

# Sustainability Embedded Organizational Diagnostic Model

Bilal Bin Saeed<sup>1,2</sup>, Wenbin Wang<sup>1</sup>

<sup>1</sup>Dongling School of Economics and Management, University of Science and Technology Beijing, Beijing, China

<sup>2</sup>Department of Management Sciences, COMSATS Institute of Information Technology, Abbottabad, Pakistan

Email: [bilalbinsaeed@yahoo.com](mailto:bilalbinsaeed@yahoo.com)

Received 26 March 2014; revised 1 April 2014; accepted 9 April 2014

Copyright © 2014 by authors and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

---

## Abstract

Organizational diagnosis is an exercise done to check an organization's current health. A complete diagnosis not only checks the current health, but also suggests corrective measures. Diagnostic models suggested by others were evaluated in this paper including some of the authors' previous work and shortcoming *i.e.* lacking the sustainable development focus in these models of organizational health diagnosis was identified. The main focus of this paper is to incorporate sustainability dimension in the organizational diagnostic model. We therefore propose in this paper an alternative, sustainability embedded model for organizational diagnosis. This model can be used by the organizational diagnosticians to perform a comprehensive organizational diagnosis.

## Keywords

Sustainable Organizational Diagnosis, Organizational Health, Diagnostic Models, Sustainability Principles, Sustainability Embedded Organizational Diagnostic Model, Organizational Health and Change Management

---

## 1. Introduction

The world of today is not what it was a few generations ago. Attributing it to globalization, changing economic trends or socio-cultural diversification, it would be apt to imply that the organizations in our society are now growing under circumstances unfamiliar to their predecessors. To cope with these uncertainties, organizations often explore innovative methods of achieving competitiveness since growing external factors such as varying demographics, globalization and technology all influence organizational performance.

Another factor which has been in the limelight in the last two decades is sustainability. There is increasing recognition that organizations play a vital role in the overall health of the society [1]. Prevention is known to be

better than the cure. This holds true in case of sustainability as well. The one condition that is bottom line for the survival of humanity is the social and ecological integrity of the system. Increased environmental concerns within society, rising public pressure and growing regulatory requirements push many organizations to increase their efforts to evaluate environmental performance and exhibit actual improvements [2]. Climate change is often considered to be as the next key role player in shaping the business environment in which organizations operate [3]. Due to the global impact of the climate change, it demands new methods and tools and techniques to prevent its negative effects, as in addition to being an ethical issue, it is also an important economic concern, given the costs being paid by the society and business [4]. Sustainable development is complex notion and has real and challenging repercussion for the way that businesses function [5].

Sustainable development can be furthered by educating and facilitating the organizations of today about their role in maintaining capabilities, assets and activities that do not undermine natural system. Refocusing the framework for education and training and development of today's individuals around the concepts of sustainability can enable them to acquire the knowledge, skills and values [6]. While these individuals being managers of organizations, they can help their organizations achieve competitiveness.

Different authors have elaborated the benefits of incorporating sustainability in the business settings. Embedding sustainability in the various stages of the supply chain leads to increased competitiveness and better economic performance [7]. Similarly, organizations can obtain financial (e.g. reduced operational costs) as well as non-financial (e.g. goodwill, employee motivation, etc.) benefits by saving electricity [8]. Organizations of today show a great interest in sustainability, which is indicated by their interest in the sustainability initiatives e.g. tools, approaches and standards [9]. These initiatives are developed by and for the organizations [10]. Such initiatives are likely to make organizations more competitive [11]. Eco-organizational and eco-process innovations facilitate firms directly in attaining better business performance [12]. They further stated that both eco-organizational and eco-process innovations can improve business performance because of their control on eco-product innovation meaning that managers need to implement all three types of eco-innovation, with an initial stress on eco-organizational innovation. This eco-organizational innovation refers to the up gradation in the organization's management processes through a new and eco method in business practices [13]. This new eco method can be sustainability embedded organizational diagnostic model.

## 2. Literature Review

To achieve competitiveness managers should be capable of speedily identifying the weaknesses of their organizations and act accordingly [14] [15]. Top management and academic theorists consider organizational diagnosis a valuable technique for creating and sustaining competitive advantage [16]. In most organizations, failure to perform well-planned organizational diagnoses explains high rates of change-effort failures [17]. Organizational development practitioners emphasize data collection and analysis is effective only when supported by well-articulated theoretical models. Using such models properly produces effectiveness in the overall diagnostic process by supporting ample assessment and avoiding diagnostic biases [18].

