

**A study of the use business improvement initiatives – the association with company size
and level of national development**

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Abstract

This paper investigates the awareness, use and effectiveness of improvement initiatives in organisations of different sizes and in different countries. In particular, comparisons are made between large firms and SMEs, between organisations in the developing and developed worlds and between organisations in China and India and the rest of the developed world. A questionnaire survey of 453 organisations across 44 countries was conducted with the findings indicating that there are significant differences in comparability of tools. For some tools there are no significant differences between developed and developing countries as well as between large organisations and small organisations. For other tools, there are significant differences with organisations in developing countries, in general, more aware and more likely to use business improvement initiatives when compared to organisations in developed countries. Similarly, organisations in China and India have a higher awareness of and are more likely to adopt improvement initiatives when compared to the rest of the developing world. Finally, larger firms are more aware and more likely to use improvement initiatives when compared to SMEs.

Keywords: Improvement Initiatives, TQM, SMEs vs Large Firms, Developed vs Developing World, China/India

1. Introduction

There are hundreds of business improvement initiatives that organisations can use, with examples including lean management, six sigma, Business Process Reengineering (BPR), Balanced Scorecard, Quality Management Systems, Total Quality Management (TQM) and performance benchmarking (Kornfeld and Kara 2011, Greasley 2004, Psomas, Fotopoulos, and Kafetzopoulos 2011, Yung and Chan 2003). This study examines the differences in levels of awareness, use and effectiveness of improvement initiatives in different countries and by organisations of different characteristics such as size and industry sector. The study compares the use of initiatives by organisations in developed countries with organisations in developing countries. Within the subset of developing countries, the study also examines the differences between China and India, which are regarded as fast industrialising countries, and the other developing countries. Finally the study also compares the differences between SMEs and large organisations.

The need for this study is driven by the current lack of understanding of how different business improvement initiatives are used across different countries. There have also been several studies that have suggested that there are differences between organisations in developed and developing countries and between SMEs and large organisations when it comes to the use of some of initiatives. For example, a study by Kull and Wacker (2010) suggested that there were differences in quality management effectiveness in Asian countries in comparison with western countries while Lund-Thomsen and Nadvi (2010) suggested that there were significant differences in corporate social responsibility (CSR) adoption between organisations in developed countries and organisations in developing countries. Other studies (Yusof and Aspinwall 2000, McAdam and Reid 2001, Tannock, Krasachol, and Ruangpermpool 2002) have focused on the differences between SMEs and large organisations within the context of business improvement initiatives and suggested that SMEs are at a disadvantage because of constraints that include a lack of expertise and financial resources. Yusof and Aspinwall (2000) asserted that while many large organisations typically rely on supplies from SMEs, such SMEs lack the resources and expertise to benefit from improvement tools and techniques. Similarly, McAdam and Reid (2001) found that SMEs were less advanced than their large corporation counterparts and invested less resources when it came to tools that enable them to manage organisational knowledge. Furthermore, Tannock, Krasachol, and Ruangpermpool (2002) found that Thai SMEs are faced by numerous challenges including weak information systems, a lack of statistical process awareness, a lack of management resource to manage change and a lack of management consensus on organisational vision. However, Jayaram, Ahire, and Dreyfus (2010) found that small organisations benefited from being more agile and consequently were able to focus better on their customers. Based on the literature above, there seems to be common agreement of the differences between SMEs and large organisations.

This study, based on a questionnaire survey of more than 400 organisations, aims to improve the understanding of awareness and use of a variety of business improvement initiatives on

the basis of levels of country development and organisation size. It also aims to understand the degree to which the rapid industrialisation in developing countries such as China and India is reflected in the use of business improvement initiatives in comparison to other developing countries. Therefore the findings from the study can provide guidance to managers and government organisations about the initiatives that organisations are more likely to adopt in different contexts and how effective these initiatives are perceived to be. This will be applicable in both developed and developing countries as well as in small and large organisations. Academically, the findings will contribute to the debate on how globalisation has impacted managerial choices of business improvement initiatives in developed and developing countries. Furthermore, the study contributes to the debate about differences between large organisations and SMEs.

The paper is structured as follows. The next section presents a literature review followed by the specification of the study aim and objectives. Thereafter, the research methodology and key findings are presented and are followed by a discussion of the findings. Finally, the study's conclusions and implications are presented.

