

# THE APPLICATION OF INNOVATIVE MANAGEMENT ACCOUNTING PRINCIPLES FOR ENHANCING PROFITABILITY AND COMPETITIVENESS: AN EXPLORATORY STUDY OF JAMAICAN MANUFACTURERS

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## ABSTRACT

*This study represents the first in management accounting research in Jamaica which seeks to determine the extent to which innovative management accounting principles (IMAPs) are applied in the manufacturing sector. The aim is to determine if manufacturers in Jamaica are using IMAPs to improve export competitiveness and enhance profitability. The study also seeks to determine the factors that prevent manufacturers from adopting these management accounting principles. Five manufacturing organizations were examined using an exploratory case study approach. Results indicate that companies adopting IMAPs have more reliable information for decision making, higher levels of profitability and competitiveness when compared with non-adopting companies.*

**Key Words:** Innovative Management Accounting Principles, Profitability, Competitiveness

## 1. INTRODUCTION

The manufacturing environment of the twenty-first century has changed considerably when compared with what existed decades ago. Arising from this development and with the increase in global competition, the need for accurate cost information has become an imperative. Manufacturers worldwide have suddenly realized that the continued use of traditional costing methods which lack the power and efficiency to supply accurate costing information for companies undergoing changes could significantly affect their decision making ability (Khajavi and Nazeni, 2010).

Therefore, given the complexities of the modern manufacturing environment, it is argued that management needs a costing system that has the capacity to assist them in making more effective production decisions by providing more accurate cost information leading to increase profitability (Hong, 2000). Arising from this realization, the need for a new menu of responsive management accounting principles became an immediate necessity, and this led to the birth of innovative management accounting principles (IMAPs).

The problem of the existing ineffective costing system was resolved by the development of innovative management accounting principles such as: target costing, activity-based costing, activity-based budgeting, theory of constraint, back flush costing and product life-cycle costing (Uyar, 2010).

The need for IMAPs was even more urgent when examined against the relevance of the existing traditional volume-based cost allocation system which was strongly criticized by academicians, practitioners and consultants. They argued that traditional cost allocation practices are simplistic and arbitrary and that overhead allocations do not reflect the pattern of cost causation in firms using advanced manufacturing technologies (Basteki and Ramadan, 1998).

IMAPs have been shown to provide superior costing information to be used by management to support its decision making process. Arising from this advantage, management now has better information to be used in its price setting strategy which ultimately leads to a more competitive product price which translates into increase profitability (Rehman, 2011).

The literature indicates two main reasons why companies should consider and adopt IMAPs. First, IMAPs improves insight into cost causation which helps in cost control and cost reduction. Secondly, IMAPs such as activity-based costing (ABC) lead to more accurate cost data by increasing the number of cost pools used to accumulate overhead and thus changing the basis used to assign overhead to products, it is therefore the combination of these two advantages of IMAPs that lead to export competitiveness of manufactured products (Basteki and Ramadan, 1998).

It is against this background that this research seeks to examine the extent to which these IMAPs have been adopted by manufacturers operating in Jamaica.

### **1.1. Problem Statement**

Jamaican manufacturers have been for a number of years lamenting their low levels of profitability, operating efficiency and export competitiveness and have constantly sought special waivers from successive governments in order to remain profitable and internationally competitive. Various presidents of the Jamaica Manufacturing Association complain that the business climate in which manufacturers are asked to operate is anti-productive, hostile to productivity and is designed to guarantee the demise of the productive sector. Manufacturers therefore argue that if the government does not intervene in a significant way to address the current problems, then within ten year's time the entire manufacturing sector could be wiped out. It is therefore against this premise that this study will examine the extent to which IMAPs have been implemented in the manufacturing sector and the effect of these management accounting principles on profitability and export competitiveness.

### **1.2. Purpose of the Study**

The Jamaican manufactures can best be described as suffering from low levels of profitability and international competitiveness. Therefore, in its broadest form this research will address this overall research question: "What is the extent to which IMAPs have been implemented in the manufacturing sector and what are the effects of the application of innovative management accounting principles (IMAPs) on profitability and export competitiveness on the Jamaican manufacturers?"