Introducing sustainability concepts in organizational diagnostic models programs can be one of the effective avenues to empower our organizations with enduring sustainability mindset for the future. Competitiveness and effectiveness demonstrates the reliability of cultures, processes, and organizational structures with respect to overall system performance [19], thus organizational effectiveness is synonymous with organizational health. Practical assessment of organizational effectiveness stems from an analysis' intention to enhance performance through diagnosis [16]. Assessment of organizational effectiveness through diagnosis usually shapes part of a broader organizational management plan whose purpose is to improve overall system management [20] [21]. Running such a diagnosis offers an organization the knowledge that can be used to develop interceptive, corrective measures and actions [22].

Diagnosing an organization means assessing an organization's health. Diagnosis is comprised of investigations drawn from behavioral sciences methods and models, targeted to assess current organizational health to increase effectiveness [22]. The diagnosis process collects information concerning the current operations, analyzes the data, and draws conclusions about potential changes [20] [23]. Organizational diagnosis is a process in which a consultant collects information from organizational members and disseminates findings and recommendations to those members to improve performance. The purpose of the diagnosis is to develop shared understanding about an organization and determine whether change is required. Summarized advantages of organizational

diagnoses are [24]:

- 1) Offering information on processes that experience reduced functionality
- 2) Making certain an organization participates in continuous improvement
- 3) Allowing systematic data interpretation
- 4) Enabling development of appropriate change strategies

These advantages enable an organization to work optimally, and organizations must run diagnostics periodically not only when a problem arises, but also when an organization appears healthy. The literature offers many diagnosis models and a brief summary of the existing models is discussed in this paper. This paper proposes a new model for organizational diagnosis embedded within the boundaries of sustainable development. The literature offers different sustainability guidelines and principles for the organizations and the most promising (with respect to organizational diagnosis) sustainability principles in our view, translated for an organization, are to... [25]:

- *eliminate our contribution to systematic increases in concentrations of substances from the Earth's crust.*
- *eliminate our contribution to systematic increases in concentrations of substances produced by society.*
- *eliminate our contribution to systematic physical degradation of nature.*
- *eliminate our contribution to the systematic undermining of human's ability to meet their needs worldwide.*

### 3. Organizational Diagnostic Models

Most of the models present in the literature are based on open systems theory. The foundation of this theory is that organizations are social systems which are dependent upon the environment in which they exist for inputs [26]. Open systems theory permits for recurring cycles of input, transformation, output, and transformed input within organizations. Traditional organizational theories have viewed organizations as "closed" systems which are independent of the environment in which they exist [26].

Organizations are also considered to be open systems because of their constant interaction with the environment. A system can exhaust its strength and cease functioning if not provided with additional resources from an external environment [27]. Like other systems, an organization takes inputs from an environment, processes them, and produces outputs, which can be goods or services. Treated as open systems, organizations cannot survive alone. An early review of diagnostic models concluded that most of the models share the following components: (1) environment<sup>1</sup>, including the technological, market, and social environments, (2) purpose (*i.e.*, organizational mission, including strategy), (3) organizational structure and its systems, policies, and procedures, (4) social setup (*i.e.*, culture), (5) technology being used, (6) physical systems (*i.e.*, working conditions inside the organization), and (7) outcomes (e.g., sales, productivity, etc.) [28].

Organizational diagnosis is lengthy and tiresome and its tediousness occasionally leads to misleading results. The core idea of organizational diagnosis is based on criteria such as [29]:

- The nature of the diagnostic model should be understandable and not overly complex,
- The diagnostic model should fit to the organization under diagnosis (*i.e.*, comprehensive yet simple enough to cover core areas), and
- The model should gather data during the diagnosis (*i.e.*, organizational data should be compatible with the model).

Wiesbord's [30] model is the most frequently used diagnostic model [31] and its high rate of use is due to the model's simplicity [31] which demonstrates compliance with the basic criterion of a simple model. Too many variables make the diagnostic process tedious and may cause the diagnostician to lose track of variables and purpose.

