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Impacts of iPad attributes, Lifestyles and media dependency on adoption of iPad and intensity of iPad usage in Mainland China

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Usage in Mainland China
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Impacts of iPad Attributes, Lifestyles and Media Dependency on Adoption of iPad and Intensity of iPad Usage in Mainland China

Abstract The goal of this exploratory research is to identify attributes that can distinctly characterize iPad and examine the predictive power of iPad attributes, lifestyles, media dependency, and demographics on adoption of iPad, iPad usage patterns and intensity of iPad usage. Using a snowballing sample, an online survey was conducted with 623 university students in Mainland China, among which 217 were iPad users and 406 were non-users. Results of regression analyses show that application affordances is one of the few important attributes influencing the likelihood of iPad adoption, iPad usage patterns and intensity of iPad usage. Regarding lifestyles, strivers were found to be associated with higher likelihood of buying iPad; experiencers were more engaged and active when using iPad; innovators tended to use iPad for utilities, information-seeking and communication more often than other users. Interestingly, owning other Apple products has a positive impact on purchasing iPad. Furthermore, among iPad usage patterns, in particular, utilities and information-seeking are significant predictors for Intensity of iPad usage, which proves to be the most important functionalities for iPad.

Key words iPad attributes; Lifestyles; Media Dependency; Adoption of iPad; Intensity of iPad usage

Impacts of iPad Attributes, Lifestyles and Media Dependency on Adoption of iPad and Intensity of iPad Usage in Mainland China

Introduction

Tablet computer refers to computer that is intermediate in size between a laptop computer and a smartphone (Encyclopædia Britannica, 2011). Melhuish and Falloon (2010) suggested that currently tablet devices such as iPad are defined as Post-PC Devices (PPDs), a recognition that this type of device perhaps does indeed deserve its own category, possessing significant differences over and above existing desk-bound or mobile technologies such as laptop computers and smartphones. The first true tablet computers Cambridge Research's Z88 and Linus Technologies' Write-Top were introduced in 1987, which used either a keyboard or a stylus to input information. Until April 2010, tablet computers began to gain popularity worldwide at a fast pace, when Apple Inc. unveiled the iPad, a touch-screen device with a display that measured 24.6 cm (9.7 inches) diagonally, which caused a buzz on the international technology scene. The iPad is operated with the same set of finger gestures that are used on Apple's smartphone iPhone. In March 2011, Apple unveiled the second generation of the iPad – iPad 2, which brought worthwhile improvements over its predecessor, including dual cameras for FaceTime, the dual-core A5 chip, 10-hour battery life, iCloud and over 200 new software features.

The iPad is not revolutionary in terms of its concept, but more revolutionary in the execution of existing technology. The iPad is not simply a larger iPhone, nor is it a smaller computer, and it is regarded as a new type of mobile platform that will, at least in theory, offer all the functionality and connectivity of a computer, with the mobility of a mobile phone. Just like software for personal computers, iPad can run applications, which are built in or downloaded from Apple's iTunes. For instance, in partnership with several major publishers, Apple develops for iPad its own e-book application, iBooks, as well as an iBook store accessible through the Internet. According to Poe (2010), all of the features within the iBooks area would make for an excellent tool for e-books. Until the first quarter of 2012, over 55 million iPads have been sold worldwide since its introduction (Pingdom, 2012).

One survey conducted by ChangeWave (2011) showed that Apple remains the overwhelming winner among planned buyers, with 82% of future tablet buyers saying they'll be purchasing an iPad. Importantly, the iPad's satisfaction rating remains outstanding among owners – with 70% saying they're very satisfied and 25% somewhat satisfied with the Apple tablet device. Particularly in Mainland China, tablet computer also gains in popularity with consumers as approximately 8 million units were sold in 2011, among which iPad gained a 70% market share. According to iResearch (2011), an Internet consulting company in China, Chinese tablet computer users present following characteristics: 1) male accounts for 64.3% while female accounts for 35.7%, with an obvious gap of 28.6%; 2) the most often used functions are surfing Internet, watching videos and playing games; 3) over 70% of users download entertainment, game and music applications; 4) convenience and innovative user experience are thought to be the most significant advantages of tablet computers.

As tablet computer becomes widely adopted in the world, especially in the field of education and learning, teachers and students start to explore its potential. In Apple's iTunes Store, there is a category of application called "education", which aims to provide limitless learning possibilities at our fingertips. This digital device has an equal promise in revolutionizing both teaching and learning activities. Teachers can have instructional support while students can also be empowered with individualized instruction.

One study by Melhuish and Falloon (2010) indicated that as with previous devices such as mobile phones and laptops, iPad offers exciting possibilities for all those who wish to be unceasingly connected and active in the online world, for both work and pleasure. Based on the assumption that iPad will exhibit differences from computers and mobile phones, the purpose of this study is to (1) identify attributes that can distinctly characterize iPad and (2) examine how these attributes, together with lifestyles, media dependency, user preference and demographics can predict the likelihood of iPad adoption and the intensity of iPad usage among university students from Mainland China.

