A Multi-level Causal Model of Organizational Change Success

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Abstract: The purpose of the current research is to design and test a causal model of organizational change success. This topic has been gaining prominence in light of two facts. First, the existing literature is replete with descriptive, normative, and life cycle change models; there are no empirically driven causal models. Second, it has been widely reported that the failure rate of organizational change interventions is very high are above 50%. The study data were analyzed using the causal statistical technique of Structural Equation Modeling (SEM). The main findings indicate that the success of organizational change is heavily contingent on the joint effect of a basic belief in readiness for change, the appropriateness of change, and building self-efficacy. Management is responsible for providing compelling evidence for the preparedness for and appropriateness of change and for raising individuals' expectancy level for being capable to implement and sustain changes. The implications of the study results, their limitations, and future directions for research are discussed.

Change is becoming an ever-present feature of organizational life (Burns, 2004). Many organizations have been implementing changes, the frequency, significance, and importance of which have increased in recent years (Burns & Jackson, 2011; Grady & Grady, 2012). However, it is widely accepted that many organizational interventions fail (Atturan, 2000; Beer & Nohrral, 2000; Grady & Grady, 2012; Self & Schroeder, 2009; Weiner, 2009; Workman, 2009). Thus, while many organizations appreciate the necessity and need for change, as many as 70% of the change initiatives do not achieve their outcomes (Balogn & Hep Hailey, 2004; Lucey, 2008). Since the 1970s, the organizational change interventions focused on descriptions of them, success stories normative models, and lifecycle models. The high failure rate of organizational interventions leads one to conclude that the existing literature did not serve the change programs well. In addition to the fact that change initiatives are time-consuming, costly, and have a significant impact on the organization's survival and effectiveness, one is led to conclude that there is an urgent need to design different change success models - namely, causal models - which is the purpose of the current study. According to Andrews *et al.* 2008), the literature on change reports multiple theories, and there are many textbooks and courses of organization change, yet the practice of change is problematic.

LITERATURE REVIEW

The section includes the literature review. The review will primarily address three issues:

1) The reported organization change models.

2) The level(s) of analysis adopted in organization change research.

3) The reported tools of data analysis in organization change research.

Based on Mento and associates review of the literature (Mento *et al.,* 2002), there exists a number of change models, including Kotter's strategic eight- step model for transforming organizations, Jick's tactical ten-step. model of implementing change, and General Electric's seven-step change acceleration process model, in addition to Pascale and Athos'7S model (Pascale and Athos, 1981) and Peters and Waterman's model (Peters and Waterman, 1982). Moreover, othermodels include Maurer's 12 steps to build support for change, and Kanter and associates' model. There is also Burke and Litwin's model called causal model of organizational performance and change (Burke & Litwin, 1992). This model is a very prominent model in the literature. However, it is important to point out that causality in Burke and Litwin's model is derived from their extensive experience with change interventions and not from data analysis using causal statistical techniques. As these two authors pointed out, their causal model evolved from practice, not extensive theory or research, and the theoretical and empirical justifications of their model are based on what they believe works.

An excellent example of success stories includes the five case studies that were guided and supported by the MIT center for organizational learning (Sujarman, 2015). The main findings of this study is that successful learning-based initiatives should satisfy three conditions:

1) Consistent with critical business needs.

2) Make significant process improvements.

3) Organization change involves personal change.

Many other examples of success stories are found in the literature (Prosci,2003). The review of the literature indicates that the causal statistical techniques were not used in the change literature. Instead, the literature stated that the analysis tools include tables, paragraphs, linear graphs, and pie charts, as they are simple and easy to use and comprehend. Furthermore, Cronbach's alpha was used to measure the internal consistency of variables, constructs, and factors. The literature also reported the use of discourse analysis, rubrics for study applications, content analysis, as well as simple quantitative analysis, including mean, correlation, and frequency distribution analysis (Njuguna & Muathe, 2016).

