Employee Perception of Cognitive After-effects of Change: Empirical Evidence from an Indian Organization

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Abstract

The study explores employees' perception of cognitive after-effects of organization change prevalent in an organization. Data of 100 at middle level was collected from business process outsourcing organization, based in India. The Cronbach's alpha of the questionnaire was 0.797 & Pearson correlation was 0.924 (p<0.001). The factor analysis of 'cognitive after-effects of organization change' led to the extraction of three factors. These factors were "Schematic Repositioning and Diagnostic Orientation", "Self-holistic Anchors" and "Systemic Myopia" respectively. The results indicate that these factors are major source of cognitive, interpersonal and organizational issues exemplifying situated cognition at psychological level in the Indian context.

Keywords

Cognitive After-Effects, Factors of Cognitive Change, Cognitive After-effects in Indian Context

I. Introduction

The study of cognition in organizations has been on the ascendancy for the past two decades. Much of the past research on employees' reactions to change seems to have been implicitly based on a rational choice theory about employees' behaviors, thereby giving little attention to the potential effects of perceptions, attitudes, or social influence on decisions and behaviors. Indeed, there has been a growing interest in managerial and organizational cognitions, in recent years. Accordingly, there has also been a dramatic growth in psychological research directed toward advancing understanding of the cognitive capabilities and limitations of managers and employees, with a view to enhancing productivity and well-being in the workplace. Organizational theorists have suggested that individuals and groups in organizations use identifiable and stable cognitive templates or schemas for understanding and engaging in cognitive activity (Walsh 1995). Schemas are defined as relatively persistent knowledge structures for representing elements and the relationships between them (DiMaggio 1997). Further, they serve as simplified representations of knowledge and, as such, as a means for simplifying cognition in conditions of incomplete information. Schemas both constitute and structure knowledge by identifying those elements of a situation that are salient, and by describing the causal relations between them. Schemas contain the knowledge to identify an object or objectified concept (what it is and what it is not), to make sense of it (what it does), and to know the relation between its components (how it works). Theorists argue that a given schema is applied in the same manner across time and cognitive context as long as the subject matter remains similar. Organization scientists have long been challenged by how managers view their task and how they frame and construe their work environment (Hill and Levenhagen, 1995). However, it is worth noting that current theoretical understanding on the nature, antecedents and consequences of employee's situated cognitions and perception of cognitive after effects of change (in our context, after acquisition) are based largely on studies conducted in Western countries and although the organizational cognition research area is broad, it has not been extensively studied in the Indian context. The starting point for this research is the challenge of understanding employee's perception of "cognitive after-effects" of change in organizations. Managing organizational change is problematic: situations in which changes are undertaken are shifting; it is harder for organizations, and in particular top managers as well as change agents, to prepare for and manage the change in ways that satisfy the demands of both the organization and its employees. To fill the above knowledge gap, in this study we examine the perception of cognitive after-effects of change (here in our context, after the acquisition process) among a group of professional managers in India, a society that is characterized by high uncertainty avoidance (Hofstede, 1980). Theoretically, the paper contributes in two ways. First, this study examines the reasons behind what employees perceive about cognitive after-effects of change in Indian organizations. Second, the emerging factors of cognitive after-effects of change identified here add to existing literature experienced by managers in organizations, especially in the Indian context. In this study, we focus on exploring this phenomenon of cognitive after-effects of change that employees perceive in the Indian business process outsourcing sector. In other words, this research examines the reasons behind what the employees perceive about cognitive after-effects of change prevalent in middle, lower and upper managerial level in an organization that has recently been acquired by a leading business process outsourcing giant, recognized as a rank holder in Data Quest's listing of the top 20 business process outsourcing companies in India for 2010-11. Thus, we propose that understanding the reasons behind employee's perception of "cognitive after-effects" of change for organizations is an important goal to critically analyze how managers construe these phenomena in their minds, with effects on their behavior.

