

PRELIMINARY VERSION - NOT FOR CITATION

Does generation matter in strategic change implementation? Effects of the age on change propensity of managers after a privatization.

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Abstract

The aim of this paper is to find evidence of managers' generation effects on a component of resistance to change: the cognitive rigidity. We analyzed data collected during 88 interviews to managers of 16 social security organizations that were transformed by law from public into private entities. These organizations needed to have managers with a new idea of their responsibility. Findings suggest a positive relationship of cognitive rigidity with (old) generation and (high) tenure and a negative relationship with a heterogeneous experience.

Keywords: Organizational change, Resistance to change, Heterogeneity in Experience, Demographic Characteristics

Introduction

One of the common traits of organizations living in everyday world is being embedded in a frequently changing environment (Choi & Ruona, 2011). This environment produces events, which introduces several different changes into organizations, like technology improvements, mergers and acquisitions, structural changes, management changes, and cultural changes (Struckman & Yammarino, 2003). To successfully survive in such environments they are continuously required to change and adapt to muting goals and demands (Burnes, 2004). In these efforts organizations are often constrained in their ability to adapt (Boeker, 1997). Evidences for the real world tell us that several change projects end up with failures (Burke & Biggart, 1997; Beer & Nohria, 2000).

The source of change is embodied in the behavior of organizational members: the change necessarily occurs in a context of human social interactions (Ford & Ford, 1995), and human resources can support or resist the change (Herscovitch & Meyer, 2002). Many times organizational changes have been initiated with extensive efforts and later halted by the resistance of single employees or groups of them (Lorenzi & Robert, 2000).

The concept of resistance to change has been widely and extensively used both in research and in practice to explain why efforts to introduce organizational changes ended up with failures (Oreg, 2006). In spite of some critics, there has been an interest in further investigating the concept of resistance to change within organizations in recent years (Ezzamel, Willmott, & Worthington, 2001; Symon, 2005). Being change intrinsic in human actions and existing prior to organizations (Tsoukas & Chia, 2002) it is important to investigate human aspects like behavior and attitude towards the change (Judge, Thoresen, Pucik, & Welbourne, 1999). An underestimation of the individual cognitive and affective processes, and of their role as determinants of resistance to change, has been indicated as a possible explanation of the spurious results of organizational change efforts (Self, Armenakis, & Schraeder, 2007; Kavanagh & Ashkanasy, 2006). Although micro-organizational studies of organizational change have shown how members can influence change processes, there is

still a limited understanding of the factors associated with a person's decision to support or to resist a specific organizational change (Allen, Jimmieson, Bordia, & Irmer, 2007; Lamm & Gordon, 2010).

In a study by Oreg (2003) six different sources of individual resistance to change have been identified: reluctance to loose control, cognitive rigidity, lack of psychological resilience, intolerance to the adjustment period involved in change, preference for low levels of stimulation and novelty, and reluctance to give up old habits. With the intent to contribute to the understanding of the determinants of one of these sources of resistance to change, this paper investigates the influence of demographic variables, in particular age, on cognitive rigidity, in order to answer the following research question: does generation matter for cognitive rigidity aspects in resistance to change? The model proposed and tested in this paper hypothesizes the presence of a positive correlation between the age and the cognitive rigidity. Tenure and heterogeneity in experience are also considered in the model.

These variables have been included in the model since they represent leverages top managers can take into consideration in the selection of human resources to support planned organizational changes. The top management has in fact the responsibility to make the choices of people and of strategy to support the change, and can also influence the individual resistance (Piderit, 2000). Shareholders (or powerful stakeholders in the case of State ownership) often face changes adopting a people strategy based on young managers hired in different industries. Therefore also in practice individual characteristics like age (generation), experience, and tenure matter in this regard.

The structure of the paper is as follows. The following section will describe the theoretical framework and the hypotheses along with the full research model. The data collection and analysis methodology will subsequently described followed by the presentation of the results of the analysis. A discussion and conclusion section will then conclude de paper.

Theoretical Framework and Hypotheses

The model tested in this research paper investigates the potential impact of *age*, *tenure*, and *heterogeneity of experience* on the *cognitive rigidity* of managers. *Dimension of the organization* and *Dimension of the department* are considered as control variables related to the organization. *Sex* and *Education* are instead considered as control variables related to the individual. As already mentioned in the introduction the variables considered in this model are variables that can be used as managerial leverages in organizational change related decisions.

