

**Full Length Research**

# Perceived Ease-Of-Use and Usefulness of Personal Digital Assistants use by Undergraduates for Academic Activities in University of Ibadan, Nigeria

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Personal Digital Assistants (PDA) are fast becoming acceptable and useful in all sectors of human endeavor; students are seriously integrating the use of PDAs in their academic activities. The use of PDAs by students can be influenced by their perception on the ease of using PDAs and the perceived usefulness of PDAs for their academic activities. The study investigates perceived ease of use and perceived usefulness of PDAs on use for academic activities by undergraduates in University of Ibadan. Descriptive survey design was adopted for this study. Population consist 3,905 undergraduate students of the Faculties of Arts and Sciences in University of Ibadan, Nigeria. The purposive sampling technique was used for this study; three departments with the highest number of undergraduates were purposively selected for the sample to be a representative of the total population. The selected departments were Chemistry, Mathematics and Computer in the Faculty of Sciences and Communication and Language Art (CLA), English and Philosophy in the Faculty of Arts. A sampling fraction of 18% was used to draw a sample size of 272 undergraduates used in the study. Findings revealed that Blackberry phones 46(16.9%) and Android phones 36(13.2%) were major PDAs used by undergraduates. Using PDAs for Class work ranked the highest in the academic activities undergraduates used their PDAs for, majority of undergraduates believed that PDA can easily be used for learning. PDA was adjudged a useful learning tool 46 (16.9%) by undergraduates and that using PDA will enhance the downloading of electronic resources needed for academic activities 45(16.5%) by students. Also, PDAs assist undergraduates to share information faster among them. The study recommended that the school administration should develop a policy that will mandate undergraduates to own a PDA (tablet or laptop computer) before they can be duly registered for the academic session in order to encourage the use of PDAs. Adequate awareness and user education should be provided by library staff, especially those in charge of emerging technologies to promote the use of PDAs for academic activities by undergraduates.

**Keywords:** Personal Digital Assistants (PDA), Undergraduates for Academic Activities, University Of Ibadan

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## INTRODUCTION

The introduction of Information and Communication Technologies has greatly impacted our world. This has led to the use of Personal Digital Assistants (PDA) by students for educational purposes. Lots of information on the internet are now being brought close for the use of students through PDAs. Personal digital assistants, also known as smart devices are hand-held computers which can perform a wide variety of functions including access to the internet, scheduler, task list, phone-book, reference storage, camera and telephone and many more. In the educational arena, PDAs are being used by different users including students (Viken, 2009). PDA use in education provides personalised assistance that helps to support academic activities of users. PDAs offer many useful functions to help student access information resources personally for better outcomes. Through PDA, students can download required software from the Internet. There are applications on the internet that are downloadable which can be used on PDAs by students for different academic functions. Some of these applications are freeware, while some only charge little fees to purchase them. Different kinds of application can help do different kinds of work as they are designed to provide end-user comfort while using them (Andrew and Faithe, 2011).

PDAs are electronic organizers that do not need one to handle bloated spreadsheets, databases or text documents as such, users do not need to keep much power in their pockets. Instead, PDAs simply assist in organising user's lives. This is why they are called "Personal Digital Assistants" and not computers. PDA main function is to make information highly accessible to users (Kahney, 2002). This highly specified objective allows for small, fast, and cheap components without any bells or whistles. Their architecture can handle third-party software and hardware. An example of a simple PDA is the iPod. For a PDA to be successful and accepted, it must be robust and powerful.

Examples of Personal Digital Assistant includes: Window phone, Java phones, I phones, Palmtop, Blackberry, Android phones, Symbian, I-pod, Tablet PC, I-pad, Acer N Series, AlphaSmart, Apple Newton, Dell, Abacus PDA Watch. PDAs afford some potentially useful activities and interventions. For instance, data are efficiently recorded and analysed using PDAs as compared to using pen and paper. Portable and lightweight handhelds can be held in pockets or purses into almost all environments of learning or research. In comparison to desktop computers, PDAs offer improved portability, accessibility (low cost), mobility and adaptability (Ray, McFadden, Patterson and Wright, 2010). PDAs have also been proven to be valuable tools in arts and science (Ostler, 2002).

