

Impacts of iPad Attributes, Users' Lifestyles, and Media Dependency on the Adoption and Intensity of iPad Usage

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ABSTRACT

The goal of this exploratory research is to identify attributes that can distinctly characterize iPads and examine the predictive power of iPad attributes, users' lifestyles, and media dependency on iPad adoption as well as intensity of iPad use. Data were gathered from a sample of 623 university students via online survey in Mainland China, among whom 217 were iPad users and 406 were non-users. Regression results show that application affordances was one of several important attributes influencing the likelihood of iPad adoption and usage patterns. Regarding lifestyles, strivers were found to have a higher likelihood of buying iPads; experiencers were more engaged and active when using iPads; innovators tended to use iPads for utilities, information-seeking, and interpersonal communication more often than other users. Furthermore, among iPad usage patterns, utilities and information-seeking were found the two most powerful predictors influencing intensity of iPad usage. Implications of the results are discussed.

Keywords: Intensity Of iPad Usage, iPad Adoption, iPad Attributes, Lifestyles, Media Dependency

INTRODUCTION

A tablet computer refers to a computer that is intermediate in size between a laptop computer and a smartphone (Encyclopedia Britannica, 2011). Melhuish and Falloon (2010) suggested that currently tablet devices such as iPads are defined as post-PC devices (PPDs), a recog-

nition 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; they used either a key-

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board or a stylus to input information. In April 2010, tablet computers quickly began to gain popularity worldwide when Apple Inc. unveiled the iPad, a touch-screen device with a display that measured 24.6 cm (9.7 inches) diagonally.

An iPad is not simply a larger iPhone, nor is it a smaller computer; 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, iPads can run applications that are either built in or downloaded from Apple's iTunes. By October 2012, 100 million iPads had been sold worldwide since its introduction two and a half years prior (Richard, 2012).

In Mainland China, tablet computers have also gained popularity with consumers, as the data released by Analysys International (2013), which is a leading local third party market research in China, 3.58 million units were sold during Q2 2013, among which iPad gained a 65% market share. The second tier of tablet products lagged far behind in terms of sales (7.6% for Lenovo's IdeaTab and 7.2% for Samsung's Galaxy Tab). According to iResearch (2011), another Internet consulting company in China, Chinese tablet computer users present with the following characteristics: 1) males account for 64.3% while females account for 35.7%, with an obvious gap of 28.6%; 2) the most often used functions are surfing the Internet, watching videos, and playing games; 3) over 70% of users download entertainment, game, and music applications; and 4) convenience and innovative user experience are thought to be the most significant advantages of tablet computers. Due to iPad's representativeness and dominance in China market, we select iPad, rather than other tablet products, as the research subject in this study.

As tablet computers have become widely adopted throughout the world in recent years, especially in the field of education and learning, teachers and students are starting to explore their potential. In Apple's iTunes Store, there is a category of applications called "education," which aims to provide limitless learning possibilities

at users' fingertips. iPad has equal promise to revolutionize both teaching and learning activities. Teachers can have instructional support while students can also be empowered with individualized instruction.

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

LITERATURE REVIEW

iPad Attributes

Kendrick (2010) discovered from personal experience that he was able to do more with a tablet than with a smartphone and gave us a typical user scenario for iPads. 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. Particularly for education and learning, Warschauer (2011) identified the advantages of iPads as follows: First, their lighter weight and flexible orientation makes them far superior for digital reading or accessing 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 to take notes. 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. Finally, tablets' relative long battery life makes them more suitable for a school day.

