



Moving Towards Technology-Based LGUs: A Review of Computer Literacy of Mariveles Barangays

Ruby Jean S. Medina^{a*}, Lenis Aislinn C. Separá^b, Leonila J. Generales^c, Sonia
S. Delos Reyes^d

^{a,b,c,d}*Polytechnic University of the Philippines Bataan*

^a*Email: rjsiccion@yahoo.com*

^b*Email: lenisaislinn@yahoo.com*

^c*Email: ljgenerales@yahoo.com.ph*

^d*Email: sondreyes@yahoo.com*

Abstract

Government organizations from national to local levels have been taking the path of computerization of documents and interconnectivity of transactions to improve public service. In the town of Mariveles, Bataan where 18 barangays are continuously attending to the needs of more than 100,000 residents, the barangay council and employees are expected to be equipped with the necessary technical know-hows on basic computer operations Word, Powerpoint, and Excel. A self-assessment survey was conducted among 127 barangay employees on their knowledge level of the various computer processes and usages. Results show that majority of the respondents have limited knowledge on the operating these three (3) programs which are usually used in office management. Thus, a computer training design must be proposed to address the specific areas in which respondents have a difficulty on using.

Keywords: computer literacy; computer usage; e-government; barangay; barangay council.

* Corresponding author.

1. Introduction

Management of the smallest organized community in the country – the barangays – entails a number of functions in and out of the barangay halls. Alongside with the task of ensuring the peace and order in the community, barangay officials also need to process different types of documentations concerning its constituents. Though a lot of office transactions still use pen and paper, computerizing the processed documents is deemed necessary and inevitable in making public service more efficient and more effective.

The author in [1] pointed out five (5) skills prerequisite to e-government: (1) Analytical; (2) Information Management; (3) Technical; (4) Communication and Presentation; and (5) Project Management. With all of these skills, it is evident then that the use of computer becomes inevitable in steering towards a local government adept to the changing transactional needs of the neighborhood concerned. If being a government employee assigned in the smallest unit of community in the country – *barangay* entails a variety of such skills, the expertise on the basic office applications must no longer be an issue among them.

In fact, this statement has been given more emphasis when another set of authors [2] revealed that word processing and spreadsheet skills are most valued by employers among graduates. These employers refer to both private institutions and government offices. Barangay offices, being one of the highest in number among all other types of government offices, suggests the need for the same computer skills that would be necessary in performing the daily tasks of serving the residents of the community. And aside from the level of government-citizen transactions in e-government where computerization takes place [1], the aim of computerizing government-government and government-business requires even more competent computer skills.

This is true to state governments having been encouraging the different units doing public service to use Information Technology during transactions [3]. The call for a paperless, thereby more environmental way of the government sector in providing services, as well as the vision of making the lives of other people more convenient, can be said to be the aspects where this effort is anchored on. With the varied nature of reasons for seeking the assistance of government in daily transaction whether it is personal or work-related, the role of technology in making service provision more efficient is inevitable.

In the Philippines, majority of the duties and responsibilities of barangay secretaries and treasurers stated in the Republic Act No. 7160 or the Local Government Code of 1991 requires the usage of computer applications [4]. A legal basis for the need to be proficient in using the computer, the government of the Philippines clearly considers computerization as a useful tool in improving government-citizen services. With more than 42,000 barangays all over the country across 81 provinces nationwide [5], barangay officials serve as the front-liners in providing basic government services to the community.

As a means of assessing the potential of adapting some features of e-government, this study seeks to obtain an overview of the different computer operations involving MS Word, MS Excel, MS Powerpoint, and Internet, that the barangay employees of Mariveles are knowledgeable of. Mariveles, being the biggest municipality of the Province of Bataan divided into 16 barangays with more than 127,000 residents as of 2016 [6], is a potential

geographical area to focus on with regard to assessing the computer literacy levels of its barangay employees. Through this baseline survey, knowledge base of devising a training design that would further strengthen the computer literacy of barangay employees can be determined. With this way, a more effective and more efficient public service can also be crafted with the goal of continuously improving barangay management.

2. Methods and Materials

Quantitative research was employed using a one-shot survey on the knowledge of respondents in terms of using the computer. The first part contains details on the demographic profile while the second part elicits information on how they assess their knowledge about some computer concepts necessary in office operations, as well as about Word Processing, Excel Spreadsheet, Powerpoint, and Internet.