The review of the literature reported that tools of analysis indicate the need to use causal statistical techniques to build more valid and grounded theories and models of change. The literature review also indicated some disagreements concerning the appropriate level of analysis, including individual, collective, and organizational, that should be adopted in change research. Some scholars argue that the primary problem facing change research is the unit of analysis. Most of the existing theory and research focuses on the organizational (i.e., macro- or system- oriented) level and less on the individual level (Neves, 2009; Worberg and Banas, 2000). Much less still considers the two levels together although some researchers are beginning to adopt a micro level perspective on change, which emphasizes the role of individuals in implementing change (Choi & Rouna, 2010). Neves claims that further consideration should be given to

micro- level processes and that future theories and research should integrate the macro and micro levels of analysis into a comprehensive model of change (Neves,2009).

The current study proposes a three-level model of change that includes micro (individual), group, and organization levels.

The Study Model

The focus is on selecting variables that are pertinent to all studies of organizational change. However, the door will remain open for adding to this core group of variables some variables that are particular to the situation at hand. Armenakis and Harris suggest that the five message domains of discrepancy, efficiency, appropriateness, principal support, and personal valence apply to all organizational interventions (Armenakis & Harris, 2002).

These five domains combine to shape individuals' motivation and their positiveness (support) or negativeness (resistance) regarding the change (Armenakis & Haris, 2002). The following Figure 1 depicts the study conceptual model.
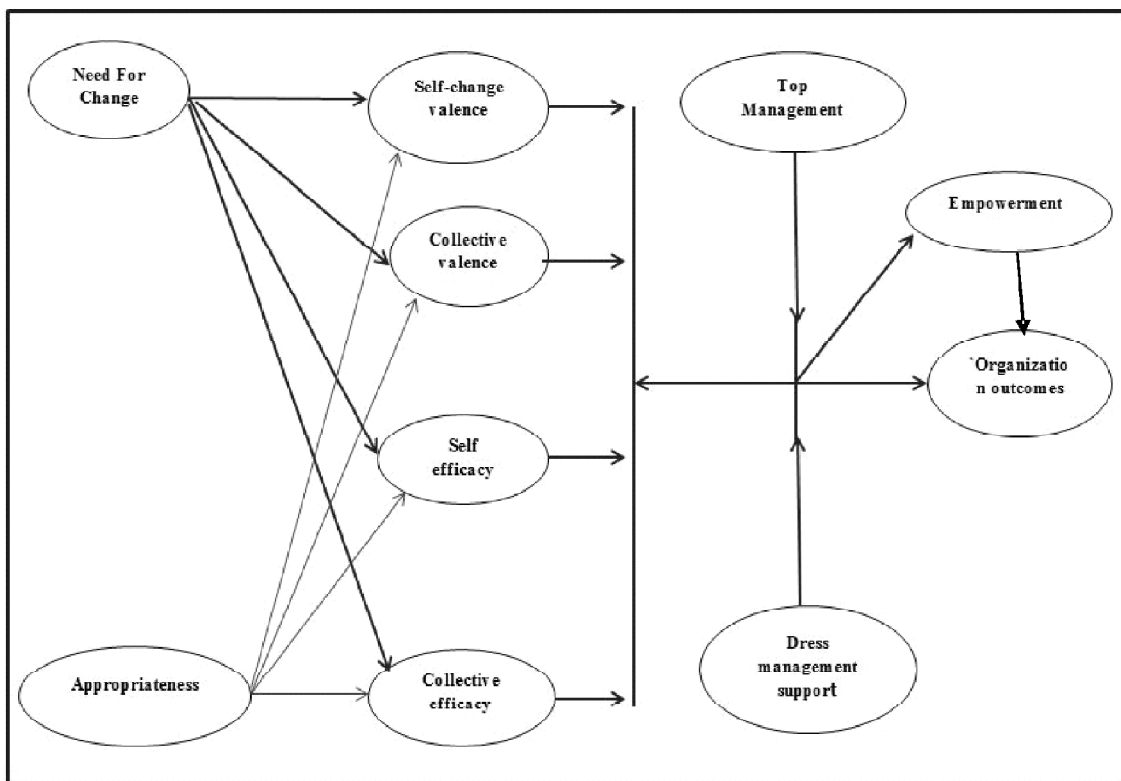

Figure 1: The Study Conceptual Model of the Organizational Change Success

The following is a discussion of the study variables

Need for Change

The acceptance of organization members is significant to the success of organizational change. Such recognition is highly expected when members have a sure feeling that difference is due and needed. The

role of management is to provide a compelling justification for why change is happening. The implementation of reform relies heavily on the skills of management in articulating the need for change throughout the change period(Sujarman, 2015).

