

# A Review of Benchmarking Implementation Problems: The Case of UAE Industrial Companies

Dr. Mohamed S. M. Salem College of Business Administration,  
University of Sharjah, United Arab Emirates (UAE)

## ABSTRACT

*Benchmarking is the continuous process of measuring products, services and practices against competitors recognised as industry leaders. This study focuses on understanding and explaining the problems that confront companies which implement benchmarking practices. Attention is centralized on two aspects of the process that lead to these problems. Benchmarking is an exogenous process for the company as well as a multivariate one. Further discussion is devoted to culture and the company's issues relevant to benchmarking. This paper argues that when benchmarking is implemented, the sensitivity and behaviour of managers are more influenced by 'vivid' than by statistical information. The availability heuristic that influences the benchmarking decisions of managers is also described. The main concentration of the paper is a concern with benchmarking processes in the context of a developing country.*

**Keywords:** *Benchmarking; aspects of benchmarking problems, culture, Emirates work environment, vivid and statistical information, availability heuristic.*

## INTRODUCTION

For more than five decades benchmarking has been demonstrated to be a catalyst for the success of a number of companies in change interventions: for example, business process re-engineering, improved operational performance and general changes in the company of thinking and action (Rohlfers, 2004). Benchmarking has also been a widely used and generally accepted business practice for many companies (Mcgaughey et al, 2005; Yaisn 2002). It has evolved into total quality management and a powerful tool performance analysis (Kirby, 2005).

As indicated by Sisson et al., (2003) that the term of benchmarking has been around for many years, it was not used as an important quality improvement tool until the early 1980s, with the success of Xerox, it overcame severe financial and competitive pressure. However, the development of benchmarking, as it has come to be known, is very much associated with Xerox in the USA (Sisson et al., 2003), leading to the first book on the subject by the company's head of benchmarking in the 1980s (Camp, 1989).

Furthermore, the management literature is full of prescriptive advice on the best ways in which companies can use benchmarking both to measure their own performance and to learn from other companies through the identification of best practices (Rohlfers, 2004). Garengo et al., (2005) also indicated that the literature on benchmarking shows that its implementation encompasses a range of interpretations and different forms and activities, as benchmarking has been born out of the experience of many companies and seems to be constantly evolving.

This paper highlights problems that confront companies which implement benchmarking practices. It endeavours to illustrate problems that confront Emirates manufacturing companies (EMCs) attempting

to implement benchmarking practice. The paper specifically deals with benchmarking as it applies to the Emirates environment. Previous studies conducted by Abusneina et al., (1993) indicated that many developing countries appear to suffer from certain political, social and economic factors which inhibit economic development. These factors, as well as cultural differences, are still not widely recognised in developing countries, and little work has been conducted on these issues in some Arab developing countries themselves. Accordingly, this paper seeks to answer questions relevant to the problems associated with the implementation of benchmarking. Key questions include: Do companies understand benchmarking before its full implementation?; Do companies need to give consideration to culture and environmental factors in benchmarking implementation?; Do companies consider criteria or set priorities in terms of the process to be adopted, based on economic factors and /or the relevant importance of the dimensions of performance? And how successful were the benchmarking activities in industrial companies?

These questions are answered in the context of EMCs through empirical fieldwork and the testing of related hypotheses. Further, the present paper contributes to key aspects of benchmarking that may lead to many benchmarking problems. It contributes to the knowledge and understanding of the nature of benchmarking problems that confront many companies in general and companies in developing countries, Emirates in particular. It also identifies the implications of accounting systems used by many Emirates companies which do not provide enough information to evaluate fully management efficiency, effectiveness and performance which are needed for the adoption of benchmarking.

This paper is organised as follows: the next section provides benchmarking definition and its continuous process. It is followed by elements of benchmarking which includes exogenous process, multivariate practice, and culture and company issues relevant to benchmarking. The third section includes hypotheses to be tested. This is followed by a discussion of data collection methods. The fifth section summarises the main result of the study. Finally, the conclusions and further research of the study are presented.

## **LITERATURE REVIEW**

### **Benchmarking definition and its continuous process**

Many relevant definitions of benchmarking provide various insights. Vermeulen (2003) indicated that benchmarking is the process of identifying, understanding and adapting best practices from inside the company or other business to help improve performance. Being a relatively new management tool and technique, benchmarking has been defined and understood in different ways. The formal definition of benchmarking used by the Xerox Corporation and identified by Camp (1989), and McGaughey et al (2005) is: Benchmarking is the continuous process of measuring products, services and practices against the toughest competitors or those companies recognised as industry leaders. Benchmarking cannot be performed once and disregarded thereafter in the belief that the task is completed. It must be a continuous process because industry practices constantly change and industry leaders constantly get stronger (Chen, 2002).

Moreover, benchmarking is viewed as a continuous process used to measure performance gaps, to establish where 'best practices' are and to introduce change capable of closing identified gaps (Rohlfers, 2004). It adds an external perspective to a total quality management system (TQM). Benchmarking ensures that the wheel of continuous process improvement is turning in the right direction towards achieving higher standards of competitiveness. Several companies have adopted benchmarking as part of

a TQM approach (Wynn-Williams, 2005). Alcoa, AT&T and Kodak are commonly cited examples (Zairi and Hutton, 1995). Benchmarking inherits from TQM a binding commitment to continuous improvement and monitoring (Wynn-Williams, 2005; CMA, 1998). Furthermore, best practice does not remain constant – it changes over time as does an organisation’s own performance. Consequently, benchmarking must be revised to reflect internal changes and the changing competitive landscape (McGaughey et al, 2005).

