative worth of advertising [10]. Besides, advertising value contains evaluating the main benefits and costs of advertising from the consumer's perspective [8]. Customer perceives smartphone advertising as valuable when advertising messages match with their expectations.

Flow Experience Theory: According to Csikszentmihalyi (1975), the initiator of flow theory, flow experience is defined as the most amusing experiences and the greatest feelings that are plausible in human lives as "the bottom line of existence" [27]. Novak (2000) defines flow experience as the estate of human mind that is severely involved in some action [28]. Mannell et al. (1988) mentioned flow experience as "complete attachment of the actor with his activity"[29]. The study of Hoffman and Novak (1996) was the first study to test the flow concept on the experiences of web users by evaluating online marketing activities [22]. To gain a better understanding of people's attitude while using the web, researchers have begun to recognize the value of flow theory [30]. Innovative mobile advertising heightens controls, enjoyment, curiosity, attention, and customer interest, allowing for a seamless experience with smartphone ads while browsing mobile websites or apps [14]. In the advertising literature, flow could be used as a key predictor of consumer’s purchase intention.

Purchase Intention: Purchase intention refers as the consumer’s willingness to buy advertised products [2]. Purchase intention is defined as the state of a consumer's thought process regarding the purchase or the likelihood of acquiring a product or service that is advertised on a smartphone [8]. It is essential for assessing the effectiveness of advertising [9]. Researchers characterize purchase intention as the

inclination of consumers to formulate a purchasing plan or their willingness to acquire a specific product or service in the future [31]. Generally, purchase intention can be understood as the probability of consumers buying a product or service, which subsequently influences actual buying behavior [26].

Theoretical Framework: As the limitation of appropriate antecedents of smartphone advertising, the study combines advertising value theory and flow theory to develop the proposed research model that can influence advertising value and favorable experience which in turn positively influence consumer's purchase intention. To fulfill the research gaps identified from the literature review, this study has proposed a model of smartphone advertisements (Figure: 2.1) which comprises eight distinct but interrelated variables.

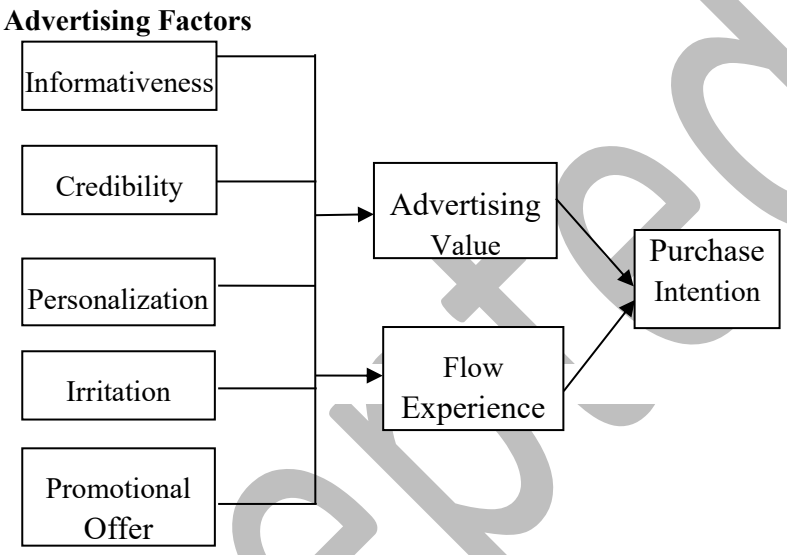

Figure: 2.1: Theoretical Model based on Advertising Value and Flow Experience Theory

Hypothesis Development: From the above theoretical model the study has predict the following hypothesizes:

Hypothesis related to informativeness, advertising value and flow experience

It is confirmed by several studies that informativeness and advertising value are closely correlated [8,9, 10,14 and 19). Additionally, because informativeness will influence consumer attention, it has a favorable impact on flow experience. Few studies also claimed that informativeness did not influence on consumer flow experience [8,14] Thus the study has assumed the following hypothesis.

H1a: Informativeness of smartphone advertisements has significant positive impact on advertising value.

H1b: Informativeness of smartphone advertisements has significant positive impact on flow experience.

Hypothesis related among credibility, advertising value and flow experience

Therefore, the perceived value of advertising is positively impacted by advertising credibility (8,14 and 19). As a result, a mobile communication's credibility is crucial, and customers can enter a flow state when they get a trustworthy message [8,14 and 32]. Therefore the following hypothesis can be drawn.