To better understand and answer the question, the following guiding questions were examined:

1. Is there evidence to support the view that the adoption of IMAPs generally tends to result in increase exports of a company's products?
2. Has there been a more reliable and accurate management accounting information system since the adoption of these innovative management accounting principles?
3. How can the impact of the adoption of IMAPs on a company's export competitiveness be determined?
4. What is the likely effect of the adoption of IMAPs on a company's ability to undertake improvements in its profitability planning and analysis of individual products?
5. What is the general perception of Jamaican manufacturers regarding the benefits to be gained from the adoption of IMAPs?

This study therefore seeks to provide a better understanding of the impact on profitability and export competitiveness of Jamaican manufacturers following the adoption of IMAPs.

### 1.3. Significance of the Study

This study is strategically positioned to make a significant contribution to the existing body of knowledge concerning the application of IMAPs to manufacturing companies in developing countries. Lin and Yu (2002) remarked that the applications of IMAPs in developing countries remain unsatisfactory and studies on this area are rare in the literature. Similarly, Uyar (2010), also made reference to Lin and Yu (2002) statement and noted that a large percentage of the research done on innovative management accounting principles was based in developed countries and thus it is difficult to access research done in developing countries.

The foregoing comments are not only applicable to the immediate Jamaican environment, but can easily be applied to the Caribbean region. The current body of literature is devoid of empirical studies addressing this issue in any regional state. Mahfar and Omar (2004), and Basteki and Ramadan (1998) stated that there are very few empirical analyses of management accounting practices being carried out in developing countries and that studies in activity-based costing (ABC) practices in developing countries are limited.

### 1.4. Scope of the Study

This study examined only manufacturing companies in Jamaica. While it would have been very useful to examine companies in other industries such as the service industry and the financial industry, given the limitation of time and other factors, those industries were not examined. Secondly, the study investigated the following innovative management accounting principles: activity-based costing (ABC), activity-based budgeting, target costing, product life cycle costing, the Balance Scorecard, strategic cost management and just-in-time costing. The study did not investigate management accounting principles such as back flush costing, value chain analysis and theory of constraint models. Therefore, the findings from this study should be interpreted within the context of the types of companies examined and the specific innovative management accounting principles investigated.

## 2. LITERATURE REVIEW

### 2.1. The Evolution of Management Accounting Principles

During the 1980s Kaplan, in his review of *The Evolution of Management Accounting*, with Johnson in the *Relevance Lost* book, leveled strong criticism at the management accounting practices of the day. Kaplan claimed that virtually all the management accounting practices employed by firms at that time and explicated in leading cost accounting textbooks had been developed by 1925 and there has since been little innovation in the design and implementation of cost accounting and management accounting control systems (Abdel-Kader and Luther, 2002).

Since then, and most likely in response to these criticisms, a number of innovative management accounting techniques have been developed across a range of industries. The most notable contributions are activity based costing, activity based budgeting, and activity based management, strategic management accounting and the balance scorecard (Fowzia and Nasrin, 2011). These techniques have been designed to support modern technologies and management processes, such as total quality management and just-in-time production systems, and the search for a competitive advantage to meet the challenge of global competition (Abdel-Kader and Luther, 2002).

It has therefore been argued that these new techniques have affected the whole process of management accounting (planning, controlling, decision-making, and communication) and have shifted its focus from a simple or naïve role of cost determination and financial control, to a sophisticated role of creating value through improved deployment of resources (Abdel-Kader and Luther, 2002).

## **2.2. Theoretical Framework**

Traditional methods for cost and management accounting have been criticized in early decades due to a lack of power and efficiency in supplying the needs of organizations that were undergoing changes. Research showed that management accountants were dissatisfied with the traditional methods of cost and management accounting. The evidence also indicated that traditional cost accounting and management systems could not adopt to the new conditions based on request for needed information arising from technological changes in manufacturing. This problem was therefore resolved by developing IMAPs such as activity based costing, just-in-time systems and balance scorecard (Khajavi and Nazeni, 2010).

Given that cost accounting measurement and information help management assess the profitability, effectiveness and efficiency of sub-systems of a company such as a product, process and department, there has been growing doubt over the last few decades about the efficacy of managing modern manufacturing operations with traditional cost accounting systems (Gupta and Baxendale, 2008).

In today's technologically advanced organizations, overhead cost tend to vary on the basis of product diversity, product volume and complexity of operations. Traditional costing accounting systems which focused on one-dimensional overhead application which rarely reflect the product diversity or complexity of operations are therefore unable to offer much support to management operating in such an environment (Gupta and Baxendale, 2008).

