Self-Assessment and Quality Awards Models: a review of practice and process

Mehran Doulatabadi
Centre for Organisational Excellence Research (COER)
Massey University
Palmerston North 4442, New Zealand
md756@uowmail.edu.au

Azizah Yusof
Department of Educational Sciences, Mathematics and Creative Multimedia
Universiti Teknologi Malaysia
Johor Bahru, Johor, Malaysia
azizah38@live.utm.my

Abstract

It is emphasized that self-assessment practices using quality award-based models has been adopted by companies throughout the world as a comprehensive and systematic means for improvement. National Quality Award (NQA) models around the world have been developed to assist organizations for analyzing its performance with reference to quality management. In this paper the authors discuss the self-assessment practices based on NQA models on the basis of current literature. A range of issues is discussed including the main purpose, benefits and process of self-assessment practices. The main quality award-based world-renowned models and frameworks are also reviewed in this paper. This study is also highlighted the main benefits of self-assessment practices for organizations seeking to introduce quality management. The results can be considered as valuable information for management review to develop an effective action plan to better-performing companies by analyzing their current practice in their quest to put meaning to quality.

Keywords
Self-assessment, National Quality Award; Quality Management, Quality Award Models.

1. Introduction

With the increasing levels of international competition and the demand of major customers for quality, a variety of quality improvement approaches have been proposed as the prime driver to measure of company performance. One of the most common ways and systematic reviews of an organization's activities and performance against a quality model, usually based on a National Quality Award (NQA), is self-assessment. Self-assessment through participation in a NQA program is considered as an effective way for analyzing company performance with reference to quality management. NQA programs around the world have been mainly proposed as the prime driver for company performance assessment purpose against the existing quality assessment models. These models have spread as a way of increasing competitiveness and reducing costs by helping to incorporate and assess quality management principles and practices within organizations (Kim *et al.*, 2009; Al Marri *et al.,* 2007). They provide guidelines for organizations seeking to introduce quality management.

Over the last few years, self-assessment approach through participation in a quality award program has been widely adopted by organizations as an essential instrument to assess their performance towards excellence (Dimitriadis *et al.,* 2015; Doeleman *et al.,* 2014; Brown, 2013). For many organizations conducting self-assessment against quality award models is strategically and tactically vital for gaining a competitive advantage.

The purpose of this paper is to provide an overview of the concepts of self-assessment using National Quality Award (NQA) models and frameworks on the basis of current literature. It includes a discussion relating to the main concepts, purpose, benefits, approach and process of self-assessment in organizational level. A discussion of NQA including purpose and benefits then will present. The paper also discussed on the four main world-renowned quality models and frameworks as a means of company quality assessment in international level.

2. Self-Assessment Practice

There has been an increase in the practice of self-assessment using quality award-based models among countries around the world. Self-assessment through participation in a NQA is considered as an effective way of company performance assessment. For many organizations self-assessment practices is strategically and tactically vital for gaining a competitive advantage towards achieving business performance. Self-assessment practices in organizational context, recognized as a process which enables organizations to determine where they are on their business activities and plan out the next steps. It is perceived as a key driver and one of the powerful approaches for improving performance in an organization. Self-assessment is a method of looking across an organization at a specific point in time to see where it is in relation to achieving its performance outcomes (Lee, 2002). It is considered as an effective way of learning and improving the organizations strengths and weaknesses. Self-assessment practice answers the fundamental question including, where an organization is now, where they want to be, how they can get there, and how close they are to the world class destination. In the initial stages, self-assessment can be used as a 'health check' a starting point for focusing attention and action.

2.1 The Nature and Benefits of Self-Assessment

The origin and key concept of self-assessment is referred to the initiation of quality award assessment models and frameworks. Self-assessment according to EFQM (2014) defined as "a comprehensive, systematic and regular review of the activities and results of an organization, against a model of business excellence". Hillman (1994) is clearly defined self-assessment as a process of evaluating against a model for continuous improvement. Van der Wiele *et al,* (1997) also defines self-assessment as a quality management issue that is used by organizations for increasing quality awareness, driving the quality improvement activities, and improving business performance.
In an organizational context, self-assessment is used as a method for learning and improving the organizations strengths and weaknesses. It is recognized as a process which enables organizations to determine where they are on their business activities and plan out the next steps. According to Hillman (1994) self-assessment aims at identifying and acting on the areas which require improvement efforts, while recognizing and maintaining the practices. The major outcome of the self-assessment is to distinguish clearly what an organization has been achieved and what needs to be done for improvement actions against an award model (Hillman, 1994). According to Zairi (1994), the main purpose of self-assessment are as follows:
1) Identify strengths in key processes;
2) Exploit potential areas of improvement;
3) Work on areas which need improvement; and
4) Monitor the impact of appropriate action plans on a regular basis.