Theoretical Frameworks

iPad Attributes

Kendrick (2010) discovered that from personal experience, he was able to do more with a tablet than with a smartphone and gave us a typical user scenario that fits iPad perfectly. He stressed that the enhanced web browsing experience, far better than on a small screen smartphone, leads to an extended session, which can be either productive or entertaining, either way it's an enjoyable one. Particularly for education and learning, Warschauer (2011)

identified the advantages of iPad as: First, their lighter weight and orientational flexibility makes them far superior for digital reading or accessing of content. Second, their instant-on capability and fast switching among applications allows learning activities to proceed with less delay. Third, their touch-screen interface allows a high degree of user interactivity. Fourth, they are much more mobile than laptops, as students can carry them inside or outside a room without having to close and reopen the screen and can also use them for mobile data collection or note-taking. Fifth, since it is inexpensive to develop applications for mobile platforms, there is a rapidly growing amount of free or low-cost applications for tablets, many of which are suitable for education. And finally, tablets' long battery life makes them more suitable for a school day. According to Poe (2010), iPad is a cool, new toy that students may want to use instead of a laptop - plus it does not weigh as much, so it is easier to carry.

Bolt, Evans and Harrell (2010) suggested that the form factor and physical affordances of the iPad also change the nature of PPDs. The iPad is not pocket sized, it has a large screen, and it naturally lays flat on the table as opposed to resting upright or being tucked away in your hand. All of these factors place the iPad squarely in the realm of a shareable computing device. It is also easy to view content on iPad since the screen can easily be viewed by 3-4 users sitting around in a circle or gazing over the shoulder. An iPhone with its 480x320 screen would be squinted at by neighbors, or would simply be passed around and handled individually.

Kelly and Schrape's (2010) study regarding usability of iPad found that the speed with which the iPad boots up (instant on), and the speed applications can be launched and switched between, is much faster than a comparable application on a laptop. iPad was also thought to

bring us an era of ubiquitous computing when Wempler (2010) stated that tablet computers can be anywhere, fulfilling many functions, without the cruff of their lineage, like keyboards and mice. What's more, compared with netbook and ebook reader, Pratt (2010) argued that the touch screen of iPad is largely intuitive and easy to use. Moreover, where iPad truly shines is in the range of applications available for it. One example Pratt has discussed is iBooks, which combines replicating the look and action of a traditional book with, multimedia elements. The pages on the screen look like those of a book, and reader can see either one page or facing pages at once. Turning a page involves using a flicking motion with finger, in the bottom right hand corner. The high definition screen and interactive nature allow readers to interact with material on the page pleasingly and smoothly. With all these unique attributes, it is believed that they will significantly affect adoption decisions and usage patterns. Thus, we asked:

RQ₁: What attributes of iPad can be identified?

Lifestyles

According to Lazer (1963), lifestyle is “a systems concept. It refers to the distinctive mode of living, in its aggregative or broadest sense . . . It embodies the patterns that develop and emerge from the dynamics of living in a society.” Previous studies show that one's lifestyle orientations will greatly influence one's media usage and consumption (Becker & Connor, 1981; Donohew, Palmgreen, & Rayburn, 1987; Leung, 1998; Li, Kuo & Russel, 1999; Zhu & He, 2002). Becker and Connor (1981) found that personal values, which are fundamental, parsimonious bases of both attitude and behavior, influence individuals'

media-usage behavior. Donohew, Palmgreen and Rayburn (1987) examined how social and psychological factors, including the need for activation, interact to produce different lifestyles and patterns of media use. They identified four lifestyle types whose members differed significantly on a broad range of variables, including newspaper and newsmagazine readership, and gratifications sought from cable television. Particularly for the relationship between lifestyles and adoption behavior of new media technologies, Leung (1998) confirmed the usefulness of lifestyles as a new set of attitudinal variables to supplement demographics and suggested how consumers manipulated consumption object meanings to fit their social identity. Li, Kuo and Russel (1999) examined the influence of shopping orientations, which were conceptualized as a specific dimension of lifestyle, on online buying behavior and indicated that frequent and occasional Web buyers are indeed not more price-sensitive than non-Web buyers. Zhu and He's (2002) study showed that Chinese Internet audience members' choice among rival value orientations such as Communism, Materialism, and Post-materialism, is influenced by media credibility, cognitive sophistication, and access to alternative information, in that order.

One of the most widely popularized approaches to lifestyle research is the VALS (Values and Lifestyles) programme developed by Mitchell (1983) at SRI International. The VALS approach, which was derived from the theoretical base of Maslow's (1954) need hierarchy and the concept of social character (Riesman, Glazer, & Denney, 1950), explicitly linked the two constructs – values and lifestyles together. VALS indicates that people express their personalities through their behaviors. VALS segments consumers into eight distinct types – or mindsets – using a specific set of psychological traits and key demographics that drive

consumer behavior. The eight consumer segments are: Innovators, Thinkers, Achievers, Experiencers, Believers, Strivers, Makers, and Survivors. The combination of primary motivations and resources determines how a person will express himself or herself in the marketplace as a consumer. The concept of primary motivation explains consumer attitudes and anticipates behavior. VALS includes three primary motivations that matter for understanding consumer behavior: ideals, achievement, and self-expression. Consumers who are primarily motivated by ideals are guided by knowledge and principles. Consumers who are primarily motivated by achievement look for products and services that demonstrate success to their peers. Consumers who are primarily motivated by self-expression desire social or physical activity, variety, and risk. These motivations provide the necessary basis for communication with the VALS types and for a variety of strategic applications. When it comes to talking about resources, besides age, income, and education, energy, self-confidence, intellectualism, novelty seeking, innovativeness, impulsiveness, leadership, and vanity also play a critical role. These psychological traits in conjunction with key demographics determine an individual's resources. Various levels of resources enhance or constrain a person's expression of his or her primary motivation (Strategic Business Insights, 2009).

