

# Computerized vs. Non-computerized Accounting System of Small and Medium Enterprises in Lipa City, Philippines: A Comparative Analysis

**Asia Pacific Journal of Academic Research in Business Administration**  
Vol. 1 No. 1, 48-55  
April 2015  
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*Date Received: January 15, 2015; Date Revised: April 17, 2015*

**Abstract** - *The study aims to determine the level of performance of small and medium enterprise businesses in using accounting system. This study utilized descriptive or survey research design through distributing an adopted questionnaire among the 128 respondents. The study's results revealed that most SME's have been using their accounting system for six to ten years. Likewise, with the use of a computerized accounting system, the respondents tend to finish their jobs effectively and at the same time enhance their quality and quantity of work. Meanwhile, in utilizing the manual accounting system, the respondents claimed that though they are also able to finish their job accurately, establishing a computerized accounting system is still more convenient. The main problem encountered by the manual accounting system users is that it is time consuming.*

**Keywords:** *computerized accounting system, enterprise*

## **INTRODUCTION**

The rapid advancement of technology has changed the way the world operates. Technology now provides people the opportunity to communicate from opposite ends of the globe. The internet is now another means through which people can expand their social networks and form close interpersonal relationships.

Personal life is highly dependent on the technology that people have developed. Technology has advanced through the years and has changed the way products are purchased, the way people live their lives; that is, the way they communicate, the way they travel, the way they learn such that numerous changes have been brought by these continuous technological advancements. As people's demands and life style change, the demand for advancing the type of technology they use is high. Thus, almost everything they use has been refurbished to better standards.

Over the past few decades, there has been a big shift from manual to automated accounting systems. In work-life workers may never have to make a pencil entry into a sales journal again, but it is vital to understand how double entry systems and the flow of data through a manual system work. In the past,

accounting was done manually by business owners. However, the world now faces a modern technology civilization where many things work with the help of computers. This could be the reason why business is one of the witnesses of how world is rapidly changing. Software with an effective and advance system is a great help.

Manual accounting implies that employees perform the whole accounting cycle manually on a periodic basis: they calculate trial balances, journalize transactions, and prepare financial statement reports and other routines. Of course it takes much time, resources and effort in large organizations.

On the other hand, computerized accounting implies that the only thing that employees do is record transactions into the computer which processes the other steps of accounting cycle automatically or by a request. But this is a very simplified view on the computerized accounting because transaction is a complex category which includes not only sales or acquisitions, but depreciation, premiums and wages calculation, dividends, etc. So computers provide accurate calculations and smart reports but it takes much time, resources and effort too and it's difficult to

assess which accounting type is faster and more economic. The computerized system requires accountants who can use specific software and thus costs more. Computer software calculates faster but it does not know what you need until you can clearly explain what you exactly need. In addition, a good computerized accounting system can cost thousands and even millions of dollars, depending on the complexity and the size of the organization.

Furthermore, the computerized accounting provides better internal control report system for any given period of time (computer can control thousands indicators simultaneously and create notifications to the appropriate departments or workers if some indicators do not correspond to the normal state), while manual control takes more time (Weber, 2014).

The small and medium enterprises in Lipa, City have already been facing stiff competition since every management wants to invest in that fast growing business. For this continued evolution of the SME's in Lipa City, it is expected that more and more development and improvement of financial management operations and practices will emerge so as to minimize the problems they encountered. (Sarmiento, et. al., 2014).

In today's computerized, interconnected, global business environment, Computerized Accounting Systems became the 'engine of growth' in business organizations. It therefore involves the computerization of accounting information systems which is established in order to facilitate decision making. These are associated with a number of benefits like speed of carrying out routine transactions, timeliness, quick analysis, accuracy and reporting. (Genil & Valencia, 2013).

