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PC USAGE AMONG STUDENTS IN A PRIVATE INSTITUTION OF HIGHER LEARNING: THE MODERATING ROLE OF PRIOR EXPERIENCE

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Abstrak: Selaras dengan Wawasan 2020 dan dasar teknologi maklumat dan komunikasi (ICT) negara, kajian ini percaya tentang perlunya Malaysia memberi tumpuan kepada penerimaan terhadap komputer peribadi (PC) di institusi pengajian tinggi swasta (IPTS), terutama apabila trend terkini dan masa depan jelas menunjukkan pertambahan kemasukan bilangan pelajar ke institusi berkenaan. Kajian ini meninjau tentang penggunaan PC di kalangan pelajar-pelajar IPTS yang bekerjasama dengan sebuah institusi pengajian tinggi awam (IPTA) di bawah skim francais. Soal selidik berstruktur telah digunakan untuk mengutip data daripada pelajar-pelajar yang terlibat secara langsung dalam skim pengajian ini. Dapatan kajian menunjukkan bahawa tanggapan tentang mudah atau sukar menggunakan PC (PEU) mempengaruhi tanggapan terhadap kebergunaan PC (PU), dan secara lebih signifikan apabila pelajar terlibat dalam tugas-tugas asas; tetapi kesan sebaliknya berlaku bagi tugas-tugas yang lebih sukar. Tambahan pula, PU menjadi pengantara sepenuhnya bagi kesan PEU ke atas penggunaan PC bagi tugas-tugas asas sahaja. Didapati juga pengalaman lepas pelajar menjadi pengantara hubung kait antara PEU – penggunaan PC hanya bagi tugas-tugas mudah sahaja. Oleh itu, kajian lanjutan dan implikasi pengurusan bagi pembuat dasar ICT negara dibincangkan dalam kertas kerja ini.

Abstract: In line with the vision 2020 and information technology and communication (ICT) policies, this study believes in the need for Malaysia to focus on personal computer (PC) acceptance in private institutions of higher learning, especially when the current and future trends directly indicates the increase in the number of enrolment in the said institutions. The present study looks at the PC usage among students of a private institution of higher learning, which has a joint collaboration with a public institution of higher learning under the franchise programme scheme. A structured questionnaire was used to collect data from the students who were directly involved in this scheme. The results suggest that perceived ease of use (PEU) influences the perceived usefulness (PU) with PU more significant when students engage in basic tasks and vice-versa for advanced tasks. Additionally, PU was found to fully mediate the impact of PEU on PC usage for the basic tasks only and not for the advance tasks. It was also found that prior experience moderated the PEU-PC usage relationship only for basic tasks. Subsequently, future research and managerial implications for ICT national policy makers are explored.

INTRODUCTION

The manufacturing sector has been Malaysia's engine of economic sustenance with a growth rate averaging 7 to 8% per annum. According to recent projections by the National Economic Action Council (NEAC), Malaysia's manufacturing sector's contribution will peak at 38% by year 2005. Hence, this statement attests to the global current economic climate where knowledge assets have overtaken maximizing of production outputs. This notion of the knowledge economy has prompted Malaysia to reposition and reinvent itself through a series of radical policy changes to prepare its knowledge citizens for future challenges. The K-Master Plan coupled with Multimedia Super Corridor (MSC) are examples of Malaysia's agenda in the paradigm shift from production economy to K-based economy, which stresses on capitalizing human capital to create, innovate and commercialize knowledge through the use of information and communication technology (ICT). Seven strategic thrusts, ranging from ensuring the necessary infra/infostructure and bridging the digital divide were outlined to restore the nation's competitive advantage.

Therefore, computer literacy has achieved much attention in the K-Master Plan in developing knowledge workers. An observable fact is the "one computer to one family" policy where amendments to the Employees Provident Fund (EPF) act allowed withdrawals to be made in purchase of personal computers (PC). Secondly, Malaysia seeks to convert all its primary and secondary schools to Smart School status by the year 2010 through one of the flagships championed by the MSC. Despite these favorable policies and infrastructures, there are two points that need to be considered, which are as follows:

1. The policies and infrastructures do not guarantee that there will be a high rate of technology acceptance at the individual level, and

2. Albeit the emphasis in promoting computer literacy among primary and secondary schools and public universities, much less attention has been given to private institutions that charted an increase in the number of student enrolment from 127,596 to 270,904 during the period of 1995–2001.