Respondents are 127 officials and employees of the 18 different barangays of the town of Mariveles in Bataan which include Captains, Councilors, Secretaries, Treasurers, and Clerks. The proponents decided to survey the entire population to capture the actual status of respondents training needs in computer usage.

Part I of the questionnaire contains items on the demographic profile of the respondents and baseline information on computer usage. Meanwhile, Part II includes questions pertaining to their self-assessment of their understanding of basic computer concepts and their ability to perform specific operations in using MS Word, MS Powerpoint, MS Excel, and the Internet which are relevant to their work functions.

3. Results

3.1 Demographic Profile

Two-thirds of barangay employees are male with 66 per cent, while 34 per cent are female. This information confirms that the organization of barangay officials and employees is male-dominated.

More than half of the employees are between the ages 28-47 with 58 per cent, while two out ten employees are between the ages 48-57. Senior citizens with ages 58-67, who comprise 13 per cent, are also employed in the barangays while only 8 per cent is being composed of employees between 18-27 years old.

With such small percentage of young respondents, it follows that barangay centers are composed of experienced and seasoned public servants.

In terms of position, more than six out of ten employees are councilors with 63 per cent, while captains only comprise 11 per cent. About one-fourth of the employees are secretaries, treasurers, and clerks, and only 5 per cent of them are *tanods*.

Having a barangay organization with a majority of employees with Councilor positions, as well as with the significant number of secretaries, treasurers, and clerks, majority of workload may also equate to the possibility of computer usage in performing various committee tasks.

3.2 Computer Usage

When asked about their exposure to computers, a big majority of the barangay employees claimed that they are computer users, having 82 per cent while only 18 per cent are not.

On the aspect of frequency, more than one thirds of them with 37 per cent, use the computer everyday while the other one thirds, 33 per cent, only utilize the computer once to six times a week. The other employees are barely using the computer in a month having 14 per cent while the remaining 16 per cent never used a computer.

Having 84 per cent of employees who have been using the computer, it is evident that computer usage is a necessity in performing their tasks. Meanwhile, the inability of the 16 per cent to use the computer may consider such situation a deterrent in becoming more efficient and effective at work.

3.3 Concepts

In terms of specific MS Office applications, a big majority of the respondents are using Word with 87 per cent, more than four out of ten employees utilize Powerpoint having 41 per cent while more than one-thirds use Excel with 36 per cent.

The only computer concepts that are known to at least three fourths of the respondents are the basic skills of turning on of computer unit, launching preloaded programs from Desktop Icon or Menu Bar, and exiting/ quitting an application and/or file and shutting down computer properly.

Table 1: Knowledge on Basic Computer Concepts

Computer Concepts	<i>f</i>	%
1. Turn on computer and launch specific preloaded programs from Desktop Icon or Menu Bar	97	76.3
2. Exit/quit an application and/or file and shutdown computer properly	96	75.6
3. Navigate toolbars, windows, menus, submenus, tabs and dialog boxes	73	57.5
4. Select appropriate software (word processor, presentation, browser, database, spreadsheet, etc.) for the task	62	48.8
5. Insert and eject CD-ROMs and USB drives properly	67	52.8
6. Identify components of Windows environment with correct terminology	49	38.6
7. Manipulate windows with minimize, restore, and maximize	80	62.9
8. Differentiate Operating System Software and Application Software	45	35.4
9. Run more than one program simultaneously and navigate between multiple open windows	60	47.2
10. Print multiple copies of a document	64	50.4
11. Identify file types .doc, .docx, .rtf, .pdf, .pptx	54	42.5

Six out of ten of the respondents are knowledgeable of manipulating windows – minimizing and maximizing.

Meanwhile, only more than half of them can navigate toolbars, widows, and menus, inject and eject CD-ROMs and USBs, and print multiple copies of documents. The other basic computer concepts are only familiar to 35 – 48 per cent of the respondents. See Table 1.

3.4 Word

Since documentation is an integral part of any organization, the knowledge in using the MS Word is necessary to every government employee. Writing business letters, project proposals, and even Minutes of the Meeting are just some of the reportorial outputs that are expected from them.