The impact of VALS has been widespread and dramatic. Previous research has investigated online news using VALS and the results showed that, experiencers, a lifestyle savoring the new, the offbeat, and the risky, read more online international/China news. In the contrary, the survivors, who live narrowly focused lives, seldom do (Chan & Leung, 2005). In this study, lifestyles of both iPad users and non iPad users were examined. As a result, we proposed:

RQ₂: What lifestyle types similar to VALS can be identified in Mainland China?

Media Dependency

Ball-Rokeach and DeFleur (1976) proposed media system dependency theory, which refers to an integral relationship among audiences, media and the larger social and economic system. Ball-Rokeach (1985) defined media system dependency as a relationship in which the capacity of individuals to attain their goals is contingent upon the information resources of the media system – those resources being the capacities to (a) create and gather, (b) process, and (c) disseminate information. Ball-Rokeach (1998) suggested that the more complex (specialized) the society and differentiated its culture, the broader the scope of personal and social goals that require access to media information resources. In 1989, DeFleur and Ball-Rokeach proposed three fundamental goals individuals aim to achieve in terms of media dependency: understanding, orientation and play.

Baldwin and Barret (1992) also defined media dependence, as a concept that demonstrates that people develop a reliance on certain channels (such as newspapers, television, radio, etc.) to satisfy certain needs. To examine what people mean when they say they rely on a medium, one study done by McLeod and McDonald (1985) examined the extent to which reliance reflects actual time spent with a medium by comparing audience reports of media reliance with measures of actual time spent with various news sources. Furthermore, Miller and Reese (1982) suggested that what DeFleur and Ball-Rokeach predict for media in general holds for specific media. Previous research has also looked into the dependence on specific media, such as newspaper dependence (McLeod et al., 1977),

television dependence (Robinson & Zukin, 1976; Reagan, 1984) and radio dependence (Gaziano, 1988).

In this study, particularly computer dependency and mobile phone dependency were considered. With the rapid development of computer technology, people seem to be increasingly reliant on computers when most if not all homes, schools and other socio-economic institutions have embraced the use of computers in undertaking their day to day activities including communicating information, enhancing learning activities, storing vital data and distributing services. Shotton (1989) investigated the effects of computer dependency upon the individuals and others, and the more fundamental issue of why computer dependency should occur in the first place. It was reported that those dependent upon computers were highly intelligent, motivated and achieving people but often misunderstood. Similarly in recent years, mobile phones have become so popular that nearly everybody owns one. During the continuous progress of mobile technology, each person is becoming more seriously dependent on mobile phones. Shih, Chen and Chiang (2009) did an empirical study on mobile phone dependency and found that the level of the dependence on mobile phone between the male users and female users have no significant difference and there are no significant difference between the dependence on mobile phone and the handset uses time.

As Melhuish and Falloon (2010) suggested, collaboration and interaction between students should be easier with an iPad than a bulkier laptop or even a smartphone, where the small screen size can make sharing and group work difficult. Therefore this study aims to examine with the launch of iPad, will the dependents of computers or mobile phones turn to

iPad to seek more portable and ubiquitous user experience? What's more, if individuals are grouped based on which medium they say they primarily rely on, these groups will exhibit different attitudes toward the media and also differ in the various cognitive, affective and behavioral outcomes associated with media use (McLeod, Luetscher & McDonald, 1980). Accordingly, it is reasonable to believe dependency on computers and mobile phones will have different impact on the adoption and use of iPad. In sum, this exploratory study sought to expand previous research by addressing the following research questions:

RQ₃: To what extent can iPad attributes, lifestyles, media dependency and demographics predict the likelihood of iPad adoption?

RQ₄: To what extent can iPad attributes, lifestyles, media dependency and demographics predict iPad usage patterns?

RQ₅: To what extent can iPad attributes, lifestyles, media dependency, iPad usage patterns and demographics predict the intensity of iPad usage?

Methodology

Data Collection and Sampling

Qualitative Survey: Focus Group

Two focus groups were conducted on university students from Mainland China in order to assess iPad attribute items and iPad usage patterns.

Quantitative Survey: Online Questionnaire

Data for this study was collected by online questionnaire, with a purposive and snowball

sampling of 623 university students from Mainland China, including 217 iPad users and 406 non-users, who were aged 15 and above. The questionnaire was piloted before formal survey.

Measurement

iPad Attributes. To assess iPad attributes, respondents were asked to rank their agreement with a series of statements reflecting the characteristics of iPad adopted from the literature (Melhuish & Falloon, 2010; Kendrick, 2010; Warschauer, 2011; Pratt, 2010) as well as the results of two focus groups. At the start, 21 attributes of iPad were derived after responses were categorized, modified, and combined to construct the questionnaire. The pretest eliminated 7 items. A 5-point Likert scale was used in rating the importance of 14 attribute items to them with '1' = 'very unimportant', '2' = 'unimportant', '3' = 'neither important nor unimportant', '4' = 'important' and '5' = 'very important'.

Lifestyles. In this study, lifestyles were measured by using a well-established instrument developed by SRI International – VALS, which consists of 35 items to assess different consumer segments. Due to existing cultural differences, three items were not applicable or not truly reflective of local culture, value or belief, therefore the questionnaire was adjusted and respondents were asked to assess themselves on a 4-point Likert scale with '1' = 'mostly disagree', '2' = 'somewhat disagree', '3' = 'somewhat agree' and '4' = 'mostly agree'. The reliability for this thirty-two-item scale as indicated by Cronbach's alpha was remarkably high at .85.