Two questions arise from the idea that benchmarking is indeed a continuous process. The first relates to the life cycle of the benchmarking concept, and the second to whether benchmarking is merely a fad or fashion (CMA, 1998; Wilson, 1995). Benchmarking can be considered as part of a list of such fashionable ideas, because many companies have rushed into benchmarking with great enthusiasm, considering it to be fundamental to their quality process. However, before embracing the benchmarking concept with such enthusiasm, it is important to confirm that the culture of the company is prepared to adopt it. If a few key important components are missing, then benchmarking will become a costly failure (CMA1998; Wilson, 1995). Benchmarking requires continuous learning to gain the full benefits of the benchmarking exercise (Rohlfers, 2004; Codling, 1998). The more benchmarking is practised the more it can be applied the next time. The ultimate aim is the company in which benchmarking is just another facet of the culture, conducted by all at all levels (Rohlfers, 2004; CMA 1998).

### **Benchmarking’s exogenous process and multivariate practice**

During the last four decades many articles were written about the application of benchmarking in various areas of industries and services (Meybodi, 2005). In this concern, Harison (1999) presents detailed analysis of the evaluation of different aspects of benchmarking activities. Successful results of the application of benchmarking in the British Royal Mail have been reported by Zairi and Whymark (2000). The use of benchmarking as an effective company learning tool is suggested by Evans and Dean (2003), Ford and Evans (2001). Further, Soni, et al., (2010) argued that benchmarking is a methodology used to facilitate learning from outside. However, implementing practices developed by one company often cannot easily be adopted by another company. For instance, relevant differences in the environment of different countries could make some practices (e.g. tax regulation and accounting methods) non-transferable (Tyler, 2005). As result of such an environment, some of the benchmarking or practices, such as cost and quality control, sales maximisation and market share (Salem 2005), which have been adopted by companies in one country may not be easily transferable to companies operating in another.

In general, examples which are characteristic of business companies which seem to have been influenced by their initial supply environments are the Japanese and American car manufacturers (Lee et al., 2000). Japanese car companies were born in an environment where oilfields existed and oil was therefore cheap. Accordingly, Japanese companies followed a procedure that increased fuel efficiency, while the American corporations did not follow it to produce fuel efficiency (Zyglidopoulos, 1999).

Moreover, in many developing countries including Arab countries (e. g., UAE, Libya, and Egypt), hotel organisations, educational institutions and cultural organisations have opened up (Salem, 2005; Richardson, 2004). These organisations are managed by people who have been trained in Western or American educational institutions and have worked in Western or American corporations. These people bring with them aspects of the Western and American environment and culture to manage these companies (Garg et al., 2005; Richardson, 2004). However, these aspects needed to be used with flexibility and adapted to the culture (Andrioplous, 2001), otherwise, they would have proved to be ineffective in those environmental and cultural contexts. While there has been some analysis on the use of

these aspects and the consequent benchmarking processes in different environment and culture (Garg et al., 2005; Richardson, 2004; Maull, 2001), it has not been given enough systematic attention in the context of many Emirates companies (Richard, 2004).

Much of the literature and practice of benchmarking have developed through manufacturing and service companies, and have been learned from practitioners rather than academics (Wynn-Williams, 2005; Yasin, 2002). Within this context, it appears that there are two aspects of the process that lead to problems with the implementation of benchmarking.

With the exception of internal benchmarking, the broader concept of benchmarking is an exogenous process for the company: it attempts to identify best practices across many companies and then provides performance standards within a single company based on best practice. This creates very important questions concerning the reasonableness of adopting standards from one company and using them in another. Garg (2005) indicated that the authors Harrison, (1994) and Bramham (1997) have suggested that the company's culture may differ based on the role, power structure and ability to manage the company by expatriates who bring with them their own set of national or regional cultures. In this sense, problems can occur through the absence of sensitivity to different company cultures. For example, if changes are to be adopted across cultures, it is important to understand the extent to which factors in the decision process vary from one culture to another in a more objective fashion (Carroll, 1993). The company's culture is perceived as a set of collective norms which influence the behaviour of employees within the company (Andriopoulos, 2001). The main contention here is that different cultures produce differences in structure and managerial behaviour independent of other conditions. In general, the successful implementation of benchmarking requires an assessment of the company's culture and the implementation of an integrated process for change in company behaviour (Maull et al., 2001).

The second aspect of benchmarking that is central to the research in the present paper is that it is a multivariate practice. Companies attempt to benchmark many items of performance. These items may not be compatible with each other. The present author believes that the most common mistakes benchmarking firms make lie in trying to adopt changes in too many items simultaneously. Rohlfer (2004) and Codling (1992) indicated that benchmarking starts at a higher strategic level: the choice of what to benchmark can be made according to the strategic importance of the selected area in need of benchmarking to the business; and, whether the improvements in that area will make a significant contribution to overall business results. It is helpful, therefore, to set priorities on the processes to be benchmarked, based on economic importance, future strategic importance and internal readiness to change (Walleck et al., 1991). For example, attempting to meet "best practice" standards concerning cost containment or cost control can conflict with the attempt to meet "best practice" standards for product quality, since quality and short-term measures of cost efficiency may run counter to each other.

The literature discussed below has emerged within the context of developed, usually Western, economies. Unfortunately, no studies have been identified that focus upon companies and economies similar to the Emirates cultural context upon which this study is focused.

### **Benchmarking culture and company issues**

The company's culture is considered an important factor because of its relation to the way in which the company is performing its business. For instance, many US firms failed to implement Japanese management practices because of Japanese and US cultural differences (Awashi et al., 2001). The culture of any company is a result of interaction between many factors, such as communication, motivation, and leadership. Companies and practices are completely influenced by the society's culture and employees'

behaviour and attitudes (Hofstede, 1993). In this sense, Bramham (1997) underlines the importance of understanding the culture in which benchmarking takes place. As a fundamental prerequisite for implementing benchmarking successfully, he argues, a firm must carefully consider the culture and understand the problems and the opportunities that are inherent in it. The hypothesis here is that the culture of any company must be receptive to the concept of benchmarking and, furthermore, permit its adoption. The importance of culture in understanding any new adoption before its implementation is widely supported by many articles in the literature. For example, authors such as Kim et al. (1995) and Patten (1992) have encouraged the acceptance and the recognition of the company culture constructed within new adoptions, especially as a primary foundation for their successful implementation (Tyler, 2005; Maull et al., 2001).