The researchers have been inspired to conduct the study because of the significance and vitality that lies in the subject matter especially in discovering the most appropriate accounting system. The researchers believe that the manual system has its own advantages so is the computerized accounting system. Also, the researchers aimed to have a broad knowledge about finding out if there are organizations that still use manual accounting and are planning to change it to the computerized accounting system. The findings of this study could provide relevant information and insight for entrepreneurs on the problems encountered by the users.

### **OBJECTIVE OF THE STUDY**

The study aims to determine the level of performance of small and medium enterprise businesses in using their accounting system.

Specially, the study aimed to describe the profile of the business; to determine the performance of using computerized and non-computerized accounting system; and propose plan of action based on the results of the study; to test the significant difference on the performance and problems encountered in using computerized and non-computerized accounting system; and to identify the problems encountered in using the system.

**Ho:** There is no significant difference on the level of performance and problems encountered between computerized and non-computerized accounting systems.

### **METHODS**

The study utilized descriptive research design. Descriptive or survey research design attempts to describe and explain conditions of the present by using many subjects and questionnaires to fully describe a phenomenon. It is a study designed to depict the participants in an accurate way. More simply put, descriptive research is all about describing people who take part in the study (Alceso, 2011).

#### **Participants**

The study's respondents include users of accounting systems in 128 SMEs or Small and Medium Enterprises defined as any business activity or enterprise, engaged in industry, agri-business and/or services, whether single proprietorship, partnership, cooperative or corporation in Lipa City. Using an effect size of 35 percent and a power size of 95, percent the samples of the study consist of 128 SMEs in Lipa, City.

#### **Instrument**

The study used an adopted questionnaire from "Computerization in the accounting office of Batelec 1: Basis for enhancement" by Maligaya and Catena (2014) as its major data gathering instrument. The questionnaire has 3 parts; the first part is on the profile of the business; the second part is about the accounting system performance; while the third part contains the items on the problems encountered. A scale of 1 to 4 is used where 1 is the lowest and 4 is the highest.

#### **Procedure**

The researchers initially gathered information about the advantages and disadvantages of manual and computerized accounting system and derived questions for the study's instrument from the data gathered. The approved questionnaire was distributed to the respondents personally during the respondent's

available time and retrieved them immediately after completion. Thereafter, the collected data were tallied interpreted and analyzed. Based on the study's results, a plan of action, as well as conclusions and recommendations were derived.

### Data Analysis

All data were gathered, tallied, analyzed and interpreted using descriptive statistics which includes frequency distribution and ranking, weighted mean and independent sample t-test. The data were supported using SPSS version 18 to further analyze the results of the study.

## RESULTS AND DISCUSSION

**Table 1. Percentage Distribution of the Business Profile**

Profile Variable	F	%
<b>Type of system used in the business</b>		
Manual Accounting	35	35.71
Computerized Accounting System	63	64.29
<b>Form of business organization</b>		
Sole Proprietorship	29	29.60
Partnership	23	23.50
Corporation	46	46.90
<b>Nature of business</b>		
Retail	46	46.90
Service	27	27.60
Industry	6	6.10
Wholesale	3	3.10
Insurance	3	3.10
Banking & Finance	2	2.00
Institutional	2	2.00
Real Estate	9	9.20
<b>Computerized System Utilization</b>		
1 – 5 years	12	19.05
6 – 10 years	23	36.51
11 – 15 years	15	23.81
16 – 20 years	7	11.11
21 years and above	6	9.52
<b>Accounting software used</b>		
MYOB Plus for Windows	6	9.52
ACCPAC	1	1.59
CYMA	11	17.46
BOOKKEEPER	1	1.59
QUICKBOOKS PRO	11	17.46
Others	33	52.38
<b>Plan to shift to computerized accounting system</b>		
Yes	35	53.85
No	30	46.15

Table 1 presents the percentage distribution of the respondents' profile. In terms of type of system utilized in the businesses, majority of them use computerized accounting rather than manual accounting with the frequency of 65 and 33 respectively.

With regard to form of business organization, most of them are corporations which comprise 46.9 percent of the respondents and partnership with the least which comprise 23.5 percent of the respondents.