2. Literature Review

There is strong evidence to suggest that business improvement initiatives are used all over the world and examples of use can be found in all industries (Esain, Lethbridge, and Elias 2011, Qui and Tannock 2010, Delgado-Hernandez and Aspinwall 2007). The widespread acceptance of improvement initiatives is primarily as a result of the benefits they bring to organisations. For example, Vinodh, Kumar, and Vimal (2014) showed how the implementation of lean six sigma can reduce production defects and lead to financial gains and customer loyalty while Ooi et al. (2013) found that the implementation of TQM had a positive impact on employee's quality of work life. Business improvement initiatives are central to process improvement and by extension, can enhance organisational performance and competitiveness (Glaser 1993, Spring et al. 1998, Gupta, McDaniel, and Herath 2005). While it can be argued that improvement initiatives, in general, serve a common purpose of organisational enhancement, the initiatives themselves come in various forms and serve various specific purposes. Some of the more common improvement initiatives have been identified and discussed widely in the academic literature. These include: Business Process Reengineering (BPR), Lean Management (Dale 2003), Improvement Teams (Oakland 2003), Balanced Scorecard, Customer Surveys (Foster 2010), Plan-Do-Check-Act cycle (PDCA), SWOT analysis (Sower 2011), Business Excellence, Corporate Social Responsibility (CSR), Quality Function Deployment (QFD), Quality Management System, Six Sigma, and 5S (Slack, Brandon-Jones, and Johnston 2013) Knowledge Management, Mission and Vision Statement and Total Quality Management (TQM) (Rigby 2011).

Irrespective of the apparent success that organisations have had with the implementation of improvement initiatives, a number of challenges relating to their use have emerged. One challenge relates to organisational culture and the suggestion that senior managers are not

always committed to the use of improvement initiatives (Fotopoulos, Psomas, and Vouzas 2010) which can lead to difficulties in implementation. Also, a failure of employees to be trained adequately to use improvement initiatives has also been cited as a reason for failure of some organisations to maximise the advantage that can be facilitated by such initiatives (Dale and McQuater 1998). The second set of challenges relate to the nature of the initiatives themselves. Clegg, Gholami, and Omurgonulsen (2013) suggested that while tools relating to quality improvement have been found to lead to success, there remains a challenge in selecting the appropriate balance of tools. Similarly, Shrivastava, Mohanty, and Lakhe (2006) suggested that managers often do not have an understanding of whether they are deploying the right activities when it comes to quality improvement. According to Moore (2007), not only is it very difficult to select the right initiatives from more than 100 in existence, organisations also struggle to maintain momentum after the initial period of success. In addition, the benefits from some improvement initiatives can take a number of years to accrue (Huq and Stolen 1998, Goh 2000) and so the payback on any investment in training and other implementation activities may have a significant lag.

While it is clear that a vast number of improvement initiatives are used by many organisations in different countries and in different sectors to varying degrees of success, there is still much to understand with respect to identifying if any patterns exist in terms of how different types of organisations use these initiatives and the successes they have had. In particular, there is currently no understanding of the relationships between levels of national development and the use of specific initiatives as well as the relationships between company size and the use of the initiatives.

2.1. Why are company size and the level of national development important?

Organisations that wish to deploy improvement initiatives must be willing to invest time and money as required. According to Fotopoulos and Psomas (2009), large organisations are likely to adopt improvement initiatives related to quality management as a matter of principle or routine because of the expected payback in terms of customer satisfaction and financial performance. While the study went further to suggest that all organisations, irrespective of size, should adopt improvement initiatives, it may not be possible for smaller organisations to use them to the same degree due to resource issues. The challenges faced by SMEs were also highlighted by Turner, Bititci, and Nudurupati (2005) who noted that while SMEs need to improve to survive, they typically face resource constraints and are unwilling to devote the necessary time required for improvement initiatives. According to Bamford and Greatbanks (2005) SMEs are more likely to favour certain initiatives over others. It is important, therefore to investigate how the use of initiatives varies dependent on company size.

There has been considerable research on the use of improvement initiatives (Sharma and Hoque 2002, Chen and Sawyers 1994, Chakrabarty and Tan 2007, Irfan et al. 2012). While organisations in both developed and developing countries are likely to have used improvement initiatives to gain competitive advantage, it is commonly accepted that most

improvement initiatives including Lean Management, 5S, TQM, BPR, Benchmarking and Balanced Scorecard were developed and first adopted by organisations in developed countries. While it is possible that organisations in developing countries have caught up with their counterparts in developed countries and, perhaps, learnt from their mistakes and failures, there is a school of thought that believes otherwise. Studies by Kull and Wacker (2010) and Huang and Lin (2002) have suggested that developing countries in Asia lag developed countries significantly when it comes to adoption of improvement initiatives related to quality management. Rahman and Tannock (2005) noted that there is a pressing need for organisations in developing economies to learn as much as they can as quickly as they can about improvement tools such as TQM. However, it is unclear if such a significant difference is universal across all improvement initiatives. Furthermore, the use of initiatives in rapidly developing BRIC (Brazil, Russia, India and China) countries is currently unknown. While these economies have developed rapidly, they may still face significant challenges in implementing modern management methods. For example Mathur, Mittal, and Dangayach (2012) suggested that the workforce in Indian SMEs were likely to be semi-literate and consequently, have difficulties in applying traditional process improvement techniques.

In conclusion, the literature has shown that while the use of improvements initiatives is widespread, doubts exist about the homogeneity of the levels of adoption particularly when considered from the perspective of company size and level of national development. It is therefore important, both from academic and industrial viewpoints, to understand patterns of adoption, if they exist, and the impact that they have had on organisational success.