Moreover, the identification of contingency factors, such as environmental factors, strategic structure and company structure factors, can lead to a fair evaluation of the requirements needed for successful adoption of best practices (Beretta et al., 1998). Further, company structure influences managerial decision making through division of labour, standard practices, rewards and careers systems (Brooks, 2002). Overall, it is reasonable to conclude that the difficulty of constraints for adopting best practices becomes weaker in moving from environmental factors, through strategic structure and company structure factors (Beretta et al., 1998).

Firm size is an important factor affecting the change to more complex management systems such as benchmarking. For instance, larger firms are being more likely to adopt benchmarking than their ability to commit more resources to management innovations, to “experiment more with innovative accounting systems”. Watts and Zimmerman (1978) stated that the size of the firm has an important effect on managers’ choices and actions. Top managers, therefore need to give some consideration to firm size in selecting benchmarking partners where it is important to consider partners of similar size (Chenhall et al., 1998).

All of the issues discussed above are relevant primarily in the context of company culture. Clearly, as with any other process or system, benchmarking processes must fit well with the company’s culture (Maull et al., 2001). In this sense, Deros et al. (2006) and Chenhall et al. (1998) indicated that it has been noted that some ‘western’ innovations may not be readily adopted in various European countries because of cultural factors and historical differences in the development of costing systems. Moreover, many management theories and practices concerning ‘best performance’ are notions based on Western and American assumptions, values and norms. Developing countries are not characterised by the same aspects of culture, which means that there are different forms of social life, language and religion (Aghila 2000) that describe employees' rights and duties in different ways. Hofstede and Bond (1988) have stated that nations have certain cultural traits that are rather difficult to change. Many researchers have raised questions about the applicability of Western and American practice and theories to the environment of other developing countries (Henderson et al., 2000; Hofstede, 1993; Navis, 1983). However, understanding management theory would be impossible without understanding its cultural context. Studying company theories and, in particular, trying to test some of them in different environments is impossible without understanding cultural differences.

Cultural aspects have been recognised as important determinants of economic development in Arab countries in general and Emirates in particular. These aspects play an important role in the country’s development. For example, Arabic culture and Islamic rules are the most dominant criteria in individual and group beliefs, attitudes, behaviours, social values, state laws, and political and economic policies in Emirates society (Deros et al., 2006 ; Agnaia, 1996). In Emirates, as in other Arabic and Islamic countries,

religion and language have a strong impact on the attitude, behaviour and performance of these people (Kaabur, 1995). For instance, the Arabic language and culture were brought to Emirates during the Middle Ages (Aghila, 2000). Arabic language influence permeates the culture, among both the common people and the social, political, economic and intellectual elite (Henderson et al., 2000; Abuarroush, 1996). Furthermore, the Arabic language has influenced not only the development of Emirates culture but also all Arab cultures as well as other Muslim cultures (Aghila, 2000; Agnaia, 1996).

While wholesale adoption of foreign practices may prove difficult, the importation of key ideas from abroad sensitively adopted may prove to be useful influences in a developing society such as that of Emirates. Therefore, in spite of motivational differences between Emirates and Western and American cultural assumptions, management theories and practices in the latter may still be applicable in the Emirates cultural context for the following reasons (Salem, 2005; Aghila 2000):

The education system adopted by Emirates authorities is designed according to Western and American educational values, and the source of curriculum techniques, facilities, etc. is drawn mostly from Western and American countries.

As a result of the discovery and profit of oil deposits in the late 1960s, various Western and American countries have participated in oil exploration, refining, exporting and other related services. This enabled Emirates companies to interact with them in many ways, and also enabled employees to learn from those companies by attending management development programmes, and working and dealing with these companies. Therefore, the participation of Emirates in management activities increased dramatically, with more understanding of how Western and American companies practised management, especially in the 1970s.

Moreover, the accounting practices of many companies in developing countries were designed mostly by British and American companies, or by people who had graduated from British and American schools (Bait-Elmal, 2000; Siverbo, 2012). These "adopted" accounting practices may not meet the inherent conditions existing in the company; accounting systems should be relevant to the country's needs rather than parody another country's system. Environmental aspects (e.g. social, political and economic) have an essential impact on the actual accounting practices and information within organisations (Siverbo, 2012; Nahapiet, 1988). Therefore, a change in the orientation of accounting practices was essential in the Emirates company context.

Within a benchmarking context, Jensen (1983) stated that accounting theories do not assume that accounting practices are the same across companies (traditional firms versus not-for-profit firms). For instance, Dundas and Roper (1998) indicated that differences in a firm's accounting practice could make benchmarking difficult to adopt. The impact of these differences can lead to conflict over the company's structure and plans. Skinner (1993) stated that in some cases related to accounting practices, the structure of management compensation plans is likely to be different across firms as a function of firm performance. He also pointed out that firms with benchmarking-based compensation plans are expected to be more likely to adopt accounting practices which directly tie compensation to measures of firm performance. Therefore, managers are required to understand and select accounting methods in respect to any new adoption of benchmarking for the firm, because process performance to maximise firm-value can be affected by accounting practices selected (Salem, 2005).

