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The customer journey when purchasing a new mobile phone: Testing a dual mediation model

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Abstract

Manufacturers and wireless carriers who market cellular telephones seek to shape consumer purchase intentions through advertising. The present paper builds upon previous research to test a Dual Mediation Model (DMM) of advertising that incorporates cognitions, affect, attitudes toward the advertisement and attitudes toward the brand as these influence consumers' purchase intentions. A field study investigating university students' intentions to purchase a cellular telephone is used to test the model with structural equations. The results indicate strong support for the DMM. *Journal of Direct, Data and Digital Marketing Practice* (2008) **10**, 116–132. doi:10.1057/dddmp.2008.32

Introduction

The wireless mobile (cellular) telephone has become a widespread communication technology during the past ten years and numerous telecommunication companies provide services to millions of customers worldwide.¹ Almost all of these customers purchase their mobile telephones. Manufacturers advertise mobile telephones via brochures and point-of-purchase displays at electronics retailers. Wireless carriers often attempt to secure new customers by advertising particular brands and models of telephones, each with unique features. After all, wireless telephones are probably the most visible tangible component of a cellular service (eg customers may look at their telephone handsets every day). They are also a tangible component of marketing — telephones are featured prominently in cellular retail stores, newspaper advertisements and company brochures. Prospective customers are often informed that such telephones may be quite expensive if purchased separately from the wireless service. Therefore, the decision to purchase a particular wireless telephone may be a critical component in selecting a wireless carrier. Even so, very few academic consumer research studies have investigated the mobile telephone-buying decision process. The purpose of the present paper is to examine this process.

Any exploration of consumer intentions to purchase a mobile telephone needs to account for numerous complex factors, including

New features and services are shaping the cellular telephone market

both macro- and microeconomic conditions that affect the changing mobile telephone market and individual consumers' particular thoughts and feelings when making the purchase decision. At the macro-level, the mobile telephone market is a push-driven market where products are typically created before recognised consumer needs have been established.² Wireless handheld telephone devices often incorporate new features (eg MP3 music players and built-in cameras) based on consumers' possible future wants; thus, companies that best anticipate the technologies and services that consumers will want will be seen as market leaders.^{3,4} Presently, the development of mobile phones is leading the market into a situation where the basic need for communication is broadening to include new means of interaction and personal digital assistance. Some observers anticipate that wireless telephones will eventually fully converge with personal digital assistants.⁵ Thus, communication is not the only need mobile phones fulfil. Beyond voice communication, three types of services are shaping cellular telephone use: (1) communication services such as text messaging and taking pictures, (2) wireless internet services such as web browsing, and mobile e-mail services and (3) different media services such as motion pictures, games and music.^{6,7} Despite these trends, many mobile telephones only contain basic voice services — some companies (such as Finnish manufacturer Nokia) emphasise such telephones in marketing campaigns.⁸

Complex psychological processes are involved in cellular telephone purchases

To understand why customers purchase particular brands and types of telephones, one must consider the micro-level, psychological processes involved in purchasing decisions. Consumers may be influenced to buy a product because of the advertising that they have seen. If positive thoughts (eg 'this handset has a camera') are prominent in the consumer's memory, the impact may be greater on the consumer's attitudes toward the brand and perhaps on his or her behaviour as well.⁹ Companies realise this cognitive–attitude–behaviour link and advertise heavily in order to get potential customers to think about their products; an increase in the frequency of exposure to marketing messages (eg through television ads or by sponsorships at sporting events) increases the likelihood that the customer will think about — and perhaps purchase — the product.¹⁰ In the cellular telephone industry, telephone handset manufacturers (and/or their franchisees in particular countries) and wireless telephone service providers often coordinate advertising and promotional efforts. Service providers often show a variety of handsets with different product features in their advertising; these phones are typically manufactured by numerous firms. Such ads are designed to appeal to different types of customers.¹¹ Thus, the present research is interested in the effects of advertising on consumer intentions to purchase a cellular (wireless) telephone.