Appropriateness

Appropriateness of change is essential. Individuals may feel some change is needed, but there ought to be agreement on the proposed specific change (Pare, 2011). This idea is also consistent with the social accounts theory and is used to assess the appropriateness of the proposed change for the situation at hand.

Empowerment

Employees' empowered involvement is essential for change implementation; however, it should be coupled with managers playing the critical roles of guiding, encouraging, and supporting the change plans (Blackman *et al.,* 2013).The literature indicates that the reduction of resistance to change and the enhancement of change readiness require the involvement of organization members in change or empowering them to make changes themselves. There is ample support for the role of empowerment in the implementation of reform, especially in the public sector (blackman *et al.,* 1013; Warwick, 1975).

The view of advising organizations to broaden members' empowerment and stress that empowerment should be widespread and include all phases of the change process. There is evidence that organization members' empowerment leads them to accept and embrace changes in their current environment (Kubiciek & Margret, 2006). The doubling of empowerment and top management support help members make the transition to a new state of mind, which aids to sustain the benefits of the post-transformation period (Serkin, 2005).

Change Valence

According to motivation theory, the commitment to change is mostly a function of change valence (Meyer & Herscovitch, 2001). An organization's members may value change for different reasons (Cole *et al.,* 2006; Holt *et al.,* 2007). They might appreciate difference because they feel some change is indeed needed; because they think the change will achieve benefits for the organization as a whole, for employees, or for them personally; or because they believe that the move will efficiently solve a critical organizational problem. The more the organization's members value the change, the more significant their support will be for the implementation of reform and the more involved they will be in the plan of action for change implementation (Armenakis & Harris, 2002). The issue to consider here is to what extent organizational members collectively have high enough valence for change to be committed to its implementation.

Change Efficacy

The employees' commitment to organizational change is more likely to be at its highest level when organization members not only have valence for the change but also feel confident that they can implement change. High confidence in one's capabilities to execute the course of action required for the change can enhance one's motivation to engage in that course of action (Bandura, 1997). One's judgment of one's capabilities is related to one's motivational state. A negative motivational state leads to underestimating

one's judgment of one's capability. The process used to support the employees to adapt successfully to change taking place requires the shift of employees' mindset from the current state to a desired future state. Based on the social cognitive theory (Gist & Mitchell, 1992), the change efficacy is the result of organization members' cognitive evaluation of the organization's implementation capabilities concerning task demands, resources, and situational factors. It is believed that increasing organization member' competencies results in increased commitment to change. The increased competencies are due to the organization's plans for training and effective communication before, during, and after change implementation.

Top Management Support

Successful change initiatives require support by senior management, including the board and chief executive (Alkaya & Hepaktary 2003; Kubiciek, 2006).

Method Sample

The data were collected from 257 subjects working in 22 Kuwaiti organizations. These organizations work in very diverse domains including education, marketing services, petroleum, and government. The subjects were selected on two bases:

1) Their respective organizations recently went through a significant change.

2) They are well informed about the origin and the development of the change.

The study used a 24 items questionnaire. The data were collected under the guidance of the researcher.