2.2 Identifying improvement tools and techniques for the study

There are a large variety of improvement tools and techniques available to organisations that are in the process of improving their operations. In addition, different types of tools and techniques are suitable for addressing different issues within an organisation. Some of the tools and techniques and research studies on them include: Business Process Re-engineering (BPR), Lean, Plan Do Check Act (PDCA), Quality Function Deployment (QFD), Quality Management System (QMS), Six Sigma and Total Quality Management (TQM) (Dale 2003), Balanced Scorecard, Improvement Teams, Knowledge Management, Mission and Vision Statement, PDCA, QFD, Quality Management System, Six Sigma and TQM (Oakland 2003), Balanced Scorecard, Customer Surveys, Knowledge Management, Lean, PDCA, QFD, Six Sigma and TQM (Foster 2010), Balanced Scorecard, Six Sigma, PDCA, QFD, Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis and TQM (Sower 2011), Balanced Scorecard, Business Excellence, BPR Corporate Social Responsibility (CSR), Lean, PDCA, QFD, Quality Management System, Six Sigma, TQM and 5S (Slack, Brandon-Jones, and Johnston 2013) and Balanced Scorecard, BPR, Knowledge Management, Mission and Vision Statement and TQM (Rigby 2011). For practical reasons, it is not possible to include all available improvement tools and techniques in this study and consequently, the authors researched 21 of the most commonly found tools in the literature. These tools were benchmarking (informal, performance and best practice), balanced scorecard, business

excellence, BPR, CSR system, customer surveys, employee suggestion scheme, improvement teams, knowledge management, lean, mission and vision statement, PDCA, QFD, quality management system, six sigma, SWOT, TQM, and 5S.

3. Research aim and objectives

The aim of this study was to analyse the use and level of effectiveness of business improvement initiatives within the context of the size of the organisation and the level of development of the country that the organisation is based. The objectives that support this aim are as follows:

1. Identify a range of business improvement initiatives that can be used by different types of organisations.
2. Compare the levels of awareness, use and effectiveness of these initiatives between organisations in developed economies and organisations in developing economies.
3. Compare the levels of awareness, use and effectiveness of these initiatives between large organisations and SMEs.
4. Compare the use of improvement initiatives in fast growing developing countries such as India and China with other developing countries to understand how they might have evolved as a result of their rapid growth.

Based on the literature study, the fulfilment of the study aim and objectives would enable the identification of answers to important questions about the views and relevance of business improvement initiatives. Key questions to be answered include the following:

- RQ1. Are organisations in developing economies catching up with their counterparts in developed economies and taking advantage of a suite of initiatives that facilitate improvements in their operational and organisational performance?
- RQ2. What is the relationship between company size and willingness and ability to adopt business improvement initiatives and which initiatives are SMEs more likely to use?
- RQ3. To what extent is the fast growth of India and China reflected in the use of organisational improvement initiatives in comparison to other developing countries?

4. Research methodology

In order to achieve the study aim and objectives, it was important to collect data widely from organisations of different sizes and in different countries around the world. The most suitable methodology, therefore, was the use of a questionnaire-based survey. According to Denscombe (2003), a questionnaire survey is appropriate when responses are solicited from a large number of respondents that are geographically dispersed and when the information required is straightforward and respondents can be expected to have the ability to read and understand the questions. In addition, Burns (2000) noted that the use of questionnaire

surveys promotes standardization of responses and thereby promotes better reliability of the study.

The research reported in this paper was part of a larger study that was promoted and supported by the Global Benchmarking Network (GBN). The GBN is a membership-based association with representation in more than 25 countries and the support of the members was crucial to the success of this study.

4.1. Questionnaire design

The design of the questionnaire was a key responsibility of the research team. The first draft of the questionnaire was presented to GBN delegates from 8 countries. At the meeting a team of five consisting of researchers and GBN members reviewed the questionnaire and made improvements. The review included an agreement on the list of improvement tools and techniques in the research. The input from the GBN members (who are leaders in educating and training organisations on the use of improvement tools and techniques in their respective countries) provided important justification for the tools and techniques that were used in the study. In addition, the members of the GBN committed to promoting the questionnaire in their home countries and, where necessary, translating the questions into local languages. Thereafter, the modified questionnaire was sent to all GBN members and members of the academic community and this resulted in a progressive development of the questionnaire over a three-month period.

The questions used for the findings in the paper were close-ended in nature. With respect to current and future use of the improvement initiatives, respondents were expected to answer on a dichotomous or binary alternative (yes/no). With respect to awareness of the initiatives, respondents were expected to answer on a four level ordinal scale (zero/minor/moderate/high). The question rating the level of effectiveness of the initiatives was only open to respondents currently using the initiatives and respondents were expected to answer on a five level ordinal scale (unknown/no effect/minor/moderate/major).

Furthermore, to eliminate the potential of misunderstanding of the initiatives across countries or cultures, each initiative was briefly defined or described in the questionnaire. For example Knowledge Management was described as “a range of practices used by organisations to identify, create, represent, and distribute knowledge” while QFD was described as “a structured team approach in which customer requirements are translated into appropriate technical requirements for each stage of product development and production”.

