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INTERNET USE ADOPTION AMONG ACADEMICIANS: Comparing Innovative Adopters and Other Adopter Types

Norazah BTE MOHD SUKI
Lecturer
College of Business Management and Accounting
Universiti Tenaga Nasional,
MALAYSIA

Norbayah BTE MOHD SUKI
Doctoral student
Faculty of Creative Multimedia
Multimedia University
MALAYSIA

ABSTRACT

Online shopping represents an innovation to be adopted or rejected by online consumers globally. Previous experiences and knowledge of innovation are the main factors affecting people's willingness to adopt a new innovation. We explore how Internet use differs between academicians who are innovative adopters and other types of adopters. Academicians who are innovative adopters are hypothesized to:

- **have more years of experience on online shopping,**
- **have greater frequency of purchase, and**
- **pay a higher price for items purchased online.**

Data were collected from 301 respondents. Results provide new perspective on innovative adopters among Malaysian academicians; they have less experience than other adopters in shopping for products online, make fewer purchases online and pay small amount of money in shopping for products online than other adopters. Directions for future research are also discussed.

Keywords: Internet, using Internet, online shopping, Malaysia.

INTRODUCTION

Online shopping is a form of retailing online available in the digital age and therefore, represents an innovation to be adopted or rejected by online consumers globally. Online shopping has been available for 10 or so years and has made considerable progress in that time. Even people who have not shopped online are likely to be familiar with what is entailed in doing so. Rogers (1995) defines innovation as an idea, practice, or object that is perceived as new by an individual. Online shopping is an advanced form of traditional home shopping requiring some changes in behavioral patterns - in particular machine-interactivity such as searches and online forms (Hoffman and Novak, 1996).

Online shopping combines new technologies and new behavioral patterns into new way of product purchase or adoption (i.e. innovativeness) that allows companies to provide

product information and offer direct sales to their customers through an electronic channel or a new retail form: virtual stores.

This is a storefront in cyberspace, a place where customers can shop from their home computers and where merchants can offer merchandise and services for a fraction of the overhead required in a physical storefront (Yesil, 1997). Previous experiences and knowledge of an innovation are the main factors affecting people's willingness to adopt a new innovation such as online shopping.

A research study by Jupiter Research (2004) reports that the online retail sales in US was USD65 billion in 2004 and is likely to reach USD117 billion in 2008. In addition, 30% of Internet users in the US are buying online in 2004 and their average online spending is estimated at USD585. As for Malaysia, total Information & Communication Technology (ICT) spending in 2004 is estimated to be USD2.5 billion (RM9.5 billion), expanding at a compound annual growth rate of 8.3%, faster than global average of 6.2%.

As of second quarter of 2004, Malaysia had 9.4 million Internet users, nearly 175,000 broadband subscribers and more than 12.4 million cellular subscribers. According to International Data Corporation (IDC), Malaysia's ICT market is expected to reach a value of USD10.49 billion (nearly RM40 billion) in 2007 (Matrade, 2004). Online shopping has proved that there is remarkable growth of online users which has led to dramatic shifts in the way of conducting purchase activities and transactions.

What type of products do consumers purchase online? eMarketer (2002) reports that 34% of Internet users in Spain purchased music online in the first half of 2002. This is according to a Consumer Link/Delvico Bates survey (2002). Event tickets were the second most popular item bought online during the first six months of 2002 with 30% of Spanish Net users saying they purchased them.

A quarter of Internet users in the country bought financial products online, while 24% purchased gifts. Computer hardware and software were also popular purchases among Spanish Internet users, as were apparel and beverages (Matrade, 2004). Norazah (2003) conducted a study among Malaysian Internet shoppers and found that Internet shoppers who own a credit card enjoyed purchasing books/journals/magazines through the Internet, especially books at the price of less than RM100 per item.

Respondents also reported a higher level of satisfaction with items purchased online, compared to purchases made in traditional stores. In most cases, delivery was made within seven days from the date of order and settled their online payments using credit card. Also, they intended to conduct repeat purchases in the near future with a maximum amount of RM 500 per transaction. They also reported they enjoyed browsing the Internet for "less than three hours a day" for personal purchasing reasons.