iPad is an innovative tool for of mobile learning, especially when it is compared with iPhone. Bolt et al. (2010) suggested that the physical affordances of the iPad have also changed the nature of PPDs. An iPad is not pocket sized, it has a large screen, and it naturally lays flat on a table as opposed to resting upright or being tucked away in your hand. All of these factors place iPads squarely in the realm of shareable computing devices. It is also easy to view content on iPads since the screen can easily be viewed by three to four users sitting around in a circle or gazing over the shoulder. An iPhone with its 480x320 screen requires neighbors to squint to read the screen, or is simply passed around and handled individually. In mobile learning theories, the key features of mobile learning was identified by Kristine (2007) as its ability to provide learning that is 'just in time, just enough and just for me;' learning that is situated (typically in the field or at the workplace); and learning that is contextualised through mediation with peers and teachers. While mobile devices are making some types of learning easier to access, they have the potential to deliver the kind of learning that in past times could only be done with a knowledgeable tutor working on-site, alongside the student. Melhuish and Falloon's (2010) research also suggested that iPad may offer an exciting platform for consuming and creating content in a collaborative and interactive way.

Kelly and Schrape's (2010) study regarding iPad usability found that the speed with which an iPad boots up (instant on) and with which applications can be launched and switched between is much faster than a comparable application on a laptop. iPads were also thought to bring us an era of ubiquitous computing when Wempler (2010) stated that tablet computers can be used anywhere, fulfilling many functions, without the accessories of keyboards and

mice. Furthermore, compared with netbooks and ebook readers, Pratt (2010) argued that the iPad touch screen is largely intuitive and easy to use. Moreover, where iPads truly shine is in the range of applications available for them. One example Pratt has discussed is iBooks, which integrates multimedia elements into the look and action/functionality of a traditional book. The pages on the screen look like those of a book, and readers can see either one page or facing pages at once. Turning a page involves flicking one's finger in the bottom right-hand corner. The high-definition screen and interactive nature allow readers to interact with material on the page in a pleasing and smooth manner. All these unique attributes should significantly affect adoption decisions and usage patterns. Thus, we asked the following research question:

RQ₁: What attributes of an iPad can be identified?

Lifestyles

Lazer (1963) is regarded as the first to introduce the concept of lifestyle and it "refers to the distinctive mode of living, in its aggregative or broadest sense, of a whole society or segment thereof. It is concerned with those unique ingredients or qualities which describe the style of life of some culture or group, and distinguish it from others. It embodies the patterns that develop and emerge from the dynamics of living in a society" (p. 130). Previous studies show that one's lifestyle orientations greatly influence one's media usage and consumption (Becker & Connor, 1981; Donohew et al., 1987; Author, 1998; Li et al., 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 et al. (1987) examined how social and psychological factors, including the need for activities interact to produce different lifestyles and patterns of media use. They identified lifestyle types whose members differed significantly on a broad range of variables, including newspaper and magazine readership and gratifications

sought from cable television. Particularly for the relationship between lifestyles and the adoption of new media technologies, Author (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 et al. (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 no more price-sensitive than non-Web buyers. Zhu and He's (2002) study showed that Chinese Internet audience members' choices among rival value orientations such as communism, materialism, and post-materialism are influenced by media credibility, members' cognitive sophistication, and access to alternative information, in that order.

More recent studies also discussed lifestyles related to technology adoption. Lee, Lim, Jolly and Lee (2007) suggested that consumer lifestyle factors (fashion consciousness, leisure orientation, Internet involvement, and e-shopping preference) are direct and indirect antecedents of consumers' intention to adopt high-tech products. Chen, Zheng, Zhou and Gao (2012) found that the adoption of different types of mobile services varies with different groups of users because different groups of users often have their own lifestyles (e.g., new life consciousness, arbitrary consciousness, financial consciousness, etc.), which can significantly affect their intention to adopt various mobile services. In addition, Li (2013) examined the relationships between lifestyle orientations and the adoption of nine Internet-related technologies in Taiwan including IPTV, digital cable, emails, Internet instant messages, Facebook, scanners, notebooks, printers, and personal computers. The results showed that lifestyle orientations were a powerful predictor for the adoption of information-oriented and entertainment-oriented technologies, but not for the adoption of interpersonally oriented technologies.

