

Methodology term in Google dictionary defined as “a system of methods used in a particular area of study or activity”. Business process management (BPM) methodology defined by Al-Mashari and Zairi, (2000), as cited by Mohamed Zairi, (2009), as an “organized set of methods, techniques and tools, developed to guide the whole life-cycle of a process to achieve its objectives”. The author of book “Performance Excellence: A Practical Handbook”, presented a comprehensive details of methodologies used for performance measurement, management, and improvement like Six sigma, quality costing measurement, the balanced scorecard, Benchmarking, quality awards, and BEMs (Mohamed Zairi, 2003).

5. Literature Review Results’ Analysis

To consolidate the results of the conducted literature review, affinity diagram will be used. Affinity diagram assist researcher to analyze the complex or too large issues and organize the ideas or parameters into their natural relationships (BesterField et al., 2015). As result of using affinity diagram, authors able to identify **six main elements of EPRMs namely equipment, fundamentals, Performance management, input, process, and output**, and 32 sub-elements. The EPRM’s affinity diagram, elements, and sub-elements shown in the figure (1) a, and b.

Thus, **EPRMs** can be defined as a (system of methods, techniques, tools, and self-assessment approaches, used by organizations to build necessary performance management system and excellent performance fundamentals that encompasses creation of necessary core competencies, people capabilities, innovative culture, strong partnership relations, customer focus business model, top management commitment, ISO system adoption, optimum resources utilization, and managing organization behaviors. Then, use equipment, fundamentals, and performance management system, as foundation to convert organization inputs to output through process to achieve and sustain excellent organizational performance).

Based on the derived definition and affinity diagram analysis, EPRMs’ elements will be as follows:

Equipment element: Represent all methods, tools, techniques, and self-assessment approaches available in the literature that can be used to create the fundamentals and used in the process to convert input to output.

Fundamentals element: Represent all sub-elements that should be created by organization, and used as a foundation for achieving and sustaining excellent performance. The sub-elements of the fundamentals element listed in the figure (1), b.

Performance Management: Represent management system established to create, measure, and manage performance measures, indicators, and sub-indicators. Performance management system represent key element that necessary to give feedback to improve all other EPRMs’ elements. Performance management and measurement system necessary to monitor, control, and improve plans progress.

Inputs element: Vision, mission, policy, and values represent sub-elements embedded in the input element and should be created by organization management and used to create strategy. In addition, the inputs from customers, suppliers, employees, competitor analysis, and financial data represent other sub-elements should be used for strategy creation embedded in the input element. Moreover, best practices benchmarking, and employees’ input represent other two sub-elements embedded in the input element.

Process element: Process element encompasses strategy creation, goals and objectives setup, and action plans creation to achieve goals and objectives.

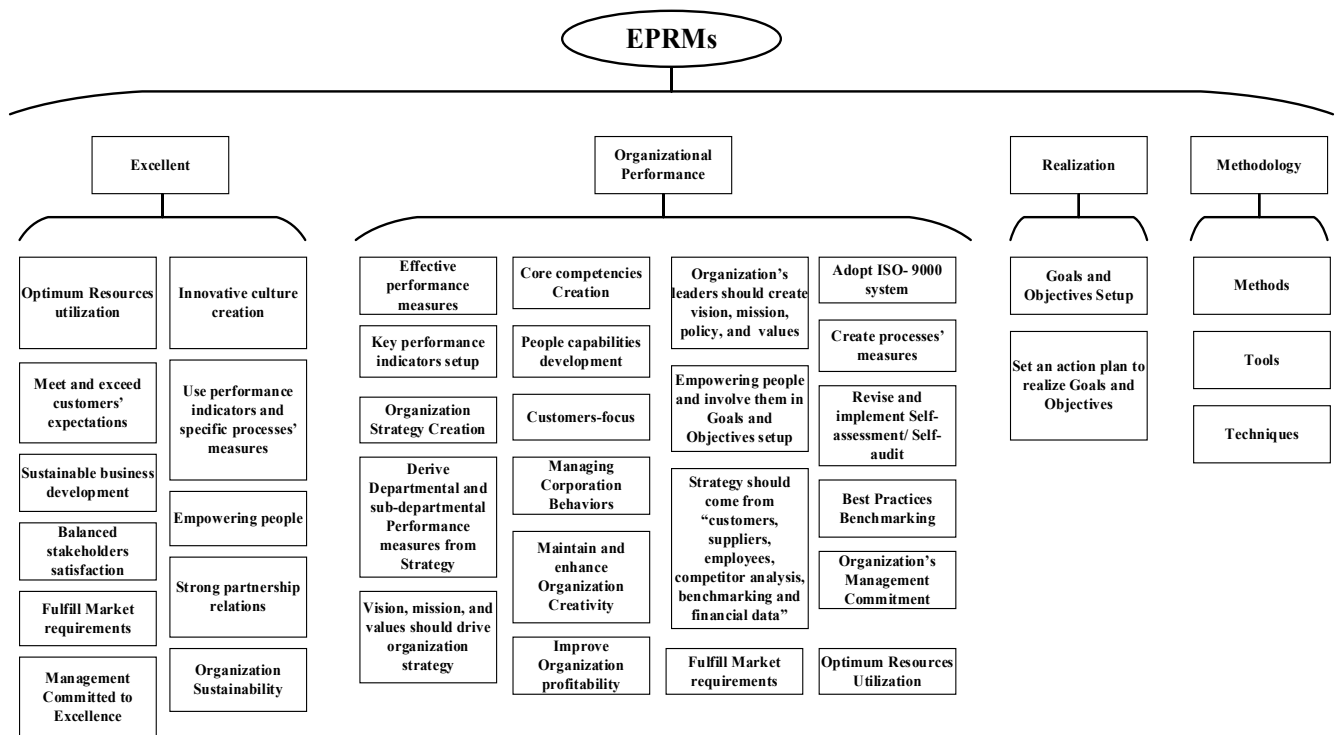
Output element: Output element encompasses many sub-elements, listed in the figure (1), b, which represent all anticipated output results should be achieved and sustained to attend excellent performance.