4.2. Questionnaire Deployment and Analysis

To make the questionnaire more respondent-friendly, it was translated from English to five languages with the assistance of GBN members – Hungarian, Arabic, German, Chinese and Russian. The questionnaire was deployed both as a web survey and an electronic survey for

distribution by GBN members. This meant that GBN members utilised their networks, membership and client base to encourage organisations to participate. It was recognised that the organisations completing the survey were likely to be more advanced in the use of improvement initiatives than if organisations were selected at random to participate. Whilst ideally a random selection of organisations would have been used this was not feasible to do based on resource and time constraints and it was considered that voluntary participation would still provide useful insights into improvement initiative usage and effectiveness between countries.

The web survey was hosted on BPIR.com, an on-line resource with members from all over the world. E-mails were sent to BPIR members and contacts on a regular basis to encourage them to complete the questionnaire. For questionnaires deployed through GBN members, the members were encouraged to send the questionnaire to as many of their contacts in their home countries as possible or alternatively, encourage them to fill the web survey on BPIR.com. Since the questionnaire was placed on an open forum and as many organisations throughout the world were encouraged to complete it, it is not possible to determine with certainty how many organisations were aware of or sent the questionnaire but the number of BPIR members that were sent e-mails and reminders were in excess of 2000 organisations/individuals.

Analysis of the questionnaire was carried out using the SPSS statistical software. For the binary questions, a chi-squared test was used to compare differences between developed and developing countries and between SMEs and large organisations. The ordinal questions were analysed using the Mann-Whitney U test (Kohlmann and Mook 2009).

5. Questionnaire Findings

Valid questionnaires received were 453 in number and were spread over 44 countries. We classified SMEs as organisations with 250 or less employees based on the definition in the 2003 Official Journal of the European Union (European Union 2012) while the classification of developed and developing countries was based on the World Economic Outlook Report (International Monetary Fund 2012). Of the 453 responses received 214 (47.2%) were from SMEs and 223 (49.2%) were from large organisations while the remainder were indeterminate and were consequently not used in the analysis. In addition, 289 (63.8%) of the respondents were from organisations in developed countries while 164 (36.2%) were from organisations in developing countries. Within the developing countries, 54 (33%) were from India/China and 110 (67%) were from elsewhere.

5.1. Developed vs Developing Countries

Table 1 presents the results of a Mann-Whitney U test investigating the differences between developed and developing countries in terms of their awareness of the various improvement initiatives. Respondents were asked to rate their level of awareness for each initiative on a

scale of Zero, Minor, Moderate or High awareness. Of the statistically significant results, developed countries had a higher awareness of Informal Benchmarking ($p = 0.004$), but, interestingly, developing countries had a higher awareness of CSR System ($p = 0.000$), QFD ($p = 0.002$), Quality Management System ($p = 0.000$), TQM ($p = 0.010$) and 5S ($p = 0.001$).

INSERT TABLE 1 HERE

Table 2 shows the results of a Chi-Square test investigating the relationship between the usage of improvement initiatives in developed and developing countries. Respondents were asked to answer Yes or No to whether or not they were currently using each of the identified improvement initiatives. The results indicate that there are some statistically significant differences in terms of the improvement initiatives used by developed and developing countries; the developed countries are more likely to use Informal Benchmarking ($p = 0.000$), whereas the developing countries are more likely to use CSR System ($p = 0.014$), PDCA ($p = 0.016$), QFD ($p = 0.000$), Quality Management System ($p = 0.001$), Six Sigma ($p = 0.021$), TQM ($p = 0.000$) and 5S ($p = 0.002$).

INSERT TABLE 2 HERE

The results of table 3 show further statistically significant differences in terms of the perceived effectiveness of the improvement initiatives via a Mann-Whitney U test. Respondents were asked to rate the effectiveness of each of the improvement initiatives on a scale of Don't Know, No Effect, Minor, Moderate or Major. Table 3 indicates that developing countries perceive Customer Surveys ($p = 0.019$), Employee Suggestion Scheme ($p = 0.000$), Mission and Vision Statement ($p = 0.000$), PDCA ($p = 0.001$), Quality Management System ($p = 0.000$) and SWOT ($p = 0.000$) to be more effective when compared with their developed counterparts.

INSERT TABLE 3 HERE

Table 4 shows a number of statistically significant differences in terms of whether or not the company intends to use the identified improvement initiatives sometime in the near future. Similar to the usage question, respondents were asked to answer Yes or No to whether or not they were thinking of using each of the identified improvement initiatives in the foreseeable future. The results of the Chi-Squared test indicates that developing countries are more likely to use the following initiatives in the future: Performance Benchmarking ($p = 0.014$),

Business Excellence (p = 0.001), BPR (p = 0.007), CSR System (p = 0.000), Employee Suggestion Scheme (p = 0.001), Mission and Vision Statement (p = 0.019), PDCA (p = 0.000), QFD (p = 0.000), Quality Management System (p = 0.000), Six Sigma (p = 0.000), SWOT (p = 0.013), 5S (p = 0.000) and Other (p = 0.010).