Being relevant to organizational change, the concept of resistance to change has been extensively discussed in literature and it has also been considered not fully adequate to understand the phenomenon of constraints to organizational change (Merron, 1993; Dent & Goldberg, 1999; Piderit, 2000). The concept has then further been decomposed into different elements comprising behavioral, cognitive, and affective components (Piderit, 2000). In particular the relevance of cognitive and affective aspects as determinant of resistance to change is also stressed by George & Jones (2001), who indicate the individual and group sense making and interpretation processes as important roots of the resistance to change.

A more punctual decomposition of the resistance to change concept is provided by Oreg (2003) who identifies six main sources: reluctance to loose control, cognitive rigidity, lack of psychological resilience, intolerance to the adjustment period involved in change, preference for low levels of stimulation and novelty, and reluctance to give up old habits.

Cognitive rigidity deals with the cognitive processes of the individuals that underlie people's responses to organizational change (Oreg, 2003). Cognitive rigidity reflects individuals' open mindedness that influences their will to adapt to new and changing situations. When cognitive

rigidity is high, individuals might be less willing to adapt and to adjust to new situations, and thence more possibly resistant to organizational change.

Age

Demographic characteristics of the top management team, like sex, educational level, age, tenure and others, influence the strategic decision making process that affects organizational performance (Goll & Rasheed, 2005). Demographic variables, and age in particular, are commonly taken into considerations when organizational change has to be investigated.

The age is expected to influence decision-making and choices: in particular Wiersema & Bantel (1992) have found younger managers more willing to undertake corporate change. In general when the age increases, the preference for established routines increases in individuals and their will to challenge formal rules instead decreases (Carlsson & Karlsson, 1970; Chown, 1960; Child, 1974). Researchers suggest then when the age of an individual increases his flexibility decreases and, consequently, his rigidity increases. Especially older executives are less willing to undertake risky decisions to safeguard their career and financial security (Hambrick & Mason, 1984).

The increase in the age contributes then to decrease the organizational responsiveness to environmental change (Desai, 2008). Older employees and managers might then show an increased resistance to adapt to changes or to new situations.

On the basis of these considerations the following hypothesis is formulated:

Hypothesis H1: The higher the age of managers, the high is the cognitive rigidity.

Tenure

The length of time and individual has been in the job in an organization, in other words the length of the tenure, may have an effect on his will to support or to resist the change (Boeker, 1997). In the past organizational tenure has been correlated with age (Bantel & Jackson, 1989) and with the rigidity and commitment to established policies and practices (Katz, 1982).

Organizational tenure has also a reflection on the experiences, the perspectives, and the value of an individual (Wiersema & Bantel, 1992). The length of tenure within an organization is expected to influence its organizational processes and choices in various ways. These past behaviors constrain and determine the actions that a chief executive will take (Boeker, 1997). Goll and Rasheed (2005) report that the length of the tenure is expected to influence the organizational processes and choices in various ways.

The following hypothesis is therefore formulated:

Hypothesis H2: The higher the tenure of managers, the higher is the cognitive rigidity.

Heterogeneity of Experience

In addition to a static view of managers' demographic characteristics, the mental process that they use in facing changes and making sense of it is also relevant to be considered. According to Weick, sensemaking is "the act of constructing interpretations of ambiguous environmental stimuli" (Weick, Sensemaking in Organizations, 1995). People need to reduce ambiguity and they socially look for a new equilibrium that is in continuous progress. Justification (a symbolic linkage among single interacts and underlying pattern), Commitment, Interpretation and Validation are phases of this process that has as output a collective structure based on a *cognitive map*.

Two elements have a role in this process: previous individual experiences and, as a result, heterogeneity of experience among managerial team members. Previous experiences in different industries have effects on sensemaking process because it is retrospective (Weick, 2001). So, managers with experiences in private industry have in their own cognitive maps concepts and ties among them that can be exactly what is needed for making sense of new reality. Managers can find reasons for a committed interpretation in their experiences that give evidence of appropriateness of new managerial tools. Sensemaking is also a process based on interaction: therefore heterogeneity matters not only at individual level but also at team level.