Organizational diagnostic models proposed in the literature contain applicability issues and it is also interesting to note that none of the models consider meeting the sustainability principles as one of the indicators of organizational health. For example, Leavitt's [32] and the McKinsey 7 s [33] models do not consider the environment (or ecosystem) in which the organization is embedded as an influencing factor. Damanpour *et al.* [34] elaborated on the role of external environments on innovation. Similarly, Gnyawali and Fogel [35] found external environments influence organizational survival and growth. Abrupt environmental changes demand information processing and simultaneously demand changes in organizational strategic postures [36]. The same is true with Wiesbord's [30] model, though in his model, environmental variables are present but do not suggest environmental influences [31]

<sup>1</sup>The environment variable here and elsewhere in the paper does not mean the ecosystem.

and this environment variable does not deal with the socio-ecological sustainability.

The congruence model is based on the fit between various elements, but binding elements in the long-term serves as change resistance [31]. The Burke-Litwin [29] model is intricate and contains too many interdependencies and links [31] that are difficult to measure in an organizational context due to overlapping of some variables. Similarly the diagnostic model presented by Saeed and Wang [37] also does not consider socio-ecological sustainability as an organizational health indicator. There are growing number of legal, market and financial demands on manufacturing firms to develop sustainable products [38]. Sustainable product development requires regular diagnosis of the manufacturing process as well as overall organizational diagnosis.

To create a generic and sustainability embedded diagnostic model applicable equally to all types of organizations—small to large and among industries—it should adhere to the criteria mentioned earlier. A summary of these diagnostic models is shown in **Table 1**.

#### 4. Proposed Sustainability Embedded Diagnostic Model

After Organizational development consultants propose a variety of intervention areas to encourage change and promote organizational effectiveness [20] [28] [39]. A summary of these points include [40]:

- Human resources,
- Behaviors and processes,
- Organizational structures and technologies, and
- Organizational goals, strategies, and cultures.

If an organization wants to be in good health and must cope with changing environments, these four areas are of considerable importance. Human resources here mean the people involved in organizational functioning and their associated skills. Behaviors and processes comprise the various systems (e.g., production process, team management program, etc.) in the organization, including leadership behaviors, and organizational structure includes both division of labor and goals/strategies.

**Table 1.** Comparison of the models.

Model	Variables	Limitations
<b>Leavitt's model</b>	<ul style="list-style-type: none"> <li>• Structure</li> <li>• Technology</li> </ul>	<ul style="list-style-type: none"> <li>• People</li> <li>• Tasks</li> <li>• Environment and ecosphere not present</li> <li>• Inputs and outputs missing</li> </ul>
<b>Weisbord's model</b>	<ul style="list-style-type: none"> <li>• Purpose</li> <li>• Structure</li> <li>• Rewards</li> <li>• Helpful mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• Relationships</li> <li>• Leadership</li> <li>• Environment</li> <li>• Does not show interdependencies clearly</li> <li>• Ecosphere not present</li> </ul>
<b>Congruence model</b>	<ul style="list-style-type: none"> <li>• Informal arrangements</li> <li>• Formal arrangements</li> </ul>	<ul style="list-style-type: none"> <li>• Task</li> <li>• Individual</li> <li>• (inputs/outputs)</li> <li>• In the long-term, congruence leads to change resistance</li> <li>• Ecosphere not present</li> </ul>
<b>McKinsey 7s model</b>	<ul style="list-style-type: none"> <li>• Systems</li> <li>• Strategy</li> <li>• Structure</li> </ul>	<ul style="list-style-type: none"> <li>• Style</li> <li>• Shared values</li> <li>• Staff</li> <li>• Skills</li> <li>• Environment and ecosphere not present</li> <li>• Inputs and outputs missing</li> </ul>
<b>Burke-Litwin model</b>	<ul style="list-style-type: none"> <li>• External Environment</li> <li>• Leadership</li> <li>• Mission and strategy</li> <li>• Culture</li> <li>• Management practices</li> <li>• Structure</li> <li>• Systems</li> </ul>	<ul style="list-style-type: none"> <li>• Climate</li> <li>• Motivation</li> <li>• Skills/job match</li> <li>• Individual needs and values</li> <li>• Performance</li> <li>• (feedback loops)</li> <li>• Too many variables</li> <li>• Too complex</li> <li>• Ecosphere not present</li> </ul>
<b>Bilal &amp; Wang model</b>	<ul style="list-style-type: none"> <li>• Leadership</li> <li>• Strategy</li> <li>• Systems</li> <li>• Structure</li> <li>• Environment</li> </ul>	<ul style="list-style-type: none"> <li>• Ecosphere not present</li> </ul>