In the book, “4Ps of Organizational Excellence” the authors stated that “Policy and planning, people, process, and performance” factors represent the “logical and progressive way of looking at the factors that drive organizational excellence in modern times” (Mohamed Zairi, 2009). The 4Ps methodology presented by in the aforementioned book encompasses the following elements:

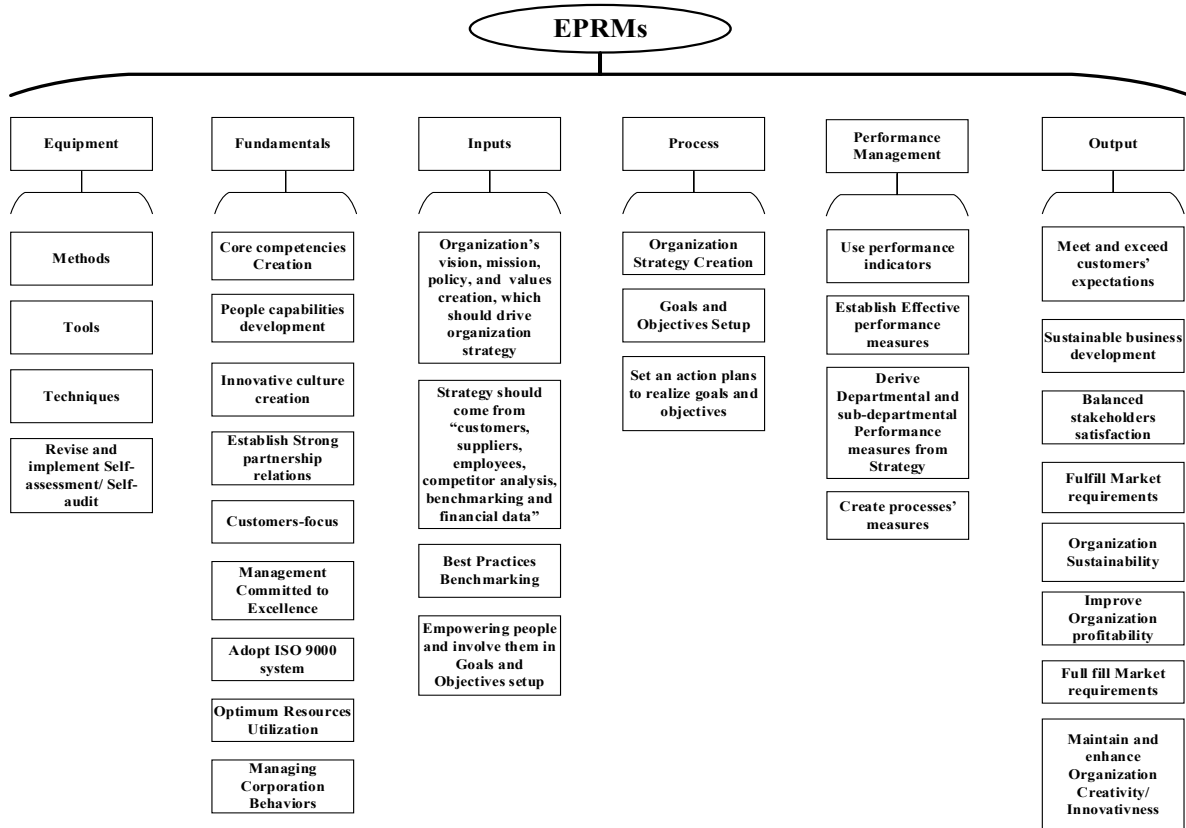
1. *Policy and planning:* Organization senior management should “govern, steer, monitor, and control path to success”, create organization strategy, and implement long term plans guided by visioning process that able to deliver organization’s goals and objectives.

