

Codification, Preparation and Verification of Core Competency Paradigm for Headquarter Management of National Iranian Gas Company

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Abstract: The present study has synthesized major strategies in order to arrange core competency paradigm for headquarter management of National Iranian Gas Co. (NIGC) so that the company's leaders could identify their manager's aptitudes and reinforce them using proper approaches. Data gathering and quantitative analysis, therefore have been carried out using 160 NIGC managers (high-ranking, senior and junior) concluding the structural mathematical modeling, correlation of study parameters and their relations to provide us with deep understanding of the competency aspects and components of managers. Having completed literature reviews and expert interviews, the researcher extracted some primary aspects and indexes which were screened through some questionnaires and narrowed down to some specific factors. Based on the research findings various aspects of the NIGC manager's competency could be classified in 7 categories prioritized as individual, inter-individual, executive, expert, organizational, analytical and subjective. Having analyzed the interviews using open coding approach and expert's viewpoints in the focal group, the author finalized 28 categories of measurable variables fitted in the aforesaid 7 classes of components. Besides, the status quo of manager's competency in NIGC recognized as rather desirable and the paradigm model became validated. Therefore considering application of an appropriate paradigm for evaluation of manager's competency and findings of the paradigm, proper training programs have been considered to promote competent managers, guarantee manager's aptitudes and realize the long-term sustainable competitive advantage for the organization (NIGC) in the current complex business status.

Key words: Sustainable, considering, categories, proper training, their manager's

INTRODUCTION

Most organizations nowadays are dealing with a variety of challenges including globalization, cultural diversity, changes in shared values and customers employee's requirements, constant performance improvement and effectiveness as well as international financial crisis (Rodriguez *et al.*, 2002). Therefore, effective management and leadership call for approaches that form competitive advantages (Toor and Ofori, 2009). In the same way, management experts rely on knowledge and competency which are the most important competitive advantages in any organization (Garavan, 2007). Based on economic aptitude and production potential of state-of-the-art organizations are indebted to intellectual capabilities and related services. Mintzberg (1994) states that the organization databank is not located explicitly in the computer storage systems but placed implicitly in the head of its managers and employees thus management competency/aptitude as the key element of the organization human capital is an essential issue. According to Apollo, competency is comprised of

knowledge, skill, attitude and capabilities influenced by the individual's career. Such competency is measured and compared based upon the individual's performance and existing widely approved norms and standards improved and developed through training and learning which leads to performance excellence that supports the individual in successful implementation of his/her job and achieving appropriate organization outputs (Vazirani, 2010). The competency model, in line with this issue, could be assumed as a descriptive tool which determines skill level and capabilities required to accomplish a task in a career, business, organization or industry. Therefore competency paradigm is a key to all human resource management processes (Barber and Tietje, 2004).

Experts and practitioners categorize the competency using a variety of approaches, for instance Byham and Moyer (1996) as well as Boyatzis (2008) have introduced individual, organizational and job or role-related competencies. In addition, Dubois *et al.* (2004) has classified the competency into individual and organizational levels while Taylor discussed on universal competencies. Considering Crawford and Nahmias (2010)

approach, required competencies for the change management could be summarized as leadership, stakeholder management, planning, team-building and development, communication, decision-making and problem-solving, cultural knowledge and skills as well as project management aptitudes (Porter, 2005). Based on the competency paradigm designed for senior management levels which is presented by Sandwith and Katz. technical, administrative, communicative and comprehensive as well as leadership skills are taken into consideration. Besides, competency paradigm presented by Elad Harison and Albert Boonstra known as technology change summarizes competency of technology managers as information and IT, organizational change, technology change, risks and success factors, communication, process management, leadership and output-oriented management style (Harison and Boonstra, 2009). In this regard, access to leaders who could manage to navigate the organization through economic, social, political and IT challenges successfully is one of the main competitive advantages of an organization so it could be concluded that training capable managers and leaders is a strategic decision making (Babaei and Sheikh, 2011).

Considering conducted studies (Hashemian, 2012), the organization performance is usually measured through Balanced Score-Cards (BSC) while its training system is analyzed through SWOT (Strengths, Weaknesses, Opportunities, Threats). Based on the study's findings, it could be pointed out to the aspects and scopes of learning and development as well as internal processes/procedures as the organization's implicit asset which is significant in financial leverage. Such assets act as defensive agents in training system which may not be appropriate in national development and achieving the organization strategic goals. Hence, competitive and conservative strategies should be taken into considerations. Therefore the company is required to utilize the comprehensive competency development in order to enhance its competency level and achieve considerable performance, efficiency and effectiveness.