II. Literature Review

Research on managerial and organizational cognition has concentrated primarily on the structure of knowledge and its implications on the organization. In his review of the cognition literature, Walsh (1995) has compiled approaches to the study of cognition and by exploring a synthesized research agenda he argued that "If a knowledge structure is a simplified representation of an information domain by definition, administrative scientists need to discover the nature of useful simplicity. That is, we need to discover how simple this representation can become before it loses its functional utility". In organization literature, 'activity theory' of knowledge (Blackler 1995), suggests that mental models or categories or schema's of knowledge are developed from experience in interaction with the (physical and social) world (Levitt and March 1988). A brief introduction and review of various manifestations of cognitive after-effects of change that employees experience examined in this study are provided in the following section.

A. Self-Efficacy of Change

The perception of being in control of the situation is often referred to as self efficacy (Bandura, 1997). Self efficacy is defined as a self-evaluation of one's competence to successfully execute a course of action that is necessary to reach desired outcomes (Bandura, 1993). Self efficacy is proven to have an impact on the way people think, feel, and act. Persons with low self efficacy have low self esteem, and are pessimistic about their accomplishments. Low self efficacy is associated with feelings of depression, anxiety and helplessness thus proposing to have a direct influence on psychological stress. Berneth (2004) identifies self-efficacy as an important factor for the success of change. A relevant domain in this study concerns self efficacy in terms of handling changes. That is, self efficacy is the perception of one's capabilities to handle changes. In other words, self efficacy is defined as the perceived ability to handle the rapidly changing situation due to a difficult situation. Self efficacy will be referred to as self efficacy of change.

B. Individual's Perception of Change

The manner in which change is perceived creates communication issues and conflict for many organizations that ultimately impede change from occurring. Many factors account for this. Of critical importance, however, is the role that institutional and individual characteristics play in coloring perceptions. In addition, individual characteristics may influence the manner in which organizational change is perceived, such as professional group and department membership etc of involvement in change. As change occurs, the interpretive schemas (the manner in which meaning is ascribed to organizational events) of organizational members are destabilized, requiring new schemas to be established.

C. Distinctive Self-Perception

Person's self-perceptions of distinctive traits (e.g., one's perceptions of his/her expertise at work) become salient when preexisting self-schemas (e.g., workplace or professional identities) are brought to mind in the presence of personally meaningful physical artifacts (e.g., work-related tools or equipment, personal mementoes) (Elbach et. al., 2005) during the sensemaking process (Weick, 1996). Further, studies conducted on self-schema suggest that artifact contexts that make salient traits that are consistent with a person's self-schema are likely to highlight and affirm personal distinctiveness perceptions in the moment, while those contexts that make salient traits that are inconsistent with a person's self-schema are likely to result in transitory perceptions that their personal distinctiveness is threatened (Rafaeli et al., 1997).

D. Problem Understanding

A common pattern of interaction between schemas and contexts apparent in the empirical findings is between rule schemas and physical contexts. In these cases, it appears that individuals' understandings about the relationships between key variables or constructs relevant to solving a current problem (i.e., a rule schema) interacts with dimensions of the physical context of problem solving (e.g., spatial arrangements of workers, availability of tools or machines, functional layout of a work area) to give rise to transitory understandings of the problem to be solved (Cramton 2001). Further, Cramton (2001) notes that dispersed work contexts that rely on mediated (versus face to face) communication are prone to such deficiencies of knowledge about location-specific rule schemas because those specific rules are not as likely to be discussed or remembered by team members in other locations.

E. Decision Making Biases Amongst Employees

Das and Teng (1999) categorized general biases inherent within various decision-making approaches. These biases are more or less prominent depending on the decision-making approach used by the decision maker. The biases focusing on limited targets and exposure to limited alternatives, are mainly driven by the philosophical orientation of the decision maker while insensitivity to outcome probabilities and illusion of manageability, describe general information-processing biases. Research in this area has shown that decision makers tend to (a) reduce problems into simple constructs and (b) use information selectively based on their beliefs (assumptions and mental models) and preferences (biases). Decision makers often create analyses and solutions that reflect their experiences and beliefs and interpret their experience in ways that support and preserve their beliefs (March, 1999).