Cobb [41] identified four areas—environment, culture, structure, and process—for the macro analysis of organizational networks during change management. Since transformation is at the core of organizational functioning, Cummings and Worley [20] argued that a transformation process involves social and technological components. The social component is comprised of people, the technological component of technology, tools, techniques, and other supporting functions such as leadership and strategy. Various studies demonstrate that more than 85% of the sources of organizational effectiveness problems are found in culture, structures and systems in the organizations [42]. Examining both the limitations of diagnostic models and these intervention points, we proposed an extended version of model for organizational diagnosis<sup>2</sup> with the element of sustainability embedded. Based on the United Nations description of institutional sustainability, organizations can address institutional sustainability by incorporating sustainability principles within their business models [43].

Since socio-ecological sustainability is not considered in any of the previous organizational diagnostic models, we present a revised version of the model we proposed previously with sustainability embedded (Figure 1). It is relatively common that organizations try to make use of available resources within a limited budget to provide training and communication to the employees for sustainable development [44]. Hence modification of the existing model (which might be in use of some organizations) would also warrant that the organizations do not necessarily have to adopt altogether new diagnostic model. The sustainability principles proposed by Robèrt *et al.* [25] translated for an organization diagnostic purpose can be; *are we...:*

- *eliminating our contribution to systematic increases in concentrations of substances from the Earth's crust?*
- *eliminating our contribution to systematic increases in concentrations of substances produced by society?*
- *eliminating our contribution to systematic physical degradation of nature?*
- *eliminating our contribution to the systematic undermining of human's ability to meet their needs world-wide?*

The above principles come into action in the overall organizational strategy and the questions can be answered at output level. Diagnosing the current health of the leadership, strategy, structure and systems can be done by asking specific questions about the broader areas of these variables. These areas are but not limited to (Table 2).

## 5. Conclusion

Organizations that build societies [45] and businesses played a vital role in technology and wealth creation that

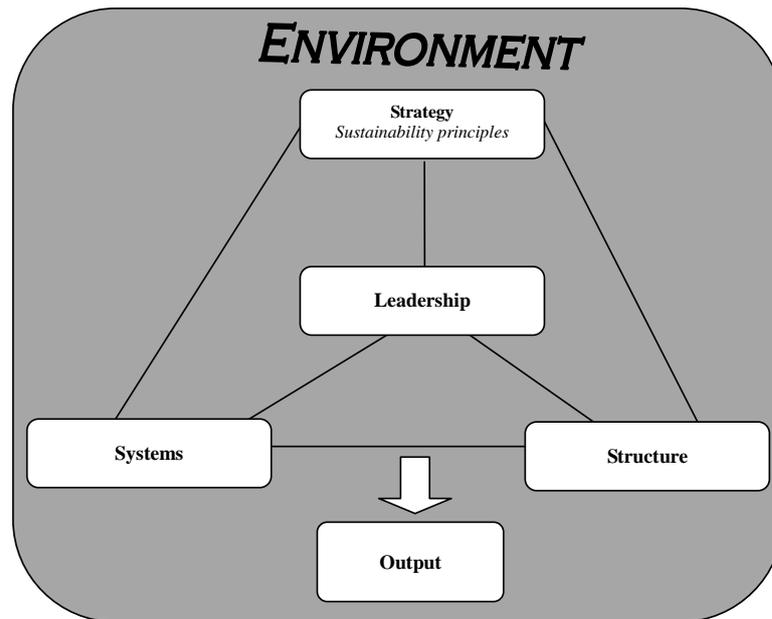


Figure 1. Sustainability embedded diagnostic model.

<sup>2</sup>This model is available at <http://inderscience.metapress.com/content/n681m74417u21712/> under the title “Organizational Diagnoses: A survey of the literature and proposition of a new diagnostic”.