As one of the major companies pioneering in the country's industry, NIGC is trying to create premium and unique capabilities to sustain its competitive advantage. Therefore designing a competency paradigm for the NIGC managers could contribute to its strategic goal in realizing its requirements in the Country's Outlook Deed and the management role in organizational success as well. In the same way, the major issue of the present study could be stated as lack of a proper framework to identify the competency components and codification of a suitable paradigm. So, the main objective of the present study

should be summarized as codification of company development paradigm both theoretically and practically (i.e., design and validation of the competency paradigm) proportional to the company's values and mission and vision.

MATERIALS AND METHODS

The present combined research methodology is based upon the philosophical viewpoint and poststructuralist paradigm which is applied by the author to analyze the case study in its natural condition to achieve a better understanding. Considering the objective and nature of the present study, it could be categorized in two levels; qualitative and quantitative data gathering and analysis (Delavar and Kooshki, 2013). Taking the subject nature and the literature review into consideration, focal group technique is utilized here in qualitative level while descriptive-analytic approach together with structural equations are applied in quantitative level. Regarding the above-mentioned plan and the study procedure, detail stages of the research and steps taken in each stage are carried out in 3 phases. Table 1, illustrates the study steps in detail based upon the qualitative and quantitative stages.

Since, investigation of NIGC manager's competency has been stated as the objective of the present study to present a paradigm proportional to NIGC context, the mixed research methodology is utilized here to realize such objective and prepare the research theoretical framework and data gathering. The required data is then collected through two steps from various experts, professionals and NIGC managers. Considering qualitative stage of the study, 12 semi-structured interviews are carried out with the related experts and professionals using focal group approach. Seven major components are totally found as the main factors of the management competency model using codification and analysis of qualitative data in two steps. The focal group is then formed by participation of 8 key members in order to modify the findings and enhance their validation. Formation of focal group contributed to modification and adjustment of findings of qualitative part of the study, therefore, the identified components are presented as the study conceptual paradigm. The questionnaire is designed based on the findings of the qualitative analysis. Its validation and verification also are substantiated through expert's viewpoints and calculation of Cronbach's Alpha. The questionnaire is then distributed among the sample statistical data (160 high-ranking, senior and junior managers) of NIGC headquarter to extract the study

Table 1: The study procedure

Variables	Procedure
1st step: literature review and preparation	Analyzing the theoretical background, paradigms and concepts in the area of competency Analyzing of the study background the practical background and competency-related studies Analysis, comparison and finalization of related studies
2nd step: design and implementation of qualitative study (focal group approach)	Presentation of primary conceptual structure based on the literature review Identification of those who are aware of the NIGC management competency development Selecting objective (non-probabilistic) sample data using chain method implementing semi-structured interviews using the selected statistical sample in order to identify various aspects of management competency and based on the NIGC features Analyzing the interview data using open codification approach Implementation of focal group issue for validation purposes and improvement of conceptual paradigm Analysis of the qualitative data resulted from focal group discussions Identification of main components of management competency paradigm Presenting a conceptual paradigm for NIGC managers' competency based on findings of qualitative part of the study
3rd step: design and implementation of quantitative study (descriptive-analytic approach)	Identification of the study sample statistical data (all the NIGC managers) Identification of sample statistical data size Questionnaire codification based on theoretical aspects and findings of the qualitative part of the study Implementation of questionnaire using the sample data Classification and analysis of quantitative data using expansion statistics Analysis and identification of fitness in NIGC manager's competency paradigm Presenting the final competency paradigm for NIGC managers

quantitative data. By accomplishing the qualitative part of the study and its report, the quantitative approach has been carried out in the 2nd step in order to test the theoretical paradigm of the NIGC and its verification. Identification of complex relationship paradigms, correlation among factors and availability of various abilities and applicability in larger sample data could be stated as the objective of the 2nd part of the study. The descriptive-analytic approach and structured equations have been utilized in the quantitative part of the study. In order to do this, major factors and their correlations are identified using cause and effect analysis. Utilization of the 2nd order cause and effect analysis and structural equation model contributed to identification of relationships and formulation of final NIGC management competency model. Since potential parameters and components of the NIGC management competency model had been identified in the qualitative part of the study, clarification of the paradigm in the selected sample statistical data and study of relationship between concepts and components of the proposed paradigm have been carried out using descriptive-analytic approach in the quantitative part.

