

## Document Analysis Framework for Modelling iTV Advertising Towards Impulse Purchase

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**Abstract:** Various studies have proposed factors of impulse purchase in different advertising medium like website, mobile, traditional retail store and traditional television. However, to the best of researchers' knowledge, none of the impulse purchase model is dedicated towards impulse purchase tendency for interactive TV (iTV) advertising. In addition, through systematic document review analysis, this study discovers that all the previous models did not emphasize on the conceptual design model of iTV advertising. Therefore, this study reviews concepts, theories, approaches, guidelines, and impulse purchase elements in order to propose a conceptual design model of interactive television advertising toward impulse purchase (iTVAdIP). The findings show that the concept of the proposed model should contain the iTV guidelines, advertising theory, persuasive approach and impulse purchase elements. In addition, a summary diagram for the development of the proposed model is depicted to provide clearer understand towards the concepts of conceptual design model of iTVAdIP.

**Keywords:** impulse purchase, interactive television advertising

### 1. Introduction

One of the purposes of television is to provide opportunity for advertisements [1]. In addition, most of the countries show that the advertisements on television are an effective way to market products and bring effective strategies for marketing [1]. According to Forecast Advertising, [2], the advertising on television had grown by 6.0% globally in 2011 and generated \$169 billion. Over the following five years, the industry should grow at an average rate of 7.5% to the total of \$243 billion by 2016, [2]. According to Nielsen, [3], the number of televisions in households has shown the largest ownership. It shows that the TV has succeeded in attracting the biggest possible audience and, as a consequence, to be appealing to advertisers. Television advertising is an important medium for marketers around the world and it brings new opportunities for the advertisers to reach more consumers. However, the traditional television advertising is less effective in promoting products as it has limited interaction with the viewers it has failed to expand the market [4]. Therefore, a comprehensive study on interactive television (iTV) advertising is much needed in order to make television advertising more effective.

According to the Television Advertising Survey [4] more than half of the revenue in US comes from

TV advertising, which amounted to \$41.1 billion, from the total \$79.5 billion. The consumers have been discovered to purchase products and services because they view the products and services on the TV [6]. However, the advertising and the marketing people have to know how to attract and influence customers to purchase their products on the TV. There are different types of interactive advertising strategies to attract viewers' attention and to provide specific information. According to NDS Business Consulting [7], interactive advertising can be categorized into response, jump, tag, incentive, targeted, viewers' response, and impulse purchase. Impulse purchase can influence and allow the viewers to purchase products while watching the advertising [8]. By understanding the consumer behaviour and environmental psychology it will easily influence users to make purchases and access the products or services.

Previously, the marketing team realized the importance of impulse purchase phenomenon in the traditional commerce, which allowed the marketers to attract customers in many ways, such as store position products, store promotion, product packaging in an enticing way to increase impulse purchase, and getting consumers to be impulsive [9]. Through the years, impulse purchase has also been made easier by innovations, such as telemarketing,

debit cards, and credit cards. Previously, rapid developments in information technology have substantially changed the landscape of consumer behaviour. The retailing availability for the Internet has brought about increased impulse purchase [10]. Consequently, impulse purchase accounts for a large volume of products sold every year [11] contributing to the iTV advertising.

iTV advertising has increased the ease to make purchases and accessibility to products and services. Additionally, it eliminates the constraints in terms of space and time that are always experienced by shoppers in the context of traditional commerce [12]. Goods and services are purchased easily on TV using a remote control instead of a telephone, PC, or PDA [13]. In fact, in the Europe and USA [14] found that the success of iTV advertising adoption was excellent. In order to take advantage of the positive aspects of iTVAdIP, the design model of iTVAdIP must be carefully and intelligently designed. Therefore, based on the preliminary investigation which was published in [15,16], there was a clear need for a design model of iTVAdIP.

Therefore, this study has moved forward by identifying the relevant issues or topics of the proposed model with the main objective was to propose a conceptual design model of interactive television advertising toward impulse purchase, which is called (iTVAdIP). In accordance, the specific objectives for this article were:

- (i) To identify the implications for each relevant issues or topics which is identified in proposing a conceptual design model of iTVAdIP.
- (ii) To summarize the relevant issues or topics for the conceptual design of iTVAdIP.

The next section will discuss in detail the relevant issues and topics regarding interactive television (iTV), advertising theory, psychology approach, and impulse purchase together with comparative on impulse purchase model.

**2. Interactive Television (iTV)**

According to IAB [1], iTV can be defined as a television viewing experience that enables users to send or request information back to the programmer and advertiser. The applications created provide richer entertainment and information, and enable a two-way communication between the viewers and the television. iTV allows the viewers to take part and actively participate in television programming.

Viewers can use the remote control to interact with the television and this makes the television more enjoyable [17,18].

The conceptual diagram of iTV as shown in Figure 1 shows the difference between traditional television advertising with only one-way communication and iTV with two-way interaction and enables viewers to take immediate action when they see advertising including requests for more information, coupons, samples, and local retail locations [18].

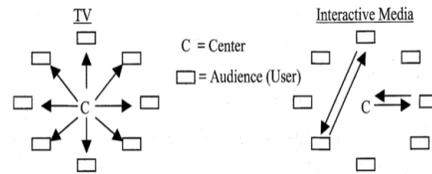


Fig.1. Conceptual diagrams of iTV [18]

According to Pequeno [19], 56% of TV viewers use the internet for video entertainment, 79% want to have interaction with the television programmes, 73% prefer two-way interaction with TV advertising, and 58% of TV viewers request free samples during advertising. The percentages show that iTV is needed among viewers and they also can experience other features provided by the iTV.