In organizational level, the primary purpose of self-assessment is to identify organizations strengths and areas for improvement and to develop action plans to improve performance (EFQM 2012). By identifying strengths and weaknesses, an organization can develop and implement an improvement strategy by analyzing the current situation (Samuelsson & Nilsson, 2002). With respect to quality awards models, however, the major outcome of the self-assessment is to distinguish clearly what an organization has been achieved and what needs to be done for improvement actions against a quality award model (Hillman, 1994). As stated by Mann and Grigg (2004) organizations around the world adopt self-assessment for several reasons as follows:

i. The provision of a mechanism for selecting high performing organizations for national awards;
ii. Providing feedback on performance for award applicants, and
iii. To promote and encourage organizational self-assessment, benchmarking and general management education and development.

Within the relevant literature there are many studies that are highlighted the benefits of implementing self-assessment through participation in a quality award process in a periodic way and on a continuous basis as follows:

i. To facilitate and identify of strengths and areas for improvement (Aly, 1997; Hillman, 1994; Svensson and Klefsjo¨, 2000; Oakland, 2005; Dimitriadis et al., 2015).
ii. As a basis for improvement planning in the firm (Conti, 1997; Oakland, 2005; Dimitriadis et al., 2015).
iii. For benchmarking and for comparing firm performance and management with world class standards (Aly, 1997).
iv. For keeping the portfolio of clients in the future (Dimitriadis *et al.,* 2015).
v. To facilitate the integration of quality management principles in every business practice (Dimitriadis *et al.,* 2015; Myers and Heller, 1995).
vi. To foster learning in the organization (Dimitriadis et al., 2015).

2.2 The Approach and Process of Self-Assessment

Self-assessment may be conducted in different ways. There are several approaches that can be used to conduct a self-assessment, including: survey questionnaire; pro forma; workshop; the matrix chart; and award simulation. These techniques vary in terms of their top down versus empowered implementation. Of these approaches, however, survey questionnaires and award simulation has been widely adopted by organizations as main instrument to assess their business performance towards achieving excellence (EFQM, 2014). A summary of self-assessment approaches is provided in Table 1.

Table 1. Summary of self-assessment approaches (Source: EFQM, 2014)

Approach	Description
Survey questionnaire	▪ It consists of a set of questions to assess an organization's performance for each category item. ▪ The results can then be analyzed to determine appropriate actions.
Pro-forma	▪ It is designed for all of category items. ▪ Each form would require the organization to record how it addressed that particular item, its strengths, weaknesses, and actions for improvement.
Workshop	▪ It usually involves a senior management team gathering data and evidence to present to peers at a workshop. ▪ At the workshop, performance against the model is scored and action plans are agreed upon.
The matrix chart	▪ It involves the creation of a company specific achievement matrix within the framework. ▪ Individuals or teams use the matrix to score their business processes.
Award simulation	▪ It involves writing a full submission document along the lines described by the administrators of a country's national award. ▪ Based on the evidence within the submission document and supporting evidence from a site visit, internal or external assessors evaluate the organization and provide feedback.

According to Hillman (1994) there is no common and best way to carry out a self-assessment as each proposed approach has advantages and disadvantages. The decision of which approach to use depends on the objectives and level of quality maturity of the company. In general, it has been suggested that for a company that conducts a self-assessment for the first time, it is wise to use a survey questionnaire as a self-assessment approach and then develop and use other approaches once they are more mature. In this sense, it has also been recommended that companies in the first instance apply an appropriate and standard model such as those underlying the EFQM Excellence Model (Conti, 2007). However, as more experience in self-assessment is obtained it would be advisable to utilize a personalized reference model in conducting a self-assessment.

Assessment against the NQA models particularly, for award purposes, is usually based on self-assessment methodology. Self-assessment process using quality award-based models is generally grouped as 'non-quantitative' aspect of quality management practices (Doulatabadi and Yusof, 2015).
There are different phases of quality award process as suggested by Svensson and Klefsjo (2000). They argue that self-assessment that is used in the award process has four phases, similar to the Deming cycle. Irrespective of what types of approach is used, there are general steps and procedures for conducting a self-assessment as illustrated in Figure 1. Details of how these processes apply to an organization can be found in 'EFQM Assessing for Excellence: A Practical Guide for Self-Assessment' (2014).