RESULTS AND DISCUSSION

Findings of the qualitative data analysis indicated the classification of variables introduced in the NIGC management competency model into 7 categories are as subjective, individual, inter-individual, executive, organizational, expert/specialized and analyst each of which includes a variety of measurable parameters. Such parameters and variables point out to the competency and proficiency of the NIGC managers. There are 28 categories

of measurable parameters identified in the aforesaid 7 classes of variables which are identified following the interviews using open codification approaches and expert viewpoints. Analysis of quantitative data indicated that based on the manager's viewpoints, level of NIGC management competency is higher than average and relatively considerable correct. In other words, subjective, individual, inter-individual, executive, organizational, expert/ specialized and analytic competency status have been significantly higher than average. Besides, there has been no substantial variance among competency levels of NIGC managers in various positions. Status of a variable will be evaluated as suitable, rather acceptable and improper if the calculated competency level is higher than 3.66, between 2.33 and 3.66 and lower than 2.33 respectively. Considering results of the 7 competency aspects, subjective and analytic competency indicated the t level with significant variances of -8.58 and -7.900 respectively which is lower than the acceptable status and may be regarded as improper. In the same way, individual, inter-individual, executive, organizational and expert/ specialized aspects have shown proper and acceptable t levels of 10.81, 8.90, 8.54, 5.091 and 5.63, respectively. Two components of problem-solving and decision-making are regarded as improper according to subjective and industrial analytic aspects while leadership and influencing are measured as average ones in organizational competency, however, the rest are fairly proper. Considering the average order of parameters they could be prioritized as individual (5.69), inter-individual (5.04), executive (4.91), expert/specialized (4.58), organizational (4.08), analyst (1.92) and subjective (1.77). The verifying cause and effect analysis indicates the correlation and influencing of sub-categories/parameters on the major 7 competency variables as follow:

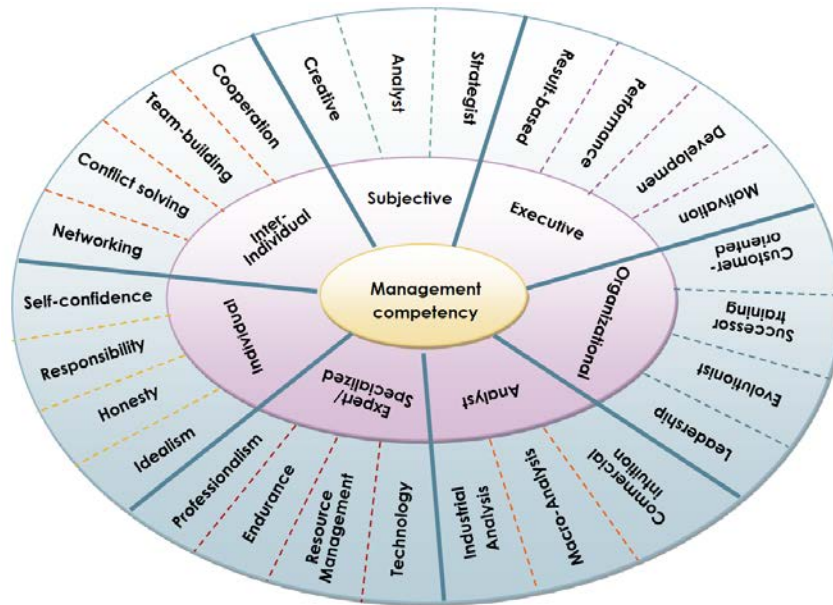


Fig. 1: Cause and effect analysis, 2nd order verification of the management competency

- Subjective: strategist, analyst, problem-solving and creative
- Individual: self-confidence, responsibility, honesty, idealism
- Inter-individual: cooperation, team-building, conflict solving, networking
- Executive: motivation, development, performance, result-based
- Organizational: customer-oriented, successor training, evolutionist, leadership
- Expert/specialized: resource management, technology, endurance, professionalism
- Analytic: intuition, strategy-oriented, macro-analysis, industrial analysis

Finally, findings of the 2nd order verifying cause and effect analysis shows that the 7-competency variables are suitable enough to project/forecast the competency level of NIGC managers in which the individual competency is the maximum level (1.00) while the analyst is the minimum level (0.80). In addition, fitness parameters of the competency paradigm specify that the presented paradigm is fairly acceptable. In line with this issue, the adjustment level of fitness calculated as 0.99 while the relative fitness is 0.98. being close to 1 indicates that the model is acceptable and properly formulated. Besides square root of the sum of the error square is 0.076 which indicates model proper fitness. RMR is also calculated as 0.052 which shows the model acceptability. Finally, CMIN/DF estimated as 2.42 which corroborate the model acceptability. In general, results of the 5 aspects

(variables) indicate that the model is properly fitted. The cause and effect analysis of each parameter has been shown in Fig. 1. Therefore, it could be concluded that quantitative data have been fitted with the assumed paradigm. Among the categories that constituted merits in component analysis, the strategic approach with factorial load of 0.16 and $0.02 R^2$ showed significance level of 0.35. In terms of mental merit of problem solving component and decision making with factorial load of 0.18 and $0.04 R^2$, its significance level was 0.21; thus, they were completely eliminated from the general model.