One of the most widely popularized approaches to lifestyle research is the Values and Lifestyles (VALS) program developed by Mitchell (1983) at SRI International. The VALS approach, which was derived from the theoretical base of Maslow's (1954) needs hierarchy and the concept of social character (Riesman et al., 1950), explicitly linked the two constructs, values and lifestyles, together. VALS indicates that people express their personalities through their behaviors. VALS categorizes 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. A person's combination of primary motivations and resources determines how he or she 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. Survivors are people who do not show a strong primary motivation. Consumers, who are primarily motivated by ideals and guided by knowledge and principles, are more likely to be thinkers or believers. Consumers, who are primarily motivated by achievement and look for products and services that demonstrate success to their peers, are more likely to be achievers or strivers. Consumers, who are primarily motivated by self-expression desire social or physical activity, variety, and risk, are more likely to be experiencers or makers. In addition, innovators exhibit all three primary motivations in varying degrees. 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. On the contrary, survivors, who live narrowly focused lives, seldom do (X & Author, 2005). In this study, lifestyles of both iPad users and non-users were examined. As a result, we posed the following question:

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

Media Dependency

Ball-Rokeach and DeFleur (1976) proposed the media system dependency theory, which refers to the integral relationships 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 the more 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 demonstrating that people develop a reliance on certain channels (e.g., newspapers, television, and radio) to satisfy certain needs. To examine what people mean when they say they rely on a medium,

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 individuals' dependence on specific types of media, such as newspaper (McLeod et al., 1977), television (Reagan, 1984; Robinson & Zukin, 1976), and radio dependence (Gaziano, 1988).

In this study, computer dependency and mobile phone dependency in particular 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 individuals and others as well as 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 but often misunderstood people. Similarly, in recent years, mobile phones have become so popular that nearly everybody owns one. Due to the continuous progress of mobile technology, each person is becoming more acutely dependent on mobile phones. Shih et al. (2009) did an empirical study on mobile phone dependency and found that male and female users' levels of the dependence on mobile phones did not differ significantly, and there were no significant differences between their duration of use on mobile phones. Ting, Lim, Patanmacia, Low and Ker (2011) found that university students' dependency on smartphones is influenced by convenience, social needs, and social influences and dependency is positively related with future purchase behaviour.

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 the following question: With the launch of iPads, will people who are dependent on computers or mobile phones turn to iPads to seek a more portable and ubiquitous user experience? Furthermore, if individuals are grouped based on which medium they say they primarily rely on, different groups will exhibit different attitudes toward the media and also have a variety of cognitive, affective, and behavioral outcomes associated with media use (McLeod et al., 1980). Accordingly, it is reasonable to believe that computer dependency will have different impact on the adoption and use of iPads than mobile phones dependency do. In sum, this exploratory study sought to expand previous studies by addressing the following research questions:

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

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

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

METHOD

Data Collection and Sampling

Two focus groups were conducted on students in a large size university in Shanghai, Mainland China to assess iPad attribute items and usage patterns. These results were used to facilitate the design of the questionnaire. Data were collected by online questionnaire with a purposive sample of 623 university students in Mainland China,

including 217 iPad users and 406 non-users, who were at least 15 years of age. University students were the target for this study as they were widely regarded as the potential adopters of tablets. The questionnaire was piloted before the formal survey was conducted.

Measurement

- **iPad Attributes:** To assess iPad attributes, respondents were asked to rank their agreement with a series of statements reflecting iPad characteristics adopted from the literature (Kendrick, 2010; Melhuish & Falloon, 2010; Pratt, 2010; Warschauer, 2011) as well as the results of the focus groups. At the start, 21 attributes of iPads were derived after responses were categorized, modified, and combined to construct the questionnaire. The pretest eliminated seven items. Both users and non-users of iPads were asked: How important are these attributes to you? A five-point Likert scale was used in rating the importance of 14 attribute items (See Table 1 for details) with 1 = very unimportant and 5 = very important;
- **Lifestyles:** In this study, lifestyles were measured using the well-established instrument developed by SRI International mentioned previously, 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 China's local culture, values, or beliefs; therefore, the questionnaire was adjusted and respondents were asked to assess these items on a four-point Likert scale with 1 = mostly disagree, 2 = somewhat disagree, 3 = somewhat agree, and 4 = mostly agree (See Table 2 for details). The reliability for this 32-item scale as indicated by Cronbach's alpha was remarkably high at .85;
- **Media Dependency:** Computer dependency was measured by asking respondents the following question: "Imagine that you woke up tomorrow to find that your