F. Selective use of Information

Decision-making strategies employed by individuals usually are based on loosely defined rules (heuristics). They also inject systematic biases into decision-making processes and increase the risk of failure as problems become more complex and ill-structured (Bazerman, 1994). These biases stem from individual orientations and the methods of information processing employed by individuals. Researchers studying decision making are increasingly aware of the biases and other cognitive limitations that characterize the use of information by individuals as they solve problems. These biases influence the consequences of decisions and increase the risks as problems become more complex and ill-structured. This leaves decision makers at the mercy of confounded processes in their efforts to define problems and construct solutions. Throughout the decision-making process, decision makers must rigorously challenge their thinking to uncover the assumptions and biases that control the decision-making process. Biases and assumptions influence problem-solving activities and decisions in a variety of ways, leading to the high probability that different problem solvers will reach different conclusions about a problem.

G. Employee's Mental Models and Frame of Reference

Mental models and frames of reference are another research approach for exploring both representation and development. In addition, Rousseau (2001) advanced a schema theory of psychological contract formation and change that might account for employee resistance to such initiatives. Rousseau maintains that psychological contracts are encoded in mental models (i.e., schemas) that are relatively malleable during the early stages of the employment relationship. However, once established, like the mental models of competitive positioning strategies held by organizational decision makers, employees' mental models of the psychological contract become resistant to change, leading to inertia and inflexibility.

H. Employee's Collectivist Mindset

Work on collective cognition has emerged over the past decade as both complement and counterpoint to the concept of shared cognition. Shared cognition researchers (Thompson et al. 1999) study the overlapping knowledge structures and content of individuals in groups, organizations, and industries, i.e., how individuals in groups come to represent the world in similar ways. By contrast, collective cognition (also described as collective mind or transactive memory) is concerned with supra-individual cognition, i.e., how individuals in groups come to think together in a shared process within a specific context. As such, collective

cognition represents a form of situated cognition (i.e., cognition embedded in the context of group activity). This perspective requires a focus that is "at once on individuals and the collective, since only individuals can contribute to a collective mind, but a collective mind is distinct from an individual because it inheres in the pattern of interrelated activities among many people" (Weick and Roberts 1993).

III. Methodology

This study used a descriptive survey design. The purpose of descriptive surveys, according to Ezeani (1998), is to collect detailed and factual information that describes an existing phenomenon. A thorough review of literature was conducted before selecting the topic of the study. In this study, we focused on understanding the employee's perception towards cognitive after effects of change from a leading business process outsourcing organization that has acquired more than sixteen companies in a span of ten years and at the time of data collection (in June 2011) the organization was in talks with seven more companies for potential acquisition, as it aimed to touch $1 billion in revenue by March 2012. The target populations of the study were 100 middle level managers who were selected, to participate because they were key linking pins and were being trained for employee engagement activities. Also members among this group are often called upon to assume expanded roles, functions and responsibilities under the mentoring program. Additionally, they are more likely to be responsible for implementing the management strategies as key linking pins. As a result, they are in better position to observe and experience the cognitive after-effects of change in organizations. It is hoped that this would provide more realistic and reliable data and information about how managers construe the cognitive after-effects of change in their minds, with effects on their behavior. Therefore, the findings regarding this group adds another perspective to the management literature on cognitive after-effects of change in a leading business process outsourcing giant and examining the reasons behind what employees construe in their minds. A total enumeration sampling technique was used to select 100 middle level managers.

A. Instrument

A set of eight measures were selected for the study after going through the literature. A structured questionnaire was constructed utilizing these eight measures of self efficacy of change; individual's perception of change; distinctive self-perception; problem understanding; decision making biases amongst employees; selective use of information; employee's mental model and frame of reference; collectivist mindset with appropriate instructions for each section of the questionnaire for the collection of data on the study. The questionnaire was specifically designed to accomplish the objectives of the study. The first section was supplemented by items based on the studies of Chen et al. (2000); Tasa et al. (2007); Elsbach, Barr and Hargadon, (2005); Sole and Edmondson (2002); Cramton (2001); Das and Teng (1999); (Bazerman, 1994); Isabella (1990); Rousseau (2001); Thompson et al. (1999). To assess the validity of the questionnaire, expert judgment method was applied. So, the developed questionnaire, along with explanations regarding terms and concepts were presented to three university professors, six managers from the organization under study. As such, they were asked to express their views about its construct, content, formal appearance and writing model. Many inputs were given by them that were included while finalizing the questionnaire. It was also noticed that some of the questions needed revision along with