**A. Features of iTV**

iTV consists of many features, which can be seen in Table 1. Each feature of iTV consists of their own functions and provides new experience to the viewers.

**Table 1.** Features of iTV

iTV Features	Functions
Electronic Program Guide (EPG)	<ul style="list-style-type: none"> <li>• One screen program guide.</li> <li>• Aids navigation for the channels, to identify content.</li> <li>• Set of program listings (organized by time, channel, category, genre, topic, and actors).</li> </ul>
Enhanced TV, Content on demand	<ul style="list-style-type: none"> <li>• Any type of content (text, graphics, and video).</li> <li>• Overlaid on regularly displayed video content.</li> <li>• Access interactivity.</li> <li>• Either synchronized with the program stream or available on demand.</li> </ul>
Personalized TV	<ul style="list-style-type: none"> <li>• Stand-alone PVR device or digital set-top box.</li> <li>• Content cached on disk.</li> <li>• Pause, rewind, and fast-forward.</li> </ul>

	<ul style="list-style-type: none"> <li>• Programmed recordings.</li> </ul>
Internet @ TV	<ul style="list-style-type: none"> <li>• Transferring www-activities from PC to TV.</li> <li>• Off line and online experiments.</li> <li>• Advantages for positions in TV market.</li> <li>• Interaction with TV programs.</li> <li>• Most common form: event chat.</li> <li>• Combination of transmissional, consultational, conversational, and registrational services.</li> <li>• Combination of TV market acceptance and web anarchic multimedia content.</li> </ul>
Home shopping	<ul style="list-style-type: none"> <li>• Television commerce: e-commerce transferred to the medium of TV.</li> <li>• T-commerce monetizes creative content by supporting sales during the content.</li> <li>• T-commerce allows the viewers to purchase products and services that he or she views on the television screen.</li> <li>• As viewers transact for TV content, they become consumers.</li> <li>• T-commerce includes shopping and banking.</li> <li>• The new generation of interactive services allows access to the internet for iTV.</li> <li>• Service providers offer access to the internet</li> <li>• Service providers are forced to differentiate their service offerings</li> </ul>
Video On Demand	<ul style="list-style-type: none"> <li>• Also called as the “true video-on-demand” or “movies-on-demand”</li> <li>• Reception of content according to individual orders.</li> <li>• Delivered directly.</li> <li>• Goes to the information source.</li> </ul>
Games and Betting	<ul style="list-style-type: none"> <li>• iTV games have become a surprise hit in iTV platforms around the world.</li> <li>• Play-along interactive games.</li> <li>• Pay-per-play games.</li> <li>• Downloadable games.</li> <li>• Multi-player network games.</li> <li>• Betting-services allow viewers to place bets while watching a particular event.</li> </ul>

However, this study focuses on home shopping whereby the viewers do not only see the advertisement on TV but at the same time they can buy products or services through television. In addition, to make clear how iTV works, the main components of iTV architecture is as illustrated in Figure 2.



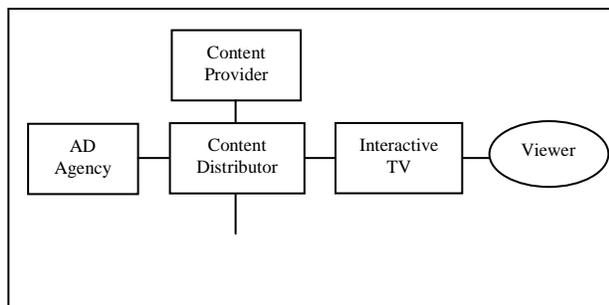
Fig.2. Architecture of the networked advertising system for an iTV [20]

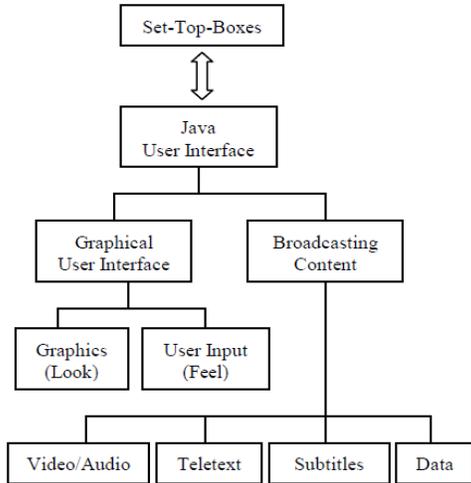
The architecture consists of six components which are advertising agency, content distributor, content provider, internet, iTV, and viewer. In relation to this, it shows how these components relate to each other. It begins with the advertising agency provides the advertising to the content distributor before it can be viewed by viewers via iTV. After understanding the general architecture of iTV, this study should be understood clearly, especially on the structure of user interface for iTV.

**B. iTV design guidelines**

There are many design principles and guidelines for television and the web, which are the basis platforms of iTV. New potential platforms such as 3G mobile devices and Sony PSP are growing in the market, bringing new sets of design issues. However, the vast majority of iTV applications are designed for TV screens or computer monitors [21]. Its convergent design is essential for successful iTV programming in the future. Designs created for common purposes that are effective for cross-platform or in television rarely translate to a compelling or functional experience on the web [21].