The PDAs can support software for specialised

mathematical programs, examples of these software include: applications for graphing, simulation, animation, and mathematical games. PDAs can also be connected to peripheral tools like temperature probes, digital cameras, GPS units and robotic apparatus for additional functional use. The use of PDAs by undergraduates comes with many benefits. Students can spell-check, modify, and amend their class notes on a PDA. Some lecturers distribute course materials through the Internet or file sharing functions of the PDA. Textbook publishers have begun to release e-books, which can be uploaded directly to a PDA, reducing the number of textbooks students must carry. Software companies have also developed PDA programs to meet the instructional needs of educational institutions, such as dictionaries, thesauri, word processing software, encyclopedias, and digital lesson planners (Andrew et al. 2011).

Students download magazine or newspaper from the Internet as well as dictionary and novels into their PDAs. The idea of PDA e-book was actually encouraged by the introduction of PDAs. PDA acts so many roles. Students do not need to carry MP3 player, mobile phone, dictionary, magazine and pocket book as PDAs can function for all. PDA can be used to satisfy students' information needs. PDA runs on Palm OS and Windows CE operating systems, Palm OS is a new operating system designed for PDA only which makes operations on PDAs simple and easy (Common Time - Cross platform mobile app development tools, 2015). Shimon et al (2014) carried out a study on PDA use by undergraduates. Their study showed a high frequency of use of personal digital assistant among students. The National Survey of Student Engagement (NSSE) is one of the largest U.S. college survey assessment projects, annually surveyed hundreds of thousands of undergraduate students at college and university campuses throughout the United States and Canada. NSSE findings showed that the number of smart phone respondents is increasing each year. The study further reported that in 2011, only about 4% of NSSSE respondents used a smart phone, however, by 2013 the figure had increased to 13%. Preliminary results in 2014 also suggested a continued increase with roughly 18% of respondents using smart phones (NCES, 2014). Dresselhaus and Shrode (2012) also surveyed students' use of mobile devices for academic purposes in Atlanta, USA. They reported that 54 percent of undergraduate students at Utah State University use mobile devices for academic purposes. Of those, 70.8 percent of students reported that they owned a hand held device.

The use of PDA by students is determined by student's perceived ease of use and perceived usefulness of PDAs. Perceived ease of use was defined as the degree an individual believes that by using a particular

technology he would be free of effort (Davis, 1989). Perceived ease of use has strong influence on students' intention to PDAs acceptance. If one particular technology is perceived as easy to use, one will make it as new alternative to use. According to Technology Acceptance Model (TAM), perceived ease of use was found to have direct effect on attitude intention but the effect is much more on the indirect mediating factor "perceived usefulness". According to Burksaitiene (2015), perceive ease of use is defined as the extent to which students believe that using a particular PDA would be free of effort. Perceived usefulness on the other hand suggests result and outcomes of using PDAs. Davis (1989) describes perceived usefulness as the degree to which an individual believes that using a particular system would enhance his/her performance. Osubor and Chiemekwe (2015) define perceived usefulness as the degree to which an individual believe that using e-learning innovation and systems will bring enhanced learning outcomes and performance. When student's perception of the usefulness of PDA is positive, use will be compelled.

One of the key reasons for using PDAs in the classroom is that every student can have immediate and personal access to computer technology, and this particular computer technology can also be taken home easily (Brown, 2011). In order to have true technological innovation in schools, computerised devices should be readily available. Handhelds provide economical way to make technological innovation more available in schools, and the Palmweb site offers successful accounts of handhelds being used in educational environments (Palm, Inc., 2006). However, the acceptance or otherwise of PDAs is highly dependent on the perception of undergraduate on the easiness of using PDAs, as well as undergraduates perception on the usefulness of PDAs. A positive perception on the ease of use and usefulness of PDAs by undergraduate would determine if such PDA would be used or rejected by students. Students are rational beings that will naturally prefer computer system or device that will give them maximum result with little or no stress or physical effort. Some of the personal digital assistants are good but some give more comfort compared with some other personal digital assistants. This is evident in the fact that students often make findings from their friends using these PDAs to find out the level of comfort they derived from using their PDAs so that they might be guided in the choice of theirs.