RESULTS

After the correlation matrix of the most reliable and valid questions (indications) had been prepared, Structural Equation Modeling (SEM) was used to fit the proposed conceptual model as against other alternatives. The fitted model is depicted in Table 2 below. Several measures of goodness of fit were considered to select the best fitted model, including Normed Fit Index (NFI)= .95, Non-Normed Fit Index (NNFI)= .95, Incremental Fit Index (IFI)= .96, Relative Fit Index (RFI)= .93, Root Mean Square Residual (RMR)= .051, Standardized RMR=.051, Goodness of Fit (GFI)= .89, Adjusted Goodness of Fit (AGFI)= .83, Parsimony Normed Fit Index (PNFI)=.70, and Comparative Fit Index (CFI)= .96. All the measures of goodness of fit indicated that the proposed model was adequate in fitting the data. In particular, RMR=.051 (recommended 0.05 or less; Hair *et al.,* 2010), GFI=.89 (recommended .85 or more), and AGFI= .83 (recommended 0.80 or more), which are satisfactory measures of goodness of fit (see Hair *et al.,* 2010; Sharma, 1996 for details). Having arrived at a fitted model, both composite reliability and extracted variance for each construct will be assessed. I would like to stress that Cronbach's alpha the reliability coefficient construct, can be assessed. However, I'd like to stress that Cronbach's reliability coefficient does not ensure the unidimensionality of the construct but contrarily assumes it exists (see Hair *et al.,* 2010 for details). Therefore, composite reliability is a measure of internal consistency (Table 1). The fitted model is depicted figures 2 and 3 below. The results of the composite reliability are depicted in Table 1.
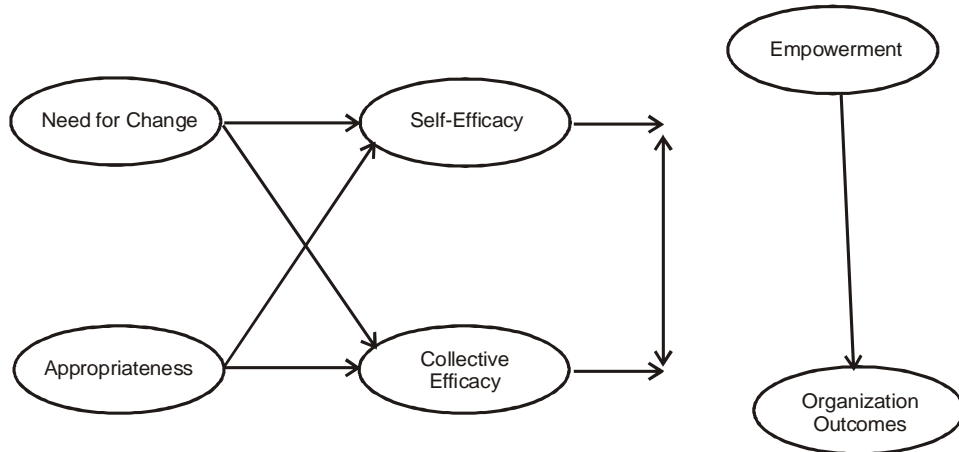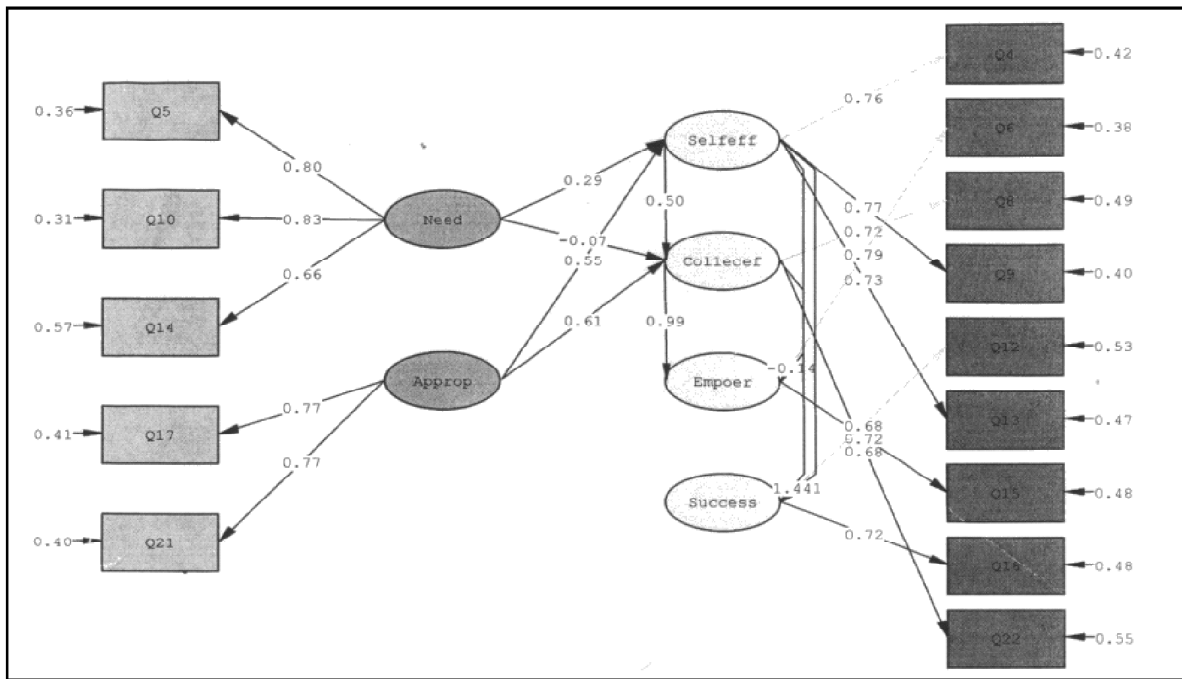
Figure 2: The Study fitted Model