Prior research and theoretical background

Consumer behaviour may be influenced in many ways by advertising. Advertising may influence people to initially purchase products, try product variations (eg customers of a brand of cola might try a new

Some advertising primarily influences emotions

caffeine-free version) or develop loyalty to particular products in order to make them resistant to competitors' advertisements.^{11,12} According to Biehal *et al.*,¹³ advertising can help create powerful brands with high 'brand equity' — defined as brands with name awareness among consumers, high perceived quality and important perceived assets (eg patents or other characteristics such as a 'secret recipe' or ingredients formula); brand equity may shape brand loyalty.

Not all advertisements work by appealing to consumer beliefs about products or brands; many ads work on an emotional level as well.¹⁴ All advertisements will, however, work at an emotional level and many will also work at the cognitive level. The distinction between cognitive and affective effects of advertising has been reviewed by numerous scholars^{15,16} and has been shown to influence service quality attitudes.¹⁷ Some writers suggest that cognitive beliefs constitute an important factor that influences purchasing decisions;^{18,19} such beliefs are thought to also determine affect toward the product. Others suggest that thinking and feeling are two different systems with independent effects.¹⁵ The faster affective system may influence initial reactions to a product and/or an advertisement; the slower, more detailed cognitive system may determine later reactions. Indeed, numerous studies suggest that affect is a critical variable in purchasing decisions.^{20,21}

The Dual Mediation Model

Such research findings have led to theoretical developments as well. The Elaboration Likelihood Model (ELM) has been offered to predict the likelihood that a person will generate thoughts in response to a specific stimulus such as a political speech.^{22,23} It posits that people are influenced directly by the message content and indirectly by aspects such as the expertise of the speaker. Rooted in the ELM tradition, but specifically created for advertising contexts, is the Dual Mediation Model (DMM), as discussed by Lutz *et al.*²⁴ While several specific hypotheses derived from the DMM and even modest theoretical variations of the DMM have been offered (eg Coulter²⁵ considered whether quantitative and qualitative information had differential effects), the basic DMM has remained an influential conceptual tool for researchers.

Consider the DMM as it applies to the decision to purchase a cellular telephone:

The DMM offers numerous links that may be considered to be testable hypotheses. Each of these links will now be considered in more detail.

Cognitions' influence on ad-evoked feelings, attitude toward advertising (A_{ad}) and attitude toward brand (A_b) (Hypotheses 1–3)

Cognitions about advertisements influence transient consumer feelings

Much research on advertising in consumer behaviour has focused on customer cognition; that is, the thoughts consumers have when exposed to advertising.¹⁵ The DMM, however, suggests that cognitions influence undifferentiated ad-evoked feelings as well as specific attitudes. *Ad-evoked feelings* are immediate, often fleeting, mood states produced by an advertisement. They are distinct from both cognitions

and other attitudes. Hoch and Lowenstein²⁶ suggest that ad-evoked feelings may occur automatically with very little conscious deliberation.

Although distinct from such feelings, cognitive responses to advertising may involve beliefs that are inherently evaluative in nature; MacKenzie and Spreng characterise these as positively valenced, negatively valenced or idiosyncratic (not related to the message about the product).²⁷ As Edell and Burke¹⁸ note, viewers may describe an advertisement using evaluative terms like 'humorous', 'lighthearted' or 'interesting'. Such evaluative beliefs suggest that, in addition to automatic affect-based responses, cognitions also directly influence feelings toward the advertisement. This suggests the first hypothesis:

H1: Cognitions about advertising have a direct influence on ad-evoked feelings.

'Attitudes' defined

Attitudes are conceptualised and measured in different ways by different researchers. As described by Fishbein and Ajzen,²⁸ an *attitude* is the sum of a person's various beliefs about a specific target where each belief is considered in light of its (positive or negative) evaluation. 'This ad is very convincing' represents a belief (typically with a positive evaluation) that may form a part of a well-developed attitude toward an advertisement. Thus, an attitude toward an ad (eg 'I like this ad very much' or 'this ad is very impressive') is more crystallised than the fleeting moods that characterise ad-evoked feelings. It should be noted that this approach to attitude-definition and measurement is not widespread in the marketing literature. This approach may also link attitudes more closely to cognitions than some other conceptualisations of attitudes.