## STATEMENT OF THE PROBLEM

Personal digital assistants have been adjudged useful for many functions, important to this study are the functions that relate to use of PDA for academic activities by students. Despite the numerous benefits associated with

the use of PDA by undergraduates, observation revealed that some students tend to use their PDA more for social networking rather than for academic activities. Interactions with some undergraduate students who use their PDA for academic activities showed that they are incapacitated by the features of these devices like small screen size and keypads, low bandwidth and slow internet network. In addition, findings from literature revealed that there appears to be few studies that have been conducted on the use of PDA for academic activities by undergraduates. Therefore, the study on the use of personal digital assistant use for academic activities by undergraduates of University of Ibadan, Nigeria, becomes imperative.

## RESEARCH QUESTIONS

The following questions guided the study:

1. What are various types of personal digital assistant use for academic activities among the undergraduates?
2. What are the types of academic activities personal digital assistant is usedfor?
3. What is the frequency of use of personal digital assistant among the undergraduates?
4. What is the ease of use of personal digital assistant by the undergraduates?
5. What is the perceived usefulness of personal digital assistant to the undergraduates?
6. What are the challenges to the use of personal digital assistant among the undergraduates?

## METHODOLOGY

Descriptive survey design was adopted for this study and the study population consisted of 3,905 undergraduate students of the Faculties of Arts and Science in University of Ibadan, Nigeria. The purposive sampling technique was used for this study, with the use of this sampling method; three departments with the highest number of undergraduates were purposively selected so that the sample would be a representative of the population. The selected departments were Chemistry, Mathematics and Computer in the Faculty of Science, and Communication and Language Art (CLA), English and Philosophy in the Faculty of Arts. A sampling fraction of 18% was used. With the use of this sampling fraction the sample size for the study was 272 and data was collected by a questionnaire. Data was analysed using the descriptive statistics which consist of tables of frequency and percentage counts.

## FINDINGS

### Question one: What are various types of personal digital assistant use for academic activities among the undergraduates?

Table 1 shows the types of PDA used by undergraduates. The findings revealed that in Faculty of Science. The most used PDA in the Department of Chemistry for academic activities were blackberry 46(16.9%) and Android phone 36(13.2%). Undergraduates in the Faculty of Arts used tablet PC and the windows phone, with the response rate of 25 (9.2%) in the Department of CLA and Philosophy. In English Department the most used PDA was android phones 23(8.5%). The least used PDA in the Departments studied was palmtop with the response rate of 7(2.6%) in Chemistry and 5(1.8%) in Mathematics, CLA was 5(1.5%) and Philosophy 4(1.5%).

### Question two: What are the academic activities undergraduates used PDAs for?

Table 2 reveals that the major academic activities that the undergraduates in the Faculty of Science use their PDAs for. Class work ranked the highest in Department of Chemistry 47(17.3%) and Computer with 44(16.2%). Use of PDA for Class work also ranked the highest in the Faculty of Arts with response rate of 36(13.2%) in the Department of CLA and English with the response rate of 32(11.8%). Academic activity the undergraduate least used their PDAs for was examination. In the Faculty of Science, Computer Science had the response rate of 27(9.9%) and Mathematics with the response rate of 22(4.4%). While in the Faculty of Arts, PDAs were least used for Practical's 16(5.9) and Assignments 18(6.6%) in the Department of English.

### Question three: What is the frequency of use of personal digital assistant among the undergraduates?

Table 3 reveals the frequency of PDA use among undergraduates. In Faculty of Science, Department of Chemistry, Computer Science and Mathematics, android phones were used daily with response rate of 33(12.1%), windows phone was used monthly/weekly with response rate of 26(9.6%) in Chemistry. while the least used daily is Symbian phones with response rate of 4(1.5%) and android monthly/weekly with response rate of 5(1.8%) in Chemistry. In the Department of Computer Science the least PDA used daily are I pod and palmtop with the response rate of 7(2.6%) and the least used monthly/weekly was android phone with response rate of 4(1.5%) and in the Department of Mathematics the least used daily was symbian phone with response rate of

4(1.5%) and the least used monthly/weekly android phones with response rate of 4(1.5%).