According to Kunz (2014), corporations can more easily raise funds than other forms of businesses. Corporations can sell stock to raise money for business expenses or cover debts. Business partners, on the other hand, must try to come up with funds on their own or turn to loans or credit programs to raise money. It takes less time and effort to sell stocks than it does to apply for loans or seek out investors for a business.

Majority of the SMEs are retailers specifically 46.9 percent of the sample population. The least of them are banking & finance and institutional enterprises at 2 percent.

Morello (2014) claims that retail marketing is easier to control, adjust and customize according to the situation, the specific customer and the needs of the brand. Unlike a print ad that will run for a predetermined length of time and cannot be altered, or a radio spot that must be rerecorded if changes are necessary, retail marketing can change from one day or even one hour to the next as the market and the conditions warrant.

In terms of the organizations that use computerized accounting system, most of them have been using such accounting system for 6 – 10 years and only few of them have been using their accounting system for 21 years and above.

Most of the SMEs that use computerized accounting system selected others like SAP, Microsoft excel, Pitch Tree and Oracle in terms of the software they use which comprises 52.38 percent due to much different accounting software. The least of them use ACCPAC and BOOKKEEPER which comprise 1.59 percent of the respondents.

Based on the results, among the users of manual accounting system, 53.85 percent claimed that they are planning shift to computerized accounting while 46.15 percent do not have plans of shifting.

Ury (2011) defines computerized accounting as accounting done with the aid of a computer that tends to involve dedicated accounting software and digital spread sheets to keep track of a business or client's financial transactions.

**Table 2. Assessment on the Accounting System Performance**

	Manual			Computerized			Over-all		
	WM	VI	R	WM	VI	R	WM	VI	R
1. Through the use of our accounting system, we have been able to finish our assigned job.	3.15	A	1	3.43	A	1	3.34	A	1
2. Through the use of our accounting system, we enhanced and increased the quality and quantity of our work.	2.97	A	3	3.42	A	2	3.27	A	2
3. Our accounting system makes our job easy and simple.	2.82	A	7	3.29	A	5	3.13	A	5
4. Our accounting system is accurate in recording business transactions.	2.91	A	4.5	3.37	A	3	3.21	A	3
5. Our accounting system is easier to manage.	2.91	A	4.5	3.32	A	4	3.18	A	4
6. Our accounting system is more secure.	2.88	A	6	3.23	A	7	3.11	A	6
7. Our accounting system affects decision making.	2.30	D	10	2.82	A	10	2.64	A	10
8. Our accounting system has the ability to reliably update data and take action.	2.64	A	9	3.15	A	8	2.98	A	9
9. Summarizing, analyzing and reporting is often much easier when using our accounting system.	2.67	A	8	3.28	A	6	3.07	A	7
10. Our accounting system is easier to set up.	3.00	A	2	3.06	A	9	3.04	A	8
<b>Composite Mean</b>	<b>2.82</b>	<b>A</b>		<b>3.24</b>	<b>A</b>		<b>3.10</b>	<b>A</b>	

*Legend: 3.50 – 4.00 = Strongly Agree (SA); 2.50 – 3.49 = Agree (A); 1.50 – 2.49 = Disagree (D); 1.00 – 1.49 = Strongly Disagree (SD)*

Computerized accounting has many advantages over traditional manual accounting. Computerized accounting tends to be more accurate, is faster to use, and is less subject to error than its manual counterpart. Today, computerized accounting is used in businesses of every type and size. Thus, anyone planning to enter the accounting field at any level needs to be familiar with its principles and operation.

As seen on the table 2, the over-all assessment of the respondents on the performance of accounting system using the manual and computerized is good. This is revealed by the composite mean value of 2.82 and 3.24 respectively.

As to the assessment on manual system, being able to finish the assigned job through the use of their accounting system ranked first with a weighted mean score of 3.15. It is followed by the accounting system's being easier to set up with the score of 3.00.