Figure 3 illustrates the basic structure of user interface in iTV which is the Java user interface, composed of GUI and broadcasting content. The GUI includes graphics and user input as so called look and feel. Graphics mean the visual presentation of widgets. Remote control, keyboard or virtual keyboard is needed for user input. Broadcasting content consists of video, audio, subtitles, teletext, and data [21]. The Java user interface creates a visual presentation of the information by manipulating the GUI widgets and video/audio. In a nutshell, the user interface for iTV can be used as a guideline to develop the proposed model. In addition, the user interface principles are also important for the development of the proposed model.





**Fig.3.** Basic structure of the user interface in iTV [21]

As suggested by Chorianoopoulos [22] there are seven user interface principles for iTV applications. Although this study did not cater to all the design principles into the development of the proposed model, certain principles were important to be adopted in the conceptual design model of iTVAdIP. Table 2 lists all the principles:

**Table 2.** User Interface Principles for iTV Applications

Principle	Description
Interactive features	<ul style="list-style-type: none"> <li>Empower the viewers with features borrowed from the TV production</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>Instead of information seeking, it supports relaxed exploration.</li> </ul>
Content delivery schedule	<ul style="list-style-type: none"> <li>Release the content from the fixed broadcast schedule and augment it with out-of-band content delivery.</li> </ul>
Group viewing	<ul style="list-style-type: none"> <li>Considers social viewing that may take place locally, or remotely</li> </ul>
Multiple levels of attention	<ul style="list-style-type: none"> <li>Users do not have to be attentive for the application to proceed.</li> </ul>
TV grammar and aesthetics Enhance	<ul style="list-style-type: none"> <li>Enhance the core and familiar TV elements (characters and stories) with programmable behaviours (objects and actions).</li> </ul>
Infotainment	<ul style="list-style-type: none"> <li>Provides interactive entertainment elements, which might be further augmented with on-demand information elements.</li> </ul>

Moreover, iTV design guidelines should be part of the important issues in designing advertising for iTV. Collazos et al., [21] elaborate the design guidelines for iTV as displayed in Table 3. This guidelines were used to develop the conceptual design model of iTVAdIP.

**Table 3.** iTV Design Guidelines from its Usability Perspective

Category	Design Guidelines
Interaction	<ul style="list-style-type: none"> <li>Interactivity should be explicitly considered when the TV program is conceived.</li> <li>Users should have increased control over their viewing experiences.</li> <li>Maximizes agency.</li> <li>Allows viewers to customize their viewing experiences.</li> </ul>
Interface	<ul style="list-style-type: none"> <li>Simplicity.</li> <li>Interface should have a consistent theme.</li> <li>Enhancements should not compete with the main content.</li> <li>Effective screen structure.</li> <li>Pays attention to the existing standards.</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>Orient the viewers.</li> <li>Teaches viewers to interact.</li> <li>Minimizes clicking/distance from primary screen.</li> <li>Always offers an “exit” option.</li> <li>Reinforces engagement through immediate and consistent feedback.</li> <li>Use appropriate cultural mental models and metaphors.</li> </ul>
Usability	<ul style="list-style-type: none"> <li>Visibility of the system status.</li> <li>Matches between the system and the real world.</li> <li>User control and freedom.</li> <li>Consistency and standards.</li> <li>Error prevention.</li> <li>Recognition rather than recall.</li> <li>Flexibility and efficiency of use.</li> <li>Aesthetic and minimalist design.</li> <li>Help users to recover from errors.</li> <li>Documentation.</li> <li>Navigation.</li> <li>Structure of information.</li> <li>Physical constraints.</li> <li>Extraordinary users.</li> </ul>

With regards to the design issues, this study extracted the applicable guidelines with the intention to adapt them in the proposed model. Thus, the following section describes the implications of the design principles for iTV Applications.

**C. The implications of Design Principles for iTV advertising guidelines**

Understanding the components of advertising as a communication tool and the design principle for iTV really implicated this study. In developing the conceptual design model of iTVAdIP, the style of interface design plays an important role to ensure that the design model is mapped with all the features that are necessary to cater for iTV advertising. Thus, in

this study, the underlying principles of interface design [21], and the design guidelines for iTV [22] are used as references with the intention to be adapted in the proposed design model.

### 3. Advertising Theory

Over the past 30 years, **persuasion theory** has been the most influential theory in advertising, marketing, and consumer behaviour. The following theories used persuasion as the underlying concept: (i) elaboration likelihood model, (ii) persuasion knowledge model, (iii) hierarchy of effects model, and (iv) conditioning theory. These persuasive advertising are discussed in the next sub-sections.

#### A. Elaboration Likelihood Model

According to Petty, Cacioppo, & Schumann, [23] elaboration likelihood model (ELM) is a model of persuasion that proposes two distinct routes to persuasion; the central route and the peripheral route, which refer to attitude changes that occur through different levels of evaluative processing. Central route, such as attitudes is formed through an extensive and full effort process that scrutinizes a message for the quality of its arguments. In contrast, the peripheral route refers to the attitude formation that is based on non-argument cues, such as mood and source attractiveness.

The model posits that when people have both the motivation and the ability to process the information presented in a persuasive communication, it means that when the likelihood of message elaboration is high, then people will take the central route. In contrast, when the likelihood of message elaboration is low, they have lack of motivation or the ability to process the information, and people tend to take the peripheral route to persuasion as shown in Figure 2.14.

In addition, the strength of this theory is that the route taken has a number of important implications. It determines the components of a persuasive communication that is the most effective; either central cues (message quality) or peripheral cues (mood, expertise, and source attractiveness). This helps in explaining the rather counterintuitive finding that the quality of a message may have little effect on persuasion in some situations, such as when motivation or the ability to process the arguments is low, but other seemingly comparatively trivial variables (liking for background music in advertising) may have strong effects.