In the Faculty of Arts, Android phone was used daily in the Department of CLA with response rate of 23(8.5%), Philosophy with response rate of 21(7.7%) and English with response rate of 19(7.0%). I-pods was used monthly/weekly in the Department of CLA 20(7.4%), Philosophy 19(7.0%) and English 15(5.5%). The least PDA used daily was Symbian phone in the Departments of CLA with response rate of 4(1.5), Philosophy 3(1.1%) and English 3(1.1%). The least PDA used monthly/weekly was Android phones in the Departments of CLA with response rate of 4(1.5%), Philosophy 4(1.5%) and English 1(0.4%).

### Question four: What is the ease of use of personal digital assistant by the undergraduates?

Table 4 shows response on ease of use of personal digital assistant (PDAs). In the Department of Chemistry, majority of the respondents, with the response rate of 53 (19.5%) indicated that PDA was most easily used for learning. In Computer Science with the response rate of 48 (17.6%) agreed that PDA was easily used for learning the most. However, findings in the Department of Communication and Language Arts (CLA) showed with the response rate of 36 (13.2%) that PDA can easily be used for learning and that it makes interaction with colleagues easier with the response rate of 34 (12.5%). Undergraduates in the Department of Mathematics felt that using PDA makes their academic activities clear and understandable with the response rate of 26(9.6) and can be easily use PDA for learning 27(9.9). Undergraduates in the Faculty of Arts affirmed that they easily share information with their PDA 21(7.7), 27(9.9) in English and Philosophy departments respectively.

### Question five: What is the perceived usefulness of personal digital assistant to the undergraduates?

Table 5 reveals how the respondents perceived the usefulness of PDA. In the Department of Chemistry 46 (16.9%) undergraduates believed PDA is a useful learning tool and that using PDA will enhance how they can download electronic resources useful for academic activities 45(16.5%). In the Department of CLA and Philosophy, undergraduates affirmed that PDAs assist them to share information faster with friends 37(13.6%) and 34(12.5%) respectively. Undergraduates in Department of Chemistry least perceived the usefulness of PDA to share information faster with friends 39(14.3%). While undergraduates in Computer Science (13.6%), CLA (12.1%) and English (11.0%) least perceived the usefulness of PDA in downloading electronic resources useful for academic activities.