INSERT TABLE 4 HERE

5.2. SMEs Vs Large firms

Table 5 presents the results of a Mann-Whitney U test investigating the differences between SMEs and large firms in terms of their awareness of the 21 improvement initiatives. Respondents were asked to rate their level of awareness for each initiative on a scale of Zero, Minor, Moderate or High awareness. Again there are a number of statistically significant differences between the two types of organisation; table 5 shows that large firms are more aware of Best Practice Benchmarking (p = 0.037), Business Excellence (p = 0.005), BPR (p = 0.009), CSR System (p = 0.003), Improvement Teams (p = 0.006), PDCA (p = 0.015), QFD (p = 0.013), Quality Management System (p = 0.014), Six Sigma (p = 0.002), and 5S (p = 0.007) than their SME counterparts.

INSERT TABLE 5 HERE

In table 6 we can see that there are also a large number of significant differences in terms of the improvement initiatives used by SMEs and large firms. Respondents were asked to answer Yes or No to whether or not they were currently using each of the identified improvement initiatives. Again the results suggest that large firms are more likely to use Informal Benchmarking (p = 0.018), Performance Benchmarking (p = 0.000), Best Practice Benchmarking (p = 0.000), Balanced Scorecard (p = 0.000), Business Excellence (p = 0.018), BPR (p = 0.000), CSR System (p = 0.000), Customer Surveys (p = 0.000), Employee Suggestion Scheme (p = 0.000), Improvement Teams (p = 0.000), Knowledge Management (p = 0.001), Lean (p = 0.000), Mission and Vision Statement (p = 0.006), PDCA (p = 0.003), QFD (p = 0.000), Quality Management System (p = 0.000), Six Sigma (p = 0.000), TQM (p = 0.015), 5S (p = 0.012), and Other (p = 0.003) when compared to SMEs.

INSERT TABLE 6 HERE

Table 7 investigates whether there are significant differences in terms of the perceived effectiveness of the improvement initiatives through use of a Mann-Whitney U test. Respondents were asked to rate the effectiveness of each of the improvement initiatives on a scale of Don't Know, No Effect, Minor, Moderate or Major. The results show that the only initiative to show significant difference was Best Practice Benchmarking ($p = 0.001$) with the mean rank indicating that SMEs rate this initiative as more effective than their large firm counterparts. The results also showed that for over half of the initiatives (13 out of 21) SMEs had higher mean rank value than the large firm counterparts; this suggests that SMEs perceive Informal Benchmarking, Performance Benchmarking, Best Practice Benchmarking, Balanced Scorecard, Customer Surveys, Employee Suggestion Scheme, Knowledge Management, Mission and Vision Statement, QFD, SWOT, TQM, 5S and Other. Conversely, large firms are more likely to rate Business Excellence, BPR, CSR System, Improvement Teams, Lean, PDCA, Quality Management System and Six Sigma to be more effective when compared with larger firms.

INSERT TABLE 7 HERE

Table 8 shows the results of a Chi-Squared test investigating the differences in future use of the improvement initiatives. Similar to the usage question, respondents were asked to answer Yes or No to whether or not they were thinking of using each of the identified improvement initiatives in the foreseeable future. The initiatives with significant results showed that large firms are more likely to use Best Practice Benchmarking ($p = 0.000$), Business Excellence ($p = 0.002$), BPR ($p = 0.014$) and QFD ($p = 0.005$) in the future than their SME counterparts.

INSERT TABLE 8 HERE

5.3. China/India Vs. Developing World

Table 9 details the results of a Mann-Whitney test investigating the differences in awareness of improvement initiatives between organisations in China/India and organisations in the developing world. Respondents were asked to rate their level of awareness for each initiative on a scale of Zero, Minor, Moderate or High awareness. The results show that organisations in China/India are more aware of CSR System ($p = 0.000$), Knowledge Management ($p = 0.003$), QFD ($p = 0.000$), Quality Management System ($p = 0.001$) and 5S ($p = 0.000$) when compared to organisations in the developing world.

INSERT TABLE 9 HERE

The results in table 10 detail the differences in improvement initiative usage. Respondents were asked to answer Yes or No to whether or not they were currently using each of the identified improvement initiatives. The results suggest that organisations in China/India use Business Excellence ($p = 0.019$), CSR System ($p = 0.000$), Customer Surveys ($p = 0.034$), Employee Suggestion Scheme ($p = 0.040$), Knowledge Management ($p = 0.000$), Lean ($p = 0.029$), PDCA ($p = 0.000$), QFD ($p = 0.000$), Quality Management System ($p = 0.001$), Six Sigma ($p = 0.000$), TQM ($p = 0.000$) and 5S ($p = 0.000$) more than those organisations in the developing world.