To be able to embrace diversity, as in the case of change after a privatization, managers and employers have to become more flexible and develop a larger range of skills and strategies in working with diverse groups of people. The concept of diversity has been explained by Abrahamson (2004) discussing distinctions in ethnic and cultural groups that are distinguished in terms of attitudes and performance at work. There are also some studies that look at the relation between heterogeneity and organizational performances (Hambrick, Cho, & Chen, 1996) considering human origins as an important element that contributes to understand organizational outcomes. The inclusion of historical elements, as the experience of the workers is an important topic that has been introduced into the studies of organizational change by Pettigrew (1985) when he critiqued the literature on organizational change as being largely a-contextual, a-historical, and a-processual.

Other studies focused on the associations between the demographic composition of the top management team and organizational characteristics. As underlined by Hambrick, Cho & Chen, (1996, p. 662) citing Bantel & Jackson (1989) and O'Reilly and Flatt (1989), "young, short-tenure, highly educated teams to be relatively innovative". Another article written by Eisenhardt and Schoonhoven (1990) showed that top team's heterogeneity impacts positively on the growing rates of semiconductor firms. Other studies showed that strategic persistence or absence to change depend from the organizational tenure of top management (Finkelstein & Hambrick, 1990; Grimm & Smith, 1991; Wiersema & Bantel, 1992).

There is still a debate concerning the heterogeneity and the homogeneity on the impact of different levels of diversity in organizations¹. From a heterogenetic point of view, different levels of human talents impact positively on the organizational attitudes to change. So, from an opposite perspective, low level of heterogeneity can explain the difficulties that every organization finds in the research of consensus to change and in the tendency to implement new solutions.

On the basis of previous considerations, the following hypothesis is formulated:

Hypothesis H3: The lower the Managers' heterogeneity in experience, the higher is cognitive rigidity.

¹ References for Business, Enciclopedia of Small Business, 2nd Edition. Trends in Organizational Change – Business Forum, <http://www.referenceforbusiness.com>.

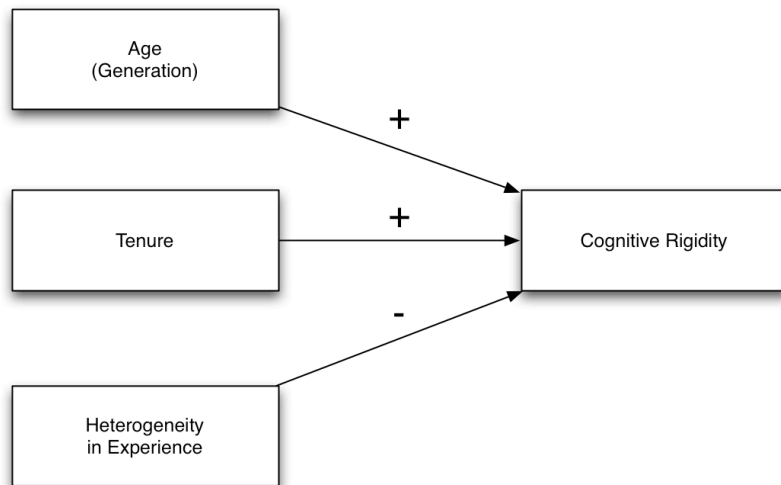


Fig. 1 - The research model

Research model

The model tested in this research paper suggests a positive relationship between (higher) age (generation) and cognitive rigidity, a positive relationship between (longer) tenure and cognitive rigidity, and a negative relationship between heterogeneity in experience and cognitive rigidity.

Four more variables are added to the model with as control variables. These variables are: sex, education, organization size, and department size. Two of these four variables (sex and education) are directly related to the individual, while the other two (organization size and department size) are related to the organization in which the individual is employed.