Some of the challenges of smart personal digital

Table 1. TYPES OF PERSONAL DIGITAL ASSISTANT

| Faculty of Science |                |           |      |          |      |          | Faculty of Arts |          |      |             |     |          |      |      |     |            |      |         |     |          |      |    |     |    |      |
|--------------------|----------------|-----------|------|----------|------|----------|-----------------|----------|------|-------------|-----|----------|------|------|-----|------------|------|---------|-----|----------|------|----|-----|----|------|
| S/N                | Types          | CHEMISTRY |      |          |      | COMPUTER |                 |          |      | MATHEMATICS |     |          |      | CLA  |     | PHILOSOPHY |      | ENGLISH |     |          |      |    |     |    |      |
|                    |                | Used      |      | Not Used |      | Used     |                 | Not Used |      | Used        |     | Not Used |      | Used |     | Not Used   |      | Used    |     | Not Used |      |    |     |    |      |
|                    |                | F         | %    | F        | %    | F        | %               | F        | %    | F           | %   | F        | %    | F    | %   | F          | %    | F       | %   | F        | %    |    |     |    |      |
| 1                  | Window phone   | 30        | 11.0 | 27       | 9.9  | 30       | 11.0            | 23       | 8.5  | 24          | 8.8 | 17       | 6.3  | 25   | 9.2 | 18         | 6.6  | 24      | 8.8 | 15       | 5.5  | 22 | 8.1 | 17 | 6.3  |
| 2                  | Java phones    | 18        | 6.6  | 39       | 14.3 | 15       | 5.5             | 38       | 14.0 | 11          | 4.0 | 30       | 11.0 | 12   | 4.4 | 31         | 11.4 | 12      | 4.4 | 27       | 9.9  | 11 | 4.0 | 28 | 10.3 |
| 3                  | I phone        | 15        | 5.5  | 42       | 15.1 | 12       | 4.4             | 41       | 15.1 | 11          | 4.0 | 30       | 11.0 | 11   | 4.0 | 32         | 11.8 | 11      | 4.0 | 28       | 10.3 | 12 | 4.4 | 27 | 9.9  |
| 4                  | Palmtop        | 7         | 2.6  | 50       | 18.4 | 7        | 2.6             | 46       | 16.9 | 5           | 1.8 | 36       | 13.2 | 5    | 1.5 | 38         | 14.0 | 4       | 1.5 | 35       | 12.9 | 6  | 2.2 | 33 | 12.1 |
| 5                  | Blackberry     | 46        | 16.9 | 11       | 4.0  | 28       | 10.3            | 25       | 9.2  | 23          | 8.5 | 18       | 6.6  | 24   | 8.8 | 19         | 7.0  | 22      | 8.1 | 17       | 6.3  | 6  | 2.2 | 33 | 12.1 |
| 6                  | Android phone  | 36        | 13.2 | 21       | 7.7  | 29       | 10.7            | 24       | 8.8  | 25          | 9.2 | 16       | 5.9  | 25   | 9.2 | 18         | 6.6  | 22      | 8.1 | 17       | 6.3  | 23 | 8.5 | 16 | 5.9  |
| 7                  | Symbian phones | 12        | 4.4  | 45       | 16.5 | 10       | 3.7             | 43       | 15.8 | 9           | 3.3 | 32       | 11.8 | 9    | 3.3 | 34         | 12.5 | 9       | 3.3 | 30       | 11.0 | 8  | 2.9 | 31 | 11.4 |
| 8                  | I pod          | 16        | 5.9  | 41       | 15.1 | 13       | 4.8             | 40       | 14.7 | 12          | 4.4 | 29       | 10.7 | 12   | 4.4 | 31         | 11.4 | 11      | 4.0 | 28       | 10.3 | 13 | 4.8 | 26 | 9.6  |
| 9                  | Tablet PC      | 33        | 12.1 | 24       | 8.8  | 29       | 10.7            | 24       | 8.8  | 25          | 9.2 | 16       | 5.9  | 25   | 9.2 | 18         | 6.6  | 24      | 8.8 | 15       | 5.5  | 21 | 7.7 | 18 | 6.6  |
| 10                 | I pad          | 24        | 8.8  | 33       | 12.1 | 23       | 8.5             | 30       | 11.0 | 17          | 6.3 | 24       | 8.8  | 19   | 7.0 | 24         | 8.8  | 19      | 7.0 | 20       | 7.4  | 17 | 6.3 | 22 | 8.1  |