Consumers differ in their readiness to adopt Internet shopping. Depending on the time taken to adopt online shopping, these consumers can be classified into five types of adopters (Innovators, Early Adopters, Early Majority, Late Majority, and Laggards) by applying Rogers (1995) adopter classification. Innovators are experimentalists who latch onto new ideas as soon as they appear. An innovator's interest lies primarily in the innovation itself, rather than with its application to significant problems. Early Adopters are visionaries who blend an interest in innovation with a concern for significant applications.

They look for breakthrough in instructional methods of learning effectiveness that new innovations for technology enable. Early Majority are pragmatists who represent the first half of the mainstream. They adopt a "wait-and-see" attitude toward new applications of innovation, and require solid references and examples of successes before adopting. Late Majority are the conservative or skeptical latter half of the mainstream. They accept innovation late in the game, once the change has already become well-established among the majority.

Laggards are the last group of potential adopters and most likely never adopt innovation at all. It is unlikely for them to employ innovations, and they may also be antagonistic to their uses by others (Geoghegan, 1994). The current study aims to find an answer to the research question: "how does Internet use differ between academicians who are innovative adopters and other adopter types".

In particular, we focus on three measures of Internet use:

- **years of experience on online shopping,**
- **frequency of purchase, and**
- **price spent on items purchased online by specifically focusing on Malaysian Internet users' online buying behavior.**

Thus, this study concentrates on Business to Consumer (B2C) market.

RESEARCH METHODOLOGY

This study uses self-administered questionnaire approach for the data collection and applies a stratified random sampling technique; technique that divided population into subpopulation and then respondents are selected by a random procedure, as a sampling method. 301 (60% from overall response rate) academicians from the Faculty of Management in Higher Learning Institutions located in Kuala Lumpur, Johor Bahru, and Penang states of Malaysia were respondents of the study.

Given the nature of the study, only those who had experience in browsing or purchasing through Internet were selected to participate. Moreover, subjects were chosen because the bulk of previous surveys showed that young people who were well-educated, academicians for instance, tend to be the adopters of online shopping.

A demographic profile of the respondents, summarized in Table 1, indicates that 41.2% of the respondents were 26-35 years of age. There were more female than male: 53% vs. 47%, respectively. The monthly income indicated by the respondents was RM 3001 to RM 5000 for over 44% of the respondents.

This is followed by less than RM 3000 for 36% of the respondents. 65% of the respondents were married. The results show that 69.4% of the respondents were Malay. Overall, the education level of the respondents was high. More than 48% indicated master's degree with business administration background. The most frequently reported occupational category was lecturer (107, 35.5%) followed by senior lecturer, (134, 44.5%). More than 45% of the lecturers teach degree level. 25.2% lectures in the area of management followed by marketing, 16.3%.
They mostly (37.9%) have served in the Higher Learning Institution for one to four years of service with full time type of employment and work in Kuala Lumpur, Malaysia (see Table: 1).

Table: 1
Internet Users' General Demographic

Characteristics of Respondents	Results	
	Frequency	**%**
Gender		
Male	159	52.8
Female	142	47.2
Age		
< 25	54	17.9
26-35	124	41.2
36-45	83	27.6
46-55	34	11.3
> 56	6	2.0
Ethnicity		
Malay	209	69.4
Chinese	54	17.9
Indian	29	9.6
Others	9	3.0
Marital Status		
Married	197	65.4
Unmarried	71	104
Highest Education Level		
Bachelor's Degree	88	29.2
Master's Degree	147	48.8
Doctoral Degree (PhD)	66	21.9
Educational Background		
Computer Science	50	16.6
Business Administration	111	36.9
Social Science	76	25.2
Management Information System	2.3	1.0
Accounting & Finance	57	18.9
Monthly Income (RM)		
< 3000	107	35.5
3001-5000	134	44.5
5001-7000	41	13.6
7001-9000	11	3.7
9001-11000	5	1.7
> 11000	3	1.0