H2a: Credibility of smartphone advertisements has significant positive impact on advertising value.

H2b: Credibility of smartphone advertisements has a significant positive impact on flow experience.

Hypothesis related among personalization, advertising value and flow experience

When consumers receive tailored advertising, they may experience a higher likelihood of perceiving advertising value [9]. In contrast, several studies have suggested that personalization does not necessarily have a positive effect on advertising value [14, 33]. While it is acknowledged that consumers are paying attention to customized advertising, there is insufficient evidence to support a positive correlation between personalization and flow experience [14].Thus, the research hypothesis can be formulated by the following way:

H3a: Personalization of smartphone advertisements has significant positive impact on advertising value.
H3b: Personalization of smartphone advertisements has significant positive impact on flow experience.

Hypothesis related among irritation, advertising value and flow experience

According to earlier studies, irritation has a negative correlation with advertising value, decreasing both the effectiveness of advertising value [8,9 and 33] while it was evident that irritation had found positive impact on advertising value due to cultural and contextual differences [33]. Irritation alone does not decrease the smartphone advertising value. Accordingly, consumers are not providing their attention towards irritative or unwanted advertising which has the negative consequences on consumer flow experience [8, 14]. As a result, the following hypothesis is developed:

H4a: Irritation of smartphone advertisements has significant negative impact on advertising value.
H4b: Irritation of smartphone advertisements has significant negative impact on flow experience.

Hypothesis related among promotional offer, advertising value and flow experience

Incentives are believed to influence consumer intentions regarding mobile advertising and offer specific financial rewards to those who consent to receive advertisements [8,14,24]. Additionally, incentives are necessary for consumers to engage with smartphone advertisements, which in turn impact their overall flow experience [8,14]. Consequently, the following hypothesis can be proposed:

H5a: promotional offer of smartphone advertisements has significant positive impact on advertising value.
H5b: promotional offer of smartphone advertisements has significant positive impact on flow experience.

Hypothesis related to advertising value, flow experience and purchase intention

Consumers filter away unrelated ideas and perceptions as they are occupied in their activities. Therefore, customers' flow experience has a favorable impact on their purchase intention [14]. However, the study found very few researches on the relationship of advertising value and purchase intention [8, 14]. Hence:

H6: Flow experience has significant positive impact on purchase intention.
H7: Advertising value has significant positive impact on purchase intention.

Methodology of the Study

Research Philosophy: Since this research involves testing of theories by forming hypotheses, it is primarily informed by positivist philosophy. In order to examine the variables and determine the correlations among the constructs in this study, quantitative methods are used. Positivism, as noted by Saunders et al. (2012), is gathering information about a phenomenon, looking for patterns within it, and constructing a "cause and effect" relationship [34]. The study's findings will offer guidance on maximizing the use of smartphone advertising. The quantitative technique is most suited for research goals that aim to determine the variables affecting the result that may influence an outcome, claims [35].

Sampling Technique: Convenience sampling technique was applied in this study for quantitative survey. The past studies had evident for using the Convenience sampling techniques [8, 14, 19, 20, 23, 33 and 36]. Total 387 valid responses out of 400 are collected from smartphone users for quantitative survey. A structural questionnaire was developed to address the elements of the proposed model (see figure 2.1).

Measures and Instruments: In total, 34 items under 8 constructs and seven elementary demographic questions (e.g. age, gender, education, marital status, occupation, smartphone user status and income.) were inclined at survey questionnaire. In particular, 3 items of Informativeness [10, 11], 3 items of credibility [24, 37], 5 items of irritation (37), 5 items of promotional offer (14), 5 items of advertising value [10, 11], 4 items of flow experience [28,38], 4 items of personalization [9,39], 5 items of purchase intention [40,41] were adopted from the previous validated studies. The measurement items were checked by the pretesting of 10 respondents. They were academics expert, researcher, and respondent also. As the tendency of respondent to provide their response at the neutral value the study used Six-point Likert scale where strongly disagree denoted by one and strongly agree indicated by six.

Data Collection Procedure: A survey method was used to collect quantitative data from the respondents at 18s (as they are adult and enough mature to have experience) or more who have smartphones and have experience in smartphone advertising. The study evident that a number of studies targeted their respondents at the age below than 20s [8,12,14,19 and 31]. Specifically, the studies targeted their respondents at the age 18s [17,19 and 31]. Both the online survey (Google form) and field survey techniques (face to face) was used to collect data from the respondents. In addition, participation in this survey was voluntary and respondents were free to complete the survey at their own convenience. It is for these reasons that convenience sampling is adopted.