Cognitions influence attitudes about advertisements

Cognitions evoked by an ad (eg 'The after-sales service of this product is good') may promote in-depth processing of the ad content. The consumer may become more aware of material in the ad and better able to retrieve ad-based information from memory. Such processing often includes assigning valences associated with the specific beliefs developed from ad-specific information.²⁹ The consumer may also attempt to relate the message of the ad to existing knowledge and attitudes.³⁰ Consequently, consumers formulate stable evaluations of the ad itself (eg 'I like this ad'). These processes suggest a second hypothesis:

H2: Cognitions have a direct influence on consumer attitudes toward advertising.

In addition to developing attitudes toward the advertisement, consumers also develop attitudes toward particular brands.²⁵ In the cellular telephone industry, there are numerous makers of handheld telephones and consumers develop attitudes toward specific brands of telephones. While such attitudes may be due to customers' own prior experience

Cognitions influence brand attitudes

with such telephones, as well as to the experiences of their friends, attitudes toward telephone brands may be shaped by advertising.³¹

How does advertising shape attitude toward a brand? One route that the DMM posits is that cognitions directly affect attitude toward the brand. Some researchers have investigated the effects of cognitions on brand attitude.³² A common finding is that the more favourable the cognitive responses elicited by an ad, the more positive the attitude toward the brand.³³ It seems reasonable to anticipate similar effects within the context of purchasing a cellular telephone. This suggests a third hypothesis:

H3: Cognitions will have a direct effect on attitude toward the brand of cellular telephone.

Transient feelings influence stable attitudes about the advertisement...

Effects of ad-evoked feelings on attitude toward advertising (A_{ad}) and brand attitude (A_b) (Hypotheses 4–5)

A consumer's attitudes can be shaped by beliefs (and their evaluations) about the advertisement, as discussed above. In addition to such direct cognitive effects, several researchers have shown that transient feelings can also play a significant role in the formation of judgments on advertising.^{34,35} Individuals in transient positive mood states tend to give more favourable evaluations to stimuli (such as work tasks or service encounters) than do individuals in negative or neutral mood states.^{36,37} This implies that transient feelings, while not identical to more cognitively measured attitudes, can influence the latter;³⁸ this is sometimes referred to as direct affect transfer.^{39,40} In addition, based on the 'feelings-as-information' model, Schwarz⁴¹ suggests that individuals sometimes erroneously assume that transient feelings are carefully considered attitudinal or cognitive reactions to a stimulus; thus, they base their attitude on transient feelings. Together, this body of research suggests that transient feelings can influence attitudes toward advertisements. This logic suggests a fourth hypothesis:

H4: Ad-evoked feelings have a direct influence on attitudes toward advertising (A_{ad}).

... and the brand

Research studies suggest that ad-evoked feelings may influence not only attitude toward advertisements (A_{ad}) but also attitude toward particular brands of products (A_b).⁴² Holbrook and Batra⁴³ suggest that, generally, the link between ad-evoked feelings and A_b is mediated by A_{ad} , although direct effects on A_b may also occur. Further, both direct and indirect effects for ad-evoked feelings occur with both familiar and unfamiliar brands.^{18,21} This suggests a fifth hypothesis:

H5: Ad-evoked feelings have a direct influence on attitudes toward the brand (A_b).

**Stable attitudes
toward the
advertisement affect
brand attitude...**

Effect of attitude toward advertising (A_{ad}) on brand attitude (A_b) (Hypothesis 6)

Mitchell and Olson⁴⁴ demonstrate that a person's attitude toward specific advertisements (A_{ad}) is conceptually and empirically distinct from their attitude toward specific brands of products (A_b). Further, both attitudes may, independently, influence purchasing decisions. Even though the two attitudes are distinguishable, under many conditions they are related. Shimp⁴⁵ suggests that a positive A_{ad} directly influences a positive A_b , and numerous subsequent empirical studies demonstrate that this is indeed the case.^{46,47} For example, Okazaki *et al.*⁴⁸ report that attitude toward advertising directly and positively influences attitude toward the brand of product.^{49,50} Similar effects are anticipated for a cellular telephone purchase, suggesting a sixth hypothesis:

H6: Attitude toward the advertisement for a particular product will have a positive influence on attitude toward the brand.