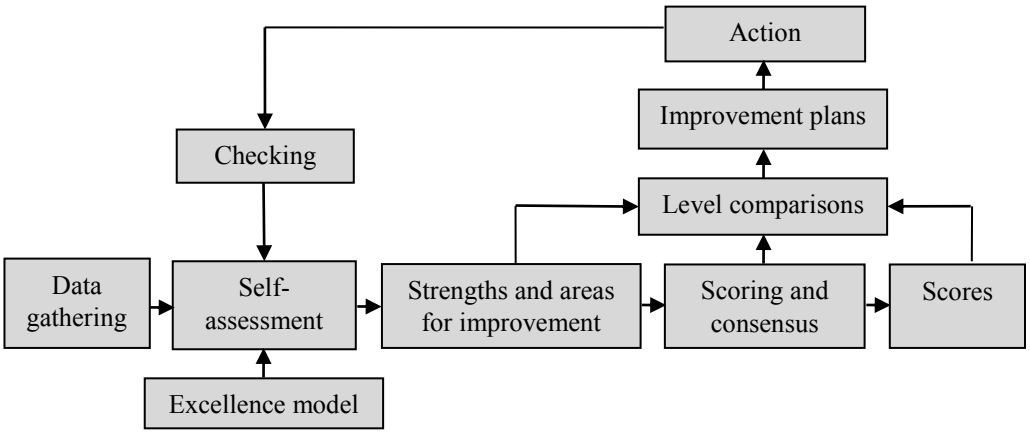

Figure 1. Self-assessment process (Source: adopted from EFQM, 2014, p. 41).

3. NQA as a Self-Assessment Tool

In the never-ending journey of quality, NQA programs is regarded as an effective pillar for becoming a world-class company with reference to quality management (Mann *et al.,* 2011b; Bauer *et al.,* 2005; Adebanjo, 2001; Laszlo, 1996). NQA programs around the world have been developed to assist organizations for analyzing their performance through carry out a self-assessment. They are primarily designed to recognize the best-performing organizations in terms of quality implementation (Miguel, 2004; Meers & Samson, 2003). They provide guidelines to organizations for effective quality management practices towards improving organizational performance. Organizations around the world use NQA models as an effective means for assessing their quality practices and business performance (Go´mez-Lo´pez *et al.,* 2015a; Dahlgaard et al., 2013). The NQA program is one of the strongest ways for companies to achieve process excellence in order to survive in nowadays' competitive environments. They have been created as a tool of self-assessment to assist organizations in evaluating their performance based on world-wide quality models/frameworks (Talwar, 2011b; Grigg & Mann, 2008b; Tan & Lim, 2000).
It has been reported that organizations which have successfully implemented and sustained quality through participating in a quality award have achieved significant improvements in quality, productivity, competitiveness or financial returns (Brown, 2014; Su *et al.* (2014); Boulter *et al.,* 2013; Mann *et al.,* 2011; Angell and Corbett, 2009; Grigg and Mann, 2008c; Meers and Samson, 2003; Dahlgaard-Park and Dahlgaard, 2003; Eriksson, 2004; Deming, 1982, 1986). Furthermore, the participation in a quality award will assess organizations to benchmark and compare their quality practices with other organizations as well as to obtain a more comprehensive view of their business processes (Eriksson and Garvare, 2005).

3.1 History and Background of NQA

The development of NQA programs in most part of the world has a history of less than 25 years. Over the last two decades, a number of prestigious national and regional quality awards have been designed and implemented, in both developed and developing countries, to encourage business organizations to assess their quality management

practices (Talwar, 2011a). However, the NQA practice has not occurred at equal levels in different regions of the world. While early practice started in Japan, the United States, and Europe, followed by the South East Asian countries; countries in the Middle East have been behind in the quality journey (Mann *et al.,* 2011a). Recent study indicated that there are over 100 NQEA programs that have been established in developed and developing countries (Talwar, 2011a). However, according to a more recent report published by the Centre for Organizational Excellence Research (COER) at Massey University in New Zealand only about 67 of these awards are known to be active in different industries including manufacturing, service, health-care and education. More details on this particular study can be found in Business Performance Improvement Resource's report (BPIR) (2015).
Today, quality assessment models/frameworks have been considered by many organizations as an effective way for self-assessment measurement in the pursuit of excellence (Doulatabadi and Yusof, 2016). NQAs have been developed as a practical tool to help organizations establish an appropriate management system by measuring where they are on the path to excellence, helping them to understand the gaps, and then stimulating solutions' (EFQM 2003). They are considered as holistic models to guide organizations to assess quality activities in their journey towards excellence. Guidelines of these award models usually make reference to self-assessment process and benchmarking based on the core elements of Total Quality Management (TQM) Philosophy.