Table 2. USE OF PERSONAL DIGITAL ASSISTANT

| Faculty of Science |                     |           |     |    |      |          | Faculty of Arts |    |      |             |     |    |      |     |     |            |      |         |     |    |      |    |     |    |      |
|--------------------|---------------------|-----------|-----|----|------|----------|-----------------|----|------|-------------|-----|----|------|-----|-----|------------|------|---------|-----|----|------|----|-----|----|------|
| S/N                | Academic activities | CHEMISTRY |     |    |      | COMPUTER |                 |    |      | MATHEMATICS |     |    |      | CLA |     | PHILOSOPHY |      | ENGLISH |     |    |      |    |     |    |      |
|                    |                     | D         |     | A  |      | D        |                 | A  |      | D           |     | A  |      | D   |     | A          |      | D       |     | A  |      |    |     |    |      |
|                    |                     | F         | %   | F  | %    | F        | %               | F  | %    | F           | %   | F  | %    | F   | %   | F          | %    | F       | %   | F  | %    |    |     |    |      |
| 1                  | Class work          | 10        | 3.7 | 47 | 17.3 | 9        | 3.3             | 44 | 16.2 | 6           | 2.2 | 35 | 12.9 | 7   | 2.6 | 36         | 13.2 | 7       | 2.6 | 32 | 11.8 | 7  | 2.6 | 32 | 11.8 |
| 2                  | Projects            | 12        | 4.4 | 45 | 16.5 | 10       | 3.7             | 43 | 15.8 | 7           | 2.6 | 34 | 12.5 | 8   | 2.9 | 35         | 12.9 | 8       | 2.9 | 31 | 11.4 | 8  | 2.9 | 31 | 11.4 |
| 3                  | Seminar             | 23        | 8.5 | 34 | 12.5 | 18       | 6.6             | 35 | 12.9 | 15          | 5.5 | 26 | 9.6  | 15  | 5.5 | 28         | 10.3 | 13      | 4.8 | 26 | 9.6  | 15 | 5.5 | 24 | 8.8  |
| 4                  | Lectures            | 15        | 5.5 | 42 | 15.4 | 11       | 4.0             | 42 | 15.4 | 9           | 3.3 | 32 | 11.8 | 9   | 3.3 | 34         | 12.5 | 8       | 2.9 | 31 | 11.4 | 9  | 3.3 | 30 | 11.0 |
| 5                  | Team papers         | 24        | 8.8 | 33 | 12.1 | 15       | 5.5             | 38 | 14.0 | 15          | 5.5 | 26 | 9.6  | 12  | 4.4 | 31         | 11.4 | 11      | 4.0 | 28 | 10.3 | 12 | 4.4 | 27 | 9.9  |
| 6                  | Assignments         | 11        | 4.0 | 46 | 16.9 | 14       | 5.1             | 39 | 14.3 | 7           | 2.6 | 34 | 12.5 | 12  | 4.4 | 31         | 11.4 | 6       | 2.2 | 33 | 12.1 | 21 | 7.7 | 18 | 6.6  |
| 7                  | Examinations        | 27        | 9.9 | 30 | 11.0 | 26       | 9.6             | 27 | 9.9  | 19          | 7.0 | 22 | 8.1  | 17  | 6.3 | 26         | 9.6  | 20      | 7.4 | 19 | 7.0  | 14 | 5.1 | 25 | 9.2  |
| 8                  | Practicals          | 24        | 8.8 | 33 | 12.1 | 24       | 8.8             | 29 | 10.7 | 18          | 6.6 | 23 | 8.5  | 18  | 6.6 | 25         | 9.2  | 15.5    |     | 24 | 8.8  | 23 | 5.5 | 16 | 5.9  |