**... and influence
purchase intention**

Effects of attitude toward advertising (A_{ad}) and brand attitude (A_b) on purchase intention (PI) (Hypotheses 7–8)

Attitudes toward the ad (A_{ad}) may put the consumer in a frame of mind toward taking some action, such as purchasing the product — although numerous other beliefs, attitudes and even social norms may interfere with the actual purchase behaviour.²⁸ Some studies suggest that A_{ad} directly influences purchase intention (PI). For example, Romani⁵¹ demonstrates that when consumers are exposed to misleading price information in advertising, they develop negative attitudes toward those ads and grow less willing to buy the product. We anticipate similar findings for cellular telephone purchases, and offer the seventh hypothesis:

H7: A_{ad} will directly and positively influence PIs.

Similarly, brand attitude (A_b) is related to PI. Many research studies have demonstrated strong support for such a link; some studies have also shown indirect effects for A_{ad} – A_b –PI relationships.^{15,32,52}

**Brand attitude
influences purchase
intention**

Further, prior research demonstrates that as time passes after exposure to an advertisement, memory of the content of the ad fades faster than knowledge about the brand.^{53–55} When such findings are coupled with the attitudinal links described earlier between A_{ad} and A_b , it is not difficult to surmise that the positive attitude toward the advertisement leads to a more enduring attitude toward the brand. More enduring attitudes, coupled with greater recall about the brand, imply that attitudes toward the brand are more strongly related to PI than the direct link between A_{ad} and PI. Together, this suggests a final hypothesis:

H8: A_b will directly and positively influence PIs.

Figure 1: The conceptual framework of the present study, based on the DMM

Testing the Dual Mediation Model with cellular telephone purchase decisions

Based on the literature review and research hypotheses as illustrated in the previous sections, this study tests the DMM conceptual framework as shown in Figure 1. Although many studies have investigated specific interrelationships between cognition, affect, attitude toward advertising, attitude toward the brand and PIs under controlled conditions,⁵⁶ very few studies have tested comprehensive DMMs.^{15,52} Further, such research has typically tested these models using rather mundane products such as toothpaste; it remains unclear whether these models adequately capture the psychology underlying purchasing decisions among consumers when making a cognitively oriented, high-technology purchase such as a cellular telephone. The results of the present study may provide a more holistic perspective for both academicians and practitioners to evaluate the effects of cognition on attitude toward advertising, feeling and PI within the context of cellular telephone purchases.

Research design and methodology

Sample

One hundred and sixty MBA students at a large university in Taiwan participated in the present study. Approximately 73 per cent of the sample was male and 27 per cent female. Approximately 27 per cent of the respondents were 21–25 years old, 44 per cent were 26–30 years old, 20 per cent were 31–35 years old and 9 per cent were older than age 36.

This was not merely ‘a sample of convenience’. University students served as subjects because they are considered quite knowledgeable about the cellular telephone market. Students use many models of mobile phones sold by different companies. Upgrading mobile phones to newer models is a common practice among those in their twenties. Purchase is frequently undertaken either immediately upon introduction of the newest model (with higher prices) or at a later date (when the prices are first reduced).⁵⁷ Researchers and practitioners agree that the most explosive growth in telecommunications has occurred in internet and mobile telephone services,⁵⁸ including internet-enabled mobile devices.⁵⁹ According to Mullman,⁶⁰ as many as 81 per cent of 18- to 21-year-olds in some countries have mobile phones. The number of

Research Sample

global mobile phone subscribers hit 2.3 billion in 2006 and is expected to climb to 3.3 billion by 2011. It is also expected that Asia-Pacific will account for 47.9 per cent of cellular telephone subscribers by 2011. Aside from the strong growth in basic cellular services, there is a strong demand in the Asia-Pacific region for additional services such as ring tones, games, mobile internet access and text messaging.⁶¹ Thus, a sample of university students would seem to be generally knowledgeable about cellular telephone characteristics.