Table: 1 cont...
Internet Users' General Demographic

Characteristics of Respondents	Results	
	Frequency	**%**
Occupation		
Lecturer	216	71.8
Senior Lecturer	54	17.9
Principal Lecturer	8	2.7
Deputy Dean	3	1.0
Head Of Department	8	2.7
Grade Level Teach		
Diploma	99	32.9
Degree	138	45.8
Master	50	16.6
PhD	14	4.7
Subject Area Teach		
Marketing	49	16.3
Management	76	25.2
Accounting	24	44
Finance	30	10.0
Economic	19	25
Entrepreneur Development	11	3.7
Other	54	27
Number of Years have been Teaching		
< 1 year	45	15.0
1 - 4 years	114	37.9
4 - 8 years	57	18.9
8 - 12 years	44	14.6
12 - 16 years	14	4.7
> 16 years	27	9.0
Term of Employment		
Full Time	251	83.4
Part Time	25	8.3
Contract	25	8.3
Workplace		
Johor Bharu	38	12.6
Kuala Lumpur	122	40.5
Penang	49	16.3
Kedah	23	7.6
Other	69	22.9

Innovativeness Scale

The Innovativeness Scale was developed as a reliable and valid self-report scale for measuring the degree to which an individual is relatively earlier in adopting an innovation in relation to others in the social system (Hurt, Joseph, & Cook, 1997). It is composed of 12 positively and 8 negatively worded items presented in a seven-point Likert response format as presented in Appendix 1. Scores for the Innovativeness Scale are determined by summing items on the scale. The Innovativeness Scale will be used to classify the adopter of online shopping among academicians by applying Rogers (1995) adopter classification, who identifies the top 16% of respondents as innovators and early adopters. The bottom 16% of respondents is classified as laggards, with the remaining 68% of the respondents representing the early and late majority of adopters. Further analyses related to adopter classifications are described in Table: 1.

RESEARCH FINDINGS

Innovators are often characterized as venturesome, a term which refers to the willingness to take risks with respect to the adoption of new idea (Robertson, 1971). In consumer studies research, early adopters have been found to show more favorable attitude towards science and technology than later adopters (Robertson, 1971; Rogers, 1995). In educational technology, early adopters are characterized as those searching for breakthrough in instructional methods that new applications for technology enable (Geoghegan, 1994). Hoffman and Novak (1997) find that experienced users are more likely to buy things over the Internet; therefore, the following hypotheses were proposed:

Hypothesis: 1 Academicians who are innovative adopters are hypothesized to have more years of experience on online shopping than other adopter types.

Table 2a: Frequency of experience level of online shopping and adopter type mean comparison

adopters groups

	Mean	N	Std. Deviation
< 6 months	2.1081	37	.51552
6-12 months	1.9091	33	.45851
1-2 years	2.1000	40	.49614
2-3 years	2.0000	50	.34993
3-4 years	1.9643	28	.33134
> 4 years	1.8333	12	.57735
never purchase	1.9802	101	.74807
Total	2.0000	301	.56569

Table 2b: Frequency of experience level of online shopping and adopter type analysis of variance

		Sum of Squares	df	Mean Square	F	Sig.
Experience level of online shopping	Between Groups	1.514	6	.252	.785	.582
	Within Groups	94.486	294	.321		
	Total	96.000	300			

The mean comparison of years of experience on online shopping and adopter type is presented in Table 2a. Most of the respondents have less than six months experience in online shopping. From this comparison, it appears that all adopter types differ with

respect to the number of years of experience on online shopping. An analysis of variance was conducted to test the hypothesis, and the difference in the mean was found to be insignificant, F (6, 294) = 0.785, *p* > 0.01. Results of the ANOVA are presented in Table 2b. Therefore, the hypothesis was not supported and it was concluded that innovative adopters have less number of years of experience on online shopping than other adopter types.

Robertson (1971) claims that changes in an individual's attitude toward a product directly relates to subsequent behavioral change towards its usage. Academicians who have more years of experience on online shopping tend to be more innovative; for instance, they frequently purchase online journals, books and magazines and research materials through the Internet. This behavior is influenced by the personality of early adopters: more venturesome, greater empathy, less dogmatic, more intelligent, higher aspirations in regard to education and occupations, and more favorable attitude toward science and technology than later adopters (Rogers, 1995: Robertson, 1971).

Given the fact that online innovators tend to exhibit a higher level of self-confidence (Goldsmith, 2000), it is likely that these shoppers will believe that they possess a higher level of knowledge about shopping and buying online and will purchase more products on the Internet. Goldsmith (2000) found that innovative online buyers bought more online. Therefore, the following are hypothesized:

Hypothesis 2: Academicians who are innovative adopters are hypothesized to have a greater frequency of purchase on online shopping than other adopter types.