Research Methodology and Data Collection

This paper is based on the analysis of a dataset that has interest for our aims because it refers to managers involved in a radical change: in 1994, 16 public social security organizations were transformed into private organizations and were put under the ownership of private foundations. The processes of privatization, liberalization and expansion of competition that are typically applied in the free market approach, are the logics that want to be applied also in public organizations, to ensure greater level of efficiency. The start of privatization in Italy occurred in 1992 and was originated by the needs to meet the emergency viability of the early '90s: the need to reduce public debt, to regain credibility in international markets and to respond to pressures of liberalization from the European Commission and other international institutions. This change had important effects on the level of autonomy and empowerment of managers. Many managers were hired from other organizations in order to manage new services (financial investments) or new competences (economic accounting). Organizational members had the option to leave their organizations and find a new job in public sector.

We analyzed data collected during 88 interviews to managers of these 16 organizations. The interviews are the result of a consultancy project developed to implement managerial competences and skills to enhance the awareness after the privatization. In order to support this strategic change, top managers decided to invest in education and training for the evolution of managerial role from a bureaucratic authority to a “coach” interpretation. Managers were asked to give their opinion with respect to importance and contest appropriateness of four managerial competencies: labor organization and quality, leadership, empowerment, innovation in managerial roles. Each respondent gave his evaluation on four levels: “I am interested for advanced knowledge”, “I am

interested for basic knowledge”, “I am not interested because I already have that competences”, “I am not interested because that competences is not appropriate to our context”. These evaluations are representative of managers’ cognitive rigidity expressed in terms of “disposal to change their mind” and “disposal to be not consistent with their previous opinions”. In this sense, managers that are not disposal to be trained on managerial competences because those competences are inappropriate to the specific context show the highest rigidity. On the contrary, managers who want to be trained on new competences, even if they already know something about them, have the lowest rigidity.

Definition and measurement of the variables

The variables included in the model tested in this paper are: cognitive rigidity (the dependent variable), generation, organizational tenure and heterogeneity of experience. As control variables size of the department, size of the organization, education and sex are also used. The variables are measured as follows.

Dependent variable

Based on the answers described, the Cognitive rigidity has been measured using a scale expressed in percentage on the maximum of 12 (4 times 3, that is the maximum value of rigidity assigned to the answer “I am not interested because that competences is not appropriate to our context”). The four questions regard the managerial cognitive rigidity as a sum of the evolution of competences and skills that are interesting or not because: the technical level of the competences, because they are known or unknown or because the relevance of the application of specific competences is not important.

Independent variables

Generation is a variable based on the age and grouped in three classes (under 40 years, between 40 and 50 years, over 50 years). The dummy variables are constructed identifying the class over 50 years as the base class. From this perspective, the effect of age is measured considering differences with younger managers.

Organizational tenure is a dummy that explains the effect of privatization with the working experiences. The dummy variable is equal to 1 when the single subject has worked in the same organization before privatization. In this case the organizational change has been totally experienced, from the beginning to the change.

Heterogeneity of experience serves to understand how different experiences, especially in the private sector, influences the cognitive rigidity of managers. The previous experiences in the private sector have been operationalized in a dummy variable: when the variable is equal to 1, the manager has previous experiences in the private sector. This variable explains something more than the organizational tenure: considering only the tenure is not sufficient because there can be managers that have been hired after the privatization and don’t have experiences in the private sector; on the other hand private experience can be useful before and after the privatization.

Control variables

Size of managed department has been measured using the number of employees assigned to the office managed by the respondent manager.

Size of organization has been measured using the value of cost for personnel from the Profit and Lost of the organization. Because we are considering managers within the same industry and the cost of personnel is a valid variable, because public social security organizations have been organized through the development of general laws where salaries are homogeneous.

Sex is a dummy variable that has value equal to 1 if female and 0 if male.

Education is articulated into three dummies variables that assume respectively value 1 if respondent is graduate, undergraduate or other (master, PhD or similar post graduate activities).

Results

Table 1 presents the means, standard deviations, and correlations among the variables. Managers are female in 32 cases on 88. The age of managers has been ranged in three classes: 33 managers are younger than 40, 32 are from 40 to 50, and 23 are older than 50. The mean of department size is 11.32 people (min 0 and max 45). The mean of organization size is 9,53 mln of euro (min 0.4, max 27.6). Education variables: 46 managers are graduate, 26 undergraduate and 14 got an MBA. 46 managers have tenure longer than privatization period and 29 have previous experience in private organizations.