computer had 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 = would miss it extremely great deal. The distribution of computer dependency responses 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. Respondents were asked the same question for mobile phone dependency: "Imagine that you woke up tomorrow to find that your mobile phone had 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 interpersonal communication, were derived from the results of two focus groups. Specifically, for the purpose of utilities, respondents were asked: "How often do you use an iPad to (1) watch videos; (2) listen to music; (3) take photos or videos; (4) do online shopping; (5) store files; and (6) do school work?" For the purpose of information-seeking, respondents were asked: "How often do you use an iPad to (1) browse the Internet; (2) read the news; (3) check maps; and (4) microblog?" For the purpose of interpersonal communication, respondents were asked: "How often do you use an iPad to (1) read and respond to e-mails; (2) social network; (3) send and receive instant message; and (4) video chat?" A five-point Likert scale was used to measure the frequency of these iPad usage behaviors with 1 = never, 2 = rarely, 3 = sometimes, 4 = very often, and 5 = always;
- **Likelihood of iPad Adoption:** A five-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 iPads use was assessed using a five-point Likert scale with 1 = never, 2 = rarely, 3 = sometimes, 4 = very often, and 5 = always;
- **Demographics:** Respondents' demographic characteristics, such as gender, age, education level, major, and monthly household income, were also included in the questionnaire.

RESULTS

iPad Attributes

To assess the attributes associated with iPads, two principal components factor analyses with varimax rotation were run to determine the potential groupings of attribute items on iPads, both for the group of iPad users and the group of non-users, respectively. Items with extremely low commonalities and items that failed to load on any factors were removed. For 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 the advantages of an iPad's fundamental factors such as its display performance, instant-on capability, and multi-touch screen that allow for a totally 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 .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, Game Center, iCloud, and iPod enable users to take advantage of all the technology built into an iPad. However, the item mean scores underlying this factor were the lowest, and the Cronbach's alpha was also low at .67. The third factor, "mobility" (eigenvalue

Table 1. Factor analysis of iPad attribute items (for iPad users, n=217)

How Important are these Attributes to You?	Mean	SD	Factors			
			1	2	3	4
Hardware Features						
1. Processing power	4.38	.78	.71			
2. Display performance	4.21	.82	.68			
3. Battery life	4.53	.71	.67			
4. Instant-on capability	4.18	.85	.63			
5. Multi-touch screen	3.90	.88	.62			
6. Storage	3.93	.87	.62			
Application Affordances						
7. FaceTime	3.16	1.07		.84		
8. Game Center	2.85	1.06		.76		
9. iCloud	3.30	1.04		.54		
10. iPod	3.19	1.00		.52		
Mobility						
11. Mobile learning	4.01	.98			.84	
12. Ubiquitous computing	3.64	1.01			.82	
Connectivity						
13. WiFi & 3G	4.55	.76				.80
14. Internet communicator	4.53	.75				.76
Eigenvalue			4.50	1.86	1.22	1.02
Variance explained (%)			32.17	13.29	8.74	7.32
Cronbach's alpha			.82	.67	.75	.78

Scale used: 1 = very unimportant; 2 = unimportant; 3 = neutral; 4 = important; and 5 = very important

= 1.22, variance = 8.74%, Cronbach's alpha = .75), consisted of two items illustrating how mobile learning and ubiquitous computing play a promising and potential role in the penetration of tablet computers. The last factor was "connectivity" (eigenvalue=1.02, variance=7.32%, Cronbach's alpha = .78), which contained two items indicating that built-in wireless technologies such as WiFi and 3G provide users with great ways to stay connected with each other anytime, anywhere. The item mean scores were relatively high.