Subjects completed a questionnaire

Procedure

Subjects completed an experiment conducted by one of the authors of the study. Each participant was given a questionnaire to complete. At the beginning of the questionnaire, each participant was shown one print brochure featuring an actual cellular telephone currently sold in Taiwan; the brochure came from one of the following telephone manufacturers: Sony Ericsson, Motorola, Nokia, BenQ, Pantech, Innostream and DBTEL. Such brochures are often used in direct-mail marketing campaigns and are often given to customers in stores. Thus, a 'between-subjects design' was used in that each subject only responded to one brochure. Subjects then completed a questionnaire that asked them to evaluate the ad and the brand, and to indicate their likelihood of purchasing the particular telephone.

Questionnaire items

The questionnaire used in this study consisted of six constructs: 'cognition (eight items)', 'attitude toward the advertising (seven items)', 'ad-evoked feelings (eight items)', 'brand attitude (four items)' and 'PI (three items)'. *Ad-related cognitions* focused on the product (eg 'the design of this product is good' and 'the after-sales service of this product is good'). *Attitude toward the advertising* items focused on the advertisement itself (eg 'this ad is very convincing' and 'this ad is very informative') and contained items that were more affect-oriented (eg 'I like this ad very much' and 'this ad is very impressive'). *Ad-evoked feelings* asked respondents to indicate the extent to which the ad elicited positive and fleeting affective states (eg playfulness and lightheartedness). *Brand attitude* items consisted of items such as 'I think this brand is pleasant' and 'I like this brand very much', which measured the consumer's stable evaluation of the brand. Finally, PI items asked whether the consumer would purchase the product.

The respondents were asked to rate the degree of agreement with each statement on a seven-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. These items and coefficient alpha data are presented in Table 1. All coefficient alpha results suggested that each scale consisted of only one dimension. A principal-components factor analysis with varimax rotation was also conducted for each scale separately. Each scale had only one factor, as determined by factor loadings larger than 0.30 on the appropriate factor (not reported here) and eigenvalues greater than 1.0 — with one exception. Two types of ad-evoked feelings emerged: 'attractive' and 'warm'. Even so, with

a coefficient alpha above 0.95, it was deemed acceptable to treat ad-evoked feelings as one scale.

Because scales had different numbers of items, average scores were computed for each subject for each scale. These average scores were used in subsequent analyses. Descriptive statistics and correlations between the scales are shown in Table 2.

Data analysis procedures

Once it had been determined that the scales had satisfactory homogeneity (using Cronbach's alpha), structural equation modelling (using AMOS, version 5.0) was employed. Structural equation modelling is an appropriate statistical methodology to test the DMM.

Results

Structural equation model

Before evaluating the structural or measurement models, the overall model fit must be assessed to ensure that the proposed model adequately represents the entire set of causal relationships. Based on the approach of Arbuckle and Worthke,⁶² this study used chi-square, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI) and root mean square residual (RMR) statistics to evaluate overall model fit.

The chi-square test (with 2 d.f.) yielded a value of 1.903 ($p < 0.38$). Because the chi-square test was strongly affected by both the sample size and the number of variables included in the analysis (eg when the same analysis was conducted using item scores instead of average scale scores), the chi-square (with 46 d.f.) value was 88.8 ($p < 0.001$). Hair *et al.*⁶³ suggested that the ratio of the chi-square value to degrees of freedom should not exceed 3. A chi-square/d.f. = 0.951 was acceptable. Bearing this in mind, other goodness-of-fit measures were also examined.

Model fit improves over the null model with decreasing RMR. This study obtained an RMR of 0.015, which was a close fit. GFI and AGFI tested the degree to which the model fits the data better than the null model. A very good research model fit is defined as GFI and AGFI each exceeding 0.90. Both clearly exceed this threshold (GFI = 0.995 and AGFI = 0.959).

The quality of the *a priori* alternative model should depend on the fit indices. It, however, does not necessarily mean that one model is superior to alternatives or is the optimum causal model. Another important consideration for model quality is the plausibility criterion. This means that the path coefficients in the model adhere to the general theoretical conception and to the hypotheses. Therefore, a model that fits the data well but contains many paths that are illogical or inconsistent with the hypotheses cannot be considered correct. For example, purchasing a cellular telephone would not normally precede cognitions about making such a purchase.