Data Preparation and Analysis Technique: SPSS was used in this work for factor analysis, descriptive statistics, and data preparation. However, data on observable variables were analyzed using a structural equation modeling technique based on PLS. After evaluating the measurement model then the structural model evaluated. Specifically, the measurement model of the study constructs in the conceptual framework was evaluated in two steps. First, factor loading, composite reliability (CR), and average variance extracted (AVE) were inspected in order to assess validity and reliability. Second, Fornell and Larcker's criteria, which are commonly used in social science research for PLS-SEM analysis, were operated to test discriminating validity.

Analysis and Findings

Common Method Bias: In Harman's single factor test, every indicator is loaded onto a single common factor. Common method bias does not significantly affect the data if the total variation owing to a single common component is less than 50% [47]. A principal component analysis was performed after all indicators were measured, and the results showed that there was only one factor that explained 24.583% of the variation (see table 4.1). As common method bias had no effect on this study, it can be said that the dataset is appropriate for further investigation.

Table 4.1: Harman's Single Factor Test

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %

1	8.358	24.583	24.583	8.358	24.583	24.583
2	3.212	9.448	34.031			
3	2.185	6.428	40.459			
4	1.889	5.556	46.015			
5	1.660	4.881	50.896			
6	1.407	4.138	55.034			
7	1.293	3.803	58.837			
8	1.076	3.164	62.002			
9	.921	2.708	64.710			
10	.879	2.585	67.295			
11	.809	2.380	69.675			
12	.736	2.165	71.840			
13	.712	2.093	73.934			
14	.696	2.046	75.980			
15	.679	1.998	77.978			
16	.594	1.748	79.726			
17	.581	1.710	81.435			
18	.571	1.679	83.114			
19	.530	1.558	84.672			
20	.502	1.477	86.149			
21	.459	1.350	87.499			
22	.441	1.296	88.795			
23	.428	1.259	90.054			
24	.400	1.175	91.229			
25	.396	1.165	92.394			
26	.377	1.108	93.503			
27	.353	1.037	94.540			
28	.333	.979	95.519			
29	.302	.887	96.406			
30	.288	.848	97.254			
31	.270	.795	98.049			
32	.252	.742	98.791			
33	.214	.631	99.422			
34	.197	.578	100.000			
Extraction Method: Principal Component Analysis.						

Socio-Demographic Profile of Respondents: The average age of the respondents are 21-30 as 70.81% noted. Besides, 19.12% are at their age 31-40. In terms of gender, a substantial number of respondents are male 62.3%. However this study found a significant portion of female respondents 37.7% as well. Out of 387 respondents 58.7% (227) are single and 41.3% (160) are married due to their marital status. On educational background 50.6% (196) are graduate level. Besides, 35.9% are post graduate level, 12.4% are HSC level and 1% from SSC level as well. The high representation of young graduates indicates smartphone adoption among digital-native groups. Among the survey respondents 46.5% are student, 25.8% are service, 19.6% are homemaker, and finally 7.0% to 8% are doing their own business. In terms of monthly income, 10.6% earned less than10000 BDT while 26.4% monthly income is above 50000 BDT. Respondents' monthly income ranged from 10001-20000 (12.9%), 20001-30000 (19.4%), 30001-40000 (14.0%), and 40001-50000 (16.8%) respectively. The findings represent that on the basis of income here several income groups show healthy percentage. On the basis of user status, the result of the

paper reveals that out of 387 respondents 36.7% are using smartphone for 7-9 years which is noted at the highest level. However, 30.0% respondents are using smartphone at 4-6 years, 27.4% are using smartphone for 10 years or above.