## HYPOTHESES DEVELOPMENT

This study attempts to show that managers rely on a limited number of the two simple judgmental heuristics (Lee, 2001; Tversky, 1982) which reduce the complex tasks of adopting change in situations of benchmarking implementation. In general, these heuristics are quite useful, but sometimes may lead to difficulties and systematic errors (Salem, 2005; Shanmugam et al., 1992; Tversky et al., 1982).

It has been argued by Manis et al. (1997) and Nisbett et al. (1980) that the sensitivity and behaviour of managers are influenced much more by vivid than by statistical information. What this means is as follows:

Information may be described as vivid, “that is, as likely to attract and hold our attention and to excite the imagination to the extent that it is emotionally interesting” (Nisbett et al., 1980, p. 62). Information can be described as statistical (or pallid), “that is not emotionally interesting and has no effect on managers' views, and no substantial effect on inferences (Nisbett et al., 1980). For example, managers do not give enough attention to information related to employees' behaviour in situations of change adoption.

In the context of the adoption of benchmarking, vividness relates to salient information about excellent performance, while statistical, pallid data relate to reports on individual and unit behaviour (Salem, 2005; Lee 2001). In many companies, managers do not give enough attention to statistical considerations such as information about the company's future and revenues (which is not easily available) (Zimmerman, 1997). Moreover, the use of statistical information requires technical and behavioural skills, as well as the ability to communicate effectively and so on (Arrowsmith, 2004; Bramham, 1997). Thus, decision-making is more difficult without the requisite statistical information from which it can adopt a new change.

In fact, many companies which apply benchmarking pay attention to vivid information only; they do not give enough attention to statistical information. For instance, company information about performance is often displayed as deterministic rather than stochastic. What this means is that singular data that may be vivid or attractive is not a reliable indicator of performance on any dimension. That is because any single piece of information is subject to variance, chance, and unreliability. Thus, any company applying benchmarking “best practice” needs to be sensitive to the importance of statistical information as well as vivid information.

In general, benchmarking and its effectiveness in many EMCs have remained largely unexplored (Gurumurthy et al., 2009). This could be related to a lack of complete understanding of benchmarking within the companies which the author has studied and applied for another developing countries (Salem, 2005). For instance, one study done by Abusneina et al. (1993) indicated that many investments and change programmes appear to have been implemented within many companies of developing countries without adequate feasibility studies. Decisions concerning which items should be produced or other company changes appear to be influenced more heavily by social factors than strategic factors. However, this study seeks to capture the complexity, diversity and network of influences operating on benchmarking practices in the Emirates environment. Furthermore, it attempts to shed light on the results of benchmarking implementation in EMCs.

Concerning this, one aspect of the present study is an examination of a manager's sensitivity to the importance of information about best performance, such as vivid information and statistical information. Therefore, the specific hypothesis to be tested in this study is:

***H1: Insensitivity of managers to the importance of information about employees' behaviour through the implementation of benchmarking***

In the context of new change adoption such as benchmarking, which is a growing area of management practice (Garengo et al., 2005) in which theory is insufficiently developed, there is evidence to explain differences in the availability of information about performance (Wolfram Cox et al., 1997). For instance, managers' evaluation systems for a company may reflect what they consider to be the decision of the company in adopting changes in cost control. Specifically, if managers implicitly believe that labour costs are primarily the originator of cost control, they would assign little importance to material and overhead costs. On the other hand, they might rate this weight (for material and overhead cost) to be important, but for reasons that are very different from the reasons that motivate someone who values the importance of the labour cost. Further, managers might rate the labour cost as the most important sub-criterion of cost control, because they want to minimise what they see as a high cost in determining change adoption in cost control (Salem, 2005). Other managers might disagree and rate labour, material and overhead cost as equally important because of misleading information caused by the availability heuristic that managers use to judge changes in cost control.

Under some circumstances, the use of the availability heuristic may lead to perfectly appropriate conclusions; however, under those circumstances where there is a bias in what information is available, faulty inferences follow. Specifically, biases of salience, biases in retrieval, and biases resulting from cognitive structures such as beliefs and values can lead to the heightened availability of incorrect or misleading information in social judgement tasks (Shanmugam et al., 1992; Kahneman et al., 1982). Therefore, the second aspect of the present paper is to examine the availability heuristic. This heuristic, as Lee (2001) and Tversky et al. (1982) have indicated, can lead managers into systematic biases of important information or serious judgmental errors. The way to test this is to give managers' information about "best" performance taken from a highly visible company. Also, they will be given information about "best" performance taken from a less visible company. Then, the study will determine which of the two types of information they are most likely to be responsive in making judgements about best performance.

However, this study deals with benchmarking as it applies to the UAE's environment, and attempts to understand the difficulties which have influenced the extent of benchmarking implementation in EMCs. At this point, the researchers want to involve the application of relatively simple judgemental heuristics as tools for understanding the process of change in adoption in EMCs. This includes the availability heuristic which will have a significant impact on managerial decision making.

From the above discussion, the second hypothesis was formulated to examine the attributional tendencies of managers when they are given information about best practice from both highly and less visible companies. Thus, the extant theory leads to the following hypothesis:

**H2:** *The influence of managers' benchmarking decisions by availability heuristic*

From the theoretical considerations related to the availability heuristic (Lee, 2001; Shanmugam et al., 1992; Kahneman et al., 1982), one would expect managers to be more interested in information about best performance taken from highly rather than less visible organisations. The specific result of this hypothesis for the company investigated will be provided later in this paper.