Similarly, for the non-users, factor analysis in Table 2 also yielded four factors: "hardware features" (eigenvalue=4.44, variance=37.03%, Cronbach's alpha=.78), "mobility" (eigenvalue = 1.49, variance = 12.39%, Cronbach's alpha = .75), "connectivity" (eigenvalue = 1.18, variance = 9.84%, Cronbach's alpha = .78), and "application affordances" (eigenvalue = .94, variance = 7.80%, Cronbach's alpha = .64). Compared with iPad users, "application affordances" was less important for non-users, probably because they did not have any expe-

Table 2. Factor analysis of iPad attribute items (for non-iPad users, n=406)

How Important are these Attributes to You?	Mean	SD	Factors			
			1	2	3	4
Hardware Features						
1. Multi-touch screen	3.97	.93	.77			
2. Display performance	4.34	.74	.76			
3. Storage	4.02	.89	.74			
4. Processing power	4.39	.77	.69			
5. Instant-on capability	4.06	.91	.53			
Mobility						
6. Mobile learning	3.97	.91		.85		
7. Ubiquitous computing	3.66	.93		.82		
Connectivity						
8. WiFi & 3G	4.45	.77			.87	
9. Internet communicator	4.60	.66			.79	
Application Affordances						
10. Game Center	3.05	1.09				.83
11. iPod	3.41	1.05				.69
12. FaceTime	3.42	1.04				.64
Eigenvalue			4.44	1.49	1.18	.94
Variance explained (%)			37.03	12.39	9.84	7.80
Cronbach's alpha			.78	.75	.78	.64

Scale used: 1 = very unimportant; 2 = unimportant; 3 = neutral; 4 = important; 5 = very important

rience with iPad applications, as they did not own an iPad.

VALS in Mainland China

To identify the lifestyle types among university students in Mainland China, a principal components factor analysis was performed among both iPad users and non-users 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 original 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, offbeat, risky, and seeking new information. Experiencers appreciate the unconventional and spend a comparatively high proportion of their income on fashion, entertainment, and socializing; reliability, as indicated by Cronbach's alpha, was remarkably high at .88. The second factor, "strivers" (eigenvalue = 2.29, variance = 12.07%, Cronbach's alpha = .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 = .73) was the third factor, which consisted of three items that characterized

Table 3. Factor analysis of VALS (for all, N=623)

	Mean	SD	Factors				
			1	2	3	4	5
Experiencers							
1. I like a lot of excitement in my life.	2.78	.73	.81				
2. I like doing things that are new and different.	2.96	.58	.79				
3. I often crave excitement.	2.90	.74	.77				
4. I like the challenge of doing something I have never done before.	2.92	.63	.74				
5. I am always looking for a thrill.	2.50	.75	.72				
6. I like a lot of variety in my life.	2.82	.73	.70				
7. I like trying new things.	2.98	.63	.70				
Strivers							
8. I like to dress in the latest fashions.	2.20	.76		.85			
9. I dress more fashionably than most people.	2.14	.71		.83			
10. I want to be considered fashionable.	2.50	.76		.80			
11. I follow the latest trends and fashions.	2.45	.76		.75			
Makers							
12. I would rather make something than buy it.	2.31	.67			.84		
13. I like to make things with my hands.	2.60	.70			.82		
14. I love to make things I can use every day.	2.78	.78			.69		
Thinkers							
15. I am very interested in how mechanical things, such as engines, work.	2.25	.84				.77	
16. I like to look through hardware or automotive stores.	1.87	.70				.75	
17. I would like to understand more about how the universe works.	2.59	.83				.66	
Innovators							
18. I like being in charge of groups.	2.47	.73					.90
19. I like to lead others.	2.41	.72					.88
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			.88	.85	.73	.61	.83