## **2.3. The Role of IMAPs**

In a broad sense, management accounting innovation has been defined as the adoption of a management accounting technique or tool that is new to the adopting organization (Naranjo-Gil, Maas and Hartmann, 2009).

Therefore, the more the development of the market economy the more significant management accounting becomes. In order to keep pace with this increasing market economy, it becomes imperative for organizations to adopt new management accounting tools and techniques (Fowzia and Nasrin, 2011).

If management accounting is to maintain its relevance, it needs to respond to the changing needs of managers. Management accounting techniques such as activity based costing, balance scorecard, target costing and value chain analysis have responded to the challenges of global competition and international markets, thus the adoption of these innovations by Asians manufacturers indicate the contribution to be derived from applying these principles (Fowzia and Nasrin, 2011).

## **2.4. A Closer Look at ABC**

One innovative management principle for example, activity based costing (ABC) is a cost allocation technique that responds to the cost distortions inherent in traditional product-costing systems by linking resource expenses to the variety and complexity of products, not just to the physical volume produced. Therefore, ABC defines not only products, but also product batches, consumers, suppliers, distribution channels, and market segments as cost objects. Furthermore, activity drivers are identified at different levels, such as unit level activities, batch level activities, product sustaining activities and facility sustaining activity (Naranjo-Gil, Maas and Hartmann, 2009).

Therefore, it is be noted that management accounting principle such as ABC can help companies make more effective production decisions by providing more accurate cost information leading to increased profitability. This is contrasted with traditional costing systems which often lead to incorrect production decisions and ultimately companies relying on such systems may be forced out of business because of their inability to respond to increasing competition. Therefore, the advantage

to be gained by using ABC depends on the relative resource use as well as the competitive intensity of the market place (Hong, 2000).

The importance of adopting these new or advanced management accounting techniques have been touted as relevant to companies that take a more strategic focus to business and thus were more effective in responding to the need for global competitiveness. In this modern environment, characterized by concerns about governance, accountability, sustainability, performance measurement and global competition, many have suggested that traditional management accounting practices are out of place (Dick-Forde, Burnett and Devonish, 2007).

However, it has been seen that the innovative management accounting practices invented by Japanese firms such as total quality management, just-in-time manufacturing (JIT), activity based costing and target costing were adopted by North American companies with the aim of improving their production efficiency, competitiveness and profitability (Lin and Yu, 2002).

Arising from this, the first response to the demand for new form of accounting information was activity based costing (ABC). Thereafter, a plethora of innovative management accounting techniques were developed and introduced such as: activity based budgeting, activity based management, back flush costing, benchmarking, capacity cost management, theory of constraint models, target costing, life cycle costing, just-in-time costing, strategic cost management, balance scorecard among others (McNair, 2007; Fowzia and Nasrin, 2011; Gerdin, J. 2005).

A case was made for the role to be played by IMAPs to respond to the needs of companies facing competition and declining international competitiveness. Cost management is therefore driven by the need to define measures and help an organization maximize its value creating potential. Thus for cost management to reach its full potential, it will have to move beyond the boundaries of traditional methods and embrace new methods and models (McNair, 2007).

## **2.5. Research Studies**

A study of forty (40) industrial companies in Egypt concluded that cost accounting information in Egypt is available at the basic level and used more for external (pricing) purposes than for internal (performance) purposes. The study also found that the use of advanced cost accounting techniques such as ABC and target costing seem absent (Uyar, 2010).

A comparative study conducted revealed that Indian manufacturing companies rely heavily on traditional management accounting techniques such as variable costing, budget for-day-to-day operations and return on investment based performance evaluation. However, the adoption rates of recently developed practices such as: product life cycle costing, back flush costing, activity based budgeting, value chain analysis, benchmarking and balance scorecard have been rather low and slow (Uyar, 2010).

Studies have shown that firm size has a major influence in determining the adoption of newly cost and management accounting practices, and thus adoption rates are much higher in larger firms. Subsequent studies have shown that parallel to the development in other countries, the implementation of cost and management accounting practices has gained momentum in Turkey (Uyar, 2010).

Similarly, Chenhall and Smith (1998), as cited in Ilias, Razak and Yaso (2010), conducted a study on the adoption and benefits of management accounting practices in Australia. They found that traditional management accounting techniques were widely adopted than recently developed

techniques. However, most of the companies intended to adopt newer techniques in the future especially activity based technique and benchmarking.