Private Education Sector

In striving towards a knowledge society, the educational sector remains crucial in developing and equipping future knowledge workers who are dynamically capable in steering the economic wave of tomorrow. In spite of current info/infrastructure and policies that are provided by the government, the level of human capability to fully utilize the resources should be at par with the existing

structures. Hence, education is again the key factor in translating the knowledge worker's perceived potential ability to maximize the current technological assets (e.g. PC applications) for the economic growth of a nation. According to the 8th Malaysian Plan, the number of labor force with tertiary education has increased from 11% to 14% in a span of five years (1995–2000). From Tables 1 and 2, it can be noted that private institutions of higher learning is gaining popularity among school leavers with about the same amount of enrolment in public institutions of higher learning. Notwithstanding the emergence of private institutions of higher learning, public institutions could not meet the demand of school leavers; judging from the enrolment trends in higher educational institutions. In retrospect, the lynchpin to a developed nation is the nation's ability to be technologically competent where there is a match between its policies and its knowledge workers' ability. Since PC acceptance has to precede technological competency and private institutions of higher learning is fast growing as an entity that nurtures the economic growth of Malaysia, this study anticipates that this subject contributes to the state-of-the art.

Table 1. Enrolment trends in private institutions of higher learning

	1995	1996	1997	1998	1999	2000	2001
Universities	–	–	–	–	15,981	22,480	27,060
Colleges	127,596	133,199	143,803	168,489	199,613	209,589	243,844
Total	127,596	133,199	143,803	168,489	215,594	232,069	270,904

Table 2. Enrolment trends in public institutions of higher learning

	1995	2000	2005 (projected)
First degree courses	75,709	170,794	244,527
Diploma courses	46,480	92,304	148,025
Certificate courses	13,556	28,154	88,848
Total	135,745	291,252	481,400

LITERATURE REVIEW

In retrospect, government policies and infrastructure do not ensure implementation success but merely to promote technology acceptance. Individuals themselves have to decide to embrace or behave receptively towards the change and the technological wave of the information age. Nevertheless, the intention to accept or reject a particular technology is based on a series of tradeoffs between the perceived benefits of the system to the user and the complexity of learning or using the system. This phenomenon can be reasonably

explained by using the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), which essentially argues that social behavior is motivated by an individual's attitude towards executing that behavior. Therefore, the change of behavior is the result of the function of one's beliefs about the outcome of the behavior and an evaluation of the value of each of those outcomes (Ji-Won Moon & Young-Gul Kim, 2001). In short, TRA proposes that individual beliefs influence attitudes, hence, creating intentions that will generate behavior. The Technology Acceptance Model (TAM) pioneered by Davis (1989) advances the TRA by postulating that perceived usefulness (PU) and perceived ease of use (PEU) are key determinants that inevitably lead to the actual usage of a particular technology or system. PU is defined as the extent to which a person believes that using a particular system or technology would enhance his/her job performance. PEU on the other hand, is defined as the extent to which a person believes that using the particular system or technology would be free from effort (Davis, 1989).

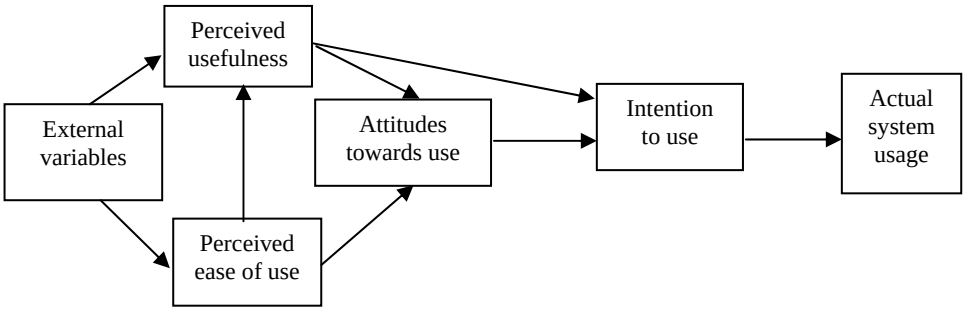

Figure 1. Technology Acceptance Model (TAM)

Although TAM was influential in predicting and explaining technology acceptance in general, it lacks the specificity of users' opinions on specific system or technology. Due to this reason, researchers (e.g. Davis & Ventkatesh, 1996; Ventkatesh & Davis, 1996) pursued vigorous validation and extension of the TAM under different environments to make increase it's explanatory power. Additionally, a number of modified TAM models (e.g. Chau, 1996; Igbaria et al., 1997; Agarwal & Prasad, 1999; Hu et al., 1999; Jiang et al., 2000; Chau & Hu, 2001; Horton et al., 2001) were developed to address acceptance of new technologies and their industrial application. Similarly in Malaysia, the advancement of the TAM is kept abreast with the latest development and diffusion of technologies in respective industries. In 2001, Jantan, Ramayah and Chin conducted a study to understand multiple factors that influence PC acceptance among small and medium sized companies. Contrastingly, Ramayah et al. (2003) replicated the TAM to understand the receptiveness of Malaysian

consumers in the e-banking sector. In addition, Ramayah et al. (2002) used the TAM to study technology usage amongst owners/managers of small medium enterprises' (SME). Recently, the study was extended to include the moderating effect of self-efficacy to assess the acceptance of web-based supply chain management among SMEs (Ramayah et al., 2003).