Considering the knowledge of barangay officials on word processing, only 40- 60 percent of them view themselves as capable of performing basic tasks. More than 6 out of 10 can type text and line break, edit text, and create new document. Half of them know how to undo and redo processes while only about 4 out of 10 knows how to format text, format documents, and format paragraph. See Table 2.

Table 2: Knowledge on Word Processing

Word Processing Operations	<i>f</i>	%
1. Type text and line break (Character Keys, Space Bar, Return/Enter key, and Word-Wrap)	83	65.3
2. Edit text: Delete (Delete Key or Backspace Key) and Insert (Cut, Copy, and Paste)	81	63.8
3. Create a new word processing document: Save, Print, and Reopen document	78	61.4
4. Format text (Bold, Italics, Underline, Alignment, Font Sizes, and Typeface)	63	49.6
5. Apply Undo and Redo features	65	51.2
6. Format document (Margins, Orientation Headers, Footers, Page Numbering)	57	44.8
7. Format paragraph (Tab, Indent, Hanging Indent, and Line Spacing)	55	43.3
8. Identify Spelling and Grammar feature	60	47.2

Though majority can perform the most basic tasks in MS Word, this knowledge is not enough to properly execute the requirements needed in producing documents in accordance with a given format, structure, and even design.

3.5 Excel

For secretaries, treasurers, and clerks, the usage of MS Excel is a useful tool in creating, maintaining, and tracking records of various natures. Thus, the respondents’ ability in using the program is one of the concerns of this study.

When asked on their familiarity of the Excel Spreadsheet, employees who positively responded consist only of about 25-30 per cent. Only less than one-thirds of the respondents have an idea on the purpose of an Excel spreadsheet in office procedures. In all other basic operations of the program, less than 3 out of 10 of them view themselves as knowledgeable. Such outcome is said to be similar with the findings of Johnson et. al. (2009) that spreadsheet skills are the most challenging office tasks for the respondents. See Table 3.

Data reveals how respondents are not acquainted much on the usage of MS Excel in their respective jobs since only about 3 out of 10 of them have the ability to use it properly.

Table 3: Knowledge on Excel Spreadsheet

Excel Spreadsheet Operations	f	%
1. Describe purpose of spreadsheet	40	31.5
2. Create a new spreadsheet, save, print, and reopen later	38	29.9
3. Enter, edit, and delete cell contents	37	29.1
4. Navigate within a spreadsheet	35	27
5. Utilize AutoSum feature	37	29
6. Use cell references in formulas	33	25.9
7. Establish row and column headings for data	34	26.8
8. Create graph or chart from Chart Wizard	33	25.9

Table 4: Knowledge on Powerpoint Presentation

Powerpoint Operations	f	%
1. Create New, Save, and Reopen presentation	45	35.4
2. Add slide from Slide Layout	37	29.1
3. Use Slide Design	39	30.7
4. Enter text and line break (Character Keys, Space Bar and Return/Enter Key)	48	37.8
5. Edit text: Delete (Delete Key or Backspace Key) and Insert (Cut, Copy, Paste)	50	39.4
6. Use Undo and Redo features	45	35.4
7. Switch between different views: Normal, Slide Show, Slide Sorter	38	29.9
8. Advance through a presentation	34	26.8
9. Add objects to slides (Clip Art, Picture, Movie or Sound)	32	25.2
10. Print presentation in various formats (Handouts, Notes, Outline or Slide)	32	25.2

3.6 Powerpoint

When it comes to presenting information with groups between and among barangay employees, with the residents, and with stakeholders, the utilization of MS Powerpoint is deemed inevitable. The respondents, then, were asked of their experience of using the program. Almost 4 out of 10 the barangay employees know how to edit text in a Powerpoint presentation and how to enter text and line break. Meanwhile, more than one-thirds of them can create new, save and reopen a presentation and can use the Undo and Redo features. For the rest of the operations, only around one-fourths of respondents view themselves as capable of doing them. See Table 4.

3.7 Internet

With the advent of internet usage which is essential in e-governance, barangay employees were also asked about their familiarity on certain internet processes.

Almost 7 out 10 respondents can recognize and launch a browser and can enter URL in address bar but only 6 out of 10 can navigate web pages and websites. Majority can enter natural language in search bar, enter username and password, and download files with 55.9 per cent, 55.1 per cent, and 50.4 per cent, respectively. See Table 5.