Finally, the study of Abdel-Kader and Luther (2006), reported on the current state of management accounting practices in UK food and drinks industry that focused on costing system, budgeting, performance evaluation, information for decision making and strategic analysis. They found that traditional management accounting practices were still alive and well but there were indications of likely increase use of cost of quality, non-financial measures and the analysis of the strengths and weaknesses of competitors.

### **3. METHODOLOGY**

The approach taken in this study is exploratory in nature. This research is exploratory as it is exploring the potential linkage between innovative management accounting principles, export competitiveness and profitability. An exploratory case study of multiple cases is therefore suitable in this environment. Yin (1994), as cited in Zainal (2007), defined the case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used.

Case study method enables a researcher to closely examine the data within a specific context. In most cases, a case study method selects a small geographical area or a very limited number of individuals as the subjects of study (Zainal, 2007).

The case study method was chosen in this research to investigate the relationship or linkage between innovative management accounting principles and their effects on export competitiveness and profitability. Therefore, given the exploratory nature of the study with the desire for depth rather than breadth and against the premise that the study focuses on contemporary phenomena, an exploratory study is therefore most suitable.

It is known that case studies may be presented in different forms and types depending on the purpose of the research and the role of the underlying theory. Six types of case-study are presented in the literature: descriptive, explanatory, exploratory, experimental, meta-evaluative and illustrative (Birnberg, Shields and Young, 1990; Otley and Berry, 1994; Ying, 1994). Otley and Berry (1994) further remarked that the main role of case-studies appeared to be exploratory.

#### **3.1. Deciding on the case study design**

The case study method is criticized for its lack of robustness as a research tool; therefore selecting the design for case studies is very important. The researcher has the option of selecting either a single-case design or a multiple-case design depending on the issue in question (Zainal, 2007). Where there are no other cases available for replication, the researcher can adopt the single-case design. However, the disadvantage of a single-case design is its inability to provide a generalizing conclusion, in particular where the events are rare. This problem can be overcome by triangulating the study with other methods in order to confirm the validity of the process (Zainal, 2007).

#### **3.2. Ethical Considerations**

Typical to any research of this nature will be a number of ethical issues which must be addressed. During the interviewing process companies requested that their names not be mentioned in the final report. Therefore companies were not identified by names, but rather were assigned letters, for example "Company A". Similarly, the responsible officers (e.g. Financial Controller/ Accounting Manager/ Chief Financial Officer) interviewed were not identified by name, but rather individual

Financial Controller was referred to as FC1, AM1 or CFO which is associated with Company A, FC2 would be associated with Company B.

### **3.3. Site and Sample Selection**

The cases that were investigated were all manufacturing companies that are members of the JMA. The nature of the companies' production operation involved production for both the local Jamaican market and for the export market. One of the reasons for selecting the manufacturing companies is based on the findings in the literature which showed that companies in developed countries that adopt innovative management accounting principles are generally more competitive and are better able to respond to changes (Hong, 2000; Lin and Yu, 2002). This is then compared to the numerous complaints by various presidents of the JMA that the manufacturing sector is underperforming and hence the desire to understand the impact of the adoption of IMAPs on manufacturing companies in a developing country. The companies were selected based on their size (that is number of persons employed), the nature of their operation (that is production for both local and export markets) and the number of years in operation (greater than five years).

The participants selected for interview were senior accounting personnel who were the officers in-charge of the accounting function within the organization whose title were Financial Controller, Accounting Manager or Chief Financial Officer (CFO). Therefore, these officers have an in-depth understanding of the cost accounting information system and thus are most equipped to respond the questions raised in the study.

### **3.4. Data Collection Instrument**

Individual interviews were conducted with the aid of semi-structured open-ended questionnaires. The instruments were designed to allow participants to provide in-depth information rather than being locked into selecting pre-selected answers. Questions were included for each main area of the study, for example, questions were asked on areas relating to export competitiveness, profitability and IMAPs.

### **3.5. Data Collection Procedures**

Interviews were conducted in a generally informal manner. All interviews were conducted individually at the office of the interviewee; this was most practical and appropriate, given that the interviewees were all senior management personnel, it was difficult to arrange interviews outside of office hours. Hand written notes were taken during the interview sessions by the researcher. Information for each interview conducted was kept in a separate paper file which included code name of company and interviewee, date of interview, location and length of interview along with the hand-written notes compiled during the interview. The semi-structured approach was useful as it helped to maintain focus on the topic under investigation especially where time constraints were an issue. The use of guiding questions and probes were used by the researcher in instances where more detailed information was needed than was provided by the interviewee.