Table 4.2: Socio-Demographic Profile of Respondents

Indicator	Classification	Frequency	%	Indicator	Classification	Frequency	%
Gender	Male	241	62.3	Marital Status	Single	227	58.7
	Female	146	37.7		Married	160	41.3
	Total	**387**	**100.0**		**Total**	**387**	**100.0**
Education Level	SSC or below	4	1.0	User Status	Below 1 year	1	.3
	HSC	48	12.4		1-3 years	22	5.7
	Graduation	196	50.6		4-6 years	116	30.0
	Post-graduation	139	35.9		7-9 years	142	36.7
	Total	**387**	**100.0**		10 or above	106	27.4
					Total	**387**	**100.0**
Occupation	Student	180	46.5	AGE	18-20	14	3.61
	Service	100	25.8		21-30	274	70.81
	Business	27	7.0		31-40	74	19.12
	Homemaker	76	19.6		41-50	25	6.46
	Others	4	1.0		**Total**	**387**	**100.0**
	Total	**387**	**100.0**				
Income	BDT 10000 or less	41	10.6				
	10001-20000	50	12.9				
	20001-30000	75	19.4				
	30001-40000	54	14.0				
	40001-50000	65	16.8				
	Above 50000 BDT	102	26.4				
	Total	**387**	**100.0**				

Assessment of Measurement Model: To confirm the convergent validity, the measurement model executes factor loading, composite reliability (CR), and average variance extracted (AVE) [42]. Particularly, Table 4.3 illustrates that loading values for every item that was higher than the recommended threshold value of 0.6 [43], and CR values for the study constructs were upper than the commended value of 0.708 [44]. Finally, the study discovered that the AVE of the study constructs was higher than the recommended value of 0.5, which was sufficient for convergent validity [42]. As a result, the reflective model satisfied all three requirements for convergent validity.

Table 4.3: Assessment of Indicators' Reliability

Construct	Item	Description	F.loading	CR	AVE
Informativeness (INF)	INF1	Supply relevant information	0.719	0.818	0.530
	INF2	Delivers timely information	0.745		
	INF3	Up to date information	0.690		
Credibility (CRED)	CRED1	Credible source	0.791	0.860	0.672
	CRED2	trustworthy	0.853		

	CRED3	Believable	0.815		
Personalization (PER)	PER1	contents are personalized	0.757	0.831	0.551
	PER2	Personalized for my use.	0.721		
	PER3	Unique customer	0.716		
	PER4	Place the order of required product	0.773		
Irritation (IRR)	IRR1	Contents are often annoying	0.772	0.876	0.585
	IRR2	May offer false information	0.737		
	IRR3	Presents overlapping messages	0.831		
	IRR4	Is confusing	0.712		
	IRR5	Sometimes unwanted	0.768		
Promotional Offer (PRO)	PRO1	Offer rewards	0.684	0.890	0.618
	PRO2	offers gift voucher	0.793		
	PRO3	offers incentives	0.854		
	PRO4	offers discounts	0.802		
	PRO5	offers coupons	0.789		
Advertising Value (AV)	AV1	valuable to me	0.710	0.862	0.555
	AV2	useful	0.717		
	AV3	Important adequate information	0.787		
	AV4	Deliver important information	0.766		
	AV5	Help to make better choice	0.743		
Flow Experience (FE)	FE1	Concentrate while watching	0.753	0.867	0.623
	FE2	Passes time quickly	0.627		
	FE3	Feel fascinated	0.878		
	FE4	Happy to watch	0.872		
Purchase Intention (PI)	PI1	Frequently purchase	0.758	0.884	0.604
	PI2	Look for information	0.699		
	PI3	Prefer to buy	0.853		
	PI4	Interest to buy	0.772		
	PI5	Strongly recommend	0.798		

The study model's discriminant validity was again estimated employing the suggested test criteria of Fornell & Larcker [42]. It recommends that the correlation scores between the research constructs should be less than the square root of the AVE. The notion of measuring Discriminant validity is the constructs used in the study should be diverse from one another [45]. Nonetheless, Table 4.4 clarifies that the AVEs square roots were greater than the correlation values for the pairing of individual components. Discriminant validity was satisfied according to the study result.

Table 4.4: Square root of the AVE and correlation of coefficient

Fornell and Larcker Criterion								
Constructs	**AV**	**CRED**	**FE**	**INF**	**IRR**	**PI**	**PER**	**PRO**
AV	**0.745**							
CRED	0.451	**0.820**						
FE	0.372	0.299	**0.789**					
INF	0.429	0.313	0.211	**0.728**				

IRR	-0.052	-0.323	-0.381	0.058	**0.765**			
PI	0.431	0.344	0.496	0.316	-0.253	**0.777**		
PER	0.417	0.320	0.345	0.288	-0.146	0.428	**0.742**	
PRO	0.348	0.314	0.381	0.197	-0.186	0.378	0.413	**0.786**

Note: Bold diagonal values denote the square root of the AVE, and the off-diagonal values denote the correlation of coefficient.