3.2 The Purpose and Benefits of NQA

The primary purpose of developing NQA is to provide guidance for building organizational performance (Boulter *et al.,* 2013; Dahlgaard-Park and Dahlgaard, 2003; Eriksson, 2003). NQA programs guide organizations in their strategy (Brown, 2014; Su *et al.,* 2014) business processes (Mann *et al.,* 2011a; Angell and Corbett, 2009) and quality improvement (Grigg and Mann, 2008a; Meers and Samson, 2003). According to Ghobadian and Woo (1996) the common goal of NQA is to raise quality awareness among industrialist and the general public. Majority of these organizations carry out self-assessment method as a way of finding out where they are now, considering where they want to improve, and then making decisions on how to get there in pursuit of excellence.
The first and immediate aim of NQA is the continuous improvement of performance towards achieving excellence (Brown, 2014; Mann *et al.,* 2011; Porter and Tanner, 2004; Sila and Ebrahimpour, 2002). Research show that NQA programs have been developed in different countries around the world for the following reasons:

i. To select high performing organizations for national awards and providing feedback on performance for award applicants (Grigg and Mann, 2008c).
ii. To assess and recognize excellent organizations based on business excellence models throughout the globe (Meers and Samson, 2003).
iii. To promote and encourage organizational self-assessment, benchmarking and general management education and development (Dahlgaard *et al.,* 1998; Mann and Grigg, 2004; Porter and Tanner, 2004).
iv. To measure organizations progress to improve their performance and competitive advantage (Bohoris, 1995; Vokurka *et al.,* 2000; Miguel, 2001).
v. To provide a national focus on quality improvement and competitiveness of the organizations as well as to pursue excellence in an effective way (Dahlgaard *et al.,* 1998).
vi. To recognize their high commitment level towards quality excellence (Asif and Gouthier, 2014; Lee *et al.,* 2003).
vii. To assist organizations to improve their performance towards business excellence (Brown, 2014; Miguel, 2001).

It has been reported that organizations which have successfully implemented and sustained quality through participating in a quality award have achieved significant improvements in quality, productivity, competitiveness or financial returns (Brown, 2014; Su *et al.* (2014); Boulter *et al.,* 2013; Mann *et al.,* 2011; Angell and Corbett, 2009; Grigg and Mann, 2008c; Meers and Samson, 2003; Dahlgaard-Park and Dahlgaard, 2003; Eriksson, 2004; Deming, 1982, 1986). Furthermore, the participation in a quality award will assess organizations to benchmark and compare their quality practices with other organizations as well as to obtain a more comprehensive view of their business processes (Eriksson and Garvare, 2005).

3.3 NQA Based Assessment Models

In the area of quality management there is no universal method for self-assessment. However, the Deming Prize (DP) of Japan, the Baldrige Excellence Framework of the United States, the EFQM Excellence Model in Europe, and the Australian Business Excellence Framework (ABEF) in Australia are recognized as the top globally accepted major quality award assessment models/frameworks (Brown, 2014; Mann *et al.,* 2011a; Talwar, 2011a; Lee, 2002); McDonald *et al.,* 2002; Hughes and Halsall, 2002; Miguel, 2001; Puay *et al.,* 1998). Table 2 presents the criteria and the key features of these models as discussed in the literature. There are more similarities than differences between these models in terms of criteria and relevant scores as presented in the table.

Table 2. Major NQA based assessment models (Adapted/edited from Sharama &Talwar, 2007)

Award name	Country (Year)	Responsible organization	International influence	Main objectives
DP[1]	Japan (1951)	Union of Japanese Scientist and Engineers (JUSE)	Southeast Asia and North America.	▪ To promote widespread adoption of quality in organisations established awards and frameworks for promoting and developing quality. ▪ To increase the knowledge and practice of Total Quality Control (TQC) as a way of driving quality in Japan.
MBNQA[2]	United States (1987)	National Institute of Science and Technology (NIST)	North and South America; Asia, Oceania and Europe.	▪ To improve organizational performance practices, capabilities, and results ▪ To facilitate communication and sharing of best practices information among US organizations of all types
EFQM[3]	Europe (1988)	European Foundation for Quality Management (EFQM)	Europe; Central Asia; Middle East; and Africa.	▪ To enhance global competitive position of Western Europe by accelerating acceptance of quality as a strategy for global competitive advantage. ▪ To support the evolution of European management identity
ABEA[4]	Australia (1988)	Standards Australia International (SAI)	Asia and Oceania.	▪ Increase management's quality awareness and recognises accomplishment in quality and productivity improvement. ▪ Provides a benchmark for achievements among Australian organisations.

Note:1. Deming Prize; 2. Malcolm Baldrige National Quality Award; 3. European Foundation for Quality Management; 4. Australian Business Excellence Award.