### **3.6. Data Analysis Procedures**

Case study work is predominantly focused on qualitative rather than quantitative data. The methods of data collection make the analysis exercise difficult as there is no single approach to the analysis of qualitative data. Yin (1994) outlined four guiding principles which underlie the highest quality of analysis: first, analysis should show that it relied on all the relevant evidence, second, analysis should include all major rival interpretations, third, analysis should address the most significant aspect of the case study and finally, the investigator should bring his/her own prior expert knowledge to the case-study.

Manual coding of interview was done. The data were retrieved from the stored paper files for each respondent. The approach involved the use of axial coding whereby central themes were identified first and then sub-themes were later identified. The coding process was repeated until no new themes or patterns were identified. The identification of themes was based on the research instrument in which key areas of the research question were identified. The coding process was assisted by the use of a coding tree which helped in identifying main themes which simplified the coding process. The result from this process was used to identify key themes and issues across each coded set. .

### **3.7. Methods of Verification**

There are four tests that are normally applied to other empirical research methods and these are equally important when conducting case studies. These tests are: construct validity, internal validity, external validity, and reliability Yin (1994).

Construct validity is concerned with establishing the correct measures for the concepts being investigated (Yin 1994). Given that test of construct validity can be difficult in case study research (Yin 1994), there are ways to increase construct validity. Yin (1994) outlined the following ways to increase construct validity: use multiple sources of evidence, establish a chain of evidence, and having drafts reviewed by key informants.

While the main focus in this study was on interviews, other sources of evidence such as financial reports prepared using specific management accounting principles were examined. At the end of each interview session the interviewee was given the opportunity to review the notes so as to ensure the accuracy of the note taking exercise. Yin (1994) suggested that the issue of internal validity is more relevant for causal or explanatory case, but not so much for case studies that are descriptive or exploratory.

## **4. FINDINGS**

### **4.1. Reliability of Information**

In order to address Research Question 2, Chief Financial Officers (CFOs) and Accounting Managers (AMs) were asked to indicate if the adoption of IMAPs such as activity based costing has resulted in more accurate cost information for decision making? The response from CFO1 who represented Company A (CA) was as follows:

“ABC has improved significantly our ability to make decisions; it has provided better information that is more accurate, it helps us to see our product costs better and helps us to better assess the performance of individual products” (CFO1).

Responding to the same question AM2 representing Company B (CB) commented that:

“Our costing system has seen a major improvement in the reliability and accuracy of information following the implementation of IMAPs especially activity based costing”. (AM2)

### **4.2. Competitiveness, Profitability and Pricing Strategy**

To answer Research Questions 1, 3 and 4 a number of subsidiary questions were asked. The researcher asked CFO1 from Company A (CA), to explain the effect of the implementation of IMAPs such as ABC and target costing on the competitiveness of its products. The response of CFO1 was:

“Well ABC has given us better cost information for each product which allows us to better price our products to reflect the true cost of production and based on this we have been able to achieve increase levels of competitiveness in the market”. (CFO1).



The ability to achieve any degree of competitiveness is normally based on a well thought out pricing strategy. CFO1 was asked to explain how the information provided by the IMAPs such as ABC and target costing impacted the company's pricing strategy; he commented as follows:

"One of the good things about ABC is its ability to help you to identify the cost of activities and thus better able to understand your entire cost structure, given that we are better able to understand our production cost structure we are now better position to set prices with required margins that are directly related to production costs which leads to a competitive pricing strategy when compared with our competitors which eventually leads to increase market share". (CFO1)

AM2 from Company B had similar views, the response was as follows:

" We use target costing for new products and it always serve as a guide to our pricing strategy, however ABC helps us in a significant way as we can better analyze our costing structure for individual products and from this cost analysis we then arrive at a price which is very competitive." (AM2).

The ability to achieve export competitiveness should normally lead to increase levels of profitability of for those companies involve. CFO1 was asked to explain how the implementation of IMAPs such as ABC and target costing has impacted on the profitability of it products. The comment by CFO1 was:

"ABC and target costing have help us to better analyze the costing structure of individual products and thus we are able to see the margins achieve on each product, hence we are better able to focus on those products that are profitable and those that are not profitable we drop them, all this adds to the overall profitability of the company". (CFO1).