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Table 11 shows a number of statistically significant differences in terms of the perceived effectiveness of the improvement initiatives. Respondents were asked to rate the effectiveness of each of the improvement initiatives on a scale of Don't Know, No Effect, Minor, Moderate or Major. Table 11 suggests that companies from China/India rate the effectiveness of Performance Benchmarking ($p = 0.022$), CSR System ($p = 0.024$), Customer Surveys ($p = 0.011$), Employee Suggestion Scheme ($p = 0.000$), Improvement Teams ($p = 0.049$), Mission and Vision Statement ($p = 0.002$), PDCA ($p = 0.044$), Quality Management System ($p = 0.002$) and SWOT ($p = 0.003$) higher than those companies in the developing world.

INSERT TABLE 11 HERE

The results of a Chi-Square test comparing the differences in future use of improvement initiatives are shown in table 12. Similar to the usage question, respondents were asked to answer Yes or No to whether or not they were thinking of using each of the identified improvement initiatives in the foreseeable future. The results imply that Chinese/Indian companies are more likely than their developing country counterparts to use the following initiatives in future; Business Excellence ($p = 0.000$), BPR ($p = 0.006$), CSR System ($p = 0.000$), Employee Suggestion Scheme ($p = 0.001$), QFD ($p = 0.000$), Quality Management System ($p = 0.045$), Six Sigma ($p = 0.000$), SWOT (0.039), 5S ($p = 0.000$) and Other ($p = 0.010$).

INSERT TABLE 12 HERE

6. Discussion

With respect to the differences between developed and developing countries, there were six initiatives that indicated significant differences with respect to level of awareness. Surprisingly, five of these indicated that organisations in developing countries were more aware than those in developed countries. We suggest that two of these five (5S and QFD) may be partly explained by the fact that they are more closely linked to production of goods and consequently, the higher levels of awareness may reflect the fact that, proportionally, there are more manufacturing organisations in the developing countries dataset in comparison to the developed countries. However, other initiatives such as CSR systems, total quality management and quality management systems are applicable in both manufacturing and service organisations. With particular reference to CSR systems, these findings contradict previous findings (Gulger and Shi 2009, Lund-Thomsen and Nadvi 2010, Ciliberti, Pontrandolfo, and Scozzi 2008), which suggested that CSR deployment in developing countries is not as advanced as that in developed countries. Taking into account that the findings from these previous studies are based primarily on manufacturing organisations, we suggest organisations in developing economies are not only becoming more aware of CSR practices, they appear to be more aware, in general, than organisations in developed countries. The findings with respect to quality management practices were surprising since developed economies have practiced quality management for much longer than developing economies. It may well be that the message of quality management is not as powerful in developed economies as it used to be. Furthermore, as the economies in some western countries have shifted from manufacturing to service-based industries, the new organisations in these industries may have failed to embrace the quality movement that was at its height in the 1980's and 1990's.

With respect to the usage of these improvement initiatives, again with the exception of informal benchmarking, organisations in developing economies are more likely to use initiatives where our study found significant differences. With the exception of CSR, all the other initiatives (PDCA, QFD, Quality Management System, Six Sigma, TQM and 5S) all appear to be related to quality and/or production of goods. These findings on quality related practices also partly contradict the suggestions by Huang and Lin (2002) that eastern countries (with the exception of Japan) lagged western countries by a decade with respect to management of quality. It also suggests that the management of quality in developed countries is not a 'given' and indicates that the 'importance of quality' message that was so powerful in the 1980's and 1990's has become weakened.

The study also showed that there were significant differences in perceptions of effectiveness in six of the initiatives. Customer survey was the only initiative where the data indicated that organisations in developed countries experienced more effectiveness than organisations in developing countries. The implication here is that organisations in developing countries need to improve their levels of engagement with their customers. However, organisations in developing countries, surprisingly, found other initiatives (employee suggestion scheme, mission and vision statement, PDCA, QMS and SWOT) to be more effective. The data also shows that of the 21 improvement initiatives, there were significant differences in the

intention of future usage for 13 initiatives. For all of these, organisations in developing countries were more likely to adopt these initiatives than those in developed countries. The reasons for these significant differences with respect to both effectiveness of the initiatives and future intentions to use are difficult to explain but they clearly point to a greater enthusiasm for using the improvement initiatives in developing countries when compared to developed countries.

6.1. Does organisation size matter?

The differences between SMEs and larger organisations have been the subject of much academic debate. In studies that have examined adoption of IT solutions, SMEs were found to lag larger organisations due to various reasons, which include lack of resources, fear of change and lack of skills (O'Toole 2003, Duan et al. 2002, Eshelman, Juras, and Taylor 2001). This study provides valuable insight into differences between the two types of organisations across several countries with respect to improvement initiatives. It indicates that of the 21 improvement initiatives, larger organisations are significantly more aware of 10 initiatives when compared to SMEs. However, it is the usage and perceptions of effectiveness data that provides the most interesting insights. The study shows that with the exception of SWOT, larger organisations are significantly more likely to use all the improvement initiatives when compared with SMEs. However, with the exception of Best Practice Benchmarking, there are no significant differences in the perception of the effectiveness of the initiatives. Furthermore, with respect to future usage intentions, larger organisations are significantly more likely than SMEs to use four improvement initiatives (Best Practice Benchmarking, Business Excellence, BPR and QFD). The finding with respect to effectiveness of the tools in SMEs indicates the need for SMEs to consider the use of improvement initiatives, as they can benefit just as much as large organisations. Indeed a previous study by Hendricks and Singhal (2001) indicated that small organisations could benefit more from TQM/business excellence in comparison to larger organisations.