In a nutshell, this theory explains how the classic inputs into persuasion (source, message, recipient,

and context) could have different impacts, depending on the particular route to persuasion [24] this theory has been widely used to understand how persuasive advertising works [23,25,26,27]. There are strategies and techniques as well in persuasive advertising that can be used by advertisers and marketers in order to increase purchase by consumers.

#### B. Persuasion knowledge model

Persuasion knowledge model (PKM) explains how the knowledge of marketers' persuasion tactics affects consumers' responses to such tactics [28,29]. It decomposes the persuasion process into two primary elements; the target and the agent. The target refers to the intended recipient of the persuasion attempt (the consumer), whereas the agent represents whoever the target identifies as the creator of the persuasion attempt (the marketer). The persuasion attempt encompasses not only the message of the agent, which itself is influenced by the agent's knowledge of the topic, target, the effectiveness and the applicability of different persuasion tactics, but it is also influenced by the target's perception of the agent's persuasion strategy [30,31].

In short, PKM emphasizes on how consumers develop and use the knowledge of persuasion to cope with the marketers' claims. The model focuses more on the interaction between the marketers (agent) and the consumers (target). The model sets up a symmetrical relationship between the agents (marketers) and the targets (consumers). With respect to a persuasion episode (e.g. an advertising for a service), each party is depicted as having knowledge of the other party, knowledge of the topic (e.g. the service), and knowledge of persuasion. With these different forms of knowledge in place, the persuasion episode occurs in the interaction between the agent's persuasion attempt and the target's persuasion coping behaviour [28,30].

#### C. Hierarchy of Effect Model

According to Egan, [32] the hierarchy model is an appropriate framework for any of these forms of communication and advertising [33,34]. They are useful to promotional planners from several perspectives. They describe the series of steps potential purchasers must take to move them from unawareness of a product or service to readiness to purchase it [34]. Then, the potential buyers may be at different stages in the hierarchy and make the advertisers face different sets of communication problems.

Moreover, some hierarchy of effect models have been developed and used by researchers from both

academician, as well as marketing communication practitioners, in a bid to measure the communication effect of advertising to the consumers' behaviour. These models are also used as a preparation basis of marketing communication strategy.

	KNOWLEDGES	FEELING		MOTIVATION → ACTION
AIDA (Strong '25)	Attention	Interest	Desire	Action
DAGMAR Colley '61	Awareness	Comprehension		Conviction Purchase
Lavidge & Steiner '61	Awareness Knowledge	Liking Preference	Conviction	Purchase
Wells et al. '65	Awareness Perception	Understanding		Persuasion
	COGNITIVE	AFFECTIVE		CONATIVE

Fig.4. Hierarchy of effects models (Egan, 2007)

The model DAGMAR has been suggested by Colley [35], which incorporates elements of awareness, comprehension, conviction, and purchase as stages of the influence of advertising message on consumers' behaviour. Awareness is the stage where advertising can raise audiences' awareness on advertising message (similar to attention and interest in AIDA). Comprehension is the stage where the consumer audience understands the core message of an advertising, and then, conviction is the stage where the audience believes the genuineness of the message that is delivered through advertising (similar to desire in AIDA, since a strong conviction can raise a desire to purchase), and purchase is where the consumer audience follows up his belief in the advertising message through the act of purchase (this stage is similar to action in AIDA). The model has been created by [36] which also share the same function with AIDA and DAGMAR, as depicted in Figure 4.

In conclusion, based on hierarchy of effect model, it can be concluded that all the models focus on the different steps that customers must pass in the process towards buying a product when exposed to advertising. They must pass a linear process with each step completed before moving to the next one.

#### D. Conditioning theory

Conditioning theory is also called stimulus response theory that plays a huge part in the concept of persuasion. Some stimuli trigger the consumers' need or want, and this in turn create the drive to response [59,60]. In other words, it is more about leading someone into taking certain actions of their

own, rather than giving direct commands. For example in advertising, this is often done by creating commercials that make people laugh, use a sexual undertone, insert uplifting images and/or music and others, and then ending the commercial with a brand/product logo.

For that reason, the conditioning theory is more applicable to the simple and basic purchase consumers make every day, and the reinforcement advertising plays its most important role along with superior product performance and good service. Persuasion occurs when the change in belief, attitude, or behavioural intention is caused by promotional communication, such as advertising and personal selling. Hence, it is important for the advertisers to establish a connection with the consumers to bring back certain emotions when one sees their logos in his/her local store.

The hope is that by repeating the message several times, it will cause the consumers to more likely purchase the product because he/she is already connected to it with good emotion and positive experience [59,60].

#### D. Persuasive strategies and the techniques in advertising

There are persuasion strategies and techniques that could be applied in advertising, which consist of claims, consequences, celebrities, pathos, logos, and ethos that are briefly described below.

1) Claims: Claims are supposed to function as information sources of the quality of the products. However, especially in the supplement industry the trustworthiness of the information to the consumers is questioned. The discussion arises as it is not clear if the consumers understand the meaning of disclaimers, i.e. a warning of that the claim has not been evaluated [37,38]. Thus, consumers face difficulties in determining the trustworthiness of different claims and its scientific base [39].