## DATA COLLECTION METHODS

The target population for this study consisted of manufacturing companies in the United Arab Emirates. Seven manufacturing companies were contacted by facsimiles and formal letters sent out from the researchers' workplace. Out of seven companies contacted, only five replied with a positive answer. Of these five companies, four have fully implemented benchmarking and one had not introduced benchmarking. Of the five companies, four with more than 10 managers were chosen. These were located in Abu Dhabi, Dubai, and Sharjah. The sample covers companies in a variety of industries ranging from chemical, food production, and building materials industries. As a condition of obtaining access for data collection, this study was unable to mention the real name of the companies under investigation. This is because of sensitivity of data collection from these companies. Accordingly, the researcher adopted a new name for each of the anonymous companies to be used in presenting data collected for this study. The letters 'W', 'X', 'Y', and 'Z' are used to refer to these companies and their activities.

In order to achieve the objectives of this paper, data were collected using two types of instruments: questionnaires and semi-structured interviews. The questionnaire questions have two distinct parts. The first part regarding company behaviours presents 4 statements related to the behaviour of managers in situations of benchmarking adoption. The second part determined 7 statements regarding characteristics of companies attempting to adopt and implement benchmarking. The semi-structured interviews were conducted with certain managers to obtain general information on the companies and the necessary data that should be obtained from the companies' records. This is in addition to the extreme difficulty of clarifying points about answering questionnaire questions. Further, semi-structured interviews have the advantage of enabling the researchers to clarify terminology such as "benchmarking", "vivid and statistical information", etc. to prevent misunderstandings and a possible distortion of results. Data collection procedures were carefully prepared, beginning with determining the number of managers who were selected to complete the questionnaire. Moreover, the questionnaire was distributed personally to 60 participants in four companies. To secure effective participation, an opportunity to discuss the questionnaire was offered to the participants through the researcher's personal attendance. Accordingly, in some cases completion of the questionnaire could be considered as a semi-structured interview, because the discussion enriched the researchers' knowledge of the respondents' answers, instead of his having to rely solely on what was written in the questionnaire. Respondents to questionnaires in developing countries, such as Emirates, are typically reluctant to help or to give meaningful information. For instance, the attitudes of Emirates employees towards research in general and questionnaires and interviews in particular are difficult to be applied (Salem, 2005; Aghila, 2000). The respondents of the study were reluctant to be observed or interviewed. This is because many employees feel that research is a political issue which is outside their interest. Others think that they may become demotivated if their answers to the questionnaire does not satisfy their company's management. Therefore, the questionnaire was conducted and supplemented with some semi-structured interviews where it is feasible.

**Table 1: Distribution of the population sampled for questionnaire**

Name of companies (investigated)	Number of questionnaires distributed	Number of questionnaires received (or returned)	No. of questionnaires considered
1- Company W	15	11 (73%)	10
2- Company X	15	12 (80%)	10
3- Company Y	15	13 (86%)	10
4- Company Z	15	10 (67%)	10
Total	60	46 (77%)	40

The questionnaire contained a series of questions to obtain a measure of variables related to benchmarking information (see questionnaire in appendix). Out of 60 distributed questionnaires, 46 completed questionnaires were received (see Table 1 above) and reviewed by the researcher in order to improve the response rate. 10 participants' questionnaires from each company were considered as a sample of data for analysis and results of this study. In this sense, these ten chosen participants were selected in respect of their experience and knowledge of benchmarking implementation problems as well as the length of their service in the company (with a range of experience from 2 years and above). The choices of the ten considered questionnaires within each company were based on the fully completed questionnaires by participants who belong to different departments in the four companies. Also, these choices were made to participants who showed their readiness to respond and their awareness of the concept of benchmarking when they were interviewed.

## RESULTS AND DISCUSSION

Some companies in Emirates faced difficulties in employing benchmarking effectively owing to the lack of a complete understanding of this technique. However, benchmarking makes sense to view some of the practices in these four EMCs as indicative of benchmarking. All participants' responses were analysed through SPSS and first subjected to descriptive analyses such as mean, standard deviation and frequency distribution to describe the important aspects of the study variables. Other statistical tests, such as the one-sample t-test, were used to compare the mean scores on the variables across managers' responses. This section presents a discussion of the managers' responses to 11 questions focused on the extensiveness of benchmarking-like practices inside their companies. The managers' responses are summarized in Tables 2-6

### Results of hypotheses tested

The results of the two testable hypotheses are discussed below to include company behaviour questions and to analyse the managers' responses to question 1, 2, 3 and 4. (see part-1 of the questionnaire in the appendix).

### Results of the first tested hypothesis

The results of managers' behaviour in response to information about benchmarking were obtained by means of reporting through the following tested hypothesis:

*H1: Insensitivity of managers to the importance of information about employees' behaviour through the implementation of benchmarking*

This hypothesis tests the sensitivity of managers to information about benchmarking implementation in respect of the two statements of questions 1 and 2 mentioned in the questionnaire. These statements were measured on a four-point scale (e.g. 'strongly disagree', 'disagree', 'strongly agree' and 'agree') to address and simplify the analysis of data presented in this paper. Also, analytical techniques, such as mean score and standard deviation, were used to show whether or not these reflect benchmarking decisions.

Managers in companies Y and Z indicated a high level of mean scores and low level of standard deviations, corresponding to question 1 (Table 2). This reveals a high level of agreement that managers in these companies are more sensitive to general information about best performance through the implementation of benchmarking. Therefore, benchmarking practice was implemented into these

companies less effectively. These results support the literature, and the point made by Manis and Shedler (1997), and Nisbette and Ross (1980) which indicated that managers' sensitivity and behaviour are much more influenced by salient information than statistical information in situations of new adoption of process performance.

Managers in companies W and X indicated a low level of mean scores and standard deviations. This reflects a high level of disagreement amongst managers with the statement in question 1, which concerned only the sensitivity of managers to general information about best performance. This finding is at variance with the literature, which states that managers are more responsive to general information about best performance than information about the behaviour of employees. Therefore, benchmarking implementation in these companies is considered to be more effective in terms of process performance.