Table 1 – Descriptive statistics and correlation matrix

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9
1.Cognitive rigidity	0.3514773	0.1484985	1	----	----	----	----	----	----	----	----
2.Generation (1<40)	0.375	0.4868973	-0.1397	1	----	----	----	----	----	----	----
3.Generation (1= 40-50)	0.3636364	0.4838024	-0.2299	-0.5855	1	----	----	----	----	----	----
4.Organizational tenure	0.5227273	0.5023456	-0.0598	0.5992	-0.1763	1	----	----	----	----	----
5.Heterogeneity of experience	0.6931818	0.4638161	-0.2236	0.21	0.0419	0.4496	1	----	----	----	----
6.Sex (1=female)	0.3636364	0.4838024	-0.0044	0.1952	-0.0804	-0.0344	-0.1118	1	----	----	----
7.Size of organization	9.53125	8.884493	0.1251	-0.2704	0.0607	-0.239	-0.0555	0.0521	1	----	----
8.Size of department	11.31818	11.21119	0.0853	-0.3001	0.1691	-0.136	-0.0783	0.0272	0.4124	1	----
9.Education1	0.5227273	0.5023456	0.1775	-0.1527	0.0129	0.089	-0.0931	-0.0344	0.2296	0.1905	1
10.Education2	0.1590909	0.3678569	-0.0233	0.1765	-0.0705	0.0424	0.0873	0.0587	-0.0383	0.152	-0.4552

We regressed the following three equations:

Model 1: control variables

$$\text{Cognitive Rigidity} = b_0 + b_1 \text{ Education} + b_2 \text{ Size Dep} + b_3 \text{ Size Org} + b_4 \text{ Sex} + e$$

Model 2: control variables, generation and tenure

$$\text{Cognitive Rigidity} = b_0 + b_1 \text{ Age1} + b_2 \text{ Age2} + b_3 \text{ Tenure} + b_4 \text{ Education} + b_5 \text{ Size Dep} + b_6 \text{ Size Org} + b_7 \text{ Sex} + e$$

Model 3: control variables, generation, tenure and experience

$$\text{Cognitive Rigidity} = b_0 + b_1 \text{ Age1} + b_2 \text{ Age2} + b_3 \text{ Tenure} + b_4 \text{ Experience} + b_5 \text{ Education} + b_6 \text{ Size Dep} + b_7 \text{ Size Org} + b_8 \text{ Sex} + e$$

The hypotheses were tested by regressing cognitive rigidity, measured in a range between zero and 100%, on the control variables and the demographic measures. Table 2 shows results. We tested separate regression equations for three models: (1) control variables only, (2) control, generation and tenure variables, (3) control, generation, tenure and heterogeneity of experience variables. This approach allows comparison of the relative effects on explained variance of each variables or group of variables. In model 1, regressing cognitive rigidity on the control variables (sex, organizational size, department size, and education) indicated that the control variables have no significant effect on cognitive rigidity. Regressing cognitive rigidity on the control, tenure and generation variables in model 2 supported our hypotheses that management characterized by an older age will exhibit greater cognitive rigidity. Tenure variable was not significant. Model 3, in which cognitive rigidity is regressed on the control, generation, tenure and heterogeneity of experience variables indicates that age, tenure and heterogeneity of experience have significant effect on cognitive rigidity. The analysis of these measures supports all our hypotheses.

Table 2 – Results of Regression Analysis on Cognitive Rigidity

Variables	Model 1: Control Variables	Model 2: Generation, Tenure and Control variables	Model 3: Full Model
Generation (1<40)	---	-0.16672 **	-0.16835 **
Generation (1= 40-50)	---	-0.12613 ***	-0.14879 ***
Organizational tenure (1>10 yrs, 0<1=0 yrs)	---	0.05011	0.08131 °
Heterogeneity of experience	---	---	-0.06557 °
Sex (1=female)	-0.00189	0.02011	0.01439
Size of organization	0.00138	0.00047	0.00087
Size of managed department	0.00008	-0.00026	-0.00042
Education1	0.05508	0.03689	0.02776
Education2	0.02588	0.03522	0.03754
R squared	0.0425	0.2048	0.2361
Adjusted R squared	-0.0159	0.1243	0.1479
F	0.73	2.54	2.68

° p < .10
 * p < .05
 ** p < .01
 *** p < .001

Discussion

The results of this study show significant relationship between the three variables studied and cognitive rigidity. Older managers and managers with relevant tenure seem to have a higher cognitive rigidity and who had previous experience in private sector shows a lower cognitive rigidity.