some additions and deletions. The necessary amendments were then made and its content and construct validity were assured and finally confirmed by other experts. The questionnaire consisted of 40 items in which the perception of the participants was central. The items measured the participants' perception, work behaviors and attitudes towards cognitive after effects of change prevalent in their organizations. All 40 items were scored on a five-point Likert scale ranging from 1 "I strongly disagree" to 5 "I strongly agree". Then, to determine the reliability of the questionnaire, it was sent to the organization under study. The questionnaire was filled out by the research community belonging to middle managerial level from the organization. After the mentioned questionnaires were filled out, the reliability of the questionnaire was determined using Cronbach's alpha and Pearson correlation. The overall reliability co-efficient of the modified instrument after the pilot survey yielded an $r = 0.797$ cronbach alpha while Pearson correlation was 0.924 ($p<0.001$) showing that the questionnaire was reliable.

IV. Analysis

Kaiser-Meyer-Olkin was used to determine the sufficiency of the sample size, and Bartlet test of sphericity was applied to calculate the meaningfulness of the correlation matrix. Then, the exploratory factor analysis was performed with maximum probability approach to identify the rate of loading of variables recognized in the component, and Varimax orthogonal approach was used to interpret the variables. Subsequently, the confirmatory factor analysis was used, with application of Lisrel 8.7, to verify the fitness of factors achieved during the explanatory factor analysis. The fitness indexes are as follows: Chi square index, goodness of fit index (GFI), comparative fit index (CFI), normed fit index (NFI), non-normed fit index (NNFI), incremental fit index (IFI), related fit index (RFI), adjusted goodness of fit index (AGFI), root mean square error of approximation (RMSEA) and root mean square residual (RMR). However, if CFI, GFI, NFI, NNFI, IFI, RFI and AGFI are higher than 0.90, and RMSEA and RMR are less than 0.50, it proves a desirable and appropriate fitness (Alexopoulos and Kalaitzidis, 2004).

V. Results

In the first step, the correlation of each identified variable and the internal consistency of all variables were calculated in the component "Cognitive After-effects of Organization Change" for the organization.

A. Cognitive After-Effects of Organization Change

Before the explanatory factor analysis, the Kaiser-Meyer-Olkin approach was used to determine the sufficiency of the sample size for the component, while Bartlet test of sphericity was used to establish whether the correlation matrix has meaningful difference with zero or not. The sufficiency of sampling and meaningfulness of the correlation matrix was checked for the ($p<0.001$), respectively. It showed that the exploratory factor analysis was permissible. Then, the explanatory factor analysis was performed with maximum probability approach and the variables were interpreted with Varimax rotation approach. The results showed that three factors came out from the "Cognitive After-effects of Organization Change" component with special values bigger than 1. The first, second and third factors explained 40.153, 11.912 and 10.800% of the total variances of variables, respectively. Therefore, these three factors explained 62.865% of the total variances of variables for the component "Cognitive

After-effects of Organization Change".

As regards this component, the following variables formed the 1st factor:

• Problem Understanding
• Selective Use of Information
• Employee's Mental Model and Frame of Reference

The 2nd factor was formed by the following variables:

• Self Efficacy of Change
• Distinctive Self-Perception
• Collectivist Mindset

The 3rd factor was formed by the following variables:

• Individual's Perception of Change
• Decision Making Biases Amongst Employees

Table 1: Cognitive After-effects of Organization Change

Code Variable	1st factor	2nd factor	3rd factor	t-value	R2
1. Self Efficacy of Change		0.678		5.57*	0.56
2. Individual's Perception of Change			.575	5.26*	0.45
3. Distinctive Self-Perception		0.500		4.70*	0.41
4. Problem Understanding	0.665			5.42*	0.58
5. Decision Making Biases Amongst Employees			0.687	6.79	0.89
6. Selective Use of Information	0.576			6.62 *	0.20
7. Employee's Mental Model and Frame of Reference	0.764			5.68*	0.53
8. Collectivist Mindset		0.949		4.66*	0.69

* t>1.96.