Media Dependency. Computer dependency was measured by asking respondents: "Imagine that you woke up tomorrow to find that your computer has vanished, how much would you

miss being able to use it?” ranked on a 10-point scale with “1” = wouldn’t miss it at all, and “10” = miss it extremely. The distribution of responses to dependency on the computer was skewed such that responses were collapsed into four categories with original responses of 1–2 recoded as “1”; 3–5 as “2”; 6–8 as “3”; and 9–10 recoded as “4”. The same question was asked for mobile phone dependency: “Imagine that you woke up tomorrow to find that your mobile phone has vanished, how much would you miss being able to use it?” Again, the distribution of responses to mobile phone dependency was skewed such that responses were collapsed into four categories with responses of 1–2 recoded as “1”; 3–5 as “2”; 6–8 as “3”, and responses of 9–10 as “4”.

iPad Usage Patterns. Three dimensions of iPad usage patterns, including utilities, information-seeking and communication, were derived from the results of two focus groups. Specifically, for the purpose of utilities, respondents were asked “How often do you use iPad to (1) watch video; (2) listen to music; (3) take photo or video; (4) do online shopping; (5) store files; (6) do school work?”; for the purpose of information-seeking, respondents were asked “How often do you use iPad to (1) browse the Internet; (2) consume news; (3) check map; (4) microblog?”; for the purpose of communication, respondents were asked “How often do you use iPad to (1) read and respond to Emails; (2) social network; (3) send and receive instant message; (4) video chat?” A 5-point Likert scale was used to measure the frequency of these iPad usage behaviour with ‘1’ = ‘never’, ‘2’ = ‘rarely’, ‘3’ = ‘sometimes’, ‘4’ = ‘very often’ and ‘5’ = ‘always’.

User Preference. Both iPad users and non-users were asked whether they own other Apple products and whether they own other kinds of tablet computers. Particularly for iPad users,

they were also asked which model did they select (WiFi or WiFi+3G) and how large storage did they select (16GB, 32GB, or 64GB).

Demographics. The demographic characteristics of respondents, such as gender, age, education level, major, monthly household income, were also requested in the questionnaire.

Likelihood of iPad Adoption. A 5-point Likert scale was used to measure the likelihood of iPad adoption with '1' = 'definitely no', '2' = 'probably not', '3' = 'maybe', '4' = 'probably' and '5' = 'definitely yes'.

Intensity of iPad Usage. Intensity of iPad Usage Index was constructed in this study to measure both the level of satisfaction and frequency when using iPad and, as a composite, to assess iPad users' level of usage intensity. It consisted of the following three dimensions: a 5-point Likert scale was used to measure both the satisfaction with iPad itself and satisfaction with applications on iPad with '1' = 'very dissatisfied', '2' = 'dissatisfied', '3' = 'neutral', '4' = 'satisfied' and '5' = 'very satisfied'. Another 5-point Likert scale was used to measure the frequency of using iPad with '1' = 'never', '2' = 'rarely', '3' = 'sometimes', '4' = 'very often' and '5' = 'always'. The reliability for this index as indicated by Cronbach's alpha was moderately high at .70.

Findings

iPad Attributes

To assess attributes associated with iPad, two principal components factor analyses with varimax rotation were run to determine the potential groupings of attribute items on iPad, both for the group of iPad users and the group of non iPad users respectively. Items with

extremely low commonalities and items failed to load on any factors were removed. For the group of iPad users, the analysis yielded four factors with eigenvalue greater than 1.0, explaining 61.52% of the variance. The results are shown in Table 1. The first factor was “hardware features”, which consisted of six items reflecting advantages of the fundamental factors of iPad such as display performance, instant-on capability and multi-touch screen that bring total different and enjoyable hands-on experience. This factor had an eigenvalue of 4.50 and explained 32.17% of the total variance. The reliability of these six items as indicated by Cronbach’s alpha was high at 0.82. “Application affordances” was the second factor (eigenvalue = 1.86, 13.29% of variance), which included four items revealing that specifically designed applications such as FaceTime and Game Center enable users to take advantage of all the technology built into iPad. However, the item mean scores underlying this factor were the lowest and the Cronbach’s alpha was also low at 0.67. The third factor, “mobility” (eigenvalue = 1.22, variance = 8.74%, Cronbach’s alpha = 0.75), consisted of two items illustrating how mobile learning and ubiquitous computing play a promise and potential role in the penetration of tablet computers. The last factor was “connectivity” (eigenvalue = 1.02, variance = 7.32%, Cronbach’s alpha = 0.78), which contained two items indicating that built-in wireless technologies such as WiFi and 3G provide users great ways to stay connected with each other. The item mean scores were relatively high.

Similarly, for the group of iPad non-users, factor analysis in Table 2 also yielded four factors: “hardware features” (eigenvalue = 4.44, variance = 37.03%, Cronbach’s alpha = 0.78); “mobility” (eigenvalue = 1.49, variance = 12.39%, Cronbach’s alpha = 0.75); “connectivity” (eigenvalue = 1.18, variance = 9.84%, Cronbach’s alpha = 0.78); and “application

affordances” (eigenvalue = 0.94, variance = 7.80%, Cronbach’s alpha = 0.64). Compared with iPad users, “application affordances” is less important for non-users, probably because they cannot have the intuitive experience if they don’t own iPad.