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

respondents as valuing practicality and self-sufficiency. These individuals choose hands-on constructive activities and spend their leisure time with family and close friends. "Thinkers"

(eigenvalue = 1.50, variance = 7.89%, Cronbach's alpha = .61), the fourth factor, consisted of three items portraying respondents as mature, satisfied, comfortable, and reflective. Thinkers

favor products with durability, functionality, and value. Lastly, “innovators” (eigenvalue = 1.19, variance = 6.28%, Cronbach’s alpha = .83) was the lifestyle factor 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 conceptually consistent 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 the Likelihood of iPad Adoption

As the results of the regression analyses using the likelihood of iPad adoption as a dependent variable in Table 4 show, regarding iPad attributes, hardware features ($\beta = .13, p < .05$) and application ($\beta = .14, p < .05$) were significant predictors of the likelihood of iPad adoption. This means that non-iPad users who view the hardware features and application affordances as important to them are more likely to adopt iPads. Among the different lifestyles, only strivers ($\beta = .32, p < .001$) significantly predicted adoption likelihood, which suggests that people who are trendy and concerned about the opinions and approval of others are more likely to purchase iPads to emulate those with greater material wealth. However, in bivariate relationships, experiencers, makers, and innovators were all significantly related to adoption likelihood. When it comes to demographics, likelihood was significantly predicted by age ($\beta = .16, p < .01$) and household income ($\beta = .17, p < .001$). This finding illustrates that people who are older and who have a highly monthly household income are likely to become iPad users. Media dependency variables were not found to be significant predictors. 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 the practical functions of an 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 .73. The second dimension, “information-seeking,” was composed of four items that refer to activities of attempting to obtain information using an iPad. Browsing the Internet and checking maps were the typical examples. Cronbach’s alpha was moderately high at .71, and the item mean scores were relatively high, indicating that most people like to look up information when using an iPad. “Interpersonal communication” (Cronbach’s alpha = .72) was the third dimension, which consisted of four items representing different iPad communication methods, such as e-mailing, instant messaging, and video chatting.

To examine the relative influences of iPad attributes, lifestyles, media dependency, and demographics on iPad usage patterns, three parallel regression analyses were run. The results in Table 6 indicate that individuals who often used iPads for utilities tended to be innovators ($\beta = .24, p < .001$), older ($\beta = .16, p < .05$), more reliant on mobile phones ($\beta = .16, p < .05$), 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 used iPads for information-seeking tended to be strivers ($\beta = .28, p < .001$) or innovators ($\beta = .16, p < .05$) and felt that application affordances ($\beta = .24, p < .001$) such as FaceTime, Game Center, and iPod were very important for them. Similarly, application affordances ($\beta = .27, p < .001$), innovators ($\beta = .20, p < .01$), and strivers ($\beta = .16, p < .05$) were also significant predictors of using iPads.

Table 4. Regression of demographics, lifestyles, iPad attributes, and media dependency on the likelihood of iPad adoption (for non-iPad users, $n=406$)

Predictors	r	β
Demographics		
Gender (female = 1)	.09	.08
Age	.18***	.16**
Education level	.08 [#]	.01
Major (social science = 1)	-.08 [#]	-.05
Household income	.20***	.17***
Lifestyles		
Experiencers	.21***	.06
Strivers	.37***	.32***
Makers	.12*	.02
Thinkers	.07	.02
Innovators	.19***	.06
Media Dependency		
Computer dependency	.13**	.06
Mobile phone dependency	.16**	.12 [#]
iPad Attributes		
Hardware features	.15**	.13*
Mobility	.01	-.12 [#]
Connectivity	.10*	.04
Application affordances	.15**	.14*
R^2		.35
Final adjusted R^2		.31
F		32.67***

Notes: Figures are Pearson's r and standardized beta coefficients ([#] $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$)

for interpersonal communication purposes. The variances explained by these three regression equations ranged from 16 to 23 percent.