RESEARCH MODEL

It can be observed that there are many studies that have replicated the TAM for the purpose of understanding software, hardware or system usage in various industries. Likewise, this study is a modification of the TAM to study the PC usage among users in a private institution of higher learning. The proposed research model is as follows.

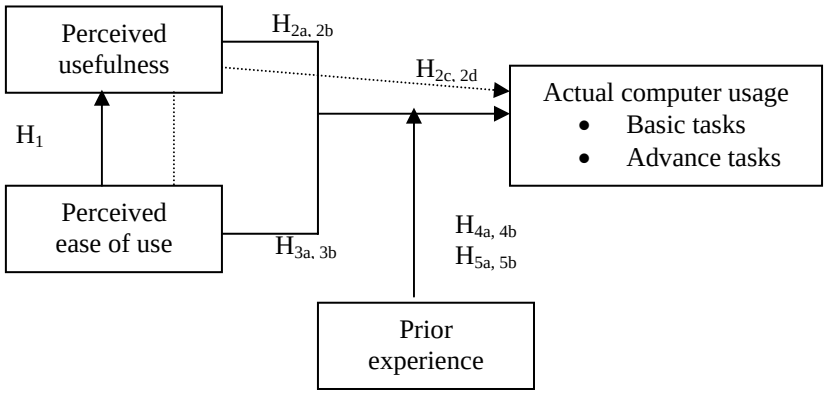

Figure 2. PC's acceptance in a private institution of higher learning

Note: The dotted lines present the mediation effect

Unlike studies based on consumer purchase decisions (i.e. Goldsmith & Goldsmith, 2002; Olson & Boyer, 2003) where attitude was rooted in consumer theory, this study intentionally excluded the attitude construct in order to focus on the actual technology usage. This decision was supported by a few studies (e.g. Ventkatesh & Davis, 1996) where attitude was found not to mediate the relationship between PEU and PU with behavioral intention. Subsequently, the revised TAM was proven to be successful in a number of studies (e.g. Jantan, Ramayah, & Chin, 2001; Ndubisi, Jantan, & Richardson, 2001; Ramayah et al., 2002; Ramayah, Jantan, & Aafaqi, 2003). Since PCs have been introduced in private institutions of higher learning for the past decade, this study excluded the

use of behavioral intention construct and concentrated on understanding the actual usage or acceptance of the PC.

Though PEU and PU are closely related, nevertheless they are two distinct constructs. In general, a system or technology that is perceived to be easy to use or learn would be anticipated to be more useful to the user. This notion was first supported by Davis, Bagozzi and Warshaw (1989) and again justified through many empirical tests (e.g. Mathieson, 1991; Chau, 2001) that followed. Therefore, it can be stated that:

H_1: PEU will positively influence the PU of PC usage among students.

In previous studies (e.g. Robey, 1979; Igbaria, 1990) have discovered that PU is directly associated with systems usage. Pragmatically, college students that have been exposed to a number of software packages (e.g. word processing, statistical, programming languages, etc.) are likely to form favorable or unfavorable perception regarding the usage of PC. The two espoused beliefs (i.e. PEU and PU) can be viewed as a means for the college student to assess his/her professed mental effort in using the software applications. These embedded innate beliefs are surmised to be an antecedent that will influence the adoption or actual usage of the PC. Hence, this study posits that:

H_2: PU will positively influence the actual PC usage among students.

H_{2a}: PU will positively influence the usage of basic applications.

H_{2b}: PU will positively influence the usage of advanced applications.

Since the seminal works of Fishbein and Ajzen (1975) in TRA and Davis (1989) in TAM, there are other researches (e.g. Adams, Nelson, & Todd, 1992; Mathieson, 1991; Davis, 1989) who indicated that technology acceptance is driven to a large extent by PU and PEU. Likewise, as mentioned earlier, PEU was also found to contribute towards the behavior of the user. Therefore, this combined association leads this study to anticipate that PU will act as a mediator for the PEU–PC usage relationship. Hence, we posit that:

H_{2c}: PU will mediate the relationship between PEU and the usage of basic applications.