**Table 2: Results of mean scores and standard deviation for company behaviours related to variables in respect of hypothesis 1 and 2**

Questions	Companies							
	W		X		Y		Z	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
1	1.9	0.70	1.6	0.75	2.80	1.00	3.30	0.45
2	2.8	0.85	2.90	0.95	1.50	1.10	1.20	0.46
3	1.70	1.00	1.90	1.10	2.70	1.00	2.60	1.00
4	2.70	1.20	2.80	1.2	2.00	0.88	1.70	0.75

$\bar{X}$  : The arithmetic mean, SD: standard deviation

Table 2 also provides a general indication that most managers in companies W and X are sensitive both to information about best performance and employees' behaviour (statement in question 2) in situations of benchmarking adoption. Thus, benchmarking practice was introduced into these companies with greater understanding about best performance. This result was obtained from managers' responses to this question, and also was confirmed by the highest mean scores and low standard deviations within each of the three companies.

With regard to the same statement in question 2 for companies Y and Z, managers seem unconcerned either on information about best performance or on employees' behaviour. Therefore, benchmarking practice was implemented in these companies with less effective impact on process performance.

### Results of the second tested hypothesis

Managers' reactions concerning the availability of information on best performance were tested through the following hypothesis:

**H2:** *The influence of managers' benchmarking decisions by availability heuristic*

The availability heuristic which influences managers for benchmarking decisions is presented through the two statements of questions 3 and 4 shown in Table 2. With regard to the availability heuristic hypothesis and the two statements of questions 3 and 4, the findings of this study indicated that EMC managers were affected by the availability heuristic when implementing change like benchmarking. For example, most managers in companies W and X were interested in information about best performance taken either from highly or less visible companies. In contrast, the majority of managers in companies Y and Z indicated that these companies were more responsive in making their judgements about best performance taken from highly rather than less visible companies. Therefore, benchmarking practice was

implemented in companies Y and Z with less understanding about best performance. This result supports the argument of Lee (2001), Shanmugam et al. (1992) and Kahneman et al. (1982) in the literature concerning the availability heuristic. This heuristic may provide an effective judgement about best performance if it is well used, but lead managers into serious judgmental errors if it is misused. Specifically, Table-2 reveals that managers' responses are in a degree of disagreement (for companies W and X) and agreement (companies W and X) with the statements in questions 3 and 4 respectively.

### Characteristics of companies attempting to implement benchmarking

This section discusses the results of managers' responses within each of the four companies. It begins by presenting the results of analysing variables related to companies attempting to implement benchmarking in the context of EMCs. In this case, various characteristics related to the implementation of benchmarking are discussed under the following sub-heading.

#### Company environment related variables

Company environment related variables are measured by questions 5 and 6, and the aim is to provide information concerning whether EMCs consider culture and economic factors when implementing benchmarking.

The statement in question 5 concerns culture and company environment considerations. According to the managers' responses, the culture and company environment were reasonably well considered with different proportions across all four companies. However, most of surveyed managers within each of the companies W, X, Y and Z indicated degrees of importance towards the statement in question 5 as 'somewhat important', 'important' and 'very important'. This reflects a high level of mean scores with a low level of standard deviations within each of the four companies, corresponded with the degree of importance that managers selected (Table 3).

**Table 3: Results of mean scores and standard deviation for company behaviours, size and employees' skills related variables**

Questions	Companies							
	W		X		Y		Z	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
5	3.50	0.52	3.30	0.68	2.80	0.80	3.40	0.50
6	3.20	0.47	3.30	0.50	1.50	0.80	1.80	0.95
7	3.00	0.70	3.00	0.55	1.70	0.99	1.20	0.50
8	3.10	0.61	2.50	0.64	3.00	0.40	3.00	0.70

$\bar{X}$  : The arithmetic mean, SD: standard deviation

Discussions with many surveyed managers emphasised that the culture and company environment were considered very important elements for the implementation of benchmarking in EMCs. They also added that the effects of these two elements on the implementation of benchmarking are clearly evident through their role in creating the appropriate atmosphere that assists in developing individuals who are then able to grasp any opportunity that helps them to achieve effective managerial performance.

With regard to statement in question 6, Table 3 shows that companies Y and Z received a low level of consideration and companies W and X received a high level of consideration about the importance of setting priorities when the processes to be adopted were based on economic factors. In this sense, managers in companies W and X ranked question 6 as very important, while managers in companies Y

and Z thought it was unimportant. Companies Y and Z were attempting to benchmark too many items without consideration of economic factors. In this sense, many of the surveyed managers in these two companies indicated that their companies faced difficulty in setting benchmarking priorities. They also added that shortages in raw materials and spare parts were considered to be the major reasons for the difficulty. Therefore, these two companies paid less attention to the multivariate character of benchmarking on the processes to be benchmarked. These two companies would have less effective strategy formulation and managerial performance.

### **Organisational size and employees skills related variables**

In the middle of the 1980s, EMCs started to deal with change adoption in the form of small, medium and large companies. In this case, many EMCs gave due consideration to company size in selecting benchmarking partners when implementing change, and companies W and X are an example of this. Other EMCs gave less consideration to whether it was important to choose partners of similar Y and Z size. Companies are examples of this. These examples are discussed below.

Due consideration was given by most managers in companies W and X in selecting a partner for benchmarking. Table 3 reflects the level of importance accorded by managers in these two companies to the statement of question 7 in terms of mean scores and standard deviations. In contrast, less consideration was indicated by most managers in companies Y and Z to the same statement of question 7. This was confirmed by lowest mean scores and standard deviations corresponding to this statement (Table 3). It has been pointed out in previous studies that the company size of partner selection is an important issue. It has an important effect on managers' choices and action in situations of new change adoption (Watts and Zimmerman, 1987). That may take place in the case of the four EMCs.

