VALIDATING AN ORGANIZATIONAL ACTION SYSTEM MODEL FROM A LEARNING AND PERFORMING PERSPECTIVE

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Abstract

This paper investigates to what extent organizational performing and learning actions can be measured. The study is grounded in Talcott Parson's theory of social action systems which provides a theoretical and empirical foundation for organizational theorists to enhance their understanding of constructs such as organizational effectiveness, organizational change, organizational learning, and organizational culture. This inquiry, anchored in the constructs noted, uses quantitative techniques, specifically, a survey of employees. Structural equation modeling (SEM) based on LISREL methodology was applied to the survey data to investigate to what extent organizational performing and learning actions can be measured as theory predicts through organizational members' perceptions of organizational learning and performing actions within an organization action system. The study explored the perceived impact of 1) organizational learning actions and 2) organizational performing actions on 3) organizational performance. The results of the confirmatory factor analysis from this study indicate that each of the constructs may well fit their respective hypothesized models.

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A critical challenge is facing today's organizations as they strive to maintain a competitive advantage: creating the internal capacity to meet the needs of their constituents (organizational performance) while continually adapting to the turbulent business environment (organizational learning). At the theoretical level, organizational learning has lacked a broad theoretical basis (Crossan, 1991),—conceptual integration (Shrivastava, 1983), and clear definitions of terms and concepts (Garvin, 1993). This has resulted in fragmentation, confusion, and a lack of clarity regarding the phenomena. What little empirical research that exists has focused on how and/or what learning occurs at a descriptive level or through simulations. To overcome these problems, this paper presents a theoretical and empirically grounded framework based on the work of Talcott Parsons (1961) and David Schwandt's (1997) organizational learning action systems model. In addition, the paper presents the empirical development, including validation, of a measure of organization action systems model from a learning and performing perspective. An Organizational Action Survey (Johnson & Schwandt, 1998) to operationalize the theoretical constructs of the organizational action systems model is put forth.

1. THEORETICAL FOUNDATION: SOCIAL ACTION SYSTEMS

The conceptual framework is based on an action frame of reference (Parsons 1949, 1965). Parsons and his colleagues (et al. 1951, et al. 1953) propose that action systems are multi-dimensional and identified all action systems as consisting of the duality of the action frame of reference: learning and performing. From this, the current research conceptualizes organizational action systems as dual systems, each with four subsystems of action. Figure 1 depicts an organizational performing action system as a function of the acquisition of resources, production/service, management and control, and the reinforcements subsystems. The figure also shows the organization learning action system as a function of four subsystems: environmental interface, action reflection, dissemination/diffusion, and meaning and memory.

The organizational action system is comprised of two subsystems: organizational learning and organizational performing. This dual aspect of action plays a critical role in understanding both structural change and an organization's ability to adapt to the routine and non-routine changes that occur in the environment. If one looks at the construct of organizational learning, this dual aspect of action at the organizational level may provide insight into better understanding these two constructs—learning and performing (Parsons, et al. 1951 and et al. 1953).

From this perspective, the duality of the action frame of reference has two corresponding processes—motivation and symbolic patterning—where both aspects of learning and performing are occurring. The first process involves the use of motivational energy for the attainment of goals where performance is defined as using the present action system's structure (collective, situation, symbols, and rules, norms, and values) to utilize and change the physical and social objects to bring about a gratification-satisfaction balance with respect to the 'value system' (culture). Learning on the other hand is the process of tension between the action system and the physical and social objects leading to the modification of goal specifications and of the adaptive and integrative patterning of the meaning leading to the restructuring of the attitude patterns of the system.