Table 3a: Frequency of purchase on online shopping and adopter type mean comparison

adopters groups

	Mean	N	Std. Deviation
once a year	2.0833	108	.43503
< 3 times a year	2.0492	61	.49753
once a month	1.8966	29	.48879
< 3 times a month	2.0000	8	.53452
once a day	2.0000	1	.
> 3 times a day	2.0000	2	.00000
n/a	1.9022	92	.74214
Total	2.0000	301	.56569

Table 3b: Frequency of purchase on online shopping and adopter type analysis of variance

		Sum of Squares	df	Mean Square	F	Sig.
Frequency of purchase online	Between Groups	2.088	6	.348	1.090	.369
	Within Groups	93.912	294	.319		
	Total	96.000	300			

In the mean comparison of frequency of purchasing products online and adopter type, presented in Table 3a, all adopter types (i.e. laggard, majority, and innovator) appear to differ with respect to academicians' frequency of purchasing products and services online. Most of the academicians have made at least one purchase of products through the Internet in a year. An analysis of variance was conducted to test the hypothesis, and the difference in mean was insignificant, F (6, 294)=1.090, *p*> 0.01. Therefore, the hypothesis was not supported and it was concluded that innovative adopters have fewer number of frequency of purchase products on the Internet than other adopter

types. Results of the ANOVA are presented in Table 3b and it was divergent to Goldsmith (2000) study.

Innovation adopters possess a higher level of knowledge, have more social participation, maintain extensive interpersonal networks, and have contact with people not only within the social system but also outside it. They have greater exposure to both mass media communication channels and interpersonal communication channels and also current updates through this networking. Moreover, innovation adopters are active information-seekers and thus possess more knowledge of the innovation regarding new products and services available or offered online. They could influence other people's decision-making process rather than being influenced by others to frequently purchase products and services online. All these lead innovation adopters to purchase fewer products through new form of retailing: online shopping. Goldsmith and Newell (1997) found shopping innovators to be less price sensitive than later buyers, whereas Korgaonkar and Smith (1986) reported no associations between non-store shopping and price consciousness. However, Korgaonkar (1984) had concluded that non-store shopping would be most appealing to price oriented individuals. Online shopping innovators may simply enjoy the process of shopping and buying more than those who are less innovative because they less particular about the price offered on the Internet. As such, the following hypothesis is proposed:

Hypothesis 3: Academicians who are innovative adopters will pay a higher price for items purchased online than other adopter types.

Table 4a: Frequency of price of item purchased per transaction (RM) and adopter type mean comparison

adopters groups

	Mean	N	Std. Deviation
< 50	2.0233	43	.40757
50-100	1.9808	52	.46401
100-300	2.1333	60	.50310
300-500	2.0233	43	.40757
> 500	1.9333	15	.59362
n/a	1.9091	88	.75256
Total	2.0000	301	.56569

Table 4b: Frequency of price of item purchased per transaction (RM) and adopter type analysis of variance

		Sum of Squares	df	Mean Square	F	Sig.
Price of item purchased per transaction (RM)	Between Groups	1.926	5	.385	1.208	.305
	Within Groups	94.074	295	.319		
	Total	96.000	300			

The mean comparisons for money spent on items purchased online and adopter type are presented in Table 4a and it appears that all adopter types differ with respect to the price of the items purchased online. Majority of the academicians have spent between RM 100 to RM 300 on items purchased per transaction. An analysis of variance was conducted to test the hypothesis. The difference in mean was found to be insignificant, $F(5, 295) = 1.208$, $p > 0.01$ (Table 4b). Therefore, the hypothesis was discarded. It was discovered that academicians who are innovative adopters pay a lower price for items purchased online than other adopter types. Innovators are more receptive to new ideas

particularly to the new medium of retailing (i.e. online shopping) than other types of adopters. They are willing to take risks when shopping online but they spend small amount of money purchasing products and services through the Internet. Indeed, they are innovative/early adopters and are more experienced online shoppers and know how to, for example, comparison shop between sites or use shopping bots. Therefore, they should, all other things being equal, spend less than the other groups. Furthermore, the accessibility of wider information, provision of search mechanisms, possibility of price and products comparisons, and online product trial have reduced their uncertainty in their purchase decision.