H_{2d}: PU will mediate the relationship between PEU and the usage of advanced applications.

H_3: PEU will positively influence the actual PC usage among students.

H_{3a}: PEU will positively influence the usage of basic applications.

H_{3b}: PEU will positively influence the usage of advanced applications.

The inherent beliefs that reside in users are formed through experience that will then give rise to preconceived ideas of the particular technology or system. According to Thompson, Higgins, and Howell (1994), the relationship between experience and users can take up to three forms, which are as follows:

1. Experience has a direct influence on behavior, a case whereby knowledge workers will develop affinity towards the use of technology through experience and past behavior,

2. A possibility exists where experience can influence behavior indirectly through the intervening variables such as beliefs, and

3. The possibility of experience as a moderator between the component of beliefs and behavior.

It is difficult to generate *a priori* hypothesis for prior experience to be the moderator of both beliefs (i.e. PEU and PU) on the actual computer usage, since theoretical arguments can be raised in both positive and negative manner. Nevertheless, this study intent to, contribute towards understanding the moderating effect of prior experience on type of tasks. In the context of private institutions of higher learning, it can be observed that social norms and habits impact behavior, with social norms playing a greater role when the behavior is new. Thus with experience, behavior is routinized and embedded in the user's system of beliefs that will then translate into either a favorable or unfavorable response towards the usage of a particular technology.

Hence, this suggests that the effect of prior experience will exert a moderating effect rather than indirectly influencing the actual PC usage among college students. To illustrate the case, a relatively inexperienced PC user may initially develop favourable or unfavourable attitude towards the use of PC based on various reasons. Nonetheless, due to external factors such as peer pressure and the need to communicate and deliver assignments, college students are forced to adopt the usage of PC. Hence, it can be said that there is a "dissonance" between external factors and the need to use the PC among students in private institutions of higher learning. This is supported by Rogers and Schoemaker (1971) in stating that individuals would tend to modify their behavior or attitudes to reduce the dissonance.

Therefore, experience is likely to reduce the dissonance and the negativity of the attitudes towards the use of PC. Additionally, as individuals become more experienced and comfortable with the use of PC, their self-confidence and knowledge will increase to the extent that they perceive they can handle more advanced applications. In supporting this assertion, Thompson, Higgins, and Howell (1994) explicitly stated that a user without prior experience would have unrealistic expectations on the applications of the PC through the influence of media and secondary sources. As the user gains experience, dissonance will then be reduced as to provide a more realistic expectation on the performance of the applications. Thus, this illustrates that experience plays a prominent role in PC usage regardless of types of tasks, i.e., basic or advanced. Therefore, this study anticipates that:

H_4: Prior experience will moderate the relationship between PEU and PC usage.

H_{4a}: The impact of PEU on basic tasks will be greater for students with more prior experience.

H_{4b}: The impact of PEU on advanced tasks will be greater for students with more prior experience.

H_5: Prior experience will moderate the relationship between PU and PC usage.

H_{5a}: The impact of PU on basic tasks will be greater for students with more prior experience.

H_{5b}: The impact of PU on advanced tasks will be greater for students with more prior experience.

RESEARCH METHODOLOGY

This research involved a field study that examined the relationship between PEU and PU with actual PC usage. Subsequently, the moderating effect of prior experience was examined on the said relationship. This study's research instrument consists of a six-part questionnaire that was modified from various sources (Table 3) in order to gather information regarding demographics, PU, PEU, prior computer experience, frequency of its usage and types task performed using computer.

Table 3. Questionnaire sources

Section	Sample questions	Source
PEU	Learning to use the microcomputer would be easy for me	Davis (1989)
PU	Using the microcomputers improves my work performance	Davis (1989)
Type of tasks	Extent of use of word processing, spreadsheets, etc.	Adapted based on Teo et al. (1999); Igbaria et al. (1995)
Prior experience	How many years of experience do you have in using a computer?	

Population and Sample

The population consisted of students from a particular private institution of higher learning that was selected through a convenience sampling. These college students have been exposed to a number of software applications that include basic and advanced applications. The demographic profile of the respondents is presented in Table 4.

From Table 4, it can be seen that 79.4% of the respondents are female whereas only 17.5% of them are male. As for ethnic composition, 81% of the respondents are Malay, 11.1% are Chinese, followed by 6.3% and 1.6% of Indians and Others, respectively. Majority of respondents are of 21–23 years age group, which is 57.4% of them. Another 37.7% of respondents fall in the category of 18–20 years age group. As far as program that respondents are doing, 68.3% of them are enrolled in diploma program, followed by 28.6% of respondents are enrolled for undergraduate program.