The implications of these findings are clear. Larger organisations are more likely to be aware of improvement initiatives than SMEs. However, even for the initiatives that SMEs are equally aware, they are significantly less likely to adopt these initiatives. Interestingly the SMEs that do adopt the initiatives are likely to find them as effective as the large organisations do. The conclusion, therefore is that although business improvement initiatives are as equally effective in SMEs as they are in larger organisations, they are less likely to be adopted by SMEs. Although this failure to adopt can be partly attributed to the differences in levels of awareness for certain initiatives, the reasons are likely to be much more complex. The relative lack of significant differences in intentions for future usage, however, suggests that SMEs are not unaware of the benefits of using these initiatives. These findings differ significantly from those of Ahire and Golhar (1996) who found no differences in implementation and effectiveness of TQM in manufacturing organisations in North America. However, while their study only considered manufacturing firms in North America and was restricted to 'TQM' application only, this study covers both manufacturing and non-

manufacturing organisations from various countries including developing countries where implementation tool adoption is often lagging. Furthermore, this study examined a range of improvement tools and not just TQM.

Finally, we consider the position of Best Practice Benchmarking. Across all four dimensions of comparison (awareness, usage, effectiveness, future use) this initiative was the only one where the significant difference between SMEs and large organisations was consistent. The clear indication is the SMEs do not believe that Best Practice benchmarking is either applicable or as useful to them in comparison to larger organisations and this is supported as it was shown to be less effective for those that used it.

6.2. The advancement of China and India in comparison to other developing countries

Of the 21 different improvement initiatives, organisations in China and India were significantly more aware of 7 improvement initiatives in comparison to organisations in other developing countries. There is no apparent pattern to the initiatives as they consist of both manufacturing-based initiatives (technical) such as 5S, six sigma, OFD and lean as well as the more management-based initiatives (i.e. business excellence, improvement teams and knowledge management). However, the data on the use of the improvement initiatives shows that organisations in China and India are significantly more likely to use 12 of the 21 initiatives compared to organisations in other developing countries. These 12 initiatives include the 7 initiatives of which they are significantly more aware. The implications of this are clear and two-fold. Firstly, organisations in China and India are not only more likely to be aware of improvement initiatives, they are also more likely to use these initiatives once they are aware of them. Secondly, for five improvement initiatives (performance benchmarking, CSR, customer surveys, employee suggestion scheme, PDCA) where there are no significant differences between China/India organisations and those in other developing countries, organisations in other developing countries are significantly less likely to use the initiatives. It is worth noting that these 5 initiatives are all management-oriented and not manufacturing-oriented.

The reasons for this difference are not clear but our data suggests that effectiveness is unlikely to be one of them. This is because statistically significant differences between China/India and other developing countries with respect to perceptions of levels of effectiveness only apply to three initiatives (CSR, employee suggestion scheme and six sigma). The implication is that although organisations in other developing countries are likely to find the initiatives as effective as organisations in China and India, they have failed to deploy many of these initiatives even when they are aware of them. Furthermore, there are no significant differences in future intention to use the initiatives with the exception of business excellence and six sigma which Chinese and Indian organisations are more likely to use. This suggests that organisations in other developing countries are unlikely to catch up with those in China and India when it comes to the use of business improvement initiatives in the near future. However, these positive findings do not mean that organisations in India and China do

not face problems. Shrivastava, Mohanty, and Lakhe (2006) noted that Indian organisations (and SMEs in particular) still face challenges with management communication and motivation and these challenges are likely to have a significant impact on the effectiveness of their improvement activities.

7. Conclusion

The study presented in this paper has investigated the use of improvement initiatives within different organisational contexts. The results have shown that, in general, organisations in developing countries are more likely to be aware and more likely to use business improvement initiatives when compared to organisations in developed countries. Organisations in the developing economies are also more likely to adopt the initiatives in future. Furthermore, with the subset of developing countries, organisations in China and India are in general more likely to be aware and more likely to use these initiatives when compared to organisations in other developing countries. However, the differential in levels of effectiveness and intentions of future usage is less significant.

With respect to the sizes of the organisations, larger organisations are more likely to be aware of the business improvement initiatives and are significantly more likely to use virtually all the improvement initiatives that were examined. However, the initiatives are likely to be just as effective in SMEs as they are in larger organisations. Larger organisations are also significantly more likely to use some of the initiatives in future in comparison to SMEs.

At this point it is important to revisit the research questions. Research question 1 examined if organisations in developing countries are catching up with their developed counterparts. In general organisations in developed countries utilise the initiatives more successfully, however this does not apply to all initiatives. Research question 2 examined the relationship between organisation size and willingness to adopt the initiatives. This study has shown that large organisations are significantly more likely to use the initiatives although the initiatives are equally beneficial to large and small organisations alike. Research question 3 examined if the fast growth of India and China is reflected in the use of initiatives. The study has shown that organisations in India and China are significantly more likely to use a majority of the initiatives.