2) Consequences: Consequences represent the reasons why an attribute is important to someone and why it is positively or negatively valued [32,40]. The importance of consequences and their attractiveness or unattractiveness is derived from their perceived ability to satisfy personal values. Consequently, the consequences are meaningful as they help individuals to reach values central to the self [37,40].

3) Celebrities: Celebrities are used in advertising to persuade consumers through credibility [37,41]. The

influencing power of a well-known endorser lays first of all in the celebrity's ability to attract attention. Furthermore, the general view is that celebrities possess likeable and attractive qualities [42]. The aim is that through endorsement, the positive meaning connected to the celebrity will transfer to the product and subsequently, to the buying consumer [44]. However, even though consumers seem to have a positive view of celebrities, their credibility and thus effectiveness in advertising have been questioned [37,42,45].

4) Pathos: an appeal to emotion. An advertisement using pathos will attempt to evoke an emotional response in the consumer. Sometimes, it is a positive emotion, such as happiness, for example an image of people enjoying themselves while drinking Pepsi. In other times, advertisers use negative emotions such as pain, for instance a person having back problems after buying the "wrong" mattress. Pathos can also include emotions such as fear and guilt, for example images of a starving child would persuade you to donate money [28].

5) Logos: an appeal to logic or reason. An advertisement using logos will give you the evidence and statistics you need to fully understand what the product does. The logos of an advertisement will be the "straight facts" about the product [28].

6) Ethos: an appeal to credibility or character. An advertisement using ethos will try to convince you that the company is more reliable, honest, and credible. Therefore, you should buy its product. Ethos often involves statistics from reliable experts. In knowing how the different strategies work, a natural question follows of why an individual employs a certain strategy.

Therefore, strategy that is employed depends on the amount of resources that the message recipient is willing and able to put into the processing [28,45]. The advertising message, (e.g. complexity and inclusion of pictures), the individual's personal characteristics, (e.g. message involvement and expertise), and the situation in which the message is received, (e.g. editorial and advertising context), constitute the determinants of the allocation of resources. Moreover, the mood of the message receivers has also proven to play an influencing role in the adoption of processing [28,45]. Thus, the following section describes the implications of the advertising theory, persuasive strategies, and technology to the study.

## **F. Implications of the advertising theories, persuasive strategies, and techniques to this study**

The theories discussed in this section were referred to for better understanding on how advertising works. Developing the proposed model of iTVAdIP required this study to embed persuasive advertising theories during the development process. ELM, PKM, hierarchy of effects models, and conditioning theory are the four established advertising theories that act as the root of advertising development. Although these four advertising theories have their own principles, not all of the elements are inserted into the development of the proposed model. They are selected based on applicability, which particularly relate to the proposed model. In addition, persuasive strategies and techniques have been important to be applied in the model in order to increase the level of impulse purchase among the consumers.

### **4. Psychology Approach**

There were two approaches chosen in this study, which are: environmental psychology and the design of psychology customization, which are described in the next section.

#### **A. Environmental Psychology**

Environmental psychology focuses on two major topics which are the emotional impact of physical stimuli and the effect of physical stimuli on a variety of behaviours [46]. In other words, environmental psychologists focus on the environmentally influenced attitude, which leads to a behavioural response. It assumes that individuals' feelings and emotions ultimately determine their behaviour and it also assumes that environments can evoke various feelings that can cause certain behaviours. As defined by [46] the approach "centres on the use of human emotional responses to environments as intervening variables linking the environment to the variety of behaviours it elicits."

Most of the environmental psychologists have studied to find which element of environment affects behaviour intention [46]. For example, when translated to an advertising context, it is the way the advertising is presented that influences attitude which may lead to purchase intention [47,48].

Previous environmental studies have used a number of alternative sets of stimulus categories [49,50]. The most common procedure is to describe an environment in terms of various objects in it and

the relations among these objects. For example, another possible set of environment descriptors is the emotional reactions to variables which stimulate the senses, such as those for colour, sound, temperature, and texture [51,52,53,54].

However, this list of descriptors is also quite long and awkward since most environments simultaneously include stimulation in all the sense modes, as well as along numerous stimulus dimensions within each modality (for instance, a colour may be a certain hue and of a certain brightness).

## B. Design of Psychology Customization

Psychological customization provides a way of implementing mind-based technologies in the system design. It can be applied to various areas of HCI, such as persuasive technology (advertising for persuasion, and e-commerce persuasion), augmentation systems (augmented and context sensitive financial news), notification systems (alerts that mobilize a suitable amount of attention per task or context of use), affective computing (emotionally adapted games), collaborative filtering (group-focused information presentation), computer-mediated social interaction systems (collaborative work, and social content creation templates), and messaging systems (emotionally adapted mobile multimedia messaging and email).

Psychological customization consists of three layers which are physical, code, and content [55][56]. Physical layer includes the physical technological device and the connection channel that is used to transmit communication signals. The code layer consists of the protocols and software that make the physical layer run and the content layer consists of multimodal information. The content layer includes both the substance and the form of multimedia content [57,58]. Substance refers to the core message of the information presented to them in a systematic manner to create emotional, cognitive and other psychological effects [56,57,59].

The types of psychological effects are depth of learning, positive emotion, persuasion, presence, social presence, and other types of psychological states and effects, as well as consequent behaviour [32,61,62,63]. There is considerable evidence in the literature and in our own experimental research that varying the forms of information, such as modality, layouts, background colours, text types, emotionality of the message, audio characteristics, the presence of image motion, and subliminality, creates for instance emotional, cognitive, and attentional effects [64,65].