Table 4. Demographic profile

Variable		Frequency	%
Gender	Female	50	82.0
	Male	11	28.0
Race	Chinese	7	11.1
	Indian	1	1.6
	Malay	51	81.0
	Others	4	6.3
Age	18–20	23	37.7
	21–23	35	57.4
	> 24	3	4.9
Program	Undergraduate	18	28.6
	Diploma	43	68.3

FINDINGS

A factor analysis with Varimax rotation was performed to validate whether the items in each section loaded into the expected categories when used for analyzing the hypotheses. As presented in Table 5, the results show two distinctive factors for PEU and PU as well as two distinctive factors for usage, which differentiated, basic and advanced tasks performed. For PEU and PU the total variance explained was 58.08%, whereas for usage the total variance explained was 62.25% (Table 6). The criteria used to identify the loadings were the same as that used by Igbaria et al. (1995): each item should load 0.50 or greater on one factor and 0.35 or lower on another factor.

Table 5. Factor and reliability analysis for the independent variables

Variables	Factors	
	1	2
PEU		
Learning would be easy	–0.154	0.813
Easier to do my task	0.205	0.624
Easy to become skillful.	0.268	0.766
Find microcomputers easy to use	0.263	0.664
PU		
Increases productivity on job	0.741	0.099
Useful on the job	0.738	0.248
Enhances my job effectiveness	0.842	0.090
Help in better decision-making	0.679	0.128
Variance (58.08%)	39.25	18.83
Eigenvalue	3.14	3.51
Reliability (Cronbach alpha)	0.76	0.72

Another factor analysis was run to see if the dependent variable (usage) was unidimensional or multidimensional. As depicted in Table 6, a two-factor solution explaining 62.25% variance was discovered. The Cronbach alpha was 0.67 and 0.72 providing strong support for its two components.

Based on the survey, most of the respondents have used the computer for duration of one to two years (22.2% and 23.8%, respectively). A big portion, 39.7 percent of the respondents claimed that they used the computer a few times a week. Nineteen percent claimed to use the computer for over three hours daily, while only 9.5% used the computer between 30 minutes to one hour. The frequency distribution for computer usage is shown in Table 7.

Table 6. Factor and reliability analysis for the dependent variable

Variable	Factors	
	1	2
Usage		
Word processing	0.631	0.012
Spreadsheets	0.855	–0.076
Database	0.695	0.343
Graphic package	0.714	0.198
Statistical package	0.228	0.713
Programming languages	0.181	0.897
HTML editors	–0.059	0.823
Variance (62.25%)	40.420	21.830
Eigenvalue	2.830	1.530
Reliability (Cronbach alpha)	0.670	0.760

Table 7. PC usage information

PC usage		Frequency	%
Frequency of PC usage	Never/almost never	0	0
	Less than once a month	3	4.8
	A few times a month	7	11.1
	A few times a week	25	39.7
	About once a day	14	22.2
	Several times a day	4	6.3
Length of experience	1 year	14	22.2
	2 years	15	23.8
	3 years	4	6.3
	4 years	9	14.3
	5 years	4	6.3
	6 years	3	4.8
	7 years	6	9.5
	8 years	2	3.2
	10 years	1	1.6
Actual daily usage	Almost never	0	0
	< 0.5 hrs	0	0
	0.5–1 hr	6	9.5
	1–2 hrs	17	27.0
	2–3 hrs	20	31.7
	> 3 hrs	12	19.0

Relationship between PEU and PU

To test whether there is a direct impact of PEU on PU, a linear regression was used whereby PU was taken as the dependent variable and PEU as the independent variable. Table 8 shows the summary of the regression that was performed.

Table 8. Summary of the results of regression analysis (PEU→ PU)

Independent variable	Std. beta
PEU	0.355**
R^2	0.126
Adj. R^2	0.111
F-value	8.641**

**p < 0.01

From Table 8, it can be seen that the R^2 value of 0.126 suggests that 12.6% of the variance in PU is explained by PEU. The standardized beta value of 0.355 ($p < 0.01$) suggests that PEU directly influences PU. Thus, hypothesis 1 is fully supported.

Mediating Effect of PU

In order to find the mediating effect of PU on the PEU and PC usage relationship, two additional sets of regression was run. A variable may be considered a mediator to the extent to which it carries the influence of a given independent variable (IV) to a given dependent variable (DV). According to McKinnon et al. (1995), mediation is generally present when:

1. the IV significantly affects the mediator,
2. the IV significantly affects the DV in the absence of the mediator,
3. the mediator has a significant unique effect on the DV, and
4. the effect of the IV on the DV shrinks upon the addition of the mediator to the model.