Based on the above criteria, the best model that emerged is shown in Figure 2. This model is consistent with the DMM. Table 3 lists the

Structural Equation Modelling showed that the Dual Mediation Model fit the data well

Table 1: Coefficient alpha analyses of research constructs

Variables	Research items	Item-to-total correlation	Cronbach's alpha
Ad-related cognitions (C_{ad})	$C_{ad}1$: The appearance of this product is good	0.797	0.945
	$C_{ad}2$: The function of this product is good	0.831	
	$C_{ad}3$: The after-sales service of this product is good	0.820	
	$C_{ad}4$: The quality of this product is good	0.823	
	$C_{ad}5$: The design of this product is good	0.831	
	$C_{ad}6$: This product offers benefit to the customers	0.780	
	$C_{ad}7$: This product style is very innovative	0.809	
	$C_{ad}8$: This product considers human factors in its design.	0.711	
Attitude toward the ad (A_{ad})	$A_{ad}1$: This ad is very meaningful	0.850	0.964
	$A_{ad}2$: I like this ad very much	0.873	
	$A_{ad}3$: This ad is very interesting	0.878	
	$A_{ad}4$: This ad is very outstanding	0.873	
	$A_{ad}5$: This ad is very innovative	0.849	
	$A_{ad}6$: This ad is very believable	0.833	
	$A_{ad}7$: This ad is very convincing	0.865	
	$A_{ad}8$: This ad is very informative	0.792	
	$A_{ad}9$: This ad is very understandable	0.724	
	$A_{ad}10$: This ad is very impressive	0.836	
Ad-evoked feelings	Feel1: Attentive	0.852	0.958
	Feel2: Playful	0.869	
	Feel3: Interested	0.901	
	Feel4: Energetic	0.917	
	Feel5: Friendly	0.867	
	Feel6: Affectionate	0.890	
	Feel7: Lighthearted	0.876	
	Feel8: Inspired	0.864	
Attitude toward the brand (A_b)	A_b1 : I think this brand is pleasant	0.914	0.961
	A_b2 : I think this brand has high quality	0.909	
	A_b3 : I think the category of this brand is favourable	0.899	
	A_b4 : I like this brand very much	0.899	
Purchase intention (PI)	PI1: I will consider purchasing this product	0.856	0.889
	PI2: I will purchase this product	0.846	
	PI3: I will recommend to others that they purchase the product	0.658	

estimated model fit indices and demonstrates a GFI of 0.995 and an AGFI of 0.959. Taken together, these various fit indices indicate that the model fits the data well; it has acceptable goodness-of-fit indices.

Since the goodness-of-fit indices appeared promising, the study further identified the magnitudes and significance of the various path structural coefficients of the model. The analytical results indicated that cognition had significant effects on attitude toward the ad ($\gamma=0.496^*$), on ad-related feelings ($\gamma=0.808^*$) and on brand attitude ($\gamma=0.481^*$).

Table 2: Descriptive statistics and correlations

	Mean	SD*	Cognitions	Attitude toward ads	Ad-evoked feelings	Brand attitude	Purchase intention
Cognitions	4.919	1.31	1.000				
Attitude toward ads	4.494	1.38	0.866	1.000			
Ad-evoked feelings	4.763	1.31	0.805	0.867	1.000		
Brand attitude	4.679	1.66	0.828	0.831	0.802	1.000	
Purchase intention	4.240	1.74	0.780	0.816	0.787	0.890	1.000

Note: All correlations are significant ($p < 0.05$).

*Standard Deviation

Ad-related feelings had a strong positive significant influence on attitude toward the ad ($\gamma = 0.514^*$) and a modest significant influence on brand attitude ($\gamma = 0.314^*$). Attitude toward the advertising had a positive significant influence on brand attitude ($\gamma = 0.345^*$) and a positive significant influence on PI ($\gamma = 0.312^*$). Brand attitude had a positive significant influence on PI ($\gamma = 0.721^*$).