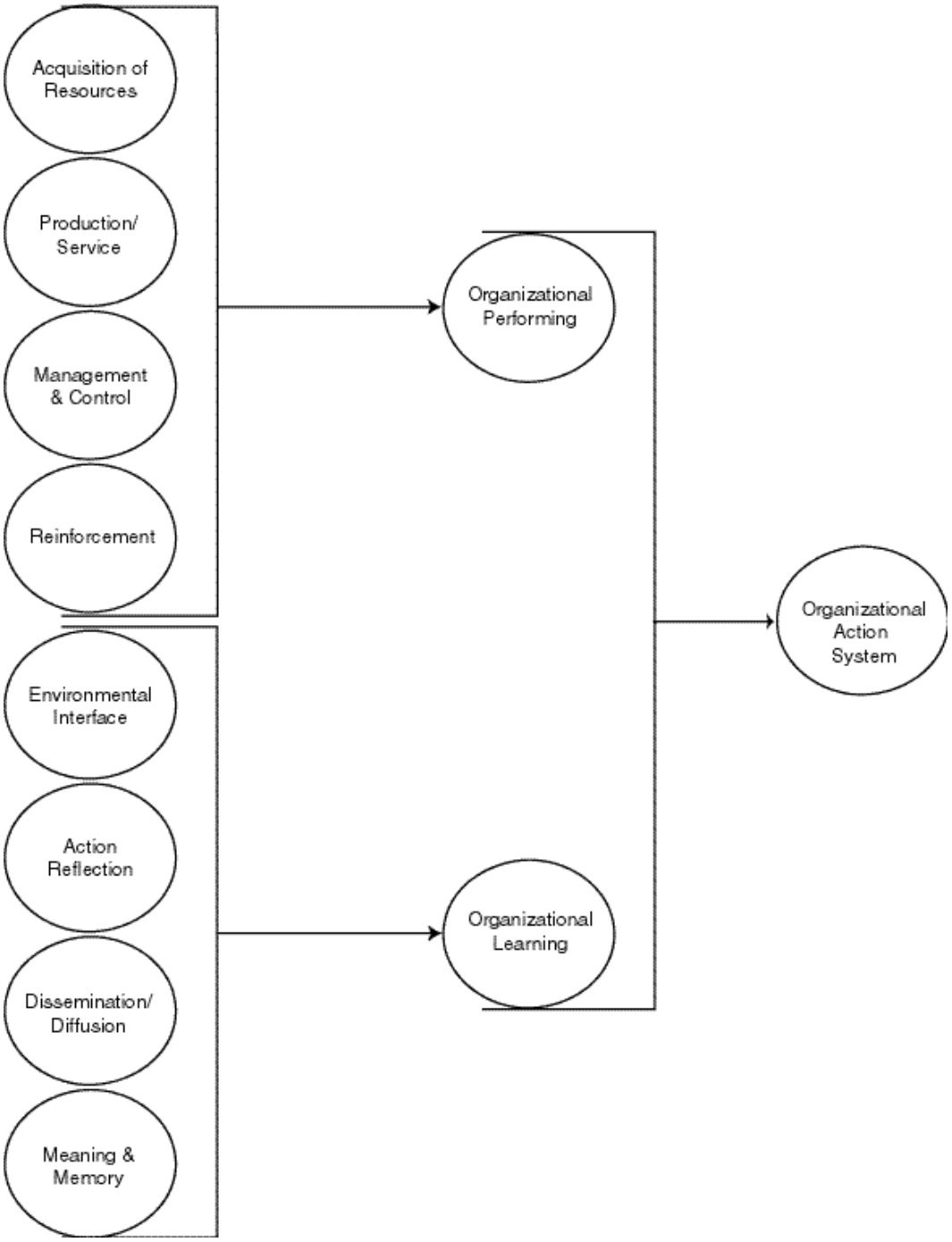

Figure 1. Conceptual Model of the Duality of the Organizational Action System

In the corresponding process of symbolic patterning, performance is defined as maintaining the system structure while the physical and social objects are acquired as possessions, used as facilities and possibly consumed; or created and changed in accordance with system values. The learning aspect is concerned with processes of change in the symbolic-meaning patterns of the system. This means that there is a shift in energy to new objects and a change in knowledge through the assimilation of adaptation inputs that are organized into a system. This shift in energy, as it relates to adaptation and integration of symbolic meaning, is then integrated into the action system creating a new knowledge-

symbolic orientation structure. This dual aspect of action plays a critical role in understanding both structural change and an organization's ability to adapt to the routine changes that occur in the environment.

1.1 Functions of the Social System

Parsons, Bales and Shils (1953) describe the structure of action systems as having four functional problems which are described as those of "*adaptation* to conditions of the external situation, of instrumental control over parts of the situation in the performance of *goal attainment*, of preserving the social *integration* of members with each other as a solitary collectivity, and of the management and expression of sentiments and tensions of the members—*Latency*" (p.64) .