**Table 3. FREQUENCY OF USE OF PERSONAL DIGITAL ASSISTANT**

| Faculty of Science |                       |            |              |            |            |              |            |             |              |            | Faculty of Arts |              |            |            |              |            |            |              |            |
|--------------------|-----------------------|------------|--------------|------------|------------|--------------|------------|-------------|--------------|------------|-----------------|--------------|------------|------------|--------------|------------|------------|--------------|------------|
| S/<br>N            | PDAs                  | CHEMISTRY  |              |            | COMPUTER   |              |            | MATHEMATICS |              |            | CLA             |              |            | PHILOSOPHY |              |            | ENGLISH    |              |            |
|                    |                       | Never<br>% | Monthly<br>% | Daily<br>% | Never<br>% | Monthly<br>% | Daily<br>% | Never<br>%  | Monthly<br>% | Daily<br>% | Never<br>%      | Monthly<br>% | Daily<br>% | Never<br>% | Monthly<br>% | Daily<br>% | Never<br>% | Monthly<br>% | Daily<br>% |
|                    |                       | F          | F            | F          | F          | F            | F          | F           | F            | F          | F               | F            | F          | F          | F            | F          | F          | F            | F          |
| 1                  | Window<br>s phone     | 17 6.3     | 269.6        | 145.1      | 145.1      | 228.1        | 176.3      | 103.7       | 18 6.6       | 134.8      | 11 4.0          | 18 6.6       | 14 5.1     | 9 3.3      | 16 5.9       | 145.1      | 12 4.4     | 16 5.9       | 11 4.0     |
| 2                  | Java<br>phones        | 27 9.9     | 20 7.4       | 103.7      | 24 8.8     | 176.3        | 124.4      | 207.4       | 14 5.1       | 7 2.6      | 20 7.4          | 14 5.1       | 9 3.3      | 17 6.3     | 13 4.8       | 9 3.3      | 20 7.4     | 12 4.4       | 7 2.6      |
| 3                  | I phone               | 2810.5     | 21 7.9       | 8 3.0      | 26 9.7     | 166.0        | 103.7      | 18 6.7      | 14 5.2       | 8 3.0      | 2 7.5           | 14 5.2       | 8 3.0      | 17 6.4     | 14 5.2       | 7 2.6      | 21 7.9     | 10 3.7       | 7 2.6      |
| 4                  | Palmto<br>p           | 2910.7     | 23 8.5       | 5 1.8      | 27 9.9     | 197.0        | 7 2.6      | 20 7.4      | 16 5.9       | 5 1.8      | 22 8.1          | 16 5.9       | 5 1.8      | 20 7.4     | 16 5.9       | 3 1.1      | 19 7.0     | 14 5.1       | 6 2.2      |
| 5                  | Blackbe<br>rry        | 16 5.9     | 16 5.9       | 238.5      | 16 5.9     | 134.8        | 238.5      | 11 4.0      | 13 4.8       | 165.9      | 12 4.4          | 11 4.0       | 17 6.3     | 10 3.7     | 11 4.0       | 176.3      | 13 4.8     | 9 3.3        | 16 5.9     |
| 6                  | Android<br>phones     | 19 7.0     | 5 1.8        | 3312.<br>1 | 23 8.5     | 4 1.5        | 269.6      | 14 5.1      | 4 1.5        | 269.6      | 16 5.9          | 4 1.5        | 23 8.5     | 14 5.1     | 4 1.5        | 217.7      | 19 7.0     | 1 0.4        | 19 7.0     |
| 7                  | Symbia<br>n<br>phones | 3211.8     | 21 7.7       | 4 1.5      | 2910.<br>7 | 186.6        | 6 2.2      | 21 7.7      | 16 5.9       | 4 1.5      | 23 8.5          | 16 5.9       | 4 1.5      | 20 7.4     | 16 5.9       | 3 1.1      | 24 8.8     | 12 4.4       | 3 1.1      |
| 8                  | I pod                 | 24 8.8     | 25 9.2       | 8 2.9      | 23 8.5     | 238.5        | 7 2.6      | 16 5.9      | 20 7.4       | 5 1.8      | 18 6.6          | 20 7.4       | 5 1.8      | 16 5.9     | 19 7.0       | 4 1.5      | 18 6.6     | 15 5.5       | 6 2.2      |
| 9                  | Tablet<br>PC          | 17 6.3     | 20 7.4       | 207.9      | 18 6.6     | 165.9        | 197.0      | 11 4.0      | 15 5.5       | 155.5      | 13 4.8          | 15 5.5       | 15 5.5     | 11 4.0     | 15 5.5       | 134.8      | 14 5.1     | 11 4.0       | 14 5.1     |
| 10                 | I pad                 | 3412.5     | 14 5.1       | 9 3.3      | 27 9.9     | 155.5        | 114.0      | 20 7.4      | 12 4.4       | 9 3.3      | 22 8.1          | 12 4.4       | 9 3.3      | 20 7.4     | 10 3.7       | 9 3.3      | 23 8.5     | 9 3.3        | 7 2.6      |

**Table 4. EASE OF USE OF PERSONAL DIGITAL ASSISTANT**

|     |                                                                                                                 | Faculty Of Science |        |                  |        |             |        | Faculty of Arts |        |            |        |         |        |
|-----|-----------------------------------------------------------------------------------------------------------------|--------------------|--------|------------------|--------|-------------|--------|-----------------|--------|------------|--------|---------|--------|
|     |                                                                                                                 | Chemistry          |        | Computer Science |        | Mathematics |        | CLA             |        | Philosophy |        | English |        |
| S/N | Statement                                                                                                       | D F%               | A F%   | D F%             | A F%   | D F%        | A F%   | D F%            | A F%   | D F%       | A F%   | D F%    | A F%   |
|     | I can easily use PDA for learning                                                                               | 41.5               | 5319.5 | 51.8             | 4817.6 | 145.1       | 279.9  | 72.6            | 3613.2 | 93.3       | 3011.0 | 103.7   | 2910.7 |
|     | I feel that using PDA makes my academic activities clear and understandable                                     | 186.6              | 3914.3 | 114.0            | 4215.4 | 155.5       | 269.6  | 114.0           | 3211.8 | 72.6       | 3211.8 | 124.4   | 279.9  |
|     | I feel that using PDA makes it easy for me to download electronic resources that enhance my academic activities | 134.8              | 4416.2 | 176.3            | 3613.2 | 62.2        | 3512.9 | 114.0           | 3211.8 | 51.8       | 3412.5 | 93.3    | 3011.0 |
|     | I feel that using PDA makes interactions with my colleagues that centre in academic activities                  | 207.4              | 3713.6 | 145.1            | 3914.3 | 114.0       | 3011.0 | 93.3            | 3412.5 | 82.9       | 3111.4 | 103.7   | 2910.7 |
|     | I feel I can easily share information with the use of PDA                                                       | 134.8              | 4416.2 | 165.9            | 3713.6 | 134.8       | 2810.3 | 103.7           | 3312.1 | 124.4      | 279.9  | 186.6   | 217.7  |