2. *People*: People should be recruited, developed, engaged and involved, retained, awarded, and recognized in the right way.
3. *Process*: In the 4Ps approach, process orientation presented as third pillar of organizational excellence. The objectives of this pillar is creation of “*seamless, transparent, simplified, and optimized value chain, which focus entirely on customers and their needs*”.
4. *Performance*: Performance measurement and management considered as fourth pillar of organizational excellence in the 4Ps approach.

The comparison of 4Ps approach with EPRMs’ elements proposed in this research reveals that all 4Ps’ pillars already included in EPRM elements, especially the process. The supply chain management, business process re-engineering, and enterprise resource planning (ERP) systems mentioned in the 4Ps book as part of process-pillar, could be part of equipment element in the EPRMs.



(a)



(b)

Figure 1: Affinity diagram for EPRM

6. EPRMs' Framework

By defining EPRMs and its elements, the first and second research questions has been answered. For third question, in the figure (2), authors proposed a framework for implementing EPRMs. In this framework, all methods, tools, techniques, and self-assessment/Self-audit methods available in the literature represent the equipment element that will be used to establish necessary foundation (fundamentals), and create performance management system for the available performance indicators. Equipment element, fundamentals' element, and performance management system's element used to create inputs' element. Inputs' element used along with fundamentals' element, and performance management system's element as an inputs to process element to create strategy, goals and objectives, and action plans in all organization levels, which lead to generate all targeted outputs under output element. Performance management system will monitor the efficiency, effectiveness, gauge progress, and monitor actions of the input, process, and output elements (Mohamed Zairi, 2009), pages 192-194. The bi-directional arrows in the framework selected to emphasize on the importance of communication and bi-directional information flow in all framework elements, which represent one of the main successful leadership and management's pillars (BesterField et al., 2015), pages 40-42.