Role of the human resources is vital due to its scarcity, value, successor and uniqueness. Placing such resource in various positions based on the capabilities, aptitudes, experience and so on is one the most fundamental measures to realize human resource potentials and its efficient performance among them, it could be pointed out to the organization managers as the key human resource and competency paradigm due to its role in all the human resource management procedures (Barber and Tietje, 2004). Development of the competency model for the human resource management enhances the recruitment/employment process, improvement of performance management, identification of required training, integration of culture and commercial aspects, communication through merging the human resource processes and establishment of clear expectations to secure the individual and organization success (Akbar and Akber, 2012). Literature review and accomplished studies indicate that accurate and precise requirement assessment is one of the most important activities in the

field of staff and management competency. Besides, realization of competency plan depends on participation and cooperation of all stakeholders in planning, implementation and evaluation of competencies. Involvement of the organization senior managers (specifically) and other stakeholders (universally) is a must in the competency programs (Redick *et al.*, 2014; Taheri, 2015; AbdSabour, 2008; Houshyar, 2013). Most studies are focused on some limited aspects of the competency. Some experts emphasize on organizational and individual universal competencies while a proper competency paradigm should avoid overlaps of categories, repetitions in various classes and missing other aspects of competency, and cover suitably its applied objectives. Besides, overview of the presented paradigms and literature review indicate that the organization context and type of the institute under study is highly influencing in figuring out a comprehensive paradigm. The company's mission and vision should be taken into account. Monitoring and evaluation should also be constantly implemented to ensure continuous quality and performance improvement.

Hence, type of the company, its goals and plans are of the main determinant factors in management competency paradigm. The competency paradigm of the NIGC managers have been figured out based on the above-mentioned issues. Findings of the present study and quantitative data analysis indicate that NIGC managers believe that general status of the management competency in NIGC is higher than average and fairly proper/acceptable, that is, competency level of the 7 categories (subjective, individual, inter-individual, executive, organizational, expert/ specialized and analyst) is significantly higher than average and there is no substantial difference between NIGC competency levels in various status. In addition, results of the cause and effect analysis show that influencing factors in each category of the major 7 competency variables are as Subjective (strategist, analyst, problem-solving and creative), individual (self-confidence, responsibility, honesty, idealism), inter-individual (cooperation, team-building, conflict-solving, networking), executive (motivation, development, performance, result-based), organizational (customer-oriented, successor training, evolutionist, leadership), expert/specialized (resource management, technology, endurance, professionalism) and analytic (intuition, strategy-oriented, macro-analysis, industrial analysis). In the end, the 2nd order cause and effect verification analysis showed that the 7 factors identified earlier are capable enough to forecast the NIGC management competency in which the maximum level is allocated to individual competency (1.00) and the minimum level is assigned to analytic competency

(0.80). Fitness indicators of the proposed paradigm also revealed to be appropriately adjusted for the NIGC competency model.

In the same way, the proposed paradigm for management competency and identified aptitudes should be taken into consideration by the Human Resources Department and fill the gap between the existing and ideal levels through required training programs and practices. Identification of training requirements should be evaluated in accordance with the needed competency level. Such procedure indicates the level of individuals in comparison with the required management competency. There are a variety of approaches to implement such evaluation, amongst are 3 main methodologies proposed by Byham and Moyer (1996):

- Assessment by the experienced knowledgeable manager
- Concise evaluation by some assessment centers
- About 360° feedback (assessment made by colleagues and juniors)

Training programs in this approach are presented to those who really need them, and that's the advantage for assessment of required training. If a training program irrelevant to the individual's current or future career is presented, it would not contribute to any individual organizational progress and may be regarded as waste of time, improper utilization of training resources and accordingly organization costs and expenditures (Byham and Moyer, 1996).

There are various steps taken in the stage of program identification and implementation such as identification of development opportunities (workshops, coaching, mentoring, competency development (implementing the identified programs) and reassessment of competencies (in order to identify the efficiency of programs). In the same way, proper training opportunities should be forecasted and implemented to meet the required training following the identification of required training programs. Holding such development programs is the main difference between competency-oriented human resource development programs and other training programs. Knowledge transfer is the only achievement of traditional training programs which is usually presented as a lecture while knowledge transfer in the competency-oriented approach has got a minor part in the training programs, because, the competency requires aptitude, skill, proficiency, attitude and motivation in addition to knowledge. Attempts are made in the development programs to help the individual become practically competent. Therefore, presenting the knowledge is followed by practicing the competency in which scenario-making, case-study and roleplaying methods are utilized here.