Parsons defines each of the four functional prerequisite subsystems that are carried out in all action frame of reference systems as follows:

> Adaptation (A) is the external, instrumental function of the system which involves relating the system to an environment and the development of generalized means for pursuing a variety of future goals and for meeting a variety of environmental conditions as they change over time (Mayhew, 1982, p. 25).
>
> Goal Attainment (G) is the external, consummatory function which achieves ends in relation to the environment and the organization [order, systematic, arranged] for the effective pursuit of particular system goals (Mayhew, 1982, p. 25).
>
> Integration (I) is the internal and consummatory function that requires relating the constituent units of a system to each other. The mutual adjustments of the other subsystems from the point of view of their contributions to the effective functioning of the system as a whole (Parsons and Smelser, 1956, p. 18).
>
> Latency (L) is the internal and instrumental functional tendency to stabilize the system in the face of pressures to change institutionalized values through cultural channels. It is the function of "pattern maintenance and tension management" relative to the stability of the institutionalized value system (Parsons and Smelser, 1956, pp. 17-18).

Transferring the social action systems theory to an organizational context, the authors next present an organizational action systems model which delineate the actions of an organization into the four functional prerequisites outlined above.

1.2 Organizational Action Systems Model

The Organizational Action Systems Model is comprised of Organizational Resources (adaptation), Organizational Success (goal attainment), Organizational Structure (integration), and Organizational Culture (latency) (See Figure 2.).

Figure 2. Differentiated Subsystems of the Organizational Action System (Johnson, 2000).

The organizational learning literature has discussed the difference among learning, adaptation, and change at the collective or organizational level (Hedberg, 1981; Meyer, 1982; Fiol and Lyles, 1985). Extensive studies (Van de Ven and Poole, 1993; Levy and Merry, 1986) depicted organizational change as an overarching concept in which multiple theoretical perspectives can reside. The organizational theory literature is embedded with many perspectives of organizational change. Organizational theories provide a diverse view of assumptions about how organizations are understood. These differing theories contribute to the discussion of how organizations function; develop structures; change; impact societies, constituents, and its members; and socially survive. It is from these multiple theoretical perspectives that the context of the organizational action systems model was build.

After a review of the literature focusing on organizational theories that dealt with change and organizational learning, three organizational theories were selected to guide the development of the OAS model—theory of the firm, resource dependence, and institutional. It should be noted that to do this in great detail and scope would be beyond the purpose of this paper—for a more complete review refer to Johnson (2000). To summarize, all three of the theories have as a basis of their work that organizations are social entities and that normative theory (e.g., role expectations, transfer of social facts, and value infusion) are prevalent in their discussion of organizational action and therefore are consistent with Parsonian constructs. Organizational theories present multiple perspectives and different conceptual approaches to understanding organizations. Understanding these multiple views, both similarities and differences, creates knowledge about organizations.

1.3 Dynamics of an Action Systems Theory

In Parsons' theory, a system of action requires organization of its systemic relationships. Parsonian theory articulates four concepts used to explain these relationships: functional prerequisites, pattern variables, cybernetic hierarchy of control, and symbolic

media of interchange. An action system is a dynamic system that is comprised of interacting subsystems. For this paper the authors looked at the dynamic relationships among subsystems by focusing on only one of these four concepts—cybernetic hierarchy.

Parsons uses the cybernetic hierarchy to explain the change process as a function of circulating normative information and creating energy (factors requiring action) that stimulates systemic change. The cybernetic hierarchy shows that those subsystems with more normative information also command more control, while those with more energy command less control. This provides a means for understanding which subsystems control the process of change and which subsystems provide energy to stimulate the process of change (See Figure 3).

Figure 3 illustrates the cybernetic relationship among the four functional prerequisite subsystems. Each subsystem of actions is subject to control or influence by the higher-order subsystem. For example, the subsystems that correspond to the adaptation function provide the highest amount of energy and exert the lowest amount of control for the total action system. In contrast, the subsystems that correspond to the goal attainment function produce more energy-creating capability than the integration or latency functional subsystems but exert less control (normative function) than either of these two subsystems. Thus, by looking at the cybernetic principles at the organizational level, the organizational culture subsystem has the greatest amount of normative control but the least amount of energy-producing capability of all the other organizational action subsystems. Using the cybernetic hierarchy, the theoretical explanation for the controlling nature of organizational culture and the lack of energy-creating capability can be better understood.