Among these models, Baldrige Criteria for Performance Excellence (BCPE) and European Foundation for Quality Management (EFQM) Excellence Model are most commonly adopted and used as the basis for developing quality and business excellence awards in different countries (Saunders *et al,* 2008). The EFQM Excellence Model is the most popular framework use throughout Europe and the Middle East, whereas the Baldrige Excellence Framework is used in the United States and many countries in Asia (Grigg and Mann, 2008b). Since their inspection, these two models have generated great interest and provided role models to thousands of organizations around the world including Middle East (Mann *et al.,* 2011a). They are also adopted as worldwide tools of self-assessment and implemented throughout many government organizations in countries within Middle East and North Africa (MENA) region. NQA based assessment models have gone through many changes particularly the Baldrige Award, the European Quality Award and the Australian Quality Award (Mann *et al.,* 2011a). The overall NQA models o generally include a minimum of seven core criteria. All the models follow similar procedures for the assignment of their own quality and business excellence awards programs and use a weighting scheme in scoring performance against the defined criteria. A brief background of each major award models and frameworks is given below.

Deming Prize Model

The Deming Prize (DP), as the highest quality award model in the world, was established by the board of directors of the Japanese Union of Scientist and Engineers (JUSE) in 1951. DP as the first Japanese national quality award model was created to thank Dr. William Edwards Deming (1900 - 1993) for his contribution to the development of industrial quality control in Japan (JUSE, 2014). The main purpose of the prize is to increase the knowledge and practice of Total Quality Control (TQC) as a way of driving quality in Japan (Kanji, 2002). The DP is unique and provides different focus in comparison with other quality models. The DP is awarded annually to both individuals and group organizations that demonstrate outstanding quality by implementing Total Quality Control (TQC) program using statistical control tools. It evaluates the operation of an organization against 10 criteria that are centered on the implementation of a set of principles and techniques such as process analysis, statistical methods, and quality circles. The award has four categories include Deming Prize for Individuals, Deming Distinguished Service Award for Dissemination and Promotion (Overseas), Deming Prize, and Deming Grand Prize (former Japan Quality Medal) (JUSE, 2014).

Baldrige Excellence Framework

The Baldrige Criteria for Performance Excellence (BCPE) was established in 1987 as a basis for quality award in the United State. It was named after Malcolm Baldrige (1922-1987), former Secretary of Commerce of the United States, in recognition of his contributions to quality improvement in the United States (NIST, 2014). The basic structure of Baldrige Excellence Framework consists of 11 core values addressed in seven categories. Six of the categories are called 'systematic processes' and include leadership; strategic planning; customer focus; measurement, analysis, and knowledge; workforce focus; and operations focus. In turn, the 'systematic processes' lead to 'performance results', the seventh category. The Malcolm Baldrige National Quality Award (MBNQA) programme is inspired by Deming Prize and is similar in its principles and evaluation criteria. It is the highest level of national recognition for performance excellence that is given yearly to organizations in the United States in three eligible categories including production companies, service companies and small business (NIST, 2014). The main purpose in developing the MBNQA programme was to promote quality excellence among organizations based in the United States (Kanji, 2002).

EFQM Excellence Model

The EFQM Excellence Model was introduced in 1988. It was developed by a non-profit organization called European Organization for Quality (EOQ) with the support of the European Commission (EC). The EFQM Excellence Model helps organizations to know how far they have come in their journey to excellence (Kanji, 2002). The model as a well-respected excellence model has been used by organizations for different purpose. The structure of the EFQM Excellence model is based on nine criteria as well as a management tool to drive continuous improvement called RADAR. The first five categories of the EFQM are termed `enablers' criteria which primarily focused on what an organization does, while the last four are termed `results' criteria refer to what an organization achieves (EFQM, 2014). The EFQM Business Excellence Award (formerly known as the European Quality Award) is the most prestigious excellence award to structure and review quality management processes of organizations in European countries. It is awarded annually by the EFQM organization to high performing companies in four categories namely large, small and medium enterprises, non-profit organizations and corporate departments or division (EFQM, 2014). The aim of the award is to recognize companies across Europe for achievements in business excellence (EFQM, 2014).

Australian Business Excellence Framework

The Australian Business Excellence Framework (ABEF), which formerly called the Australian Quality Award framework, is another existing worldwide excellence model established independently in 1988. It was developed by the Australian Quality Council (AQC) in order to help Australian organizations meet the challenges of the global

market. The framework provides a useful vehicle for organizations to assess their excellence against internationally recognized business principles. ABEF has been the model for excellent organizations across Australia for over two decades. It measures quality performance through seven categories of criteria. The main aim of the award is to encourage indigenous companies to improve quality of their offerings, raise their performance to world-class level, and provide a benchmark for their achievements (SAI Global, 2014). Australian Business Excellence Award (ABEA) is Australia's premier business award presented yearly to high performing organizations in four categories namely large organizations, subsidiaries and divisions of large organizations, medium sized enterprises, and small sized enterprises. It is administrated by the Standards Australia International Limited (SAI) as a private organization since 2005 (Grigg and Mann, 2008a).