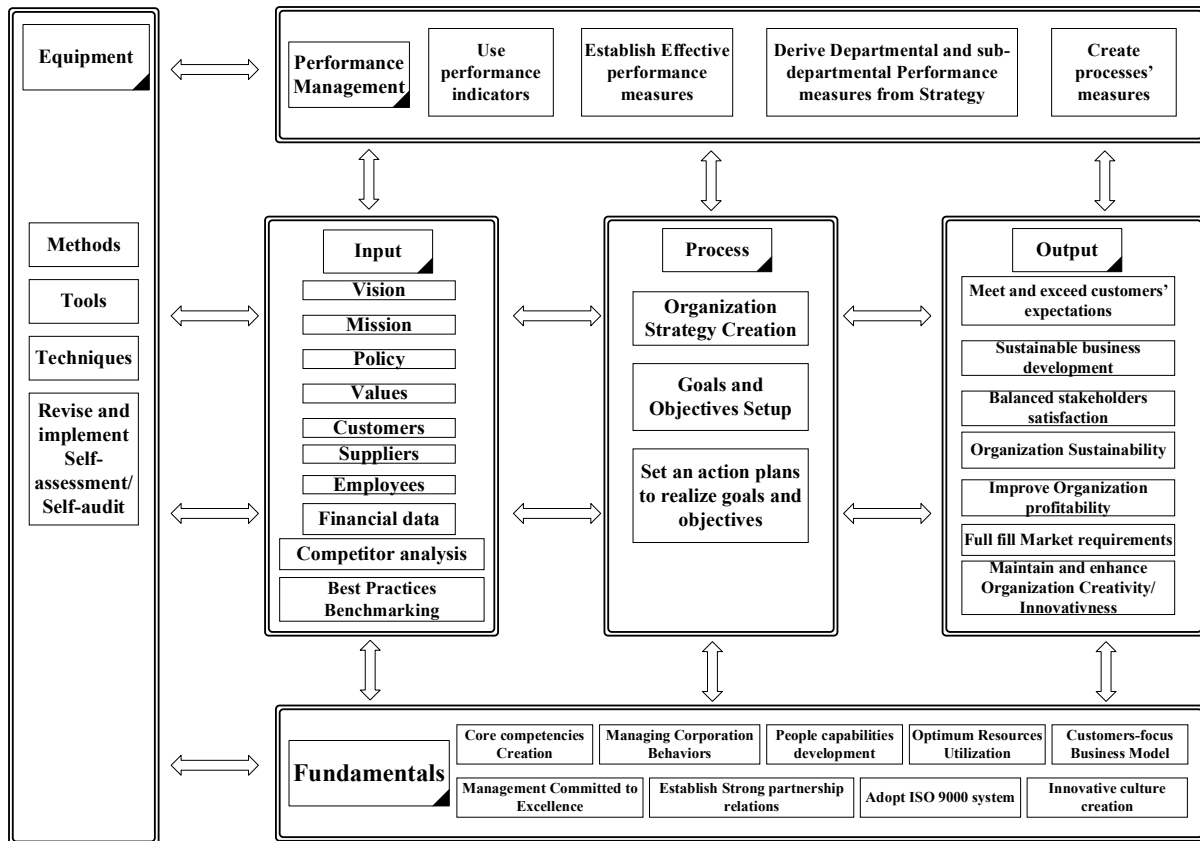


Figure 2: EPRM implementation framework

7. Conclusions

Business excellence and excellent performance realization on organizational level has been attracting many researchers in the last two decades. BEMs and their related methodological issues subjected as well to deep investigation. However, in the state of the art literature, it has been proved that BEMs still have some methodological issues that need to be resolved. In the current paper, as part of ongoing project to evaluate BEMs' EPRMs efficiency and effectiveness, authors defined EPRM after they analyzed the terminologies of EPRM, and reviewed its related literature. After that, affinity diagram used to extract the necessary information from the reviewed literature, organize it, and remove the duplicated information in order to identify the main elements of EPRMs. Based on the conducted analysis, six elements of EPRMs proposed namely Equipment, Fundamentals, Performance management, Inputs, Process, and Outputs. Moreover, EPRMs' elements used to propose a conceptual framework for applying EPRMs elements. The proposed framework gives an insight, to the researchers and practitioners in organizational excellence scope, about the elements need to be exist in any model/methodology adopted to realize excellent performance. For future work, the proposed elements and frameworks will be use to evaluate BEMs' EPRMs to improve BEMs' efficiency and effectiveness.

8. Acknowledgements

We would like to express our gratitude to the Emirates Islamic Bank and University of Sharjah for granting funds to attend and present this paper in the 9th International Conference on Industrial Engineering and Operations Management (IEOM) organized by IEOM society.