Table 1

Factor Analysis of iPad Attribute Items (for Users, N=217)

How important are these attributes to you?	Mean	SD	Factors			
			1	2	3	4
<i>Hardware features</i>						
Processing Power	4.38	0.78	.712			
Display performance	4.21	0.82	.679			
Battery life	4.53	0.71	.666			
Instant-on capability	4.18	0.85	.634			
Multi-touch Screen	3.90	0.88	.622			
Storage	3.93	0.87	.616			
<i>Application affordances</i>						
FaceTime	3.16	1.07		.838		
Game center	2.85	1.06		.756		
iCloud	3.30	1.04		.540		
iPod	3.19	1.00		.524		
<i>Mobility</i>						
Mobile learning	4.01	0.98			.837	
Ubiquitous computing	3.64	1.01			.824	
<i>Connectivity</i>						
WiFi & 3G	4.55	0.76				.795
Internet communicator	4.53	0.75				.763
Eigenvalue			4.50	1.86	1.22	1.02
Variance explained (%)			32.17	13.29	8.74	7.32
Cronbach’s alpha			0.82	0.67	0.75	0.78

Scale used: 1=very unimportant; 2=unimportant; 3=neither important nor unimportant; 4=important; 5=very important.

Table 2

Factor Analysis of iPad Attribute Items (for Non-Users, N=406)

How important are these attributes to you?	Mean	SD	Factors			
			1	2	3	4
Hardware features						
Multi-touch Screen	3.97	0.93	.769			
Display performance	4.34	0.74	.746			
Storage	4.02	0.89	.743			
Processing Power	4.39	0.77	.690			
Instant-on capability	4.06	0.91	.534			
Mobility						
Mobile learning	3.97	0.91		.850		
Ubiquitous computing	3.66	0.93		.815		
Connectivity						
WiFi & 3G	4.45	0.77			.865	
Internet communicator	4.60	0.66			.793	
Application affordances						
Game center	3.05	1.09				.826
iPod	3.41	1.05				.688
FaceTime	3.42	1.04				.643
Eigenvalue			4.44	1.49	1.18	0.94
Variance explained (%)			37.03	12.39	9.84	7.80
Cronbach's alpha			0.78	0.75	0.78	0.64

Scale used: 1=very unimportant; 2=unimportant; 3=neither important nor unimportant; 4=important; 5=very important.

VALS in Mainland China

To identify the lifestyle types in Mainland China, a principal components factor analysis was performed to determine the potential groupings of lifestyle items. Table 3 shows the underlying structure of lifestyles and the results were similar to the ones found in the VALS. Five factors emerged with eigenvalues greater than 1.0, explaining 66.01% of the total variance. The first factor, “experiencers”, had an eigenvalue of 5.56 and explained 29.25% of the variance. It consisted of seven items that described respondents as active, impulsive, seeking information from the new, offbeat and risky. Experiencers appreciate the unconventional and spend a comparatively high proportion of their income on fashion,

Table 3

Factor Analysis of VALS (N=623)

	Mean	SD	Factors				
			1	2	3	4	5
Experiencers							
I like a lot of excitement in my life.	2.78	0.73	.812				
I like doing things that are new and different.	2.96	0.58	.791				
I often crave excitement.	2.90	0.74	.771				
I like the challenge of doing something I have never done before.	2.92	0.63	.736				
I am always looking for a thrill.	2.50	0.75	.721				
I like a lot of variety in my life.	2.82	0.73	.704				
I like trying new things.	2.98	0.63	.695				
Strivers							
I like to dress in the latest fashions.	2.20	0.76		.853			
I dress more fashionably than most people.	2.14	0.71		.828			
I want to be considered fashionable.	2.50	0.76		.797			
I follow the latest trends and fashions.	2.45	0.76		.746			
Makers							
I would rather make something than buy it.	2.31	0.67			.842		
I like to make things with my hands.	2.60	0.70			.815		
I love to make things I can use every day.	2.78	0.78			.693		
Thinkers							
I am very interested in how mechanical things, such as engines, work.	2.25	0.84				.770	
I like to look through hardware or automotive stores.	1.87	0.70				.745	
I would like to understand more about how the universe works.	2.59	0.83				.658	
Innovators							
I like being in charge of a group.	2.47	0.73					.895
I like to lead others.	2.41	0.72					.882
Eigenvalue			5.56	2.29	2.00	1.50	1.19
Variance explained (%)			29.25	12.07	10.52	7.89	6.28
Cronbach's alpha			0.88	0.85	0.73	0.61	0.83

Scale used: 1=mostly disagree; 2=somewhat disagree; 3=somewhat agree; 4=mostly agree.

entertainment, and socializing. The reliability as indicated by Cronbach's alpha was remarkably high at 0.88. The second factor, "strivers" (eigenvalue = 2.29, variance = 12.07%, Cronbach's alpha = 0.85), was composed of four items that depicted respondents as trendy and fun loving. They favor stylish products that emulate the purchases of people with greater material wealth. "Makers" (eigenvalue = 2.00, variance = 10.52%, Cronbach's alpha = 0.73) was the third factor, which consisted of three items that characterized respondents as valuing practicality and self-sufficiency. They choose hands-on constructive activities and spend leisure time with family and close friends. "Thinkers" (eigenvalue = 1.50, variance = 7.89%, Cronbach's alpha = 0.61), the fourth factor, consisted of three items. It portrayed respondents as mature, satisfied, comfortable and reflective. Thinkers favor durability, functionality, and value in products. Lastly, "innovators" (eigenvalue = 1.19, variance = 6.28%, Cronbach's alpha = 0.83) was the factor fell at the top end of the spectrum, with high resources and high innovation. They are change leaders and are the most receptive to new ideas and technologies. Their purchases reflect cultivated tastes for upscale, niche products and services.