Predicting iPad Usage Intensity

To examine how demographics, lifestyles, iPad attributes, media dependency, and iPad usage patterns predict the intensity of iPad use, regressions were run. The results in Table 7 show that utilities ($\beta = .44, p < .001$), information-seeking ($\beta = .24, p < .01$), experiencers ($\beta = .17, p <$

.05), age ($\beta = .14, p < .05$), and education level ($\beta = .14, p < .05$) were significant predictors of intensity of iPad use. The regression model explained 33% of the variance in total.

DISCUSSION AND CONCLUSION

With the growing popularity of iPads and the rapid development of the tablet computer industry, it is worth investigating the predictive

Table 5. iPad usage patterns (for iPad users, n=217)

How Often Do You Use an iPad to...?	Mean	SD	Cronbach's Alpha
Utilities	2.80	0.82	0.73
Watch videos	3.65	1.18	
Listen to music	2.88	1.26	
Take photos or videos	2.63	1.28	
Do online shopping	2.54	1.32	
Store files	2.96	1.32	
Do schoolwork	2.14	1.13	
Information-Seeking	3.52	0.89	0.71
Browse the Internet	4.32	0.91	
Consume news	3.13	1.22	
Check maps	3.21	1.22	
Microblog	3.40	1.46	
Interpersonal Communication	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 messages	3.32	1.26	
Video chat	2.21	1.14	

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

power of demographics, lifestyles, media dependency, and iPad attributes on iPad adoption as well as iPad usage patterns and intensity. Exploratory factor analysis successfully identified four attribute clusters for both iPad users and non-users: hardware features, application affordances, connectivity, and mobility. Among them, application affordances are one of the most important factors influencing the likelihood of iPad adoption and iPad usage patterns. This finding suggests that users purchase and become obsessed with iPads because it is a platform that can provide numerous third-party applications to meet the personalized needs of different individuals. Thus, application availability should form the integral part of any marketing campaign promoting iPads. To make a success in the industry, tablet manufacturers should pay more attention to the creation of ecosystem, which means to provide a admirable platform for third-party application developers.

This study also identified five VALS types in Mainland China—experiencers, strivers, makers, thinkers, and innovators—instead of the original eight. As the scope of research target was limited to university students, survivors were not applicable to them as survivors are usually at the bottom of society. Believers and achievers were excluded probably due to cultural differences such as in religion and social convention. 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 identities (Author, 1998). For instance, strivers, who favor stylish products that emulate the purchases of people with greater material wealth, were more likely to buy iPads while experiencers, who are regarded as active, impulsive, and risky, were more engaged and active when using iPads. There is another interesting

Table 6. Regression of demographics, lifestyles, iPad attributes, and media dependency on iPad usage patterns (for iPad users, n=217)

Predictors	iPad Usage Patterns		
	Utilities	Information-Seeking	Interpersonal Communication
	β	β	β
Demographics			
Gender (female = 1)	.02	.05	.02
Age	.16*	.11	-.08
Education level	-.05	.09	.09
Major (social science = 1)	-.10	-.05	-.12 [#]
Household income	-.04	.09	-.09
Lifestyles			
Experiencers	.01	-.12	.06
Strivers	.13 [#]	.28***	.16*
Makers	.07	.04	-.01
Thinkers	.04	.01	.03
Innovators	.24***	.16*	.20**
Media Dependency			
Computer dependency	-.03	-.04	.05
Mobile phone dependency	.16*	.10	.04
iPad Attributes			
Hardware features	.42	-.01	-.01
Application affordances	.26***	.24***	.27***
Mobility	.18*	.07	.05
Connectivity	-.13	.07	.04
R ²	.30	.23	.25
Final adjusted R ²	.23	.16	.17
F	25.46***	19.77**	16.05**