Structural Model: Bootstrapping procedure was required at Smart PLS-3.0 software to test the proposed hypothesis. The analytical model was concluded by employing bootstrapping procedures to calculate path coefficient (β) and *t*-statistics [43]. To facilitate this process, a bootstrapping method was used to draw 5000 cases of sub-samples from the initial sample. The analysis was supported by 10 hypotheses, and other two were not supported.

The coefficient of determination is an indicator for assessing the test of R^2 which researcher can measure the structural model. The percentage of variance in the endogenous construct that can be explained by the exogenous construct is indicated by R^2 values. According to Suhartanto (2016) the R^2 values of the constructs denote three levels, i.e., substantial (0.66), moderate (0.33) and weak (0.19) [46]. The result of the study shows that the R^2 values Purchase Intention (0.317) Flow Experience (0.296) and Advertising Value (0.367) are closer to moderate.

The significant impact of one construct on another construct is measured by the effect size f^2. The notion of the correlation between two variables is positively associated with the result of effect size. The values 0.02, 0.15 and 0.35 for small, medium and large effects are stated as standards to estimate the effect sizes (f^2) of exogenous variables [48]. The result also indicates very small effect of credibility on flow experience and irritation on advertising value. Besides, the remaining endogenous variables have good effect on exogenous variables as small and medium to large (see table 4.5).

Table: 4.5 Effect Size (F^2)

Constructs	AV	FE	PI
INF	0.079	0.021	
CRED	0.098	0.001	
PER	0.052	0.027	
IRR	0.009	0.118	
PRO	0.023	0.054	
AV			0.103
FE			0.191

Particularly, Table 4.6 depicts that the informativeness has a great role in advertising value (β= 0.25 and *t*= 4.139). The credibility plays a significant positive role in the advertising value (β= 0.289 and *t*= 4.453). Likewise, the personalization also has a significant positive impact on the advertising value (β= 0.210 and *t*= 3.701). The irritation has a great role in advertising value (β= 0.080 and t= 1.784) and, in terms of promotional offer have a significant negative influence on advertising value (β= 0.139 and *t*= 2.672). In the same way the informativeness has a great role in flow experience (β= 0.126 and t= 2.490). Similarly, the credibility does not have significant positive role in the flow experience (β= 0.039 and t= 0.698), the personalization also has a significant positive influence on the flow experience (β= 0.162 and t= 3.255), In contrast, there is no positive significant relationship between irritation and flow experience (β= -0.315

and t= -6.955), as well as the promotional offer has a positive relation on flow experience (β= 0. 221 and t= 4.511). Advertising value has a great role in the purchase intention (β= 0.289 and t= 5.699). Finally flow experience have a significant positive impact on purchase intention (β= 0.391 and t= 8.289).Therefore, hypotheses H1a, H2a, H3a, H5a, H1b, H3b, H4b, H5b, H6, and H7 were supported. However, this study did not find any significant relation of irritation on advertising value, and credibility on flow experience, respectively. Thus, hypothesis H4a, and H2b were not supported.

Table 4.6: Results of the Structural Model

Hypotheses	Path relationship	Coefficient (β)	T Statistics	Decisions
H1a	INF ->AV	0.245	4.139**	Supported
H2a	CRED ->AV	0.292	4.453**	Supported
H3a	PER ->AV	0.209	3.701**	Supported
H4a	IRR ->AV	**0.084**	1.784	**Not Supported**
H5a	PRO ->AV	0.137	2.672**	Supported
H1b	INF ->FE	0.128	2.490**	Supported
H2b	CRED ->FE	0.038	0.698	**Not Supported**
H3b	PER ->FE	0.159	3.255**	Supported
H4b	IRR ->FE	**-0.312**	6.955	Supported
H5b	PRO ->FE	0.221	4.511**	Supported
H6	AV ->PI	0.286	5.699**	Supported
H7	FE ->PI	0.389	8.289**	Supported

Note: **p<0.01, *p<0.05. INF= Informativeness, CRED= Credibility, PER= Personalization, IRR=Irritation, PRO= Promotional offer, AV= Advertising Value, FE= Flow Experience, PI= Purchase Intention.