7.1. Study Implications

The findings have important managerial and academic implications. For managers in developed countries, it is important to realise that their organisations may be failing to gain the benefits accruable from the adoption of business improvement initiatives at the same time at which their competitors in developing economies are adopting the initiatives and gaining benefits from them. This may have future significant impacts on the competitive positioning of organisations in developed countries. Therefore, managers of organisations in developed countries need to review their operations and understand where improvement tools and

techniques may help them to improve. They also need to assess the current tools and techniques they are using and evaluate whether their effectiveness can be improved. It may also be necessary to consider implementing training programmes on improvement tools and techniques for their employees. Secondly, for organisations in developing countries, other than China and India, their failure to use many of these initiatives even when they are aware of them may be putting them at a disadvantage. This is because the initiatives are likely to be just as effective for them as they are for Chinese and Indian organisations. Therefore, organisations in these countries need to invest resources in investigating the nature of the different types of improvement tools and understanding how they can be used to bring about positive change. Subsequently, they need to invest in gaining the requisite skills and knowledge that enable them to implement improvement tools and techniques successfully. Furthermore, management commitment to the adoption of improvement tools and techniques is vital for organisations in countries where levels of adoption are still relatively weak. In addition, there may be an action point here for governmental organisations and industry associations to promote the use of these improvement initiatives among organisations in their countries. This could be done by putting in place awareness workshops, training programmes and also publications and guidebooks that can provide organisations with the requisite knowledge about improvement tools and techniques. Managers in SMEs in both developed and developing economies also need to consider adopting some of these business improvement initiatives in order to close the gaps between them and their larger competitors. In particular, as cost tends to be a key obstacle for SMEs, it is important to consider investment in improvement tools training as an investment in the development of the organisation. Therefore, organisations need to include costs for such training in their strategic investment plans.

The study implications are validated by developments in industry. In particular, the Asian Productivity Organisation (APO), which has a membership of 18 National Productivity Organisations (NPO) in Asia has 3 key strategic directions, one of which is to:

“Strengthen NPOs and promote the development of small and medium enterprises (SMEs) and communities. NPOs are the backbone of the APO and thus need to be strengthened to lead national productivity initiatives. SMEs play a crucial role in the economies of members. The APO aims to improve the productivity of targeted segments of SMEs and communities (APO, 2014).”

In part-fulfilment of this aim, the APO has commissioned a series of publications (e.g. Mann and Mohammed, 2012; Mann et al; 2012a, 2012b) aimed specifically at enabling SMEs in Asia to understand how a variety of improvement tools play a role in the journey towards excellence. The aim of these publications is to encourage more SMEs to use them.

The activities of the APO, therefore, provide validation for the study implications relating to the need for SMEs to be more aware and engaged with the use of improvement tools as well as justification of the challenges that they face. Furthermore, the activities of the NPO provide justification for implications regarding the role of government in providing assistance to SMEs. The activities of the APO also provide justification for the implications relating to

developing countries (and in particular, Asian countries including India and China) starting to catch up with developed countries with respect to adoption of improvement tools. Further validation of implications relating to the rapid changes in developing economies is provided by data from the International Standards Organisation (ISO) whose data shows increasing take up of quality-related standards in developing countries (ISO, 2014) while other studies have indicated a contrasting decline in interest in quality and improvement tools in developing countries (Millard, 2003; Adebajo and Mann, 2008)

Academically, this study has provided new insights into differences between organisations in developed and developing countries. It has shown that the perception that organisations in developed countries may be more adept or experienced at business practices may not be entirely true. There is a need to further investigate the relationships between the adoption of business improvement initiatives and organisational competitiveness in both developed and developing countries. Such a study would be best conducted via a questionnaire design and a research methodology that can enable simultaneous analysis of multiple relationships (e.g. Structural Equation Modelling). In addition, it is also important to investigate if a shift in economic base in developed countries from manufacturing to service-based economies has influenced the adoption of business improvement initiatives that were developed and originally used by organisations in developed countries. Such a study can be conducted using either qualitative or quantitative methods. Suitable qualitative methods would include structured interviews and focus groups while suitable quantitative methods would include a questionnaire survey or an analysis of existing industrial datasets.

In terms of limitations, it is important to recognise that organisations participating in the study did so voluntarily. As the study was promoted by leading bodies in benchmarking and quality management in some of the countries, it is likely that some of the organisations that participated were of higher business maturity than the average organisations in their countries and were therefore more likely to utilise improvement initiatives. Whilst this is recognised the authors still consider that this study provides useful insights into the relative use and effectiveness of improvement initiatives in the countries studied. Indeed, the author's study will hopefully encourage other researchers to undertake a more comprehensive global study using random sampling on the use and effectiveness of improvement initiatives. Furthermore, the study was based on the collection of data that was suited to analysis by descriptive methods. Future similar studies will consider other approaches including the collection of qualitative data.

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