Baron and Kenny (1986) has formulated the steps and conditions to ascertain whether full or partial mediating effects are present in a model. A graphical summary is presented in Appendix. Table 9 presents the summary of the two regressions.

Table 9. Summary of the results of regression analysis (PEU → PC usage)

IV	DV	Std. beta	Summary statistics	
PEU	Usage _basic tasks	0.448*	R^2	: 0.201
			Adj. R^2	: 0.171
			F-value	: 6.795*
PEU	Usage_advanced tasks	0.222	R^2	: 0.049
			Adj. R^2	: 0.014
			F-value	: 1.399

*p < 0.05, **p < 0.01

It can be seen from Table 9 that PEU does influence PC usage significantly when performing basic tasks. Thus it can be said that with a $\beta = 0.448$, $p < 0.05$, PEU positively influences PC usage for basic tasks. On the other hand, PEU does not have any significant influence on PC usage when performing advanced tasks.

From Table 8, it can be seen that PEU significantly influences PU and Table 9 shows that PEU significantly influence PC usage for basic tasks and does not influence PC usage for advanced tasks. From Table 10, step 1 for basic tasks shows that when PU is added together with PEU, PEU becomes insignificant, which gives the evidence for PU being a full mediator in predicting PC usage for basic tasks. Hence, hypothesis 2c is fully supported whereas hypothesis 2d is not supported.

Relationship Between PEU, PU and PC Usage

In order to find whether PEU and PU directly influence PC usage, multiple regression analysis was employed. In order to find the direct influence, only the step 1 results will be used and steps 2 and 3 will be used for subsequent discussions. The results are summarized in Table 10.

Table 10. Hierarchical regression results

Variable	Basic applications			Advanced applications		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
PEU	0.222	0.173	0.117	0.409**	0.395*	0.490
PU	0.484***	0.425**	–0.193	–0.311	–0.327	0.363
Prior		0.259	–2.312		0.072	3.064
PEU*Prior			0.042			–0.177
PU*Prior			2.822*			–3.156
R^2	0.384	0.443	0.514	0.145	0.150	0.242
Adj. R^2	0.337	0.376	0.409	0.079	0.048	0.077
F-value	8.121**	6.632**	4.868**	2.206	1.466	1.465

*p < 0.1, **p < 0.05, ***p < 0.01

Table 10 (step 1) shows when performing basic computer applications, PU has a significant influence on PC usage and PEU does not have any significant impact on PC usage. Thus, it can be said that hypothesis 2a is supported with $\beta = 0.484$, $p < 0.01$ while hypothesis 3a is not supported. Similarly, when performing advanced computer applications, PEU has a significant influence on PC usage and PU exerts insignificant influence on PC usage. Thus, it can be said that hypothesis 3b is supported with a $\beta = 0.409$, $p < 0.05$ while hypothesis 2b is not supported.

Moderating Effect of Prior Experience on the Relationship Between PEU and PU with PC Usage

Hierarchical regression was employed to find the impact of PEU, PU and prior experience, whereby prior experience moderates the type of task performed (i.e. basic or advanced applications) (Table 10).

From the regression output for basic tasks presented in Table 10, gradual change in R^2 value from 0.384 (step 1) to 0.443 (step 2) and 0.514 (step 3) can be seen. From step 2 (Table 10), it can be seen that the direct impact of prior experience on PC usage is not significant when performing basic tasks. Subsequently, step 3 suggests that prior experience has a significant moderating effect on PU when predicting usage of PC for basic tasks. Hence, hypothesis 5a is supported with $\beta = 2.822$, which is significant at 10% significance level. On the other hand, prior experience does not exert any moderating effect on PEU when predicting PC usage for basic tasks, hence, hypothesis 4a is not supported.

From the regression output for advanced tasks presented in Table 10, advanced tasks registered an insignificant change in R^2 values across the three models with 0.145, 0.150 and 0.242, respectively. From step 2 (Table 10), it can be seen that the direct impact of prior experience on PC usage is not significant when performing advanced tasks. Subsequently, step 3 suggests that prior experience has no moderating effect on PU and PEU when predicting usage of PC for advanced tasks. Hence, hypotheses 4b and 5b are not supported.

Figure 3 shows the effect of prior experience on the relationship between PU and PC usage to perform basic tasks. When the level of PU increases, experienced users tend to use more of the PC for doing basic tasks as compared to the inexperienced users which shows a lesser gradual increase.