Furthermore, some EMCs have been able to create strategies in order to upgrade their employees' skills. This has led to positive results in terms of making these companies ready for the new adoption of benchmarking. In this context, most of the managers in the four companies surveyed paid the utmost consideration to the statement of question 8. For example, most of surveyed managers grant importance to question 8. This was confirmed by high mean scores with low standard deviations which reflected the high level of importance of this statement (Table 3). These results tend to support Bramham's (1997) suggestion that the abilities of employees are the skills required to introduce the adoption of high performance and implement it with best practice.

### **Prior considerations of benchmarking practice related variables**

This section presents managers' responses to the statements in questions 9, 10 and 11. These are discussed below.

Table 4 indicates high mean scores and low standard deviations within each of the four companies corresponding with the degree of importance of statement in question 9. This reveals the high level of importance accorded by most managers to the accounting systems used to provide more effective accounting methods of motivating employees through the implementation of benchmarking.

**Table 4: Results of mean scores and standard deviation for  
prior consideration of benchmarking practice related variables**

Questions	Companies							
	W		X		Y		Z	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
9	3.50	0.45	3.40	0.50	3.00	0.72	2.80	0.80
10	2.40	0.82	3.30	0.51	1.40	0.68	1.20	0.72
11	3.00	0.56	3.10	3.20	3.3	0.66	3.00	0.56

$\bar{X}$  : The arithmetic mean, SD: standard deviation

Applying benchmarking taken from different companies' 'best practice' needs to be fully understood before it is implemented. However, this study shows that managers within companies Y and Z accorded a low level of importance to the statement in question 10. Further, most of surveyed managers indicated that the need for fully understanding benchmarking before it is implemented in their companies was 'not important'. In contrast, most managers' responses in companies W and X ranked the same statement as 'important'. This was confirmed by high mean scores and low standard deviations reflected the level of importance to the statement in question 10 within each of the three companies. Overall, benchmarking practice was introduced in companies W and X more effectively than in companies Y and Z. This is because the level of understanding of information about best performance taken from a highly or less visible companies was given greater consideration in companies W and X than in companies Y and Z.

This study indicates that strong consideration is given to the statement of question 11. Such consideration was about the time required for technological innovation and the full adaptation for technology in situations of benchmarking implementation. Specifically, results from surveyed managers indicate that most EMCs import technology in order to implement benchmarking effectively. In this case, the level of technology which is used with each of companies W, X, Y and Z has an important impact on the length of time it takes companies to implement benchmarking fully. According to the questionnaire results, the managers' responses indicated that their companies gave a high level of consideration to the statement in question 11, which concerned the time required to adopt technology fully for the implementation of benchmarking. This result was confirmed by the highest mean scores and standard deviations within each of the four companies, corresponded with the degree of importance that managers selected (Table 4).

From the above discussion, the findings of the managers' responses to the statements in questions 1 to 11 were also examined through a one-sample t-test to compare the mean scores on the variable across managers' responses. A one- sample t-test was also used to show the value of the t-statistic, and the level at which this value has significant or no significant differences across managers' responses to all questions within each of the four companies. In fact, one can see significant differences in the mean scores across managers' responses for the statement in question 1 (ranging from  $t = -2.72$  to  $2.65$  at  $p \leq .05$ ) for companies W, X, and Z. While managers' responses in company Y have no significant differences. Also, the findings of managers' responses to the statement in question 2 reveal statistically significant differences in the mean scores within each of companies W, X, Y and Z. Further, the conclusions were drawn across managers' responses for the statements in questions 3 and 4 show significant differences in the mean scores for company W and Z. No significant differences are found in the mean scores between managers' responses to the same statements in question 3 (for companies X, Y and Z) and 4 (For companies W, X and Y) (Table 5).

**Table 5: Results of one-sample t-tests for company behaviours related variables**

Questions	Companies							
	W		X		Y		Z	
	T value	P value	T value	P value	T value	P value	T value	P value
1	-1.92	0.042*	-2.72	0.012*	.290	NS	2.60	0.022*
2	1.90	0.041*	1.90	0.040*	-2.15	0.027*	-6.85	0.000***
3	-1.93	0.040*	-1.35	NS	1.04	NS	0.728	NS
4	.291	NS	0.588	NS	-2.14	NS	-4.05	0.002**

NS= not significant ( $P > .05$ ); P value = Significant level of  $p \leq .050^*$ ,  $p \leq .010^{**}$ ,  $p \leq .001^{***}$

The findings of the managers' responses to questions 5, 6, 8, 9, and 11 indicated positive, negative and significant differences in the mean scores, ranged from  $t = 7.78$  to  $-3.02$  at  $p \leq .050$  for all five companies. Also, the findings of managers' responses to the statements in question 7 and 10 conclude that there are positive and negative significant differences in the mean scores, ranged from  $t = 3.30$  to  $-6.55$  at  $p \leq .031$  within each of companies W, X and Y (Table 6).

**Table 6: Results of one-sample t-tests for organisation characteristic related variables to implement Benchmarking**

Questions	Companies							
	W		X		W		Z	
	T value	P value	T value	P value	T value	P value	T value	P value
5	6.54	0.000***	4.03	0.002**	1.86	0.041*	6.65	0.000***
6	1.90	0.040*	5.38	0.000***	-3.02	0.006**	6.55	0.000***
7	2.54	0.030*	3.31	0.010**	-2.12	0.032*	-6.55	0.000***
8	3.43	0.005*	5.67	0.000***	5.29	0.002**	2.47	0.030**
9	7.78	0.000***	5.22	0.000***	2.80	0.011*	1.90	0.041*
10	3.05	0.010**	3.30	0.004*	-4.06	0.002**	-2.56	0.020*
11	2.21	0.030*	6.00	0.000***	3.73	0.030*	3.32	0.010**

NS= not significant ( $P > .05$ ); P value = Significant level of  $p \leq .050^*$ ,  $p \leq .010^{**}$ ,  $p \leq .001^{***}$

## CONCLUSIONS AND FUTURE RESEARCH

This paper contributes to the knowledge of the nature of benchmarking problems that confront manufacturing companies. In addition to this, the study attempts to understand and explain key factors related to the cultural work environment of companies which have influenced the extent of benchmarking implementation in EMCs.