Table 5: Knowledge on Internet Operations

Internet Operations	f	%
1. Recognize and launch a browser	87	68.5
2. Enter URL (web address) in address bar	87	68.5
3. Enter natural language in search bar	71	55.9
4. Navigate web pages and web sites (Buttons, Tabs, and Hyperlinks)	77	60.6
5. Use browser's Back and Forward buttons	60	47.2
6. Print a web page	54	42.5
7. Enter username and password when prompted	70	55.1
8. Describe popular plug-ins/ players and their uses	43	33.9
9. View files requiring plug-ins or applets (pdf, mov)	42	33.1
10. Download Files	64	50.4
11. Manage online annoyances (Spam, Cookies, Adware, Spyware, Malware, Hoaxes, and Viruses)	35	27.6
12. Compare Search Engines, Directories, Meta Search Engines	30	23.6
13. Identify and mange Pop-up Blockers	35	27.6

The responses on this aspect of internet usage reflects that only 1 out of 4 employees is technically equipped and ready to be subjected to the idea of e-governance to certain transactional needs of the neighborhood concerned, of other local government units, and of the stakeholders.

Though it is evident in their responses that a big majority of respondents, with around 75%, are not equipped

with the necessary technical know-hows in operating the commonly used office applications MS Word, MS Excel, and MS Powerpoint, barangay employees expressed their recognition of those programs as necessary tools in their everyday tasks related to public service.

When asked about their willingness to be trained to further enhance their computer skills, majority of the respondents with 65 per cent are willing to undergo skills training while only more than one thirds with 35 per cent of them are not.

4. Conclusion

Referring to the idea of La Vigne and Reffat on the prerequisite to e-governance, the 16 barangays of Mariveles, Bataan can be said to be still in the developing stage on the aspects of: (1) Information Management; (2) Technical; and (3) Communication and Presentation. Being deficient in these areas subjects the barangay employees into the possibility of not being able to carry out a number of tasks requiring computerization and internet connectivity.

Thus, municipal-wide computer literacy training is suggested to be conducted among the 16 barangay respondents of this study. Since the three (3) MS Office programs are considered useful in office procedures, training modules should contain skills building exercises that further enhance the barangay employees' prior knowledge on them. In the same way, additional varied activities to widen the mastery of program must also be included.

Information Technology experts must be consulted for a training design that is appropriate for adult learners of computers and the internet. Meanwhile, to make the training adept to the needs of the employees and to the demands of the job, the problems to be solved and outputs to be made must be aligned with the documentation requirements among barangay centers. In this case, sample works of barangay centers must be considered as basis for such.

References

- [1] Rabee M. Reffat, M. "Developing a Successful e-Government" Internet: http://faculty.kfupm.edu.sa/ARCH/rabee/publications_files/03Reffat_eGov.pdf, 2003 [January 26, 2016].
- [2] David W. Johnson, Kimberly W. Bartholomew, Duane Miller. "Improving Computer Literacy of Business Management Majors: A Case Study". *Journal of Information Technology Education*. [online] Volume 5, p.1. Available: <http://bern.library.nenu.edu.cn/upload/soft/0-article/+03/v5p077-094Johnson100.pdf>, 2006 [April 18, 2016].
- [3] Subhash S. Bhatnagar, S. (2000) "Information Technology and Development: Foundation and Key Issues". *Information and Communication Technology in Rural Development* [online]. p.1 Available: <http://www->

wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/03/08/000310607_20070308122818/Rendered/PDF/389200Info0and1cation0200001PUBLIC1.pdf [April 18, 2016].

- [4] The Local Government Code of the Philippines: Book III. [online] Available: http://www.dilg.gov.ph/PDF_File/reports_resources/dilg-reports-resources_2016120_5e0bb28e41.pdf dated [April 18, 2016].
- [5] “Number of Provinces, Cities, Municipalities, and Barangays per Region.” Republic of the Philippines Department of Interior and Local Government [website] Available: <http://www.dilg.gov.ph/facts-and-figures/Number-of-Provinces-Cities-Municipalities-and-Barangays-by-Region/32> [April 27, 2017].
- [6] Jose Mari M. Garcia, “Bataan population up to 760,650” Republic of the Philippines Philippine Information Agency [online]. Available: <http://news.pia.gov.ph/article/view/1951467344610/bataan-population-up-to-760-650>, 2016. [April 27, 2017].