AM2 response was in keeping with general theme of CFO1, AM2 comment was:

"A number of factors normally affect a company's overall profitability; however, if you are getting better cost information and you understand your costs better, then this must have an impact on your overall profitability". (AM2).

#### **4.3. The Benefits**

The extent to which benefits accrue to companies that adopt the IMAPs must be examined. In an attempt to answer Research Question 5 interviewees were asked a number of subsidiary questions. CFO1 was asked to explain the major improvements in the management accounting information system following the adoption of IMAPs, he response was

"The major improvement is definitely the quality of information that we now have, the information is more reliable and accurate and also very important is the fact that I now have information in real-time, that is very timely".(CFO1).

When AM2 was asked to indicate the benefits to the manufacturing sector from adopting IMAPs, the comment was:

"It is my view that the sector can benefit significantly if operations that require an ABC approach adopt this costing methodology as it would allow companies to better understand their cost structure and thus make better pricing and production decisions". (AM2).

In an attempt to understand why companies changed their costing approach from the traditional methods and adopt IMAPs, the researcher asked CFO1 to explain the problems encountered with the traditional costing system, CFO1 responded by saying:

“The best way to answer this question to consider the inverse of all benefits of using ABC that I have told you earlier and you will see the problems with the traditional costing methods”. (CFO1).

#### **4. 4. Findings from Non-Implementation of IMAPs**

The research showed that there were a number of companies that did not implement the IMAPs. In an attempt to understand why companies did not implement the IMAPs, CFO2 who represents Company C (CoC) was asked to explain what were the factors that prevented the implementation. CFO2 responded by saying:

“We currently do not have the in-house resources to implement the system, I have been thinking about ABC for a while but we need outside assistance, one of my main problems is that we need someone to come in and do the analysis for us. We have all the data, but I could not stop what I am doing to set up the system, so we definitely need someone to come in and help with the implementation”. (CFO2).

The accounting personnel from Companies D and E all indicated that one of the main factors that prevented the implementation of aspects of IMAPs is the lack of in-house resource expertise.

Accounting Manager 3 (AM3) who represents Company D was asked if the company is aware of the benefits to be derived from implementing the IMAPs such as ABC and target costing. In addition to saying yes, AM3 commented:

“My understanding of ABC is that it provides more accurate cost information in that you are better able to know what your costs are and I would think that ABC should provide cost information on a more timely basis”. (AM3).

The question that now arises is what type of costing approach is used by these companies that do not adopt the IMAPs. Accounting Manager 3 (AM3) when asked to explain the current costing used by his company (CoD); replied:

“Our system is the traditional costing system where overheads are allocated based on the number of employees hours worked, so when we run a batch we simply look at the number of employees involved in the operation and determine the number of hours worked and that becomes our overhead allocation base”. (AM3).

This approach to overhead allocation would appear to have some level of inaccuracy in its design. Therefore, based on the response of the previous question, AM3 was asked to indicate what are the main weaknesses of its current costing system, AM3 commented as follows”

“I told you, we currently make too much assumptions regarding how we treat overheads, I know that this is not the best way of doing it but as I say this is what we have. The other problem is that our present system is not providing the cost information in a timely manner, I am not able to determine the cost of production in real-time, it takes at least one month after the production run for me to get cost information, so this is one thing that I would like to have change. I think if we used ABC then we should be able to get the information much faster”. (AM3).

AM3 indicated earlier that the benefits from adopting IMAPs were clear, therefore the researcher inquired of AM3 how would the adoption of IMAPs / ABC be beneficial to Company. AM3 replied by saying:

“Once you are able to get better cost information it should impact on all areas of your operations. For one, better cost data will result in you having better prices or should I say more competitive prices which would make your products become more competitive. Given that we export to the Caribbean, this would help us, also I would better know which products are profitable or better still know the products with the highest margin based on true cost of production”. (AM3).

Finally, the issue of competitiveness was addressed by the researcher when CFO2 was asked to explain how would the adoption of IMAPs /ABC impact on the competitiveness of CoC's products. CFO2 replied by stating:

“You see, competitiveness is a very complex issue, as a manufacturer there is a number of factors apart from cost information that affect our ability to be competitive, you just need to mention import duties on raw materials and machinery, subsidies given by foreign governments to their manufacturers, the cost of security that we have to bear. However, having said that, I have no doubt that if we use ABC then with more accurate costing information it would assist us with our pricing strategy because pricing reflects the type of cost information that you have”.  
(CFO2).