Discussions and Implications: This paper aims to investigate the antecedents of smartphone advertising which can influences advertising value and flow experience to share their contribution on consumer purchase intention. Using PLS-based structural equation modeling (SEM), the predicted findings demonstrated the strength and extent of the correlations between the constructs being studied. The findings from the analysis are discussed in line with the earlier proposed hypotheses of the study. Out of 12 hypotheses 10 hypotheses were supported, and two were rejected.

Relationship among Informativeness of Smartphone Advertising, Advertising Value and Flow Experience (H1a & H1b)

The study found informativeness has a significant positive impact with advertising value (H1a) which is also claimed by several past studies [8,9,14]. The study found a new relationship which is significantly positive between Informativeness and flow experience (H1b). The past studies claimed that informativeness did not have any positive impact on flow experience [8,14].

Relationship among Credibility, Advertising Value and Flow Experience (H2a & H2b)

This study found similar result with the past studies that there is a significant positive influence on credibility and advertising value H2a [8,14]. In addition, the study does not able to support relationship

between credibility and flow experience in smartphone advertising due to insignificant (H2b). The result reflects also different as the few previous studies [8,14].

Relationship among Personalization, Advertising Value and Flow Experience (H3a & H3b)

The finding of this paper shows that personalization has a significant positive impact on advertising value. The result also similar as the study of [9] but denied few studies [14,33]. Although the contradictory findings, the result of this study found that personalization of smartphone advertising significantly influence on consumer advertising value. Although the study finds very few researches on personalization and flow experience in the smartphone advertising context, the study explores a new significant statistical support regarding personalization as a predictor that positively influences consumer flow experience. It is new findings in the literature of smartphone advertising [14]. From the flow theory it is clear that when consumer gets personalized advertising then they are very much focused on that advertising. As a result, more the personalized advertising more the flow experience of consumer.

Relationship among Irritation, Advertising Value and Flow Experience (H4a & H4b)

When consumer perceives smartphone advertising as irritating, they show their negative [23]. From the advertising value theory the proposed hypothesis on irritation and advertising value was negative. However, the result of this study shows positive correlation (not significant) between irritation and advertising value due to the cultural and contextual differences. Consequently, the findings refuted the notion that irritation caused by smartphone advertisements diminishes their effectiveness. Customers may become irritated or annoyed by an improper smartphone advertisement. However, irritation by itself had no effect on consumers' opinions of the value of advertising. Customer tends to be favorable if they get informative, credible, personalized advertisements [14]. On the other hand, this study found the significant negative relationship between irritation and flow experience that was same as our proposed hypothesis (H4b) and also same as the few past studies [8,14]. Irritation prevents customers from fully engaging with smartphone advertisements. Therefore, marketers must generate smartphone advertisements that do not irritate consumers and can enhance the essence of their advertising efforts.

Relationship among Promotional Offer of Smartphone Advertising, Advertising Value and Flow Experience (H5a & H5b)

The relationship between promotional offer and advertising value is significantly positive in this study and same as previous studies which is supported the proposed hypothesis H5a [8,9,14]. As a result, marketer should concentrate on promotional offer for influence on consumers' advertising value. On the other hand, the relationship between promotional offer and flow experience is supported by this study as well as matched with previous studies [8, 14]. Thus, organization should focus on providing advertising that has some scope of incentives for consumer.

Relationship among Personalization, Advertising Value and Flow Experience (H6a & H6b)

The finding of this paper shows that personalization has a significant positive impact on advertising value. The result is also similar with [9] and contrast with [14,33] studies. Although the contradictory findings, advertiser should devote their focus more on personalization to provide smartphone advertising. Similarly, the study finds significant statistical support regarding personalization as a predictor that positively influences consumer flow experience. The literature claimed that personalization does not positively associate with flow experience [14]. As a result, more the personalized advertising more the flow experience of consumer.

Relationship between Advertising Value and Purchase Intention H6

Moreover, the relationship of hypothesis H6 between advertising value and purchase intention shows that there is significant positive relationship between advertising value and consumer purchase intention and supported by the previous studies [8,9 and 14]. So, this study claims that if the advertising value is higher that will positively influence on purchase intention.

Relationship between Flow Experience and Purchase Intention H7

Finally, this study finds significant positive relation between flow experience and purchase intention. The result also matches with past studies [8, 12 and 14].Thus, marketer should concentrate to build flow experience on consumer at smartphone advertising which in consequence of purchase intention.