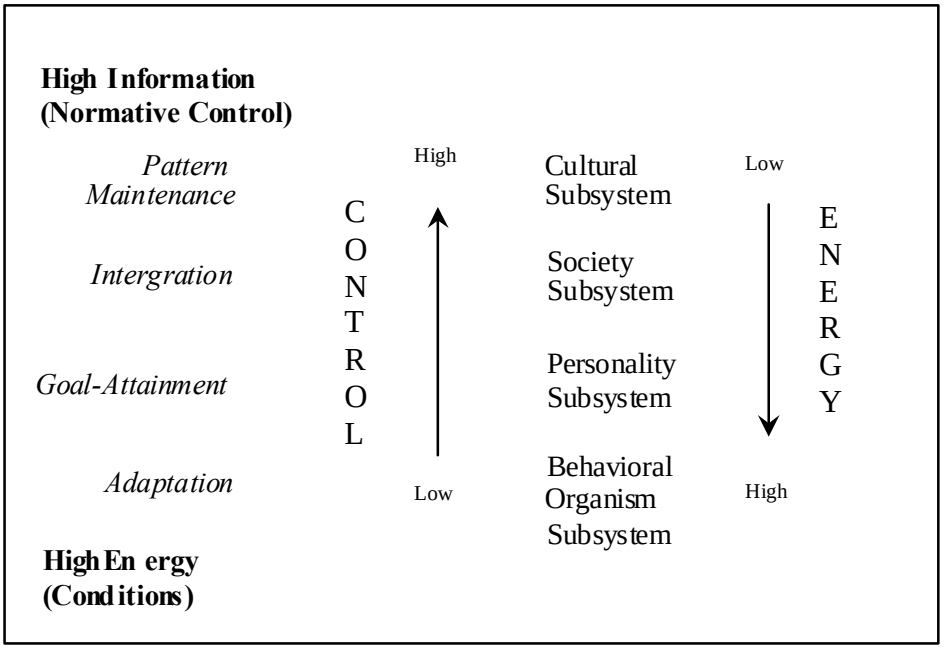

Figure 3. Cybernetic Hierarchy of Control by Functional Prerequisite and Corresponding Subsystems of the Social System. Adapted from Parsons, 1977b, et al. 1965 and 1977.

1.4 Organizational Learning Theory

Organizational learning is a complex, multidimensional, interdependent phenomenon. The complexity is a result of the multiple, dynamic social interrelationships that occur in all organizations. After an extensive organizational learning literature review, three perspectives of organizational learning were extracted and studied in detail. Conceptualizations offered by Huber (1991), Fiol and Lyles (1985), and Hedberg (1981) were compared to a Parsonian social action system approach. Refer to Johnson (2000) for a more detailed discussion of the literature review.

Through the study of these three organizational learning perspectives, three points need to be made. First, all three perspectives (along with many others) are not grounded in a sociological theoretical framework even though each authors' foci is at the social level. They are all explanatory and descriptive in nature. Second, they all focus on social interaction and take an action based approach to organizational learning in which each of the theoretical perspectives discuss the role of organizational learning in dealing with the changing environment. Lastly, each of the theoretical perspectives had similarities to a Parsonian sociological approach.

The Dynamic Model of Organizational Learning proposed by Schwandt (1994, 1995, & 1997) provides a social systems based approach that is theoretically grounded in social action systems and provides a link between the external environment and internal processes of organizations as organizations deal with the nature of change.

1.5 A Dynamic Model of Organizational Learning

Since Schwandt's Dynamic Organizational Learning Model is grounded in Parsonian theory, the following section is based on the discussion of Parsons' work laid out above. Schwandt's extension of Parsonian theory to organizational learning has been viewed as a "logical and valuable extension of Parsons' work" and "has overcome some of the causes of censure of that theorist" (Carson & Carson, 1997, p. 366). It is from this work that the authors took the organizational learning dimensions. The use of a sociological paradigm as a basis for defining organizational learning allows us to define learning as a grounded dynamic social phenomenon. The primary purpose of social action systems in a collective is to provide the means through which the collective is able to survive in its changing environments. It is this sometimes-intangible series of actions that contribute to the organization's ability to systematically integrate its social aspects with other objects and processes to form an organizational learning system. This system of actions is so critical to the collective's survival that Schwandt (1993a) defines organizational learning as follows:

> "A [complex social] system of actions, actors, symbols and processes that enables an organization to transform information into valued knowledge, which in turn increases its long-run adaptive capacity."

This definition not only allows one to interpret organizational learning as an information/ knowledge-processing system, but also, through the incorporation of the theory of action, broadens into a framework for dealing with the dynamic interpretational nature of collective learning.