**Table 2.** Measures of the variables.

<b>Leadership</b>	<ul style="list-style-type: none"> <li>• Decision making skills</li> <li>• Leadership style</li> <li>• Communication skills</li> <li>• Performance and reward management skills</li> <li>• Providing direction and leading from the front</li> <li>• Support for staff</li> <li>• Conflict management skills</li> <li>• Group and team work management</li> <li>• Risk taking and management skills</li> </ul>
<b>Structure</b>	<ul style="list-style-type: none"> <li>• Human resources</li> <li>• Division of labor</li> <li>• Hierarchy of authority</li> <li>• Span of control</li> <li>• Decentralization</li> <li>• Employees skills/job match</li> </ul>
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• Prioritization</li> <li>• Measurability</li> <li>• Stakeholder involvement</li> <li>• Clarity</li> <li>• Realism</li> <li>• Alignment</li> <li>• Well communicated/discussed</li> <li>• Meeting sustainability principles</li> </ul>
<b>Systems</b>	<ul style="list-style-type: none"> <li>• Supply of resources</li> <li>• Efficiency</li> <li>• Reliability and Adaptability</li> <li>• Quality Control</li> </ul>

transformed the society in the last two centuries [46]. As shapers and builders of society, organizations need to be in proper health. For any organization to be in good health, it must have strong and healthy links of interaction with its environments and the ecosphere as a whole. Interactions and communications with the environment help the organization to deal with changes and to adapt accordingly. Many organizations have found out that being concerned about the eco-sphere helps them to keep their employees motivated, makes the organization more effective and enriches shareholders [46]. A healthy organization is one capable of meeting the needs of different stakeholders and adapting to changing environments and ecology. The initial step toward organizational agility is diagnosis, recognizing areas that support agility and areas that do not [47]. To check whether an organization can meet all these expectations, different authors suggested disparate diagnostic models that can be used to examine organizational health. These models include a number of variables and structures. The ones discussed in this paper are either too complicated or simple to perform organizational diagnoses plus all of these models do not consider contributions made towards sustainable development as one of the indicators of organizational health. The proposed sustainability embedded diagnostic model is comprehensive enough to perform organizational diagnoses, and involves structures, systems, and strategies bonded through leadership to deal with external and internal demands and expectations.

## Acknowledgements

The research reported here is partially supported by NSFC China under grant number 71231001, the PhD supervisor fund of MOE under grant number 20120006110025 and the Fundamental Research Funds for the Central Universities of China, FRF-SD-12-020A. The research is also financially supported by Higher Education Commission of Pakistan under the Overseas Scholarship Phase 2 Batch 3 program.

## References

- [1] Asif, M., Searcy, C., Zutshi, A. and Fisscher, O.A.M. (2013) An Integrated Management Systems Approach to Corporate Social Responsibility. *Journal of Cleaner Production*, **56**, 7-17. <http://dx.doi.org/10.1016/j.jclepro.2011.10.034>
- [2] Lundberg, K., Balfors, B. and Folkesson, L. (2009) Framework for Environmental Performance Measurement in a Swe-