Figure 3: The Study Fitted Model – SEM Analysis outputs

Table 1
The Results of SEM, The Composite Reliability, Variance Extracted and R Square

Construct	Composite Reliability	Variance Extracted (AVE)	R square
Need for Change	.81	.59	
Appropriateness of Change	.74	.59	
Self Efficacy	.75	.67	.59
Collective Efficiency	.65	.49	.99
Empowerment	.61	.57	.74
Success	.66	.49	.99

The results depicted in table 1 indicate the validity of the variables reported in the table. It is to be noticed that the SEM results supported a smaller model compared to the conceptual model reported in the current study. Only the variables reported in Table 1, were included in the final SEM suggest model. The results of the path analysis total effects of the SEM are reported in table 2 below. While the results of the path analysis indirect effect are depicted in Table 3 below.

Table 2
The Results of Path Analysis Total Effect

Path	Path Coefficient	Standard Error	T Value	P-Value
Need for Change Self Efficacy	.29	.09	3.32	.0001
Need for Change CollectiveEfficiency	.08	.08	097	.166
Need for ChangeEmpowerment	.04	.07	.50	.309
Need for Change Success	-.04	.09	-.40	.345
Appropriateness Self Efficacy	.55	.09	5.88	.0001
Appropriateness Collective Efficiency	.89	,10	8.75	.0001
Appropriateness Empowerment	.80	.11	8.88	.0001
Appropriateness Success	1.00	.11	8.88	.0001
Self Efficacy Collective Efficacy	.50	.11	4.7	.0001
Self Efficacy Empowerment	.35	.11	3.09	.0001
Self Efficacy Success	.21	.12	1.67	.047
Collective Efficacy Empowerment	.99	.22	4.50	.0001
Collective Efficacy Success	1.49	.29	5.01	.0001

Table 3
The Results of The Path Analysis Indirect Effects

Path	Path Coefficient	Standard Error	T Value	P-Value
Need for Change Collective Efficacy	.14	.06	2.49	.0001
Need for change Empowerment	.04	.07	.50	.308
Need for Change success	-.04	.09	-.40	.344
Appropriateness Collective Efficacy	.14	.06	2.49	.001
Appropriateness Empowerment	.95	.10	8.39	.0001
Appropriateness Success	1.0	,11	8.88	.001
Self Efficacy Empowerment	.49	.18	2.67	.001
Self Efficacy Success	.72	.26	2.73	.001

The results of the SEM indicate the following:

The need for Change has significant total impact on:

1. Self efficacy.

2. Empowerment.

3. Success

and has significantindirect impact on:

1. Collective efficacy.

2. Empowerment.

The Appropriateness of change has significant total impact on:

1. Self efficacy.

2. Collective efficacy.

3. Empowerment.

4. Organization Success.

and has t significantindirect impact on:

1. Collective efficacy.

2. Empowerment.

3. Organization Success.

Self efficacy has significant total impact over:

1. Collective efficacy.

2. Organization Success.

This has significant indirect effect on empowerment.