References

- Adebanjo, D. (2001) 'TQM and business excellence: is there really a conflict?', *Measuring Business Excellence*, 5(3), pp. 37–40. doi: 10.1108/13683040110403961.
- Ahmed, A. M., Yang, J. B. and Dale, B. G. (2003) 'Self-assessment methodology: The route to business excellence', *The Quality Management Journal*, 10(1), pp. 43–57.
- Akyah, U., Sumerli, S. and Uygur, A. (2013) 'The Scope and Importance of EFQM Excellence Model', *International Review of Management and Business Research*, 2(4), pp. 980–993.
- Al-Mashari, M. and Zairi, M. (2000) 'Revisiting BPR: a holistic review of practice and development', *Business Process Management Journal*, 6(1), pp. 10–42. doi: 10.1108/14637150010283045.
- B.G. dale, M. Zairi, A. V. der W. and A. R. T. W. (2000) 'Quality is Dead in Europe-long live excellence true or false', *Measuring Business Excellence*, 4(3), pp. 4–10. doi: <https://doi.org/10.1108/13683040010377737>.
- BesterField, D. H., Besterfield-Michna, C., Besterfield-scare, M., Besterfield, G. H., Undhwareshe, H. and Undhwareshe, R. (2015) *Total Quality Management*. Fourth Edi, Pearson. Fourth Edi. Pearson.
- BPIR.com Limited & Massey University. (2002) Business Performance Improvement Resource (BPIR), EPIR.com. Available at: <https://www.bpir.com/business-excellence-bpir.com/menu-id-69.html> (Accessed: 3 July 2018).
- Dale, B. G., Williams, R. T. and van der Wiele, T. (2000) 'Marginalisation of quality: is there a case to answer?', *The TQM Magazine*, 12(4), pp. 266–274. doi: 10.1108/09544780010325840.
- EFQM (2016) What is Excellence ?, <http://www.efqm.org/efqm-model/what-is-excellence>.
- Globerson, S. (1985) Performance criteria and incentive systems. Elsevier Publishing Company. doi: <https://doi.org/10.1080/00207548508928073>.
- Grigg, N. and Mann, R. (2008) 'Review of the Australian Business Excellence Framework: A comparison of national strategies for designing, administering and promoting Business Excellence Frameworks', *Total Quality Management & Business Excellence*, 19(11), pp. 1173–1188. doi: 10.1080/14783360802323669.
- Ionica, A., Baleanu, V., Edelhauer, E. and Irimie, S. (2010) 'TQM and Business Excellence', *Annals of the University of Petroșani - Economics -*, 10(4), pp. 125–134.
- Karapetrovic, S. and Willborn, W. (2001) 'Audit and self-assessment in quality management: comparison and compatibility', *Managerial Auditing Journal*, 16(6), pp. 366–377. doi: 10.1108/02686900110395505.
- Karapetrovic, S. and Willborn, W. (2002) 'Self-audit of process performance', *International Journal of Quality & Reliability Management*, 19(1), pp. 24–45. doi: 10.1108/02656710210413435.
- Kaydos, W. (1991) Measuring, managing, and maximizing performance: what every manager needs to know about quality and productivity to make real improvements in performance. *Productivity Press*. Available at: https://scholar.google.ac/scholar?hl=en&as_sdt=0%2C5&q=measuring+managing%2C+and+maximizing+performance.+what+every+manager+needs+to+know&btnG=.
- MacKerron, G. C., Masson, R. and McGlynn, M. (2003a) 'Self assessment: Use at operational level to promote continuous improvement', *Production Planning & Control*, 14(1), pp. 82–89. doi: 10.1080/0953728021000080979.
- MacKerron, G. C., Masson, R. and McGlynn, M. (2003b) 'Self assessment: Use at operational level to promote continuous improvement', *Production Planning & Control*, 14(1), pp. 82–89. doi: 10.1080/0953728021000080979.
- Mohamed Zairi (2003) *Performance Excellence: A Practical Handbook*. 1st editio. Edited by Mohamed Zairi. Bradford: eTQM College Publishing House. Available at: <https://www.amazon.com/Performance-Excellence-Practical-Mohamed-Zairi/dp/095458791X>.
- Mohamed Zairi (2009) *The 4Ps of Organizational Excellence*. First Edit. Edited by M. Zairi. Bradford: e-TQM College Publishing House. Available at: <https://estore.hbmsu.ac.ae/product/4ps-organizational-excellence>.
- Nabitz, U., Quaglia, G. and Wangen, P. (1999) 'EFQM's new excellence model', *Quality Progress*, 32(10), pp. 118–120. Available at: <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=2388753&site=ehost-live>.
- Rusjan, B. (2005) 'Usefulness of the EFQM excellence model: Theoretical explanation of some conceptual and methodological issues', *Total Quality Management & Business Excellence*, 16(3), pp. 363–380. doi: 10.1080/14783360500053972.
- Shields, J. (2007) *Managing employee performance and reward: Concepts, practices, strategies*,. doi: 10.1017/CBO9781139168748.
- Talwar, B. (2011) 'Business excellence models and the path ahead', *The TQM Journal*, 23(1), pp. 21–35. doi: 10.1108/17542731111097461.
- Young Kim, D., Kumar, V. and Murphy, S. A. (2010) 'European Foundation for Quality Management Business Excellence Model', *International Journal of Quality & Reliability Management*, 27(6), pp. 684–701. doi: 10.1108/02656711011054551.

Biographies

Alaa M. Ubaid is the Senior Administrative officer in the College of Engineering, University of Sharjah (UoS). Before joining UoS, he was the Production Manager in the LIN SCAN Advanced Pipeline and Tank Services Co, Sharjah, UAE, since June 2012 until April 2013. He has about 12 years' extensive experience in industrial sector in managing production lines, professional staff, and organizations resources' management. He obtained his MSc and BSc in Production Engineering from University of Technology, Iraq. He is a PhD candidate in Engineering Management Program in Sharjah University, Department of Industrial Engineering and Engineering Management. He has minor experience in teaching and few publications. His current research interests include several areas in business excellence, optimization, and innovation management.

Fikri T. Dweiri is the Vice Dean of College of Engineering and Founding Chairman for the Industrial Engineering and Engineering Management Department at the University of Sharjah, UAE. Before that, he served as the Dean of the School Technological Sciences at the German-Jordanian University and the Founding Chairman of the Industrial Engineering Department at Jordan University of Science and Technology. His research interest includes quality management, supply chain management, organization performance excellence, multi-criteria decision making and fuzzy logic.