Vitez (2013) explains that using manual accounting system is very detailed since accountants must carefully enter information into physical books. If developed correctly, the manual accounting system can deliver timely and accurate information. They can apply this in any businesses. It is easier to set up and can be more flexible than a computerized accounting system. Unlike the computerized, it does not need electricity or battery. Comparative cheap workforce and resources, reliability, independence from machines, and skilled workers' availability are the advantages of manual accounting.

On the other hand, the respondents who use manual accounting system did not agree that their accounting system affects their decision making since it obtained the lowest mean value of 2.30.

It appears that some small businesses do not have any formal accounting system. Their accounting records do not affect their decision making since they just use their records for compliance purposes.

Indira (2008) emphasizes that financial reports should provide information about financial performance during a period when the management discharges its stewardship responsibility to owners. It should likewise be useful to managers and directors themselves in making decisions on behalf of the owners.

As to the assessment of the computerized system, finishing their assigned jobs through the use of their accounting system got the highest with weighted mean score of 3.43. This ranked first followed by enhancement and increase on their quality and quantity of work through the use of their accounting system with a weighted mean of 3.42.

The computerized accounting system processes data in basically the same manner as does a manual system. Transactions are initially recorded manually on source documents. The data from these source documents are then key – punched into punched cards, which can be read by the computer. The computer processes the information and performs such routine tasks as printing journals, posting to ledger accounts, determining

account balances and printing financial statements and other reports.

According to Duchac (2009), the computerized accounting system enhances the workflow of a company's financial information. Rather than using employees to input financial transactions into the general ledger, this computerized accounting system imports information electronically. Owners and managers can also set up internal procedures in an accounting software application to process information according to specific rules and guidelines. This therefore allows accountants to spend more time reporting and analyzing information rather than inputting the data.

Computerized accounting system involves the use of computers to handle large volume of data with speed, efficiency and accuracy aimed at overcoming fundamental challenges which do not change the principle. The principle of accounting remains to be the limitations of many accounting firms and hence produce quality and reliable work.

Likewise, Romano (2013) emphasizes that through using this accounting system, it becomes easier for different individuals to access accounting data outside of the office securely. Since using the computerized system is more efficient than paper based accounting, work will be done faster and time will saved. People do not have to wait for hours, even days to lay our hands on an important report. For computers provide accurate calculation and smart reports. However, it takes much time, resources and effort too and it is difficult to assess which accounting type is faster and economic. Computer accounting provides better internal control report system for any given period of time, while manual control takes more time. The computerized

system also provides high speed and mobility of reporting, reliability for routine work, increased accuracy, internal control system of increased productivity, easy back up and restoration of records.

However, the computerized accounting system's respondents who said that their accounting system is easier to set up and their accounting system affects the decision making, have the lowest mean of 3.06 and 2.82 respectively.

The need for specialist or accounting would be a burden for the organization that uses computerized accounting system. It is also hard to choose an appropriate system that would fit the nature of the business.

McBride (2007) explains that computerized packages can quickly generate all types of reports needed by management for instance budget analysis and variance analysis. Data processing and analysis are faster and more accurate which meets the managers' need for accurate and timely information for decision making.

To sum up, manual accounting can be computed by either using actual paper journal and ledger sheets or by creating these sheets in a computer program such as excel. It is considered manual because each transaction is entered into the systems individually. The manual system though it requires a greater understanding of how to book keep, can be easier to manage. It is easier to set up. It can be more flexible than a computerized accounting system. Unlike the computerized, it does not need electricity or battery. Comparative cheap workforce and resources, reliability, independence from machines, and skilled workers availability are the advantages of manual accounting.