These results indicate that the two independent / exogenous variables - namely, need for change and appropriateness - are very potent variables regarding their impact on self-efficacy, collective efficacy, the psychological state of organization members feeling empowered,and the organization's success. It is also clear from reviewing results that self-efficacy has substantial impact on the collective efficacy and organization success. The initial interpretation of these results indicates the importance of launching managerial programs to create the feeling of need of change to increase the success of organizational change. However, the felt need for change is a necessary but not sufficient condition for the success. It has to be coupled with a sense and feeling of the appropriateness of change - that is, the relevance and validity of theproposed change. There is also a strong indication that the issue of efficacy starts with the variable at the individual level. In other words, self-efficacy leads to the needed collective efficacy. The latter is termed the shared value resolve (Weiner, 2009), which reflects a group phenomenon.

It is expected that the relevant development programs can create the needed pivotal self-efficacy. The relevance is assessed regarding the contribution of the development programs to the requirements of the change project at hand. The fitted model did not include the valence variables. It is hard to explain this result. However, one can speculate that the impact of valence variables may be achieved through their impact on efficiency variables. The valence variables may not be influential except where they have impact on efficiency variables.

DISCUSSION

There is a need to advance causal models for organization change. It is believed that such models will improve success rates of organizational interventions. The study fitted model demonstrates the requirements of accepting such models. It shows that the three pillars of change success are: the felt need for change, the appropriateness of change, and self-efficacy. These three variables can lead to other desired states such as collective efficacy and the felt empowerment of organizational members, which, in turn, lead to organizational change success.

The results of the study lend support to using multiple levels of analysis within the same model, i.e., it is not adequate to focus on either the micro level (individual) or the macro level (organization). Thus the current study model includes individual, collective, and organization variables.

The change literature is primarily based on life cycle models whose focus is on the steps needed to implement change. However, the need is for change models that deal with the currently experienced high levels of uncertainty and the evolving nature of organizational interventions (Femander & Rainy, 2006; Graetz *et al.,* 2010; Sirkin, 2005; Todem, 2005).

The remainder of this discussion will address the study's conceptual, empirical implications and future directions for research. The organizational change literature draws from multiple disciplines and theoretical approaches. Thus, it is full of complexities and contains many contradictory research findings(Todrem, 2005, Frenander & painey, 2006). Any conceptual model of change should include both generic and specific variables; the generic variables are the ones found in all change programs like the variables in this current study. Additionally, the model should include specific situational / variables that are unique to a change situation. The generic variables will lead to reducing the complexity of the change studies, and open the door for generalizing and making comparisons. The change literature should focus more on the nation of equal-finality-there is no one best way to build for increasing organization readiness for change. Here,again the notion of coupling generic and specific variables in the model will serve us well. Although the current study results did not show the role of top management support, it is believed that this role still exists subtly- through doing actions that make organization members internalize the change and think that it is needed and appropriate and they are capable of achieving it. A new approach to organizational change sees change as so rapid and unpredictable that it cannot be managed top-down. It should be controlled by top management involved and through information sharing via social interaction. It is argued change should be seen as a process of learning where the organization responds to the internal and external changes. Hays (2010) noted that this approach was more focused on change preparation and facilitating than for providing specific, planned steps for each change project & initiative. This rapidly developing discipline looks at the total system and the linkages between all the parts of the organization, and at how change in one part will affect the other parts (Hobeche, 2009). The managerial/empirical implication of the current study includes an emphasis on having a clearManagement Vision. Management should also focus on the readiness for change rather than on the resistance to change. The development of programs for organization members and the smooth flow of information through the organization will contribute immensely to the buildup of readiness for change.The extent to which this shared psychological state exists in any given situation is an empirical issue requiring the examination of within- group agreement statistics. However, the buildup of collective readiness for change is more conducive to the success of change.Management should strive to make the organization's members feel competent.. It is important to

recognize that members can misjudge their or the group's organizational readiness, for example by overestimating or even underestimating the associated capabilities to implement change. Bandura (1997) indicated that efficacy evaluation should be based on accurate information to reach a correct outcome.