Theoretical Implications: In order to develop a comprehensive smartphone advertisement model, this study used the advertising value theory, and flow theory. The research has two theoretical consequences. **First,** smartphone advertising value is positively affected by Informativeness, credibility, irritation, personalization and promotional offer that is aligning with earlier research [8, 9, 10, 11 and 14]. Among these, credibility emerged as the most significant positive antecedent, followed by Informativeness, personalization, promotional offers, and irritation. These findings indicate that consumers regard smartphone advertisements as a valuable source of product information highlighting the key antecedents that contribute to the advertising value. Interestingly, the study revealed that irritation can also have a positive effect on advertising value but not significant. However, irritation by itself did not affect customer perceptions regarding advertising value. **Secondly,** the flow experience is positively affected by informativeness, personalization, and promotional offers. While credibility has a positive impact, it is not significant. Conversely, irritation exerts a significant negative effect on flow experience, which slightly diverges from previous research, [8, 9 and 14]. Promotional offer emerges as the most influential factor, followed by personalization and informativeness. Consequently, they believe that if advertisers place greater emphasis on incentives or offers within smartphone advertising, their focus on the advertisements will increase. Ultimately, personalized advertising has a more substantial impact on the consumer's flow experience.

Practical Implications: The outcomes of the study offer marketers, advertisers, and mobile advertising platform providers some management and strategic recommendations. Marketers and advertisers should concentrate on the matters since sales is one of the primary goals of advertising. Based on this study model, managers or advertisers can create business plans and think about actions to make the advertising more informative, credible, and personalized, as well as to give promotional offer, while also lowering the degree of annoyance for viewers. Some practical implications can be inferred from the study.

First, as consumers observe and interact with smartphone advertisements, it is essential to present valuable information that addresses their needs. Furthermore, consumers take pleasure in examining the specifics of the products or services being promoted on smartphones. Consequently, marketers have the opportunity to create advertisements that satisfy the informational requirements of consumers, thereby enhancing both the value of the advertisement and the flow experience. **Second,** from the finding of the study it is clear that consumers are watching and show positive value and deeply concentrate on smartphone advertising that are providing with promotional offer. To engage customer at smartphone advertising advertiser should focus on incentives with their advertising. **Third**, the result of the thesis claimed that customized advertising features enable people to focus more on themselves and enjoy more. Personalized ads based on consumer demographics, preferences, purchasing behavior, and context are

among the most efficient methods to provide such high-quality smartphone ads. Irritation by itself do not affect customers' perceptions of advertising value, despite the study finds significant negative effects of irritation on flow experience and positive effects on advertising value. Customers view irritation as being bothersome and invasive when it comes to smartphone advertising. It is important for advertisers to think about whether or not customers are open to seeing advertisings on smartphone and to provide them the choice of product. Consequently, advertisers or marketers should concentrate more on the aforementioned aspects (informativeness, personalization, promotional offer, Credibility and irritation) to enhance advertising value and flow experience, ultimately fostering consumer purchase intention in smartphone advertising.

Conclusion: This study made a significant contribution by identifying the major antecedents those impact consumers' perceptions of the advertising value and flow experience in relation to their intention to buy after viewing smartphone advertisements. A comprehensive model based on Ducoffe's Web Advertising Value Theory and Flow Experience Theory was created for this purpose. Utilizing a sample of 387 valid responses from participants, this study empirically validated that the antecedents for advertising value and flow experience included Informativeness, credibility, personalization, and incentives, whereas irritation served as an inhibitor. These results indicated that consumers perceive smartphone advertising as informative, credible, and a valuable source of personalized advertising for product purchases.

Opportunities and Future Research: To conduct a study their might have several limitations. The limitations of the study are as follows; **first**, the study was conducted with the context of Bangladesh. Therefore, to remove the disparities of cultural and economic aspects, it would be interesting to implement it within various populations among the whole country, and compare the findings. **Second,** Brand awareness one of the main objectives of advertising can be regarded as a construct that an impact purchase intention. **Third,** the web design quality can serve as an additional variable that elucidates flow experience, and future research should explore antecedents such as interactivity. **Forth,** Future research should investigate the moderating effects of respondent demographics, as well as the connections among personalization, advertising value, and flow experience, along with the relationships between advertising value, flow experience, and purchase intention. **Besides,** the study's internal validity was compromised by failing to take into account the potential that impacts can vary depending on the type of product (e.g., technology product, daily use product). Future studies on a particular product type might be beneficial. A more precise evaluation of the effects of smartphone advertising will be possible if these constraints are addressed in the future studies.

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