- dish public Sector Organization. *Journal of Cleaner Production*, **17**, 1017-1024. <http://dx.doi.org/10.1016/j.jclepro.2009.01.011>
- [3] Pesonen, H.-L. and Horn, S. (2013) Evaluating the Climate SWOT as a Tool for Defining Climate Strategies for Business. *Journal of Cleaner Production*, **64**, 562-571.
- [4] Schaltegger, S. and Csutora, M. (2012) Carbon Accounting for Sustainability and Management. Status Quo and Challenges. *Journal of Cleaner Production*, **36**, 1-16. <http://dx.doi.org/10.1016/j.jclepro.2012.06.024>
- [5] Chee Tahir, A. and Darton, R.C. (2010) The Process Analysis Method of Selecting Indicators to Quantify the Sustainability Performance of a Business Operation. *Journal of Cleaner Production*, **18**, 1598-1607. <http://dx.doi.org/10.1016/j.jclepro.2010.07.012>
- [6] Wheeler, K.A. and Bijur, A.P. (2000) Education for a Sustainable Future: A Paradigm of Hope for the 21st Century. Vol. 7. Kluwer Academic/Plenum Publishers, New York. <http://dx.doi.org/10.1007/978-1-4615-4277-3>
- [7] Schrettle, S., Hinz, A., Scherrer-Rathje, M. and Friedli, T. (2013) Turning Sustainability into Action: Explaining Firms' Sustainability Efforts and Their Impact on Firm Performance. *International Journal of Production Economics*, **147**, 73-84.
- [8] Zhang, Y., Wang, Z. and Zhou, G. (2013) Determinants of Employee Electricity Saving: The Role of Social Benefits, Personal Benefits and Organizational Electricity Saving Climate. *Journal of Cleaner Production*, **66**, 280-287.
- [9] Ny, H. (2009) Strategic Life-Cycle Modeling for Sustainable Product Innovation. Blekinge Institute of Technology, Karlskrona.
- [10] Lozano, R. (2012) Towards Better Embedding Sustainability into Companies' Systems: An Analysis of Voluntary Corporate Initiatives. *Journal of Cleaner Production*, **25**, 14-26. <http://dx.doi.org/10.1016/j.jclepro.2011.11.060>
- [11] Hallstedt, S. (2008) A Foundation for Sustainable Product Development. Blekinge Institute of Technology, Karlskrona.
- [12] Cheng, C.C.J., Yang, C. and Sheu, C. (2013) The Link between Eco-Innovation and Business Performance: A Taiwanese Industry Context. *Journal of Cleaner Production*, **64**, 81-90.
- [13] Birkinshaw, J., Hamel, G. and Mol, M.J. (2008) Management Innovation. *Academy Management Review*, **33**, 825-845. <http://dx.doi.org/10.5465/AMR.2008.34421969>
- [14] Whitfield, G. and Landeros, R. (2006) Supplier Diversity Effectiveness: Does Organizational Culture Really Matter? *Journal of Supply Chain Management*, **42**, 16-28. <http://dx.doi.org/10.1111/j.1745-493X.2006.00019.x>
- [15] Saeed, B.B. and Wang, W. (2013) The Art of Organizational Diagnosis; Pathogens and Remedies. *iBusiness*, **5**, 55-58.
- [16] Lee, D. and Brower, R.S. (2006) Pushing the Envelope on Organizational Effectiveness: Combining an Old Framework and a Sharp Tool. *Public Performance & Management Review*, **30**, 155-178. <http://dx.doi.org/10.2753/PMR1530-9576300202>
- [17] Harrison, M. and Shirom, A. (1999) Organizational Diagnosis and Assessment: Bridging Theory and Practice. Sage Publications, Thousand Oaks.
- [18] Armenakis, A.A., Mossholder, K.W. and Harris, S.G. (1990) Diagnostic Bias in Organizational Consultation. *Omega*, **18**, 563-572. [http://dx.doi.org/10.1016/0305-0483\(90\)90048-E](http://dx.doi.org/10.1016/0305-0483(90)90048-E)
- [19] French, W.L., Bell, C. and Zawacki, R.A. (2000) Organization Development and Transformation: Managing Effective Change. Irwin/McGraw-Hill, Boston.
- [20] Cummings, T.G. and Worley, C.G. (2009) Organization Development & Change. 9th Edition, South Western Cengage Learning, Mason.
- [21] French, W.L. and Bell, C.H. (1973) Organization development: Behavioral Science Interventions for Organization Improvement. Prentice-Hall, Englewood Cliffs.
- [22] Van Tonder, C. and Roodt, G. (2008) Organisation Development: Theory and Practice. Van Schaik, Pretoria.
- [23] Slocum, J.W. and Hellriegel, D. (2007) Fundamentals of Organizational Behavior. South-Western/Cengage Learning, Mason.
- [24] Lok, P. and Crawford, J. (2000) The Application of a Diagnostic Model and Surveys in Organizational Development. *Journal of Managerial Psychology*, **15**, 108-124. <http://dx.doi.org/10.1108/02683940010310319>
- [25] Robèrt, K.H., Basile, G., Broman, G., Byggeth, S., Cook, D., Haraldsson, H., Johansson, L., MacDonald, J., Ny, H., Oldmark, J. and Waldron, D. (2007) Strategic Leadership towards Sustainability. Blekinge Institute of Technology, Karlskrona.
- [26] Katz, D. and Kahn, L.R. (1978) The Social Psychology of Organizations. 2nd Edition, Wiley, New York.
- [27] Ashmos, D.P. and Huber, G.P. (1987) The Systems Paradigm in Organization Theory: Correcting the Record and Suggesting the Future. *Academy of Management Review*, **12**, 607-621.