Notes: Figures standardized beta coefficients ([#] $p <= .1$; * $p <= .05$; ** $p <= .01$; *** $p <= .001$)

finding that innovators, who were most receptive to new ideas and technologies, tended to use iPads for utilities, information-seeking, and interpersonal communication more often than other users. This seems logical as innovation is a central interest in their lives. Innovators continue to seek challenges, and they are intrigued with any fundamental advance. When a new iPad application comes into the market,

they are more willing to try it for the pleasure of exploring new properties. This evidence supports 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 iPads for utilities. This can be explained by the similarities between mobile phones and tablet computers in terms of their portability and

Table 7. Regression of demographics, lifestyles, iPad attributes, iPad usage patterns, and media dependency on intensity of iPad usage (for iPad users, $n = 217$)

Predictors	Intensity of iPad Use
	β
Demographics	
Gender (female = 1)	.01
Age	.14*
Education level	.14*
Major (social science = 1)	-.10
Household income	-.01 [#]
Lifestyles	
Experiencers	.17*
Strivers	.01
Makers	.05
Thinkers	.02
Innovators	.07
Media Dependency	
Computer dependency	.12
Mobile phone dependency	-.14 [#]
iPad Attributes	
Hardware features	.07
Application affordances	.08
Mobility	.01
Connectivity	.02
iPad Usage Patterns	
Utilities	.44***
Information-seeking	.24**
Interpersonal communication	-.15 [#]
R ²	.41
Final adjusted R ²	.33
F	15.51**

Notes: Figures are standardized beta coefficients ([#] $p \leq .1$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$)

mobility. Individuals who are used to engaging in mobile learning and ubiquitous computing on their mobile phones will use more practical functions such as doing schoolwork or storing files on their iPads. Apart from this, the results showed that computer dependency and mobile

phone dependency were not significantly linked to iPad adoption likelihood, other iPad usage patterns, and iPad usage intensity, which indicates that the decision to buy and engagement with iPads are not significantly related to consumers' usage behavior of computer or mobile

phone. This suggests that although tablets are intermediate in size between a laptop computer and a smartphone and combine the advantages of both, they are, in fact, a totally new type of electronic product in the market and deserve their own category. Therefore, people do not simply refer to a tablet as a larger iPhone or a smaller laptop; they regard it as a new type of mobile platform that possesses significant differences over and above existing desk-bound or mobile technologies. Perhaps it is true that an iPad is a revolutionary product that has initiated the Post-PC era in human history.

Finally, there was strong support for our expectation that iPad usage patterns would be associated with iPad usage intensity. Both utilities and information-seeking are significant predictors of intensity. Specifically, they can predict both satisfaction with and frequency of iPad use. This means that utilities and information-seeking are the two most important functionalities for iPads and it may be due to their larger multi-touch screen and longer battery life when compared with mobile phones. It will certainly benefit marketing managers and media planners in devising better positioning and communication strategies for promoting the next version of iPads or other tablet devices in the future. As the third usage pattern, interpersonal communication is not significantly linked to iPad usage intensity, this suggests that people prefer to communicate with each other by mobile phone, which is more suitable for making phone calls, texting messages, or video chatting, rather than communicating by iPad.

Limitations and 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 study's methodological limitations. First, respondents in this exploratory study were based on a convenience sample, which may result in greater sampling errors. Second, although iPads are currently highly welcomed in Mainland

China, their penetration is still comparatively low. Thus, among 623 respondents who had valid questionnaires, only 217 of the respondents were iPad users. Third, the scope of the present study is too narrow, as only university students in Mainland China were studied. Other demographic groups such as teachers and white- and blue-collar workers should be included in future research. Fourth, 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 people from Mainland China. This perhaps explains why only five VALS types merged 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 measure that is more suitable for Chinese culture and society. Finally, as iPad is not the only device in the tablet world, other kinds of tablet computers such as the Samsung Galaxy Tab and Amazon Kindle Fire should be taken into consideration in future studies as well.

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