The influence of generation

Results of regression support the hypothesis H1 (the higher the age of managers, the higher is the cognitive rigidity). Data about managers' age have been grouped into three ranges (less than 40 years, between 40 and 50 years, more than 50 years) and three dummy variables have been generated. In Model 3, we included two of these variables in order to estimate differential effects with base-class (more than 50 years). Results show that managers that have less than 40 years have a lower cognitive rigidity (coefficient -0.1683) with respect to base-class. Managers with an age in the range 40-50 years have a lower cognitive rigidity (coefficient -0.1487) with respect to base-class. Both results are statistically significant (P<0.05).

The influence of tenure

The hypothesis H2 (the higher the tenure of managers, the higher is the cognitive rigidity) has been confirmed by data. In Model 3, tenure shows a positive coefficient (0.0813) and it is statistically significant (P<0.1). A positive coefficient means that managers who worked in this industry before privatization should have a higher cognitive rigidity. Literature shows evidence that tenure has negative effects on change if previous performances of the company are positive. We can hypothesize that in this case a positive interpretation of previous performances is ambiguous.

The influence of experience heterogeneity

The hypothesis H3 (the lower the managers' heterogeneity in experience, the higher is cognitive rigidity) has been confirmed. We created a dummy variable (previous experience in private sector) that has value 1 if manager had that kind of experience. In Model 3, Managers with an experience in private sector have a lower cognitive rigidity (coefficient -0.0655) and it is statistically significant ($P < 0.1$).

The role of control variables

Regressions with cognitive rigidity show that relationships with control variables (sex, organizational size, department size, and education) are not statistically significant. This result means that these demographic characteristics have no role in explication of determinants of cognitive rigidity.

Conclusions

This study was focused on the effects of some demographic variables on cognitive rigidity as a part of resistance to change. We selected these variables in order to provide information about effects of variables that can be used as position requirement during recruitment process. Results suggest that the better way to support change should be to recruit from other organizations young managers who had previous experience in private sector.

Even if the sample could be considered not enough statistically significant, we underline that that sample of managers represents all the managers that faced the privatization event in that sub-industry. Nevertheless, other studies on managers that face different change could make these results more robust.

Limitations and suggestions for future researches

This study considers manager's demographic characteristics as individual. Managers are social actors in their organizations and they could be influenced by other managers' characteristics. Therefore, it could be interesting considering the effects of demographic heterogeneity at organization level.

For a complete comprehension of resistance to change, it could be interesting some studies about the role of other determinants (routine seeking, emotional reaction to imposed change, short-term focus).

Theoretical and practical implications

This paper contributes to understand whether generation, tenure and experiences are relevant in make sense of individual bias of new reality after a radical change. These issues are important for both researcher and practitioners in order to assign new responsibility after a radical strategic change. In addition, a deep comprehension of managers' demographic characteristics can support choices that can encourage the knowledge sharing among old and new managers. The propensity to change and the elements that characterize the development of new responsibilities are important elements that must be considered as key components of organizations' competitiveness. However, a prudential analysis of differences in generation attitudes can give back important results that underline the limitation that today derive from alternative approaches to the change. If in the past, the experiences were associated to the age and the workers history in the same company, today, new trends evidence that multiple experiences are preferred in terms of different cultural approaches. Is for this reason that we considered this issue as a new interesting way to understand social dynamics inside and outside the boundaries of the organizations.

This paper raises important questions for future research on organizational change and age management. The first is to enlarge our research and consider also other contexts and understand if there is a relation between generation and different industries, not only considering public and private differences. This study also connects the theme of generation with the heterogeneous composition of teams and organizational groups. Future works should study how different groups are composed in terms of generation differences and understand these differences in terms of organizational performance, attitudes to change and knowledge sharing. Another important element that can be considered in future studies is the analysis of how different generations differ in terms of negotiation, composition of coalitions and level of decision-making.

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