CONCLUSION

The approach proposed by Viton and Cameron is the most important one applicable for competency training purposes. In their paper titled as “development of management competencies”, they describe the approach in 4 steps as; primary competency assessment, learning the competency, practicing the competency and secondary competency assessment. In the first step, trainees are provided with a test to identify their current competency status. The required competency is presented in the 2nd step and attempts are made to learn the competency through such approach. The competency is practiced in the following step so that trainees could apply it practically. Hence various scenarios and role-playing are utilized for trainees to practice their skills and competencies. Reassessment of the competency level is then implemented to identify the trainee’s progress. Getting feedback through gradual assessments may contribute to constant improvement and enhancement of management development programs. Therefore, individual’s performance and efficiency levels based on personal development toward the organization goals would be reassessed again after some months.

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REFERENCES

- AbdSabour, F., 2008. Systematic approach in analysis of barriers to competency conditioning of Power Ministry. Ph.D Thesis, Faculty of Management Science, Allameh Tabataba'i University, Tehran, Iran.
- Akbar, R.M. and A. Akbar, 2012. Human resource management competency model for Pakistani banking companies. *Afr. J. Bus. Manage.*, 6: 10396-10407.
- Babaei, Z. and M.A.E. Sheikh, 2010. An Introduction to Management Development: Definitions and Cultural Doctrine as well as Approaches to Managers' Competency Development, Human Resources and Efficiency and Performance Studies Institute. Saraamad Publications, Iran,.
- Barber, C.S. and B.C. Tietje, 2004. Competency requirements for managerial development in manufacturing, assembly and/or material processing functions. *J. Manage. Dev.*, 23: 596-607.
- Boyatzis, R.E., 2008. Competencies in the 21st century. *J. Manage. Dev.*, 27: 5-12.
- Byham, W.C. and R.P. Moyer, 1996. Using competencies to build a successful organization. *Dev. Dimensions Intl.*, 54: 61-80.
- Crawford, L. and A.H. Nahmias, 2010. Competencies for managing change. *Int. J. Project Manage.*, 28: 405-412.
- Delavar, A. and S. Kooshki, 2013. Mixed Method Research. 2nd Edn., Agah Publication, Tehran, Iran,.
- Dubois, D.D., W.J. Rothwell, D.J.K. Stern and L.K. Kemp, 2004. Competency-Based Human Resource Management. 1st Edn., Davies-Black, Palo Alto, California.
- Garavan, T.N., 2007. A strategic perspective on human resource development. *Adv. Dev. Hum. Resour.*, 9: 11-30.
- Harison, E. and A. Boonstra, 2009. Essential competencies for technochange management: Towards an assessment model. *Int. J. Inf. Manag.*, 29: 283-294.
- Hashemian, F., 2012. Performance evaluation of NIGC using BSC method. MSc Thesis, Allameh Tabataba'i University, Tehran, Iran.
- Houshyar, V., 2013. Presenting the management competency model for branches of the banking system. MBA Thesis, University of Ferdowsi, Mashhad, Iran.
- Mintzberg, H., 1994. The rise and fall of strategic planning. *Harvard Bus. Rev.*, 72: 107-114.
- Porter, J.D., 2005. Application of Sandwith's competency domain model for senior college housing officers in the United States. Ph.D Thesis, University of Florida, Gainesville, Florida.
- Redick, A., I. Reyna, C. Schaffer and D. Toomey, 2014. Four-factor model for effective project leadership competency. *J. Inf. Technol. Econ. Dev.*, 5: 53-67.
- Rodriguez, D., R. Patel A. Bright, D. Gregory and M.K. Gowing, 2002. Developing competency models to promote integrated human resource practices. *Hum. Resour. Manage.*, 41: 309-324.
- Taheri, S., 2015. Codification and validation of nomination and promotion of NIOC employees utilizing competency measurement approach. Ph.D Thesis, Faculty of Psychology and Educational Sciences, Allameh Tabataba'i University, Tehran, Iran.
- Toor, S.U.R. and G. Ofori, 2009. Positive psychological capital as a source of sustainable competitive advantage for organizations. *J. Constr. Eng. Manag.*, 136: 341-352.
- Vazirani, N., 2010. Competencies and competency model-a brief overview of its development and application. *SIES. J. Manage.*, 7: 121-131.