The empirical work reflects the literature in that several difficulties that confront companies attempting to implement benchmarking practices were identified. This study investigated these difficulties in a sample of four EMCs. Two of these companies are practising benchmarking; they are companies W and X. The remaining two companies, namely Y and Z, faced difficulty in practising benchmarking effectively.

The study investigated whether or not these four companies are sensitive to information about benchmarking implementation. The evidence revealed that companies W and X are sensitive both to information about best performance and to employees' behaviour in carrying out benchmarking. Companies Y and Z were sensitive only to information about best performance. Further, companies W and X seemed to take information about best performance from both highly visible and less visible

companies. In turn, companies Y and Z focused only on information about best performance taken from highly visible companies. Consideration of information about best performance taken from only highly visible companies led these companies into poor judgments about best performance.

The results show that considerable attention is given to the culture and company environment across EMCs. These two elements create the appropriate atmosphere to assist EMCs in implementing effective functional benchmarking. They were clearly important in companies W and X, and less important in companies Y and Z. Accordingly, companies W and X were more prepared for understanding the implementation of benchmarking.

Based on the previous conclusion, this study contributes to the literature by providing a general outline of the two aspects of benchmarking that lead to many benchmarking problems (exogenous process and multivariate ways). It claims that the cultural dimension has to be taken into account whenever a company wants to adopt practices such as benchmarking which are borrowed from alien societies. This study has suggested that accounting systems in many Emirates companies do not provide enough information to evaluate fully management efficiency, effectiveness and performance. The accounting systems are not involved in the development of performance measures which are needed for any new adoption, such as benchmarking. In this respect, accounting systems need to have the capacity to provide information relevant to the decision-making process which is required for the successful adoption of benchmarking.

There are some limitations to the current study. These relate to the lack of literature and data about benchmarking implementation in Emirates companies. Secondly, the sample is limited to Emirates industrial companies and in particular to four different manufacturing companies. It should be considered that causation and generalisations from the results of this study are obviously tenuous inferences.

The present study suggests that further empirical studies on the effects of environmental factors and differences in cultural concepts adopted in Emirates companies would present more meaningful views of benchmarking practices. It is important to suggest that benchmarking implementation should be surveyed from time to time, and workable strategies should be developed that make the implementation of economic progress in developing countries a reality rather than an empty promise.

### **BIOGRAPHICAL NOTES ABOUT THE AUTHOR**

Mohamed S. M. Salem obtained his PhD from University of Strathclyde. He is an Assistant Professor at University of Sharjah in UAE and Libyan Academy in Misurata Libya. He has more than 10 years experience as a professional accountant and auditor. His teaching and research interests include, cost and management accounting, managerial accounting, auditing and fraud, accounting education, business accounting, accounting for managers, AHP for decision making. Mohamed Salem can be contacted at: msalem2@sharjah.ac.ae or msalem29999@yahoo.co.uk .

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## APPENDIX: QUESTIONNAIRE

### Part: (1)

#### Companies Behaviour

With regard to the company for which you currently work, please indicate the extent of your agreement or disagreement with each of the following statements.

- 1- [SD] means strongly disagree.
- 2- [ D ] means disagree.
- 3- [ A ] means agree.
- 4- [SA] means strongly agree.

	1	2	3	4
	[ SD ]	[ D ]	[ A ]	[ SA ]
1. Managers are only sensitive to general information about best performance through the implementation of benchmarking	[ ]	[ ]	[ ]	[ ]
2. Managers are sensitive both to information about best performance and employees' behaviour through the implementation of benchmarking.	[ ]	[ ]	[ ]	[ ]
3. Managers consider only information about best performance taken from a highly visible companies (e. g., IBM Computers Company)	[ ]	[ ]	[ ]	[ ]
4. Managers consider information about best performance taken from less visible companies (e.g. Viglen Computers Company)	[ ]	[ ]	[ ]	[ ]

### Part: (2)

#### Characteristics of companies attempting to implement and adopt change like benchmarking

In this section you will find several characteristics (variables) that are related to companies attempting to implement change. Please read each statement carefully, and choose one of the four alternative answers, which characterises your company, by placing (x) in the appropriate box (corresponding with your answer):

- 1- [ NI ] means not important
- 2- [ SWI ] means somewhat important
- 3- [ I ] means important
- 4- [ VI ] means very important

	1	2	3	4
	[ NI ]	[ SWI ]	[ I ]	[ VI ]
5. Culture and company's environment are fully considered when adopting benchmarking	[ ]	[ ]	[ ]	[ ]
6. Setting priorities on the processes to be adopted are based on economic factors	[ ]	[ ]	[ ]	[ ]
7. Managers give proper consideration to firm size in selecting partners for the new adoption process	[ ]	[ ]	[ ]	[ ]
8. Employees' skills are upgraded to make the firm ready for any change	[ ]	[ ]	[ ]	[ ]
9. Accounting systems are used which provide more effective ways of motivating employees	[ ]	[ ]	[ ]	[ ]
10. The need for fully understanding benchmarking before its full implementation	[ ]	[ ]	[ ]	[ ]
11. Consideration is given to the time required for technological innovation until benchmarking is completely implemented	[ ]	[ ]	[ ]	[ ]