CONCLUSION

In short, there are 3 significant differences that can be identified when comparing the use of Internet for shopping between academicians who are innovative. They are as follows:

- innovative adopters have less years of experience than other adopters in shopping for products online
- innovative adopters purchase less than other adopters, perhaps indicating some "novelty" effect in shopping for products online
- innovative adopters pay less, on average, than other adopters in shopping for products online

This finding provides new perspective on innovative adopters among Malaysian academicians but it is contrary to prior study by Lohse, Bellman and Johnson (2000) whom reported that length of time as an Internet user as well as frequency and amount of time using the Internet per visit were positively related to consumer's intention when buying things online. Longer-term Internet usage, a higher frequency of Internet visits, and longer time spent per visit could be indirect indications that a consumer has had more chances to visit and explore retail sites. A larger degree of such exposure can enhance a person's (i.e. academicians) familiarity and knowledge about what is involved in purchasing through the Internet, which in turn can reduce uncertainty in evaluating e-shopping.

Future study should carry out more in depth research on the characteristics of innovators and early adopters of online shopping adoption and use new statistical technique for data analysis such as Structural Equation Modeling. Therefore, an innovative online marketer and online retailer could benefit the research finding by directing and segmenting their marketing efforts and strategy toward these valuable and profitable customers since these group of customers tend to be relatively younger, better educated, and higher in income than later adopters and non-adopters. They are more receptive to unfamiliar things, rely more on their own values and judgment, and are more willing to take risks by purchasing products and services through the Internet. They are fewer brands loyal and more likely to take advantage of special promotions.

BIODATA and CONTACT ADDRESSES of AUTHORS

Norazah Mohd SUKI is Lecturer in the College of Business Management and Accounting at Universiti Tenaga Nasional, Malaysia. Her research interest is in the area of Multimedia Marketing, Electronic Commerce, Consumer Behavior.

Norazah Bte Mohd SukiSultan Haji Ahmad Shah Campus,
26700 Bandar Muadzam Shah, Pahang, MALAYSIA.
Tel: 609-455 2039 Fax: 609-455 2000
E-mail: norazah@kms.uniten.edu.my

Norbayah Mohd SUKI is Doctoral student in the Faculty of Creative Multimedia, Multimedia University, Malaysia.

Norbayah Mohd Suki
Doctoral student
Faculty of Creative Multimedia
Multimedia University
MALAYSIA

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Appendix: 1
Measures of Innovativeness

	Strongly agree	Somewhat agree	Agree	Neutral	Somewhat disagree	Disagree	Strongly Disagree
1.1 I am generally cautious about accepting new ideas	1	2	3	4	5	6	7
1.2 My peers often ask me for advice or information	1	2	3	4	5	6	7
1.3 I enjoy trying out new ideas	1	2	3	4	5	6	7
1.4 I seek out new ways to do things	1	2	3	4	5	6	7
1.5 I frequently improve methods for solving problems when an answer is not apparent	1	2	3	4	5	6	7
1.6 I am suspicious of new inventions and new ways of thinking							
1.7 I rarely trust new ideas until I can see whether the vast majority of people around me accept them	1	2	3	4	5	6	7
1.8 I feel that I am influential member of my peer group	1	2	3	4	5	6	7
1.9 I consider myself to be creative and original in my thinking and behavior	1	2	3	4	5	6	7
1.10 I am aware that I am usually one of the last people in my group to accept something new	1	2	3	4	5	6	7
1.11 I am an inventive kind of person	1	2	3	4	5	6	7
1.12 I enjoy taking part in the leadership responsibilities of the groups I belong to	1	2	3	4	5	6	7
1.13 I am reluctant about adopting new ways of doing things until I see them working for people around me	1	2	3	4	5	6	7
1.14 I find it stimulating to be original in my thinking and behavior	1	2	3	4	5	6	7
1.15 I tend to feel that the old way of living and doing things as the best way	1	2	3	4	5	6	7
1.16 I am challenged by ambiguities and unresolved problems	1	2	3	4	5	6	7
1.17 I must see people using new innovations before I will consider them	1	2	3	4	5	6	7
1.18 I am receptive to new ideas	1	2	3	4	5	6	7
1.19 I am challenged by unanswered questions	1	2	3	4	5	6	7
1.20 I often find myself skeptical of new ideas	1	2	3	4	5	6	7