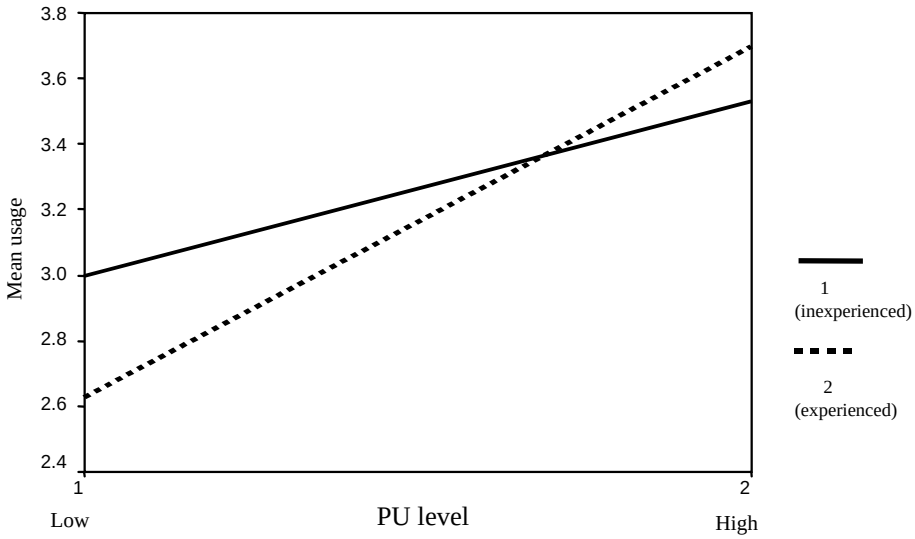

Figure 3. The moderating effect of prior experience on PC usage for performing basic tasks.

DISCUSSIONS

As predicted, the relationship between PEU and PU is found to be positive. It explicitly states that students in private institutions of higher learning view the usefulness of the applications, either basic or advance, through the lens of how easily the software could be learnt. PEU is found to have significant influence on PC usage when performing basic tasks. This maybe due to the fact that students who are enrolled in these colleges are required to use a PC to complete their assignments, so if they perceive that it will be easy for them to use PC when performing basic tasks, their usage level will increase.

Contrastingly, the students' course does not require the frequent usage of advanced applications such as programming languages, HTML editors and animation packages. These applications do not have a large impact on the students' assessment and evaluation throughout their academic tenure. Although these applications are generally not perceived to be useful in the students' context, they do require a great deal of effort to learn. College students might only use these applications if they have a personal interest in software programming or web page designing and not how useful they perceived the software to be. This suggests that their personal interest is an element by which the relationship between PEU and computer usage could be strengthened. This is anticipated to be true as generally personal interest provides a motivation to

pursue the use of advance applications, especially if the advanced applications are not related to the students' course. In short, it is assumed that college students would actually engage in the usage of advanced applications if they perceived it to be easy instead of how useful the software is to them.

In the past, researchers (Taylor & Todd, 1995) have postulated that PEU and PU have different relative influences depending on their level of experience. In essence, PEU is considered to have more influence among inexperienced users while PU being the opposite. Nevertheless, this study found prior experience to be a moderator for the relationship between PU when predicting PC usage (for basic tasks). Triandis (1971) argued that the role played by the affective component would decrease as the user's experience increases, which can be observed from the significant moderating role of prior experience on basic tasks. Nevertheless, assuming Triandis argument to be true, prior experience should also play a moderating role in the relationship between PEU and PU with actual PC usage for advances tasks. But, this is not the case. Why?

Prior experience acts as a moderator to PEU/PU when influencing the PC usage for basic tasks. It could be due to the fact that when an individual has little experience with a PC, PU and PEU would be more definite thus they will tend to use PC for basic tasks. On the other hand, prior usage does not moderate PC usage when performing advanced tasks, the reason for it could be due to the fact that "little" experience with PC or a lot of experience with PC for basic tasks, doesn't make it easier for users in learning and performing advanced tasks. In order to perform advanced tasks, definiteness of PEU is essential not the prior experience. That is, to use PC for advanced tasks is more dependent on the person's interest and his/her perception regarding its ease of use in using it rather than its usefulness.