**Table 3. Problems Encountered in Using the System**

	Manual			Computerized			Over-all		
	WM	VI	R	WM	VI	R	WM	VI	R
1. Assigned task is not finished on time.	1.91	S	7	1.86	S	4.5	1.88	S	6
2. Delayed report	1.94	S	5	1.77	S	8	1.83	S	8
3. Data Inaccuracy	1.97	S	3.5	1.58	S	10	1.71	S	10
4. Higher cost	1.64	S	10	2.15	S	1	1.98	S	2
5. Data appear to be time consuming	2.30	S	1	1.85	S	6	2.00	S	1
6. Prone to error	1.97	S	3.5	1.94	S	2	1.95	S	3
7. Problems of security and confidentiality	2.09	S	2	1.85	S	6	1.93	S	4
8. Protection against data loss	1.79	S	9	1.91	S	3	1.87	S	7
9. Difficult to assess	1.88	S	8	1.69	S	9	1.76	S	9
10. Needs special training for personnel	1.94	S	5	1.86	S	4.5	1.89	S	5
<b>Composite Mean</b>	<b>1.94</b>	<b>S</b>		<b>1.85</b>	<b>S</b>		<b>1.88</b>	<b>S</b>	

*Legend: 3.50 – 4.00 = Always (A); 2.50 – 3.49 = Often (O); 1.50 – 2.49 = Sometimes (S); 1.00 – 1.49 = Never (N)*

Table 3 illustrates the problems encountered in using the system. The over-all assessment of the respondents on the problems encountered in using either the manual or computerized accounting systems revealed by the composite mean values of 1.94 and 1.85 respectively.

The most common problem encountered by manual accounting system users is that the data appear to be time consuming followed by problems on security and confidentiality as evidenced by the highest mean rating of 2.30 and 2.09. Minimal problems on protection against data loss and higher cost are also encountered with the lowest mean of 1.79 and 1.64 respectively.

One of the disadvantages of manual accounting system is the amount of time allotted for it. Without the help of the computer which enables categorizing and totaling figures, they prefer to do it by themselves. The manual accounting system is considered to be more time consuming than the computerized accounting system.

Accounting records contain confidential information that should be kept safe and secure at all times. The consequences of unauthorized access can be devastating from identity theft problems to loss of irreplaceable data. When accounting data is changed or deleted on purpose or by chance, it creates havoc in the accounting department, calling into question the reliability or accuracy of all data.

Thomason (2014) claims that lack of security is another common disadvantage of manual accounting. Companies may be unable to prevent employees from reviewing sensitive data in paper ledgers and journals. Files copied and stored on a computer may also be less secure. This may allow employees to abuse financial information through fraud or embezzlement. Disgruntled employees may also irreparably damage the information and destroy important financial records.

Likewise, manual accounting with paper and pencil is much cheaper than a computerized system, which requires a machine and software. Other expenses associated with accounting software include training and program maintenance. Expenses can add up fast with costs for printers, paper, ink and other supplies.

However, there are also some problems encountered by computerized accounting like higher cost that ranked first with the weighted mean of 2.15. It is followed by its being prone to errors with the score of 1.94. While they encounter few problems on the difficulty to assess and data inaccuracy with the lowest mean of 1.69 and 1.58 respectively.

The need to bear the expense of software and possibly even new computers would be a burden for businesses. Introducing the use of a computerized accounting system requires high cost. Over time, businesses would be required to spend money on software upgrades as new versions become available and as well as on increase in personnel cost. The demand to pay for potential and costly repairs or replacements may likewise result when their computers malfunction.

In addition, Weber (2014) cites that a good computerized accounting system can cost thousands and even millions dollars, depending on the complexity and the size of the organization. Computerized accounting provides a better internal control report system for any given period of time (computer can control thousands indicators simultaneously and create notifications to the appropriate departments or workers if some indicators do not correspond to the normal state).

Invariably, humans do make errors. An absent decimal point or the addition of one to many zeros can drastically alter the accuracy of a financial report. Computerized accounting systems, on the other hand, are designed to minimize the existence of such blunders. Addition, subtraction and other calculations are performed by the machine. This ensures that only the correct total listed at the end of the general ledger.