4. Discussion and Conclusion

This paper has provided a detailed discussion of the concepts of self-assessment using National Quality Award (NQA) models/ frameworks on the basis of current literature. The discussions were included a brief description relating to the main concepts, purpose and benefits, and approach and process of self-assessment in organizational level. Self-assessment through participation in a NQA program is considered as an effective way for analyzing company performance with reference to quality management. Quality awards models/frameworks have been mainly proposed as the prime driver for this purpose. In short, self-assessment allows the organizations to evaluate their current level of quality management practice and progress based on the assessment results. It gives guidelines to organizations to distinguish how well it practiced compared with other organizations in their drive towards being more competitive. From the assessment results, organizations also will enable to get a quick overview on where they are in their quality journey and where improvements need to be made in the future. Today, the four world-renowned quality models are used by organizations throughout the world in self-assessment process for achieving organizational excellence. Achieving business excellence through self-assessment, benchmarking by continuous quality improvement are essential part of these models. Organizations around the world have adopted four world-renowned quality models for their internal self-assessment process.

Acknowledgements

The authors would like to take the opportunity to thank Dr. Robin Mann, Director of Centre for Organisational Excellence Research (COER) at Massey University for share his knowledge and opinion in this study.

References

Adebanjo, D., TQM and business excellence: is there really a conflict?, *Measuring Business Excellence*, *5* (3), 37 – 40, 2001.

Al-Marri, K, Ahmed, A.M.M.B., & Zairi M., Excellence in service: An empirical study of the UAE banking sector, *International Journal of Quality & Reliability Management*, *24* (2), 164-176, 2007.

Aly, M.A., Is self-assessment (as a powerful tool for total quality management implementation) suitable in the Middle East context? The experience of a petrochemical global company. *Total Quality Management.* 8 (2-3), 54-59, 1997.

Angell, L. C., & Corbett, L. M., The quest for business excellence: Evidence from New Zealand's award winners. *International Journal of Operations & Production Management, 29*(2), 170-199, 2009.

Asif, M., & Gouthier, M.H.J., What service excellence can learn from business excellence models? *Total Quality Management and Business Excellence*, *25* (5-6), 511-531, 2014.

Bauer, J., Falshaw, R. & Oakland, J.S., Implementing business excellence. *Total Quality Management and Business Excellence, 16* (4), 543-553, 2005.

Boulter, L., Bendell, T. & Dahlgaard, J.J., Total quality beyond North America: A comparative analysis of the perfor mance of European Excellence Award winners. *International Journal of Operations and Production Managem ent*, *33* (2), 197–215, 2013.

BPIR. *Business Performance Improvement Resource: New Research Shows 61 Countries with National Business Ex cellence Awards, 2015.* Retrieved from http://blog.bpir.com/latest-news/new-research-shows-67-countries-with -national-business-excellence-awards/#sthash.EQAK1z5K.dpuf.

Brown, A. R., How do excellent companies stay excellent?, *Total Quality Management and Business Excellence*, 24 (1-2), 108-118., 2013.

Brown, A. R., Organizational paradigms and sustainability in excellence. *International Journal of Quality & Service Sciences, 6* (2/3), 181–190, 2014.

Conti, T., A history and review of the European quality award model. The TQM Magazine, 19 (2), 112-128, 1997.

Dahlgaard-Park, S.M., Chen, C.K., Jang, J.Y. & Dahlgaard, J.J. (2013). Diagnosing and prognosticating the quality movement–A review on the 25 years quality literature (1987–2011). Total Quality Management & Business Excellence, 24(1-2), 1-18, 2007.

Dahlgaard-Park, S.M. & Noronha, C., Learning from failure. *Euro Asian Journal of Management, 13*(2), 3-105, 2003.

Deming, W. E., Quality, Productivity, and competitive position. Cambridge, MA: MIT Center for Advanced Engineering Study, 1982.

Deming, W.E., *Out of the Crisis.* Boston. MA: MIT Press, 1986.

Dimitriadis, V., Kousoulis, A., Sgantzos, M., Hadjipaulou, A., & Lionis, C., Implementing a system to evaluate quality assurance in rehabilitation in Greece. *Disability and Health Journal,* 8(1), 35–43, 2015.

Doeleman, H.J, Have, S., & Ahaus, C. T. B., Empirical evidence on applying the European Foundation for Quality Management Excellence model: A literature review. *Total Quality Management & Business Excellence,* 25(5–6), 439–460, 2014.

Doulatabadi, M., Yusof, S.M. Ranking measures for sustaining quality excellence practices: An empirical investigation, Lecture Notes in Electrical Engineering, vol. 349, pp. 1009-1019, 2015.

Doulatabadi, M., Yusof, S.M. Sustained quality award status in developing country: A study on the Dubai Quality Award recipients, In Proceedings of the 3rd International Conference on Industrial Engineering, Management Science and Applications, art. No. 7504036, 2016.