Discussion

Several conclusions can be drawn from the results of this study. First, cognitions have significant effects on ad-related feelings (supporting H1), attitudes toward advertising (supporting H2) and brand attitudes (supporting H3). These results indicate that marketers need to present ads that elicit favourable consumer cognitions in order to achieve optimum effects. Secondly, the processing route of ad-related feelings → brand attitude was also significant (supporting H5); the influence of feelings on the attitude toward the advertising was significant (supporting H4), suggesting that ad-related feelings have both direct and indirect effects on brand attitude and subsequent PIs. Thirdly, the results in Figure 2 show that cognitions and ad-related attitudes tend to impact the mobile telephone PI directly, but more strongly through brand attitudes. These findings support H6–H8.

These findings suggest that the DMM is relevant for service-oriented businesses; it does an excellent job of describing the relationships among factors leading to consumers' PIs toward a mobile telephone. These findings are consistent with the published literature examining the DMM in other contexts. For example, Burke and Edell⁶⁴ provide evidence that ad-related feelings influence attitude toward the advertisement both directly and indirectly through judgments of ad characteristics. Secondly, Bagozzi *et al.*²⁰ observe that emotion plays a complex role in persuasive communication, including, but not limited to, the central versus peripheral processing alternatives described in the DMM. They suggest that a person's emotional state can also influence various specific aspects of cognitive processes, such as encoding and retrieval of information, evaluations and judgments. This implies another set of causal links, modifying Figure 2, going from feelings

**All hypotheses
received support**

**Ad-related emotions
play a complex role in
purchase decisions**

Figure 2: A structural equation modelling test of the conceptual framework

Table 3: Structural equation modelling (SEM) analysis of the DMM

Relations	Standardised coefficients	Critical ratio (CR)
<i>Path</i>		
Cognition → feeling	0.808 ^a	16.021
Feeling → attitude toward ads	0.514 ^a	8.244
Cognition → attitude toward ads	0.496 ^a	7.958
Cognition → brand attitude	0.481 ^a	4.378
Feeling → brand attitude	0.314 ^a	2.799
Attitude toward ads → brand attitude	0.345 ^a	2.766
Attitude toward ads → purchase intention	0.312 ^a	3.722
Brand attitude → purchase intention	0.721 ^a	10.361
<i>Fit indices</i>		
Chi-square		1.903
Degree of freedom (d.f.)		2
Chi-square/d.f.		0.951
GFI		0.995
AGFI		0.959
RMR		0.015

Note: CR values >1.96 are significant ($p < 0.05$).

^aCoefficients are standardised values.

(ad-related and non-ad-related) back to specific types of cognitive processes. Such a detailed examination of various cognitive components and possible affect-related antecedents is beyond the scope of the present study.

Attitudes influence purchase decisions

As noted in the literature review preceding Hypothesis 8, prior research on memory effects of ads and brands implies that the brand attitude → PI link is stronger and perhaps more durable than the attitude toward the ad → PI link.^{53–55} The present findings are consistent with that literature in that the brand–PI link is much stronger than the ad–PI link.

The results also indicate that ad-related feelings will influence brand attitude indirectly. Several reasons may contribute to the above findings. Holbrook and Batra⁴³ demonstrated that A_{ad} and ad-evoked feelings mediate the effect of ad content on brand attitude and that different emotional responses have varying effects on A_{ad} ; A_{ad} , in turn, influences brand attitude. The results from other previously published studies also suggest that A_{ad} may impact consumers' PI indirectly through brand

Cognitions and transient feelings influence purchase intentions through attitudes

attitude.²² Therefore, the results of this study confirm past findings that ad-evoked feelings have an influence on brand attitude via A_{ad} , as well as direct effects.

Furthermore, several studies indicate that ad-evoked feelings and cognitions are two types of important influences on A_{ad} .^{52,56,65} The results of this study confirm past findings that ad-evoked feelings and cognitions each have an influential role in the persuasion process via A_{ad} . This supports a central tenet of both the DMM and the ELM: Brand attitudes are influenced both directly via cognitions and indirectly via affect and attitudinal processes.^{15,32}

The third conclusion drawn from this research is that the direct effect of cognition on brand attitude is strong (0.48), while the effect of feelings on brand attitude is weaker (0.31). Feelings seem to primarily influence brand attitude indirectly, as mediated by A_{ad} .