According to Joseph (2013), manual "number crunching" presents the possibility of human error, which can be costly to a small business owner who may be in a hurry to complete an accounting task. Magloff (2013) also posts that using a computerized accounting system comes with its own set of problems, such as the need to protect against data loss through power failure or viruses and the danger of hackers stealing data. Computer fraud is also a concern, and you need to investigate a system of controls for who has access to the information, particularly customers' information.

One of the disadvantages of the manual accounting system is the amount of time allotted for it. Without the help of the computer which enables categorizing and totaling figures, they prefer to do it by themselves. The manual accounting system is more time consuming than its computerized counterpart. Accounting records contain confidential information that should be kept safe and secure at all times. The consequences of unauthorized access can be devastating from identity theft problems to loss of irreplaceable data. Also, manual accounting with paper and pencil is much cheaper than a computerized system which requires a machine and software.

**Table 4. Difference on the Accounting System Performance and Problems Encountered Between the Two Systems**

	Type	N	Mean	t-value	p-value	Interpretation
Performance	Manual	33	2.82	5.436	0.000	Highly Significant
	Computerized	65	3.24			
Problems	Manual	33	1.94	1.202	0.232	Not Significant
	Computerized	65	1.85			

Legend: Significant at  $p\text{-value} < 0.05$

**Table 5. Proposed Plan of Action**

Accounting system	Key Result Area	Activities	Person involved
Manual	Data appear to be time consuming.	<ul style="list-style-type: none"> <li>Avoid repetition of work and any changes to be made, the data will have to be entered again, at times the worker would forget to make the changes and it might redo the process that makes it time consuming</li> <li>Consume on small space in storing the filed papers and records. It will take a long time to find the info and to retrieve the data.</li> </ul>	Bookkeeper
	Problems of security and confidentiality	<ul style="list-style-type: none"> <li>Monitor authorization of transaction</li> </ul>	Head of the business
Computerized	Higher cost	<ul style="list-style-type: none"> <li>Look for an alternative accounting system which requires low cost but has the same quality and accuracy with the currently used accounting system.</li> <li>Provide more accurate records that will help minimize the problems</li> </ul>	Business owner and Software provider
	Prone to error	<ul style="list-style-type: none"> <li>Seminar or trainings for employees in enhancing their skills on basic accounting</li> </ul>	Bookkeeper and Business owner

Table 4 reveals that the performance of the two accounting systems differ since the obtained p-value of 0.000 is less than 0.05 alpha levels. This means that using computerized accounting system is better than using the manual.

According to Shanker (2013), accounting is an intrinsic part of any business, large or small owners and other interested parties want to know whether they are making profit or not. Many small businesses do their accounting manually and they are happy with this setup. Others may be considering using a computerized system, since accounting software is so affordable these days. Manual and computerized accounting systems perform basically the same processes; the accounting principles and concepts are the same with differences lying in the mechanics of the process.

## CONCLUSION

Most of the SME's have been using their accounting system for six to ten years. Through using the computerized accounting system, the respondents are able to finish their jobs accurately and enhance

quality and quantity of their work, while the respondents who use the manual accounting system are also able to finish their jobs accurately, but they find the computerized accounting system easier to set.

The main problem encountered by manual accounting system is that it is more time consuming than the computerized one. On the other hand, the computerized accounting system requires higher cost due to its expensive software installation. In either of these two systems, human error is a common problem.

The performance of manual accounting system differs from the computerized system.

A proposed plan of action was formulated to minimize problems in using the system.

## RECOMMENDATIONS

SME's that are still using manual accounting system may use computerized accounting system since it is viewed to be more effective, less time consuming and can last for many years. The application of a computerized accounting system may be implemented

in businesses since voluminous tasks such as entering information, computation, and generating smart solutions and results can be made much faster and much more convenient. The computerized accounting system may be used for a better and accurate computation, smart solution and result and to provide better internal control system. Personnel may be sent to trainings and seminars to enhance their proficiency in using different accounting systems. The proposed plan of action may be tabled for further investigation and discussion. For future researchers the need to further study may be needed since the scope of the research done is only limited to business located in Lipa City

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