EFQM. *The EFQM framework for risk management. European Foundation for Quality Management, Brussels,* 2012. Retrieved from http://www.efqm.org/uploads.

EFQM *Assessing for Excellence: A Practical Guide for Self-Assessment, European Foundation for Quality Management,* 2014. Retrieved from http://www.efqm.org/uploads/EEA2007referenceguide.pdf.

Eriksson, H. & Garvare, R., Organisational performance improvement through quality award process participation, *I nternational Journal of Quality and Reliability Management*, *22* (9) 894-912, 2005.

Eriksson, H., Experiences of working with in-company quality awards: a case study, *The TQM Magazine*, 15 (6), 39 7-407, 2003.

Eriksson, H., Organizational value of participating in a quality award process: a Swedish study. *The TQM Magazine*, *16* (2), 78-92, 2004.

Ghobadian, A., & Woo, H. S., Characteristics, benefits, and shortcomings of four major quality awards. *International Journal of Quality and Reliability Management, 13* (2), 10–44, 1996.

Go´mez-Lo´pez, R., Serrano-Bedia, A. M., & Lo´pez-Ferna´ndez, M. C. Motivations for implementing TQM through the EFQM model in Spain: An empirical investigation. *Total Quality Management & Business Excellence.* doi:10.1080/14783363.2015.1068688, 2015.

Grigg, N., *Development of a statistical quality model for the control and improvement of packing processes within food manufacturing operations.* Unpublished Doctor of Philosophy Thesis.University of Strathclyde. Glasgow. United Kingdom, 2004.

Grigg, N.P., & Mann, R.S., Review of the Australian Business Excellence Framework: A comparison of national strategies for designing, administering and promoting business excellence frameworks. *Total Quality Management and Business Excellence, 19* (11), 1173–1188, 2008a.

Grigg, N.P., & Mann, R.S. Promoting excellence: An international study into creating awareness of business excellence models. *The TQM Magazine, 20* (3), 233-248, 2008b.

Grigg, N.P., & Mann, R.S. Rewarding excellence: An international study into business excellence award processes. *Quality Management Journal, 15*(3), 26–40, 2008c.

Hillman, P.G. Making self-assessment successful. *The TQM Magazine, 6*(3), 29-31, 1994.

Hughes, A., & Halsall, D.N., Comparison of the 14 deadly diseases and the business excellence model. *Total Quality Management. 13*(2), 255-263. doi:10.1080/09544120129192487, 2002.

JUSE. Union of Japanese Scientists and Engineers, *The Application Guide for the Deming Prize*, 2014. Retrieved from http://www.juse.or.jp/e/deming/97.

Kanji, G. K., Business excellence: make it happen, *Total Quality Management, 13* (8), 1115-1124, 2002.

Kim, D., Kumar, V., & Murphy, S., European foundation for quality management business excellence model: An integrative review and research agenda, *International Journal of Quality & Reliability Management*, *27* (6), 684-701, 2009.

Laszlo, G.P., Quality awards - recognition or model? *The TQM Magazine*, *8* (5), 14-18, 1996.

Lee, P.M., Sustaining business excellence through a framework of best practices in TQM, *The TQM Magazine, 14* (3), 142 – 149, 2002.

Lee, S.M., Rho, B.H., & Lee, S.G., Impact of Malcolm Baldrige National Quality Award Criteria on organizational quality performance. *International Journal of Production Research*, *41* (9), 2003-2020, 2003.

Mann, R.S, Adebanjo, D., & Tickle, M., Deployment of business excellence in Asia: An exploratory study. *International Journal of Quality & Reliability Management, 28* (6), 604–627, 2011a.

Mann, R.S, Adebanjo, D., Laosirihongthong, T., & Punnakitikashem, P., Awareness and impact of business excellence in Asia. *Total Quality Management & Business Excellence, 22* (11), 1237-1258, 2011b.

Mann, R.S., & Grigg, N.P., Helping the kiwi to fly: Creating world-class organizations in New Zealand through a benchmarking initiative. *Total Quality Management, 15* (5–6), 707–718, 2004.

McDonald, I., Zairi, M., & Idris, M. A., Sustaining and transferring excellence: A framework of Best Practice of TQM Transformation based on Winners of Baldrige and European Quality Awards. *Measuring Business Excellence*, *6* (3), 20–30, 2002.

Meers, A., & Samson, D., Business excellence initiatives: dependencies along the implementation path. *Measuring business excellence, 7* (2), 66-77, 2003.

Miguel, P. A. C., Comparing the Brazilian National Quality Award with some of the major prizes, *The TQM Magazine*, *13* (4), 260-272, 2001.

Miguel, P. A. C., Receiving a national quality award three times, *The TQM Journal*, *27* (1), 63 – 78, 2015.