Future research directions should concern the following:

1. Continue using statistical techniques that allow testing for causality. The issues related to change success are complicated and require appropriate modeling.

2. There should be some means of focusing respondents' attention on a specific impending organizational change, perhaps by including a brief description of the survey instrument and by mentioning the change by name in the instructions for particular item sets.

3. Group-referenced rather than self-referenced collective commitment and capabilities rather than personal commitment and capabilities.

4. Use hard data to measure change success.

REFERENCES

Alkaya Asil& Hepaktan,c. Edren (2003), Organization Change. Yonetim ve Ekonomi,Vol. 10, No. 1: 31-54.

Andrews, June, Cameron, Helen, & Harris Margaret. (2008), All Change? Managers Experience of Organizational Change in Theory and Practice. *Journal of Organizational Change Management,* vol. 21, No. 3: 300-314.

Armenakis, A.A., Harris, 8.G. (2002), Crafting a Change Message to Create Transformational Readiness. *Journal of Organizational Change Management*. Vo1. 15: 169 - 183.

Attaran M. (2000), Does Reengineering Fail? A Practical Guide forSuccessful Implementation, *Journal of Management Development,* vol. 19, No 9/10: 799- 801.

Balogun, J. & Hope, Harly (2004), Exploring Strategic Change, 2nd Edition, London, Prentice Hall.

Bandura A. (1997), Self -Efficacy: The Exercise of Control, New York:V.H. Freeman.

Beer, M. I & N. Nohrrg (2000), Cracking the Code of Change, Harvard Business Review, Vol. 78, No. 3: 133-141.

Blackman, D. 0' Flynn, J. & Ugyel, L. (2013), A Diagnostic Tool forAssessing Organizational Readiness for Complex Change. Paper Presented to the Australian and New Zealand Academy of Management Conference, Hobart, 4-6 December.

Burke W. Waynery & George H. Litwin (1992), A Causal Model of Organizational Performance andChange, *Journal of Management*. Vol. 18 No 3: 523-545.

Burnes B. (2004), Kurt Lewin andthePlanned Approach to Change: A Reappraisal, *Journal of Management Studies*, Vol. 41 No. 6: 977-1002.

Burnes, B. & Jackson, P. (2011), Success andFailure in Organizational Change: An Exploration of the Role of Values, *Journal of Change Management,* Vol. 11, No. 2: 133-162.

Choi M. and Ruona, W. T. A. (2001), Individual Readiness for Organization Change and its Implications forHuman Resources and Organizational Development. *Human Resource Development Review,* Vol. 10, No. 1: 46-73.

Cole M.S., Harris, S.G., Bernerth, J.B. (2006), Exploring the Implications of Vision Appropriateness and Execution of Organizational Change, *Leadership and Organization Development Journal*, Vo1. 27: 352-567.

Fernander R. and Rainey, H.G. (2006), Managing Successful Organizational Change in the Public Sector, Public Administration Review, March/April: 168-176.

Gist, M. E. Mitchell TR (1992), Self Efficacy a Theoretical Analysis of Its Determinants and Malleability, *Academy of Management Review,* Vo1. 17: 183-211.

Graetz, fiona and Aaron C.T. Smith. (2010), Managing Organizational Change: A Philosophies of Change Approach, *Journal of Change Management,* Volume 10, Issue 2.

Grady, V. M. & J. D. Grady (2012), The Relationship of Bowlby's Attachment Theory to thePersistent Failure of Organization Initiatives, *Journal of Change Management*. First DOl: 10-1080/14697017.2012.724534.

Hair, J.F, Babin, B.J. & Anderson R. E. (2010), Multivariate Data Analysis, 7th ed. New York, Prentice Hall.