Generally, these five lifestyles were consistent conceptually with the theoretical expectations described by SRI International. Compared with VALS, three types – believers, achievers and survivors were excluded in this study, probably due to the cultural differences.

Predicting Likelihood of iPad Adoption

As results of regression analyses using likelihood of iPad adoption as dependent variable in Table 4 show, regarding iPad attributes, hardware features ($\beta = .13, p < .05$) and application affordances ($\beta = .14, p < .05$) were significant predictors of likelihood to adopt iPad. This

Table 4

Regression of iPad Attributes, Lifestyles, Media Dependency and Demographics on
Likelihood of iPad Adoption

Predictors	r	β
<i>iPad attributes</i>		
Hardware features	.15**	.13*
Mobility	.01	-.12 [#]
Connectivity	.10*	.04
Application affordances	.15**	.14*
<i>Lifestyles</i>		
Experiencers	.21***	.06
Strivers	.37***	.32***
Makers	.12*	.02
Thinkers	.07	.02
Innovators	.19***	.06
<i>Media Dependency</i>		
Computer dependency	.13**	.06
Mobile phone dependency	.16**	.12 [#]
<i>User Preference</i>		
Whether own other Apple products or not (No = 1)	-.23***	-.22***
Whether own other kinds of tablets or not (No = 1)	-.08	-.06
<i>Demographics</i>		
Gender (female = 1)	.09	.08
Age	.18***	.16**
Education level	.08 [#]	.01
Major	-.08 [#]	-.05
Household income	.20***	.17***
R ²		.35
Final adjusted R ²		.31

Notes: Figures are Pearson's r and standardized beta coefficients.

[#] $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$; N = 406

means that people who think the hardware features and application availability are important to them will have a higher probability to use iPad. Among different lifestyles, only strivers ($\beta = .32, p < .001$) is significant predictor for adoption, which suggests that people who are

trendy and concerned about the opinions and approval of others are more likely to purchase an iPad to emulate themselves with greater material wealth. When it comes to user preference and demographics, the likelihood was significantly predicted by ownership of other Apple products ($\beta = -.22, p < .001$), age ($\beta = .16, p < .01$) and household income ($\beta = .17, p < .001$). This finding illustrates that Apple's brand image has been recognized by consumers and people who already own other Apple products, who are older and who have a highly monthly household income will have a higher chance to become iPad users. The regression model explained 31% of the variance in total.

Predicting iPad Usage Patterns

A total of three dimensions were identified for the iPad usage patterns. Table 5 shows the mean and standard deviation of each of the 14 items. The first dimension was "utilities", which includes practical functions of iPad such as watching videos, storing files and doing school work. It consisted of six items and the reliability was acceptable, with Cronbach's alpha at 0.73. The second dimension, "information-seeking", was composed of four items which refer to activities of attempting to obtain information on iPad. Browsing the Internet and checking map were the typical examples. Cronbach's alpha was moderately high at 0.71 and the item mean scores were relatively high indicating that most people like to look up information when using iPad. "Communication" (Cronbach's alpha = 0.72) was the third dimension, which consisted of four items representing different communication methods by iPad, such as Email, instant messaging and video chat.

To examine the relative influences of iPad attributes, lifestyles, media dependency, user

Table 5

iPad Usage Patterns (for Users, N=217)

How often do you use iPad to...?	Mean	SD	Cronbach's Alpha
<i>Utilities</i>	2.80	0.82	0.73
Watch video	3.65	1.18	
Listen to music	2.88	1.26	
Take photo or video	2.63	1.28	
Do online shopping	2.54	1.32	
Store files	2.96	1.32	
Do schoolwork	2.14	1.13	
<i>Information-seeking</i>	3.52	0.89	0.71
Browse the Internet	4.32	0.91	
Consume news	3.13	1.22	
Check map	3.21	1.22	
Microblog	3.40	1.46	
<i>Communication</i>	2.98	0.94	0.72
Read and respond to Emails	3.13	1.36	
Social network	3.26	1.33	
Send and receive instant message	3.32	1.26	
Video chat	2.21	1.14	
Total			0.87

Scale used: 1=never; 2=rarely; 3=sometimes; 4=very often; 5=always.

preference and demographics on iPad usage patterns, three parallel regression analyses were run. The results in Table 6 indicate that individuals who often use iPad for utilities tended to be innovators ($\beta = .24, p < .001$), older ($\beta = .16, p < .05$), more dependent on mobile phone ($\beta = .16, p < .05$) and thought application affordances ($\beta = .26, p < .001$) and mobility ($\beta = .18, p < .05$) were important to them. Data also show that people who often use iPad for information-seeking tended to be strivers ($\beta = .28, p < .001$) or innovators ($\beta = .16, p < .05$) and gave an importance on application affordances ($\beta = .24, p < .001$). Similarly, application affordances ($\beta = .27, p < .001$), innovators ($\beta = .20, p < .01$) and strivers ($\beta = .16, p < .05$)

Table 6

Regression of iPad Attributes, Lifestyles, Media Dependency, User Preference and
Demographics on iPad Usage Patterns