To further explain the reason for prior experience's moderation it could be discussed in terms of "like/dislike connotation". The attitude construct in the TAM model also suggests a like/dislike connotation. Hence, the affective component is quite similar to the attitude construct in the conventional TAM model. A like/dislike connotation in the attitude construct (or affective component) brings about more of a 'want to' rather than a 'need to' in the acceptance of a PC. It can be presumed that prior experience can assess the 'want to', which is the crux of the affective component and its relationship towards the actual PC usage for basic tasks. In other words, the TAM is presupposed to best gauge technology acceptance among users when assessing the 'want to' rather than the 'need to', which is the reason that causes prior experience not to have any affect on the PEU/PU – actual PC usage (advanced tasks) relationship. However, it was noted that for basic applications, students ought to have personal interest to motivate them to engage in basic tasks. In so doing, the 'want to' was addressed

instead of the 'need to', in turn, justifying the outcome of prior experience as the moderator for the PEU/PU – PC usage (basic tasks) relationship.

Conclusions and Proposed Future Research

Although this study did not test attitude or intention to use, it is an accepted principle that both are fundamentals of the conventional TAM models. The unorthodox findings had challenged the view of traditional TAM conformist and provide a new avenue of research. When analyzing the impact of prior experience, one has to first evaluate whether the user has the option to use the particular technology or system. If they are forced to use it or there is only limited choice rather than based on their own perception and liking, the TAM model will not be sufficient in explaining the abovementioned situation. Nevertheless, this study managed to shed some light on the students' perception (i.e. PEU and PU) pertaining to the type of tasks they engage in.

Implications to ICT Policy Makers

The results of this augmented TAM could provide some insight to future policies *vis-à-vis* ICT. Since PU was found to correspond only to basic but not advanced tasks, it dictates that the subjects of this study are still ignorant about the usefulness of advanced applications although they are frequent users of PC with many years of experience (taking into consideration both the number of hours in contact with PC and the years since first being introduced to the technology). Additionally as most students have a minimum of two years experience in using a PC, the findings also imply that students have been only engaging in the same routine tasks such as e-mailing and word processing rather than moving on or exploring the use of more advanced software such as HTML and animation packages. Their growth of knowledge regarding the usefulness of the potential of the PC are somewhat stunted. Therefore, future policies should take into consideration efforts in developing useful content to the current academic curriculum in order to realize the vast potentials of ICT.

Although the K-Master Plan had shown the government's effort and initiatives to equip Malaysians to be a knowledge society, the policy was not well catered for private institutions of higher learning. Instead, emphasis was given to computer literacy among primary and secondary students. No doubt it is good to provide a head start for the younger age group, but the school educational curriculum should not put the efforts merely to engage in basic tasks and applications. Therefore, some attention should be disseminated to private institutions of higher learning where more advanced knowledge could be applied through advanced applications, and the place to polish the uncut programmers and techno-designers

of tomorrow. Lest be forgotten, private institutions of higher learning are fast growing in numbers and gaining popularity among school leavers.

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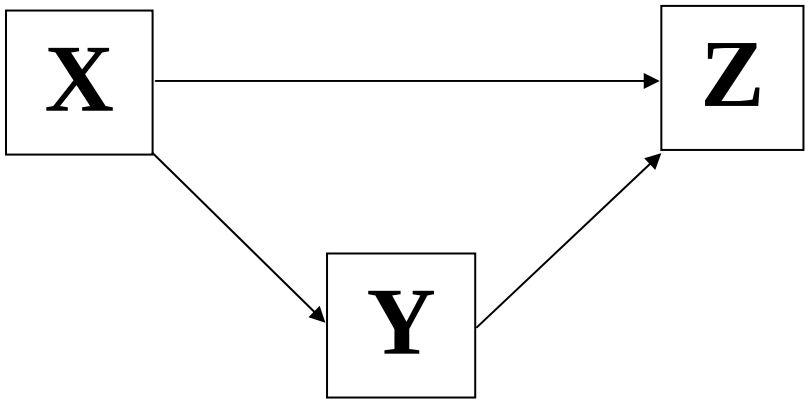
APPENDIX

Testing Mediating Effect



Z = Dependent variable
X = Independent variable
Y = Intervening variable

Steps in testing:

Z = f(X)= a + bX
Y = f(X) = c + dX
Z = f(Y)= e + fY
Z = f(X, Y) g + hX + jY

Full Mediator Effect:

- $b \neq 0$
- $d \neq 0$
- $f \neq 0$ also $j \neq 0$
- $h = 0$

Partial Mediator Effect:

- $b \neq 0$
- $d \neq 0$
- $f \neq 0$ also $j \neq 0$
- $h \neq 0$ but $h < b$

Diagram drawn based on the original article by Baron and Kenny (1986). Illustrations are courtesy of Ramayah, T. and Jantan, M. from the School of Management, Universiti Sains Malaysia, 11800 USM, Pulau Pinang, Malaysia. Please e-mail: ramayah@usm.my or mjantan@usm.my for any clarifications.