The fourth conclusion drawn from this research is that brand attitude will have a strong direct influence on PI. As noted earlier, A_{ad} has more modest effects on PI. Therefore, the results of this study confirm past findings that (1) brand attitudes have a direct influence on PI and (2) there is an indirect $A_{ad}-A_b$ - PI causal relationship.^{13,32,52}

Limitations

Study limitations

The present study has several limitations. First, in this study, respondents were asked to answer the questionnaires immediately after viewing a printed brochure. Completing a cognitively oriented paper-and-pencil questionnaire may have heightened the influence of cognitions on brand attitudes and diminished the influence of ad-evoked feelings. The wording of the questionnaire items dealing with attitudes (eg 'I think this brand is pleasant' rather than simply, 'This brand is pleasant') may have emphasised a cognitive approach to attitudes and downplayed the affective nature of attitudes. Secondly, respondents may have viewed it as more socially desirable to give responses consistent with cognitions rather than with fleeting affect states. Thirdly, this sample used graduate students taking an MBA class who are of an age and cohort group that is fairly knowledgeable about cellular telephones. Such a sample may respond differently than the general population, and thus generalisations should be made with caution. Fourthly, respondents only indicated the likelihood of their purchasing a particular brand of cellular telephone. They did not compare different brands and choose between them. Comparing brands in future research could add to the understanding of such consumer behaviour.³⁵ Fifthly, the present study measured only behavioural intentions and not behaviours; subjects did not actually purchase any goods or services. Although specific intentions have been shown to frequently correlate highly with actual behaviour,²⁸ the fact remains that no participants actually purchased a cellular telephone in this study; this lack of a behavioural outcome remains a limitation.

More generally, this study was based on the DMM, which is derived from the ELM. Such models have been subject to significant criticism. In particular, they seem to give excessive weight to cognitive processes

The Dual Mediation Model emphasises cognitions

and downplay the role of affect in consumer decision making.¹¹ Heath⁶⁶ notes that purchase decisions are often rapid, heavily influenced by affective states, and often made with little active consumer involvement. Similarly, recent developments in neuroscience suggest that decisions are often made at the neurological level even before individuals are conscious that they have made a decision; these decisions may be influenced by affect.⁶⁷ Vakratsas and Ambler¹¹ suggest that advertisements be classified according to a three-dimensional framework: (1) cognition, (2) affect and (3) prior experience. In the present study, knowledgeable subjects with prior experience using cellular telephones were asked to respond to print advertisements (which tend to be more cognitively involving than, say, television advertisements⁶⁶) and to give cognitively oriented assessments of the ads and the products featured in those ads. Thus, it is not surprising that the present study found stronger effects for cognitions than for feelings on attitude toward the brand. A different mix of type of ad and type of response set might have produced different results, consistent with the Vakratsas and Ambler framework.

Implications for advertisers

Implications for practice

Cellular telephone companies spend significant amounts of money to promote the sale of their products. Therefore, marketing managers and advertising executives are naturally interested in whether the money is well spent. The present research contributes to our understanding of how advertising messages persuade consumers. It shows that two routes are important: the first is the 'direct' route: cognitions→brand attitudes→PI and the second is the 'indirect' cognition and feelings→attitudes toward the ad→brand attitude→PI. Once these managers recognise these routes of influence on consumers, they may design the ad communication message to maximise persuasion and sales.

The Dual Mediation Model is useful

Conclusions

The present study tests a framework (the DMM) to explain the routes of influence from advertisements to persuasion and PI of products within the context of a service industry. The structural equation modelling results suggest that the DMM enables academicians and practitioners to better explain the role of cognitions and feelings on persuasion. The empirical validation of the DMM provides an important reference for advertising and telecommunication managers as they seek to develop more persuasive mobile telephone advertising for a product-savvy youthful market.

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