Predictors	iPad Usage Patterns		
	Utilities	Information-seeking	Communication
	β	β	β
<i>iPad attributes</i>			
Hardware features	.42	- .01	- .01
Application affordances	.26***	.24***	.27***
Mobility	.18*	.07	.05
Connectivity	- .13	.07	.04
<i>Lifestyles</i>			
Experiencers	.01	- .12	.06
Strivers	.13 [#]	.28***	.16*
Makers	.07	.04	- .01
Thinkers	.04	.01	.03
Innovators	.24***	.16*	.20**
<i>Media Dependency</i>			
Computer dependency	- .03	- .04	.05
Mobile phone dependency	.16*	.10	.04
<i>User preference</i>			
Whether own other Apple products or not (No = 1)	- .14 [#]	- .12 [#]	- .13
Whether own other kinds of tablets or not (No = 1)	- .01	.03	.04
iPad model selected (WiFi+3G=1)	.07	.01	.07
iPad storage selected	.04	.01	- .03
<i>Demographics</i>			
Gender (female = 1)	.02	.05	.02
Age	.16*	.11	- .08
Education level	- .05	.09	.09
Major	- .10	- .05	- .12 [#]
Household income	- .04	.09	- .09
R ²	.33	.25	.27
Final adjusted R ²	.24	.16	.18

Notes: Figures standardized beta coefficients.

[#] $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$; N = 217

were also the significant predictors for communication usage. The variances explained by these three regression equations ranged from 16 to 24 percent.

Predicting Intensity of iPad Usage

To examine how iPad attributes, lifestyles, media dependency, user preference, iPad usage patterns and demographics predict the intensity of iPad usage, regressions were run. The results in Table 7 show that people who reported a higher intensity of iPad usage tended to be experiencers ($\beta = .23, p < .01$), those who gave an importance on application affordances ($\beta = .15, p < .05$) and highly educated ($\beta = .16, p < .05$). Furthermore, the more often people used iPad for utilities ($\beta = .38, p < .001$) and information-seeking ($\beta = .29, p < .001$), the more active they are when using iPad. Collectively, all blocks explained 33% of the total variance.

Specifically, experiencers ($\beta = .23, p < .01$), information-seeking ($\beta = .23, p < .01$), utilities ($\beta = .23, p < .05$) and connectivity ($\beta = .17, p < .05$) were found to be significant predictors of satisfaction with iPad itself; information-seeking ($\beta = .23, p < .01$), iPad model selected ($\beta = .18, p < .01$), application affordances ($\beta = .16, p < .05$), experiencers ($\beta = .18, p < .05$) and utilities ($\beta = .19, p < .05$) were found to be significant predictors of satisfaction with applications on iPad; utilities ($\beta = .44, p < .001$), information-seeking ($\beta = .24, p < .01$), experiencers ($\beta = .17, p < .05$), iPad storage selected ($\beta = .14, p < .05$), age ($\beta = .14, p < .05$) and education level ($\beta = .14, p < .05$) were found to be significant predictors of frequency of using iPad.

Table 7

Regression of iPad Attributes, Lifestyles, Media Dependency, User Preference, iPad Usage
Patterns and Demographics on Intensity of iPad Usage

Predictors	Intensity of iPad Usage Index	Intensity of iPad Usage		
		Satisfaction with iPad Itself	Satisfaction with Applications on iPad	Frequency of Using iPad
	β	β	β	β
<i>iPad attributes</i>				
Hardware features	.06	-.01	.07	.07
Application affordances	.15*	.13 [#]	.16*	.08
Mobility	-.04	-.08	-.04	.01
Connectivity	.06	.17*	-.02	.02
<i>Lifestyles</i>				
Experiencers	.23**	.23**	.18*	.17*
Strivers	.06	.03	.11	.01
Makers	-.03	-.11	-.05	.05
Thinkers	.07	.12	.07	.02
Innovators	.02	-.04	-.01	.07
<i>Media Dependency</i>				
Computer dependency	.07	.01	.01	.12
Mobile phone dependency	-.03	.05	.08	-.14 [#]
<i>User Preference</i>				
Whether own other Apple products or not (No = 1)	.07	-.01	.02	.12 [#]
Whether own other kinds of tablets or not (No = 1)	.06	.04	.10	.01
iPad model selected (WiFi+3G=1)	.12 [#]	.06	.18**	.06
iPad storage selected	.12	.14 [#]	-.01	.14*
<i>iPad Usage Patterns</i>				
Utilities	.38***	.23*	.19*	.44***
Information-seeking	.29***	.23**	.23**	.24**
Communication	-.17 [#]	-.19 [#]	-.07	-.15 [#]
<i>Demographics</i>				
Gender (female = 1)	-.07	-.11	-.08	.01
Age	.03	-.02	-.11	.14*
Education level	.16*	.11	.13	.14*
Major	-.03	.04	.02 [#]	-.10
Household income	.06	.05	.11	-.01 [#]
R ²	.43	.26	.27	.45
Final adjusted R ²	.33	.15	.17	.35

Notes: Figures are standardized beta coefficients.

[#]p<=.1; *p<=.05; **p<=.01; ***p<=.001; N = 217

Conclusions and Discussions

With the growing popularity of iPad and rapid development in the tablet computer industry, it is worth investigating the predictive power of iPad attributes, lifestyles, media dependency, user preference and demographics on adoption of iPad, iPad usage patterns and intensity of iPad usage.