- [28] Porras, J.I. and Robertson, P.J. (1986) Organization Development Theory: A Typology and Evaluation. Graduate School of Business, Stanford University, Stanford.
- [29] Burke, W.W. and Litwin, G.H. (1992) A Causal Model of Organizational Performance and Change. *Journal of Management*, **18**, 523-545. <http://dx.doi.org/10.1108/02683940010310319>
- [30] Weisbord, M.R. (1976) Organizational Diagnosis: Six Places to Look for Trouble with or Without a Theory. *Group Organization Management*, **1**, 430-447. <http://dx.doi.org/10.1177/105960117600100405>
- [31] Jones, B.B. and Brazzel, M. (2012) The NTL Handbook of Organization Development and Change: Principles, Practices, and Perspectives. Pfeiffer, San Francisco.
- [32] Leavitt, H.J. and March, J.G. (1962) Applied Organizational Change in Industry: Structural, Technological and Humanistic Approaches. Graduate School of Industrial Administration, Carnegie Institute of Technology, Pittsburgh.
- [33] Peters, T.J. and Waterman, R.H. (1982) In Search of Excellence: Lessons from America's Best-Run Companies. Harper & Row, New York.
- [34] Damanpour, F., Walker, R.M. and Avellaneda, C.N. (2009) Combinative Effects of Innovation Types and Organizational Performance: A Longitudinal Study of Service Organizations. *Journal of Management Studies*, **46**, 650-675. <http://dx.doi.org/10.1111/j.1467-6486.2008.00814.x>
- [35] Gnyawali, D.R. and Fogel, D.S. (1994) Environments for Entrepreneurship Development: Key Dimensions and Research Implications. *Entrepreneurship Theory and Practice*, **18**, 43-62.
- [36] Mukherjee, D., Gaur, A.S., Gaur, S.S. and Schmid, F. (2013) External and Internal Influences on R&D Alliance Formation: Evidence from German SMEs. *Journal of Business Research*, **66**, 2178-2185. <http://dx.doi.org/10.1016/j.jbusres.2012.01.009>
- [37] Saeed, B.B. and Wang, W. (2013) Organisational Diagnoses: A Survey of the Literature and Proposition of a New Diagnostic Model. *International Journal of Information Systems and Change Management*, **6**, 222-238. <http://dx.doi.org/10.1504/IJISCM.2013.058328>
- [38] Maxwell, D. and Van der Vorst, R. (2003) Developing Sustainable Products and Services. *Journal of Cleaner Production*, **11**, 883-895. [http://dx.doi.org/10.1016/S0959-6526\(02\)00164-6](http://dx.doi.org/10.1016/S0959-6526(02)00164-6)
- [39] Robertson, P.J., Roberts, D.R. and Porras, J.I. (1993) Dynamics of Planned Organizational Change: Assessing Empirical Support for a Theoretical Model. *Academy of Management*, **36**, 619-634. <http://dx.doi.org/10.2307/256595>
- [40] Harrison, M.I. (2005) Diagnosing Organizations: Methods, Models, and Processes. 3rd Edition, vol. 8, Sage Publications, Thousand Oaks.
- [41] Cobb, A.T. (1986) Political Diagnosis: Applications in Organizational Development. *Academy of Management Review*, **11**, 482-496.
- [42] Bodnarczuk, M. (2009) Making Invisible Bureaucracy Visible: The Preface. <http://www.breckenridgeinstitute.com/09-09-reading.htm>
- [43] Labuschagne, C., Brent, A.C. and Van Erck, R.P.G. (2005) Assessing the Sustainability Performances of Industries. *Journal of Cleaner Production*, **13**, 373-385. <http://dx.doi.org/10.1016/j.jclepro.2003.10.007>
- [44] Sammalisto K. and Brorson, T. (2008) Training and Communication in the Implementation of Environmental Management Systems (ISO 14001): A Case Study at the University of Gävle, Sweden. *Journal of Cleaner Production*, **16**, 299-309. <http://dx.doi.org/10.1016/j.jclepro.2006.07.029>
- [45] Baum, J.A.C. (2002) The Blackwell Companion to Organizations. Blackwell Publishers, Oxford.
- [46] Michaelis, L. (2003) The Role of Business in Sustainable Consumption. *Journal of Cleaner Production*, **11**, 915-921. [http://dx.doi.org/10.1016/s0959-6526\(02\)00160-9](http://dx.doi.org/10.1016/s0959-6526(02)00160-9)
- [47] Worley, C.G. and Lawler, E.E. (2010) Agility and Organization Design: A Diagnostic Framework. *Organizational Dynamics*, **39**, 194-204. <http://dx.doi.org/10.1016/j.orgdyn.2010.01.006>