The companies investigated did not use activity based budgeting, product life-cycle costing, balance scorecard nor just-in-time costing.

## **5. DISCUSSION and CONCLUSION**

This study examined the application of IMAPs for enhancing profitability and competitiveness among manufacturers in Jamaica. The discussion will be based on the respective research questions (RQ). The results of RQ1 and RQ3 are interesting, the evidence suggest that the adoption of IMAPs especially ABC has a positive effect on improving the competitiveness of the products for those companies which adopted these IMAPS. This increased level of competitiveness was achieved by the companies being better able to understand their costing structure having done an activity analysis which indicated which activities were consuming cost and not creating value.

Arising from the increased in competitiveness, the adopting companies were able to either increase market share or maintain existing market share in the face of competition from overseas producers. RQ2 addressed the issue of the reliability of information system for companies which adopted the IMAPS. The results clearly indicated that companies which adopted the IMAPS had a significantly improved management accounting information system when compared with companies that did not adopt the IMAPS. Adopting companies reported that they were able to access more reliable and accurate cost information on a timely basis which significantly improved their decision making process. The evidence also suggested that adopting companies were better able to understand the structure of their cost and this led to a better approach to the management of costs.

RQ4 examined the issue of the effect of IMAPs on profitability. The results showed that adopting companies were able to report significant improvements in their ability to assess the profitability of individual products. This they reported was due to the ability of the IMAPS especially ABC to provide information specific to product which clearly outlined costs incurred in relation to resource used and thus this allowed for more detailed analysis of product profitability. The ability to perform this type of analysis resulted in the adopting companies being better position to enjoy greater levels of overall profitability when compared with non-adopting companies.

RQ5 examined the benefits to the industry from the adoption of IMAPs. The results indicated that there are significant benefits to be achieved; respondents reported that the adoption of IMAPS result in a more reliable and accurate management accounting information system. In addition, there was a general agreement that companies which adopt IMAPS are better able to understand their cost structure and this assist them in determining their pricing policies and strategies.

### **5.1. Implication of the Study**

The conclusions arrived at in this study have profound implications for both theory and practice. The manufacturing environment has changed significantly over the last decade and management must be

able to respond to these changes. It has been found that there are manufacturing companies using traditional management accounting techniques, only forty percent of the companies examined are using IMAPs. The consequence of this low adoption rate is that companies are still operating based on a management accounting information system that is unreliable and lacks the capacity to provide the quality of information required by management to respond to the changing competitive environment.

The study has supported numerous conclusions arrived at from the existing literature regarding the use of IMAPs for improving profitability and increasing the competitiveness of companies and products respectively. Companies which adopt IMAPs are better positioned to implement pricing strategies and policies based on a thorough understanding of their cost structure which allows them to achieve greater levels of profitability and competitiveness when compared with companies which fail to adopt the IMAPs.

The results further indicate that companies which fail to adopt IMAPs are operating from a disadvantageous position in which their pricing strategy is based on an inadequate understanding of cost structure, the result of which adversely impacts profitability and product competitiveness. The extent to which the non-adopting companies can continue to operate effectively in a globally competitive environment by using traditional costing methods must now be seriously questioned.

### **5.2. Limitations**

As is the case with any research, the current study is subject to some limitations. Although this study has contributed significantly to our understanding of the role of IMAPs in a manufacturing environment, there are limitations which must be highlighted. First, it would have been good to look at the data on companies' performance on a longitudinal basis rather than using aggregate results after the adoption of IMAPs. Secondly, the study did not address whether ownership structure or company size played a role in the adoption rate of IMAPs.

The limitations identified above do not weaken the results and findings. The study, despite its limitations, has significantly increased our understanding of the role of IMAPs when applied to a manufacturing environment, these limitations therefore only point to the need for further research.

### **5.3. Further Research**

This study provided a better understanding of the role of IMAPs in a manufacturing industry in a developing country. However, despite this understanding there are significant issues to be considered for future research. One area that could be examined relates to the relationship between the adoption rate for IMAPs and the size of the company. It would be useful to know if the size of the company has an effect on management's decision to implement IMAPs. Another area that could be researched relates to the relationship between the ownership structure of companies and the decision to implement IMAPs. The issue to be addressed here is whether public companies which must report to their shareholders are more likely to implement IMAPs, than private companies.