Exploratory factor analysis successfully identified four attribute clusters for both iPad users and non-users, which were hardware features, application affordances, connectivity and mobility. Among them, “application affordances” is one of the few important factors influencing the likelihood of iPad adoption, iPad usage patterns and intensity of iPad usage. This finding suggests that users purchase and get obsessed with iPad because iPad is a great platform, which is able to provide numerous third-party applications to meet the personalized needs of different individuals. Thus, the application availability should form the integral part of any marketing campaign promoting iPad. For the tablet computer industry, people need to pay much attention to the integration of upstream and downstream for their tablet products, in other words, the creation of tablet ecology.

This study also identified five VALS types in Mainland China – experiencers, strivers, makers, thinkers and innovators – instead of the original eight types. As the scope of research target was limited to university students, survivors were not applicable to them. Believers, achievers were excluded probably due to the cultural differences. Most importantly, this study supports previous research that, as a new set of attitudinal variables, lifestyles supplement demographics and suggests how consumers choose and use new media products to fit their

social identity (Leung, 1998). For instance, strivers, who favor stylish products that emulate the purchases of people with greater material wealth, was found to be associated with higher likelihood of buying iPad while experiencers, who were regarded as active, impulsive and risky, were more engaged and active when using iPad. There is another interesting finding that innovators, who were most receptive to new ideas and technologies, tended to use iPad for utilities, information-seeking and communication more often than other users. This seems logical as innovation is a central interest in their life, regardless of what function it is performing. Innovators continue to seek challenges and at root they are intrigued with any fundamental advance. When a new application on iPad comes into the market, they are more willing to try it for the pleasure of exploring new properties. These evidences supported the notion that lifestyles are significantly linked to iPad adoption and usage.

When it comes to media dependency, mobile phone dependency was predictive of using iPad for utilities. This can be explained by the similarities between mobile phone and tablet computer – portability and mobility. Individuals who are used to mobile learning and ubiquitous computing on their mobile phones will use more practical functions such as doing schoolwork or storing files on their iPad. Apart from this, results showed that computer dependency and mobile phone dependency were not significantly linked to iPad adoption, other iPad usage patterns and intensity of iPad usage, which indicates that the decision to buy iPad and engagement with iPad are not much related to their usage behavior of computer or mobile phone. This may suggest that although tablet is intermediate in size between a laptop computer and a smartphone and combines the advantages of both, in fact it becomes a total new electronic product in the market and deserves its own category. Therefore people don't

simply call it a larger iPhone, or a smaller laptop, and regard it as a new type of mobile platform, which possesses significant differences over and above existing desk-bound or mobile technologies. Perhaps it is true that iPad is a revolutionary product which initiates the Post-PC era in human history.

It is also interesting to note that owning other Apple products has a positive impact on purchasing iPad, which indicates that Apple has successfully built its brand equity and created enjoyable user experience among consumers. Moreover, people who chose WiFi+3G model rather than WiFi model tended to be more satisfied with applications on iPad. As WiFi coverage is not that high on campus in Mainland China, this may suggest that 3G network activates the ubiquitous Internet access for many applications, which enhances the functionality of them. Also, people who chose larger storage for iPad tended to use iPad more frequently. It is logical as the larger the storage is, the more videos users can download, the more photos they can take, and the more applications they can install on their iPad, which definitely contributes to the more frequent usage of iPad.

Last but not least, there was strong support for our expectation that iPad usage patterns would be associated with intensity of iPad usage. Both utilities and information-seeking are very significant predictors for intensity of iPad usage. In particular, they can predict all of the three dimensions – satisfaction with iPad itself, satisfaction with applications on iPad and frequency of using iPad. This means that utilities and information-seeking are the two most important functionalities for iPad, maybe due to the larger multi-touch screen and longer battery life, compared with mobile phone. It will certainly benefit marketing managers and media planners in devising better positioning and communication strategies for promoting

next iPad or other tablet devices in the future. As the third usage pattern – communication is not significantly linked to intensity of iPad usage, it suggests that people prefer to communicate with each other by mobile phone, which is more suitable for making phone calls, texting messages or video chat, rather than communicate by iPad.

Limitations & Suggestions for Future Research

Although the conceptual relationships in this study are based on sound theoretical assumptions and are empirically supported, the present results should be interpreted in light of the methodological limitations of the study. Firstly, respondents for this exploratory study were recruited through interpersonal contacts, which may result in greater sampling errors. Secondly, although iPad is currently highly welcomed in Mainland China, its penetration is still comparatively low. Thus, among 623 valid questionnaires, only 217 of the respondents were iPad users. Thirdly, scope of research target is too narrow as only the university students in Mainland China were counted. It is suggested that teachers, white-collar workers and blue-collar workers should be included in future research. Fourthly, a western lifestyle instrument was employed for this study to assess the lifestyle orientations of iPad users and non-users in Mainland China. We should therefore be mindful of the cultural differences between western society and Mainland China, as the segmentation method may not perfectly fit the profiles of Mainland China people. This perhaps explains why only five VALS types remained and the predictive power of the lifestyle variables in this study on adoption and intensity was relatively weak. Therefore, future research should introduce or develop a lifestyle scale more suitable for the Chinese culture and society. Last but not least, as iPad is

not the only game in town, other kinds of tablet computers such as Samsung Galaxy Tab and Amazon Kindle Fire should be taken into consideration in the future studies as well.

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