Myers, D.H. & Heller, J., The dual role of AT&T's self-assessment process. *Quality Progress*, *28* (1), 79-83, 1995.

NIST. *National Institute of Standards and Technology: The Baldrige Performance Excellence Program*, 2014. Retrieved from http://www.nist.gov/baldrige/publications/criteria.cfm.

Oakland, J. S., From quality to excellence in the 21st century, *Total Quality Management & Business Excellence,* 16 (8-9), 1053-1060, 2005.

Porter, L. J., & Tanner S.J., *Assessing Business Excellence: A guide to business excellence and self-assessment*. New York: Taylor & Francis, 2004.

Puay, S.H., Tan K.C., Xie M. & Goh T.N. A comparative study of nine national quality awards, *The TQM Magazine, 10* (1), 30-39, 1998.

SAI Global. *Standards Australia International*: *The Australian Business Excellence Frameworks*, 2014. Retrieved from http://www.saiglobal.com/Improve/ExcellenceModels/BusinessExcellenceFramework/

Samuelsson, P., & Nilsson, L.E., Self-assessment practices in large organizations. Experiences from using the EFQM excellence model, 2002.

Sharma, A.K. & Talwar, B., *Business excellence enshrined in Vedic (Hindu) philosophy*, *Singapore Management Review*, *26* (1), 1-19, 2004.

Sila, I., & Ebrahimpour, M., An investigation of the Total Quality Management survey based research published between 1989 and 2000: A literature review. *International Journal of Quality & Reliability Management, 19* (7), 902-970, 2002.

Su, H., Linderman, K., Schroeder, R.G., & Van de Ven, A. H., A comparative case study of sustaining quality as a co mpetitive advantage, *Journal of Operations Management, 32* (7-8), 429-445, 2014.

Saunders, M., Mann, R.S. & Grigg, N.P., Utilisation of business excellence models: Australian and international exp erience, *The TQM Journal*, *20* (6), 651-663, 2008.

Svensson, M. & Kledsjo, B., Experience from creating a quality culture for continuous improvements in the Swedish school sector by using self-assessments. *Total Quality Management, 11* (4/5&6), 800-807, 2000.

Talwar, B., Business excellence models and the path ahead. *The TQM Journal, 23*(1), 21-35, 2011a.

Talwar, B., Comparative study of framework, criteria and criterion weighting of excellence models. *Measuring Business Excellence*, *15* (1), 49-65, 2011b.

Tan, K.C., & Lim, C.S., A detailed trends analysis of national quality awards world-wide, *Total Quality Management*, *11* (8), 1065-1080, 2000.

van der Wiele, A., Dale, B. G., & Williams A. R. T., ISO 9000 series registration to total quality management: the tra nsformation journey. *International Journal of Quality Science*, *2* (4), 236-252, 1997.

Vokurka, R. J., Stading, G. L., & Brazeal, J., A comparative analysis of National and Regional Quality Awards. *Quality Progress*, August, 41-49, 2000.

Zairi, M., Benchmarking: The Best Tool for Measuring Competitiveness, *Benchmarking: An International Journal*, *1* (1) pp. 11 – 24, 1994.

Biographies

Mehran Doulat-Abadi is currently a fixed-term Senior Research Fellow at Centre for Organisational Excellence Research (COER), Massey University. Dr Mehran received his PhD in Quality and Organizational Excellence. He also holds double Master's Degrees in Engineering and Quality Management well as a Graduate Certificate in Research Methodology and Design from New South Wales, Australia. Dr. Mehran has completed a Post-Doctoral Fellowship. He was involved in several research collaborations with institutions and industrial partners in United States, Australia, New Zealand, Japan, and UAE. He has received several prestigious awards and honorary scholarships. He was nominated for the award of "Best Researcher UOW 2016" in Australia as result of his academic achievements. Dr. Mehran is a registered professional member of the Association for the Australian Organization for Quality (AOQ), the American Society for Quality (ASQ), the Union of Japanese Scientists and Engineers (JUSE) and Industrial Engineering and Operations Management Society (IEOM). He is also a Certified European Excellence Assessor since 2007.

Azizah Yusof is currently a PhD researcher and part-time lecturer at Universiti Teknologi Malaysia, Johor Bahru Campus. She holds a Bachelor of Science degree in Computer Science and a Master of Educational Technology from Universiti Teknologi Malaysia. She has taught courses in Computer Network Infrastructure Cabling for engineer's students at UTM Centre for Co-curriculum Courses and Service Learning (CCSL). She is a certified Microsoft Systems Engineer with over 10 years of experience. She has published journal and conference papers. She has published research papers in refereed journals and international conferences. Her current research interests include Service Learning, Online Learning, Gamification, and Massive Open Online Course (MOOC) in Higher Education Institutions (HEI).