Some of these effects are produced in the interaction with individual differences, such as cognitive style, personality, age or pre-existing mood [66].

Form implies aesthetic and expressive ways of organizing the substance, such as using different modalities and structures of information [57]. Technologies may be considered as mind-based because they systematically take into account the characteristics and individual differences of different segments of users. Thus, the following section describes the implications of psychology approaches to the study.

## C. Implications of Psychology Approaches to the study

The concept of environmental psychology is important to this study because it can determine the environment factor that could influence attitude which leads to a behavioural response. Meanwhile, the psychology customization design involves physical, content, and code in the development process of psychology effect. Hence, it really implicated to this study, particularly in understanding how advertising acts as persuasive communication. The factor that influences psychology effect in psychology customization helps to find the element of advertising content in producing impulse purchase advertising.

## 5. Impulse Purchase

Several researchers have proposed a variety of definitions of impulse buying [67,68,69]. According to Rook [67], defines it as an unplanned purchase which occurs when a consumer experiences positive affect when exposed to a stimulus. Piron [70], conducted a review of these definitions and produced thirteen dimensions which were common across from various definitions of impulse buying proposed by different researchers.

Piron [70] integrated these dimensions and proposed a new comprehensive definition of impulse buying, which is as follows. "Impulse buying is a purchase that is unplanned, the result of an exposure to a stimulus, and decided on-the-spot. After the purchase, the customer experiences emotional and/or cognitive reactions".

Impulse purchase comes from many characteristics. The first characteristic is as an unplanned purchase, whereby a consumer decides to purchase the object on the spur of the moment, not in response to a previously recognized problem or an intention that was formed prior to being in the shopping environment [70]. The second characteristic of impulse purchase is the exposure to the stimulus,

which is considered as the catalyst which predicts impulse purchase by the consumer [70].

The third characteristic of impulse purchase is the immediate nature of the behaviour. The consumer makes a decision on the spot without any evaluation of the consequences of making such a purchase [70]. Finally, the consumer experiences emotional and/or cognitive reactions, which can include for future consequences. There are four types of impulse purchase, as illustrated in Table 5. The types of impulse purchase is classified into four categories, namely pure, reminder, suggestion, and planned impulse buying [70,71].

**Table 5.** Types of Impulse Purchase

Types	Description
Pure impulse purchase	<ul style="list-style-type: none"> <li>Occurs when consumers purchase products impulsively as defined above.</li> </ul>
Reminder impulse purchase	<ul style="list-style-type: none"> <li>Occurs when the consumer is reminded of the need to buy a product when he or she sees it. The consumer may remember about running out of that product or may recall an advertisement about the item of interest, which sparks the impulse purchase.</li> </ul>
Suggestion impulse purchase	<ul style="list-style-type: none"> <li>Occurs when a consumer sees a product and visualizes a need for it.</li> </ul>
Planned impulse buying	<ul style="list-style-type: none"> <li>Occurs when consumers do not plan for their purchases, but search for and take advantage of promotions in the market. The common link across these different types of impulse purchase is that the purchase is a result of an exposure to the stimulus.</li> </ul>

A few researchers have studied impulse purchase behaviour for different requirements, such as traditional retail store [72], online shopping [12,73], website [73] and Promotional TV Programme [8]. However, this research focused on impulse purchase behaviour on the iTV context. On top of that, an analysis on the existing design models was also considered to determine the common components, elements, theory, and approach in order to propose a conceptual design model of iTVAdIP.

**A. Conceptual Design Model of Impulse Purchase**

In proposing a conceptual design model of iTVAdIP, an analysis on the conceptual design model of impulse purchase is important. It should identify common components, and elements, as well as theory and approach that are adapted in the conceptual design model. In response to that, this study analyzed impulse purchase model from different medium

which are from websites, traditional television, and iTV environment as shown below:

Firstly, a comparative analysis was carried out for five design models of impulse purchase on website: (i) Conceptual Framework of Website Attributes in Online Purchase [30], (ii) Conceptual Framework of Website Brand Equity [77], (iii) Model of Website Aesthetics within Online Environment, [76], (iv) Conceptual Model of Media Format on Behavioural Intention [75], and (vi) Conceptual Framework Effect of Atmospherics on Online Shopping [74], plus the limitations as portrayed in Table 6.

**Table 6.** A comparative model of impulse purchase from the website environment

Models	Limitations
a) Conceptual Framework of Website Attributes in Online Purchase Conceptual Framework of Website Brand Equity [30]	<ul style="list-style-type: none"> <li>The provided elements focus more on how website cues might affect impulse purchase behaviour on website but not on television.</li> </ul>
b) Conceptual Framework of Website Brand Equity Effect Atmospheric [77]	<ul style="list-style-type: none"> <li>The target users are website users and not television users.</li> </ul>
c) Model of Website Aesthetics within Online Environment [76]	<ul style="list-style-type: none"> <li>The provided elements do not have specific design on the development of iTV advertising.</li> </ul>
d) Conceptual Framework Effect of Atmospherics on Online Shopping [74]	
e) Conceptual Model of Media Format on Behavioural Intention [75]	

Secondly, the comparative analysis was continued with three impulse purchase models from the traditional television advertising: (i) Conceptual model of t-commerce [78] (ii) Conceptual Model for Effect TV Display on Impulse Purchase Toward TV shopping [79] and (iii) Model of Impulse Buying Tendency Towards Television shopping [80], plus and the limitations as stated Table 7.