## **REFERENCES**

Abdel-Kader, M. and Luther, R., (2002). *An Empirical Investigation of the Evolution of Management Accounting Practices*. Paper presented at the EIASM conference on New Directions in management Accounting: Innovations in Practices and Research, Brussels.

- Abdel-Kader, M. and Luther, R., (2006). Management Accounting practices in the British food and drinks industry, *British Food Journal*, Vol. 108, No. 5, 336-357.
- Anderson, S., and Dekker, H. (2009). Strategic Cost Management in Supply Chain, Part 2: Executional Cost. *Accounting Horizons*, Vol. 23, 289-305.
- Basteki, H., and Ramadan, S., (1998) A Survey of Activity-Based Costing Practices in Bahraini Manufacturing Firms, *JKAU: Economic and Administration*, Vol.11, 17-29.
- Birnberg, J., Shields, M. & Young, S. (1990), The Case for Multiple Methods in Empirical Management Accounting Research. *Journal of Management Accounting Research*, Vol. 2, 33-66.
- Dick-Forde, E., Burnett, J and Devonish, D. (2007). A Preliminary Survey of Management Accounting Practices in Barbados. *Journal of Eastern Caribbean Studies*. Vol. 32, 50-72.
- Fowzia, R., and Nasrin, M., (2010). Appraisal of Cost Management Tools in Manufacturing Organizations of Bangladesh. *World Journal of Social Sciences*, Vol. 1, 83-94.
- Gerdin, J. (2005). Management Accounting systems design in manufacturing departments: An empirical investigation using multiple contingency approach. *Accounting, Organization and Society*. 30, 99-126.
- Gupta, M., and Baxendale, S. (2008). The Enabling Role of ABC Systems in Operations Management. *Journal of Cost Management*, 22, 5-17.
- Hansen, S., (1998). Cost Analysis, Cost Reduction and Competition. *Journal of Management Accounting Research*, Vol. 10, 181-203.
- Hong, J. (2000). Improving Production Decisions: A case for Activity-Based Costing. *Journal of Cost Management*, 31-35.
- Institute of Management Accountant (2008). Definition of Management Accounting. *Practice of Management Accounting*, IMA, NJ, USA.
- Ilias, A., Razak, M. Z., and Yasoa, M. R. (2010). The Preliminary Study of Management Accounting Practices (MAPs) in Small Business. *Global Business and Management Research Journal* , Vol. 2, No.1, 79-88.
- Khajavi, S., and Nazeni, A. (2010). Innovation in Management Accounting: The need of World-Class Firms, *International Journal of Academic Research*, Vol. 2, 320-330.
- Lin, Z., and Yu, Z. (2002). Responsibility Cost Control Systems in China: a case of Management accounting application. *Management Accounting Research*, Vol. 13, 447-497.
- Mahfar, R., and Omar, N.H., (2004). The Current state of management Accounting Practices in Selected Malaysian Companies: An Empirical Evidence, *a paper presented at the International Business Management Conference at Universiti Tenaga Nasional*.

- McAdam, R., and O'Neil, E. (1999). Taking a Critical Perspective to the European Business Excellence Model using a Balance Scorecard Approach: A Case Study in the Service Sector. *Managing Service Quality*, 9(3), 191-197.
- McNair, C. J., (2007). Beyond the Boundaries: Future Trends in Cost Management, *Journal of Cost Management*, Jan/Feb, 21, 10-21.
- Naranjo-Gil, D., Maas, V., and Hartmann, F. (2009). How CFOs Determine Management Accounting Innovation: An Examination of Direct and Indirect Effects. *European Accounting Review*, Vol.18, 667-695.
- Otley, D, & Berry, A. (1994). Case Study Research in Management Accounting and Control, *Management Accounting Research*, Vol. 5, 45-65.
- Patton, M.Q. (2002). *Qualitative Research & Evaluation Methods*. (3rd ed).London, Sage
- Rehman, S. M. (2011). Which Management Accounting Techniques Influence Profitability in the Manufacturing Sector of Pakistan? *Pakistan Business Review*
- Uyar, A. (2010). Cost and Management Accounting Practices: A Survey of Manufacturing Companies, *Eurasian Journal of Business and Economics*, Vol.3, 113-125.
- Yin, R. (1994), *Case Study Research: Design and Methods*, 2<sup>nd</sup> edition, Sage Publication, USA.
- Zainal, Z. (2007). Case study as a research method. *Jurnal Kemanusiaan*, Vol. 9, 1-6