**Table 5. PERCEIVED USEFULNESS OF PDA**

|     |                                                                                                              | Faculty Of Science |        |                  |        |             |        | Faculty of Arts |        |            |        |         |        |
|-----|--------------------------------------------------------------------------------------------------------------|--------------------|--------|------------------|--------|-------------|--------|-----------------|--------|------------|--------|---------|--------|
|     |                                                                                                              | Chemistry          |        | Computer Science |        | Mathematics |        | CLA             |        | Philosophy |        | English |        |
| S/N | Statement                                                                                                    | D F%               | A F%   | D F%             | A F%   | D F%        | A F%   | D F%            | A F%   | D F%       | A F%   | D F%    | A F%   |
| 1   | I believe that using PDA is a useful learning tool                                                           | 114.0              | 416.9  | 165.9            | 3713.6 | 165.9       | 259.2  | 93.3            | 3412.5 | 103.7      | 2910.7 | 41.5    | 3512.9 |
| 2   | I believe that using PDA will enhance how I download electronic into resource useful for academic activities | 124.4              | 4516.5 | 165.9            | 3713.6 | 134.8       | 2810.3 | 93.3            | 3412.5 | 93.3       | 3011.0 | 93.3    | 3011.0 |
| 3   | I feel that using PDA will enhance my interaction with colleagues                                            | 165.9              | 4115.1 | 145.1            | 3914.3 | 82.9        | 3312.1 | 103.7           | 3312.1 | 176.3      | 228.1  | 62.2    | 3312.1 |

**Continuation of Table 5**

|   |                                                                                                                  |        |         |        |         |        |        |       |         |       |         |       |         |
|---|------------------------------------------------------------------------------------------------------------------|--------|---------|--------|---------|--------|--------|-------|---------|-------|---------|-------|---------|
| 4 | I feel that using PDA will assist me to share information faster with friends                                    | 186.6  | 3914.3  | 10 3.7 | 43 15.8 | 7 2.6  | 3412.5 | 6 2.2 | 37 13.6 | 5 1.8 | 34 12.5 | 6 2.2 | 33 12.1 |
| 5 | I believe that using PDA will provide access to information resources in various formats like PDF, HTML, and DOC | 17 6.3 | 40 14.7 | 13 4.8 | 40 14.7 | 13 4.8 | 2810.3 | 72.6  | 3613.2  | 7 2.6 | 32 11.8 | 6 2.2 | 33 12.1 |

assistants use by undergraduates included: small size of phone keyboard, slow data entry and slow downloading in database format. Problems of battery life power outages, battery life power outages, privacy concern, poor data entry interface, poor vision, poor vision and preference of pen and paper.

**CONCLUSION AND RECOMMENDATION**

The era whereby users can only access the Internet in the cyber cafes is gone; PDAs now provide one-touch access to the internet at the convenience of users anywhere and at any time. The use of PDAs for academic activities will provide the opportunity for the undergraduates to access, download and share relevant information that will improve their learning and research. PDAs can also be used to discuss with lecturers and facilitators in seeking clarifications. It is therefore recommended that the school administration to encourage the use of PDAs for academic activities by undergraduates should develop a policy that mandates all undergraduates to own a PDA (tablet or laptop computer) before they can be duly registered for the academic session. Adequate awareness and user education should be provided by library staff, especially those in charge of emerging technologies to promote the use of PDAs for

academic activities by undergraduates.

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