**Table 7.** A comparative model of impulse purchase from the traditional television environment

Models	Limitations
a) Conceptual Model for Effect TV Display on Impulse Purchase Toward TV shopping [79]	<ul style="list-style-type: none"> <li>The provided elements illustrate more on how promotional TV on traditional TV advertising might affect impulse purchase behaviour but the elements do not present iTV advertising.</li> </ul>
b) Model of Impulse Buying Tendency Towards Television shopping [80]	<ul style="list-style-type: none"> <li>The provided elements do not have specific design on the development of iTV advertising.</li> </ul>
c) Conceptual model of t-commerce [78]	

Lastly, four models from iTV were included in the comparative analysis: (i) An On-Demand Advertising Model for iTV [4], (ii) Context Aware Personalized Ad Insertion in an iTV Environment [81], (iii) A New Content-Related Advertising Model For iTV [82] and (iv) Interactive trend in the TV advertising landscape [83], plus the limitations as stated in Table 8.

**Table 8.** Comparative model of impulse purchase from interactive television environment

Model	Limitations
a) An On-Demand Advertising Model for iTV [4]	<ul style="list-style-type: none"> <li>The provided elements do not have specific design on the development of iTV advertising.</li> </ul>
b) A New Content-Related Advertising Model For iTV [82]	<ul style="list-style-type: none"> <li>The provided elements do not emphasis much on impulse purchase elements.</li> </ul>
c) Context Aware Personalized Ad Insertion in an iTV Environment [81]	<ul style="list-style-type: none"> <li>These models are not dedicated to design model to increase impulse purchase on iTV advertising.</li> </ul>
d) Interactive trend in the TV advertising landscape [83]	

Based on the comparative analysis, it can be concluded that most of the models do not provide specific guidelines or specific designs on the development of iTV advertising. Besides, these models are not dedicated to design model to increase impulse purchase on iTV advertising.

**B. Implications of the comparative model to the study**

The previous literatures have suggested that the development of conceptual design model of advertising should include advertising theory and persuasive approach as the basic components. It would be unreasonable to ignore these basic components in an endeavour to create the proposed model. On top of that, persuasive technique and strategies are really important to attract and persuade viewers in making purchase impulsively.

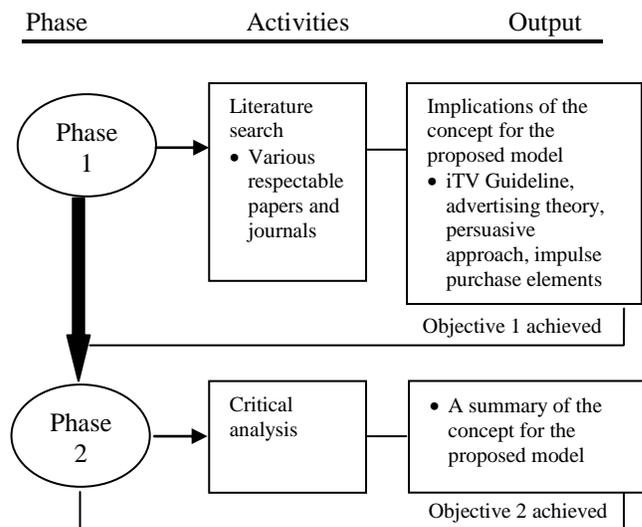
Moreover, the comparative analysis clarifies that all the reviewed models have certain guidelines to ensure they match with their target users. However, it was found that the conceptual design models or prototypes lack emphasizes on the design of iTV advertising. Only, one model has drawn attention to television viewers, but that just focused on conventional advertising and not interactive

advertising. The content aspects are also poorly emphasized for the needs of the proposed model.

Hence, it ought to be noted that this is the research gap that is the focal point of this study. In accordance, the next section discusses the methodology in this study.

**6. Methodology**

In achieving the stated objectives, this study employed two phases of activities which are (i) literature search, and (ii) critical analysis, as illustrated in Figure 5.



**Fig.5.** Methodology of this study

The first phase was to conduct the literature search from various respectable papers and journals in order to understand the concept of proposing a conceptual design model of iTV advertising towards impulse purchase. At this stage, a comprehensive literature search was performed. As for the outcome, the list of concepts to propose a model was identified, which consists of iTV guidelines, advertising theories, persuasive approaches and the models were compared. The implications to the study from each concept were stated. The second phase was a critical review and a summary of the concepts for the proposed model in order to achieve the objectives of the study. The findings and discussions of this study are provided in the following section.

**7. Findings and Discussion**

Critical analysis was carried out to identify the concept of the proposed model. Based on the analysis, the concepts for the proposed model were extracted for the implications of the study.

### A. The list of relevant issues or topics of the proposed model

The findings showed that the concept of the proposed model contributed and provided implications for the development of the proposed model. Table 9 shows relevant issues or topics of the proposed model that were extracted. It also elaborated the implications and the contributions of the concepts to the development of the proposed model.

**Table 9.** Implication of the relevant issues or topics toward proposed model

Elements	Contributions and implications to the study
iTV Guideline	<ul style="list-style-type: none"> <li>• As a guideline to develop the proposed model.</li> </ul>
Advertising Theory	<ul style="list-style-type: none"> <li>• To understand the processes in developing advertising.</li> </ul>
Persuasive Approach	<ul style="list-style-type: none"> <li>• To adapt persuasive techniques and strategies in the proposed model.</li> </ul>
Impulse purchase elements from the comparative analysis	<ul style="list-style-type: none"> <li>• To find the suitable elements that could be included in the proposed model.</li> </ul>

Hence, in order to develop the proposed model all of concepts and elements stated above were analysed clearly to be considered as guidelines in the development of the proposed model. Firstly, the guideline of iTV was clearly analysed to develop the proposed model. Secondly, advertising theory was identified and analysed to look into the processes involved in developing advertising. Thirdly, the persuasive approach was included to know the persuasive techniques and strategies which could be adapted in the proposed model and lastly a comparative analysis was carried out, which was the most important thing in order to find the gap and suitable elements that could be included in the proposed model.