Hays J. (2010), The Theory and Practice of Change Management. New York: Palgrave McMillan.

Harshak, Ashley, De Anne Aguirre & Anna Brown. (2010), Executive Education, Columbia Business School.

Holbeche, L. (2009), Organization Development - What's in a Name, Impact, Vo1. 26: 6-9.

Holt DT. Armenakis A.A., Field H. S., Harris S. G. (2007), Readiness for Organizational Change: The Systematic Development of a Scale. *Journal Appl. Behav Sci,* Vol. 43: 232-255.

Kubiciek, Margret (2006), Change Management: 10 Biggest Agents of Change, Personnel Today Magazine .www.personal today.com/articles/2006/07/25/365.

Lucey, John. (2008), Why is The Failure rate for Organizational Change so High?, Management Services Winter.

Mento, Antheny J., Jones, Raymond M. & Dirndorfer, Walter, (2002), A Change Management Process: Grounded in Both Theory and Practice, *Journal of Organizational Change Management,* Vol. 3, No. 1: 109-118.

Meyer, J.P. & Herscovitch, L. (2001), Commitment in the Workplace: Towards a General Model, Human Resources Management Review, Vol. 1: 299-327.

Neves, P. (2009), Readiness for Change: Contributions for Employee's Level of Individual Change and Turnover Intentions, *Journal of Change Management,* Vol. 9, No. 2: 215-231.

Njuguna, Elijah Ng'Ang'A& Muathe, S. M. A. (2016), Crtical Review of Literature on Change Management on Employees Performance, *International Journal of Research in Social Sciences,* VoI. 6, No. 3: 9--22.

Pare, Guy, Claude Sicotte, Placide, Roba-Nzaou & George Balouzaks. (2011), Clinicians Perceptions of Organizational Readiness for Change in the Context of Clinical Information System Projects: InsightsFrom Two Cases Sectional Surveys, Implement Sci. 6 Doi 10.1186/1748-5908-6-15.

Pascale, R., & Athos, A. (1981), The Art of Japanese Management, New York, Warner Books.

Pekis, T.J., and Waterman, R.H. Jr. (1982), In Search of Excellence: Lessons From America's Best Corporations, New York: Harper & Row.

Prosci - (2003), Change Management - Success Factors and Obstacles http://www.change-management.com/tutorial/-success-factors.htm

Self, D.R. & Schraeder, M. (2009), Enhancing the Success of Organizational Change: Matching Readiness Strategies with Sources of Resistance. *Leadership and Organization Development Journal* VoI. 30, No. 2: 167-87.

Sharma S. (1996), Applied Multivariate Technique, New York: Wiley & Sons, Inc.

Sirkin, Harold L., Keenan Perry, & Jackson, Alan (2005), The Hard Side of Change Management, Harvard Business Review, October: 108-118.

Stevens Gregory W. (2013), Toward a Process-Based Approach of Conceptualizing Change Readiness. *The Journal of Applied Behavioral Science,* Vol. 44, No. 3: 333-360.

Sugarman, Barry. (2015), A Learning-Based Approach to Organization Change: Five Case Studies of Guided Change Initiative. Lesley College School of Management Society and Organizational Learning M.A.

Todem, R. (2005), Organization Change Management: A Critical Review. *Journal of Change Management*, Vo1. 5, No. 4: 369-38.

Warwick, D. P. (1975), A Theory of Public Bureaucracy. Cambridge, MA: Harvard University Press.

Weiner Bryan J. (2009), A Theory of Organizational Readiness for Change Implementation, Science, Vol. 4: 67.

http://www.implementationscience.com/content/4/1/69

Wekman, R. A. (2009), Understanding Failure to Change: a Pluralistic Approach and Five Patterns, *Leadership & Organization Development Journal,* VoI. 30, No. 7: 664-689.

Wanberg, C.R., and Banas, J.T. (2000), Predictors and Outcomes of Openness to Change in Reorganizing Workplace, *Journal of Applied Psychology*, VoI. 85, No. 1: 132-142.