In Table 1, the confirmatory factor analysis was made with the use of the software "Lisrel 8.7" for MBPL and then the fitness of the factors achieved was determined (Table 2). Subsequent to the earlier stated stage, the first, second and third factors of the component, "Cognitive After-effects of Organization Change", were the approved factors named: "Schematic Repositioning and Diagnostic Orientation", "Self-holistic Anchors" and "Systemic Myopia", respectively.

Table 2: Fitness Index Calculated for the Component "Cognitive After-effects of Organization Change".

Component/ Index	Root Mean Square error of approx (RMSEA)	Goodness of Fit Index (GFI)	Comparative Fit Index (CFI)	Normed Fit Index (NFI)	Non-Normed Fit Index (NNFI)	Incremental Fit Index (IFI)	Related Fit Index (RFI)	AGFI	RMR	X²	P Value
Cognitive After effects of Organization Change	0.0018	0.92	0.94	0.92	0.96	0.94	0.88	0.84	0.042	22.46	p>0.05

VI. Discussion

Findings of this research show that three factors each have been identified regarding cognitive after-effects of organization change. These factors highlight the fact that middle managers encounter different cognitive after-effects in India (a society that is characterized by high uncertainty avoidance, high power distance, femininity, long-term orientation and collectivism Hofstede, 1980) than those applied to their western counterparts along with a pattern of consistent and inconsistent mindsets and stereotypes in the face of organizational change. Given such cultural differences, the findings on cognitive after-effects obtained from studies conducted in the West (for example Levin et al. 2000; Parker & Fischhoff 2005; Cramton 2001; Das and Teng, 1999; Bazerman, 1994; Rousseau, 2001) may not be readily generalized in the Indian context. This study explores factors that are a major source of perceptions and meanings that define roles, relations and procedures of interaction affecting the overall behavior of the organization. The findings of this study corresponds with Nooteboom's (2006) assertion that organizational cognitive focus, produced and reproduced by organizational culture, forms the core of organization-level competence, to achieve coordinated bundles of competencies that constitute the replicators of organizations. Organizational focus thereby yields the requisite cohesion and stability of organizations as interactors. While the raison d'être of organization as a focusing

device is that it enables cognitive and moral coordination, for the sake of efficient goal achievement, and is therefore positively selected for in market competition, it also helps to create the stable and differentiated organizational identities needed for evolutionary selection of organizations to work. This study explores factors that are a major source of cognitive after-effects of organization change in the Indian context and indicates a unique amalgamation of cognitive, inter-personal and organizational issues exemplifying situated cognition at psychological level, which the employees perceive and experience at work place. Proponents of situated cognition (Lave and Wenger 1991, Lant 2002) argue that cognition exists in the interaction of perceivers' minds (schema) and their environment (context). That is, situated cognition is thinking that is embedded in the context in which it occurs. Because much organizational context is both social and dynamic—changing as the people involved act and interact with each other and their physical surroundings—situated cognitions in organizational settings tend to be transitory, arising as the interactions of existing cognitive structures (i.e., schemas) and momentary context. In fact, situated cognition represents both an ongoing process and a momentary or temporally bounded outcome. As an ongoing process, it describes the activities of sensemaking—environmental scanning, interpretation, understanding, and action—that construct a working and workable perceptual framework (Weick 1996). Yet while the process of sensemaking has received considerable attention, the momentary outcomes themselves have not. These transitory perceptual frameworks enable one "to comprehend, understand, explain, attribute, extrapolate, and predict" and, additionally (and crucially), to act within a very specific situational context (i.e. here in the context of business process outsourcing organization). The findings of this research proved that the components identified and the structural relations presented as regards the component, "cognitive after-effects of organization change" were suitable. The factors emerging from "cognitive after-effects of organization change" also indicate that in technology-driven business environment, with ever increasing complexity, Indian workforce has undergone a tremendous transformation with individuals perceiving and prioritizing different degrees of challenges leading to a range of unique and culture-specific psychological variants of cognitive after-effects of organization change. Based upon an understanding of peoples' perception of cognitive after-effects of organization change, management can identify the strategic gaps (if any) to explain and predict the behavior of people in organizations; and can take further necessary actions to derive psychologically sound solutions to the unprecedented information-processing burdens confronting the twenty-first century workforce.

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