### B. The summary of the relevant issues or topics for the proposed model

For easy comprehension, the concepts for the proposed model were summarized, as illustrated in Figure 6. The summary of the concepts for the proposed model is presented clearly in the flow of development of the proposed model of iTVAdIP in a systematic way.

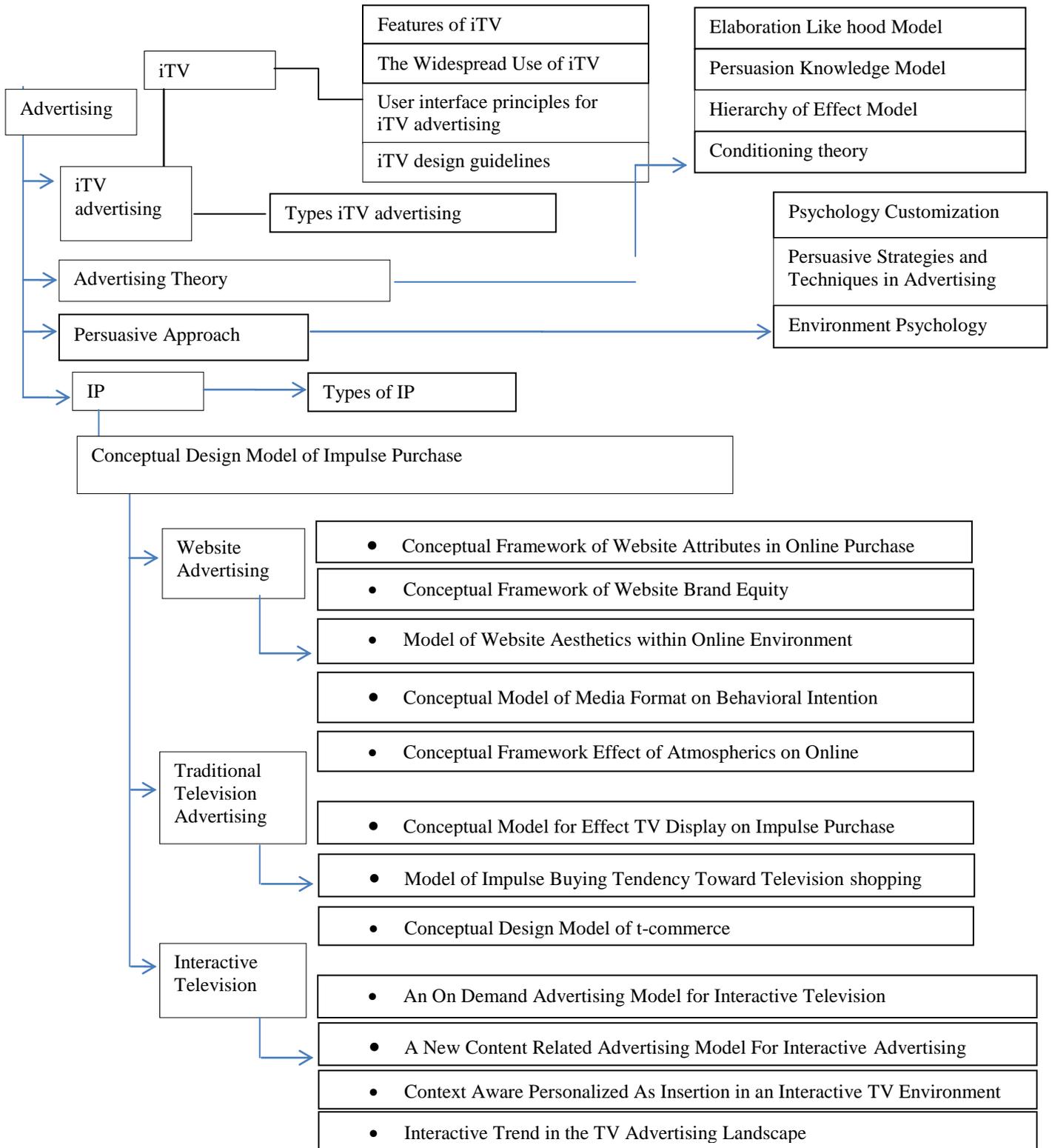


Figure 6: Document analysis framework for modelling iTVAdIP

## 5. Conclusion

As a conclusion, it can be concluded that the elements of iTV guideline; advertising theory; persuasive approach; and impulse purchase elements; are important to be understood clearly in order to be used as a guideline to develop the proposed model smoothly. In addition, by understanding those concepts and elements it was easy to develop a proposed model in a systematic way. In addition, comprehending the elements eased the identifications of the elements that were appropriate and suitable to be adapted in proposed model.

As a result, the proposed model could be easily followed and could bring benefits to the advertisers and marketers in order to develop effective advertising that consists of persuasive elements which could motivate consumers to buy impulsively. In future need to develop and improvise the proposed model by identifying other appropriate elements to be included in the proposed model.

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