Organizational learning as a theoretical framework not only enables the examination of social action system's dynamics, but it also guides the process of understanding the systemic relationships among functional domains. The dynamic model of organizational learning serves as framework for the development of measures specific to each construct. The following section will examine the organizational learning model as operationalized for the purpose of this study.

By describing the organization as a system of actions, we can relate individual and collective actions to an organizational learning system through the use of Parsons' dynamic functional prerequisites*: Adaptation, Goal Attainment, Integration, and Latency* (Parsons, 1951; Parsons et al., 1953, Parsons and Smelser 1956). These are system functions emanating from social actions which are required by the system to survive in its interactions with its environment. Using this functional framework and incorporating the dynamic organizational variables presented above (Parsons, 1956), one can explain both cognitive and behavioral learning that allows the organization to survive as a viable system of actions; to take actions different from past actions; to know whether present actions are similar to or different from the past and to understand the reasons for the similarity or difference; to allow the collective to retain its knowledge over a period of time; and to ensure that knowledge is available to inform the actions of the entire organization (Schwandt, Johnson and Gorman, 1995).

1.5.1 Functional Prerequisites

Based on Parsons' functional social model, the organizational learning system is composed of four subsystems of actions, each having the responsibility for carrying-out one of the functional prerequisites (Schwandt, 1993a). The relationship of these subsystems to each other is a function of their relative focus, "External or Internal" to the organizational learning system; and by their relative purpose, actions directed at the "Means or Ends" of organizational learning system. These four organizational learning subsystems and their respective functions (See Figure 4) are:

> **The Environmental Interface Subsystem** performs as a collection of interdependent activities and actions that responds to signals from both the inside and outside of the organization determining the information it seeks and disperses;
>
> **The Action-Reflection Subsystem** defines the relationship between the organization's actions and the examination of those actions, which enable it to assign meaning and create useful knowledge for the organization;
>
> **The Dissemination/Diffusion Subsystem** exists to transfer information and knowledge among the other subsystems of the organizational learning system (internal focus); and
>
> **The Meaning and Memory Subsystem** - provides the foundation from which the other subsystems draw guidance and control. It maintains the mechanisms, which create the criteria for the judgment, selection, focus, and control of the organizational learning system.

These four subsystems provide an analytical framework for describing and evaluating the dynamic functions of an organization's learning system.

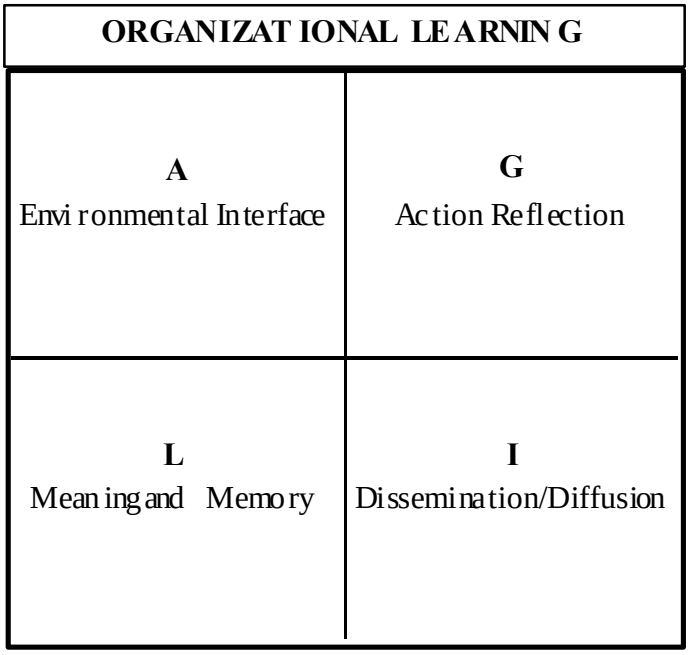

Figure 4. Differentiated Subsystems of the Organizational Learning Action System. Adapted from Schwandt (1997).

1.6 Organizational Performing

This framework mirrors the organizational learning constructs and enables the examination of an organization from a performing actions perspective. As with the organizational learning subsystem, the primary purpose of any social action systems is to provide the means through which the collective is able to survive in its changing environments. The environment in which an organization exists requires some form of product or service. As was outlined above, this concept has nothing to do with the overall effectiveness of the performing acts being taken by the organization, but rather with the existence of those acts of performance. This system of actions is more crucial to the organization's survival in the short-term than the learning subsystem. Based on the work of Parsons (1951; Parsons and Shils, 1951; Parsons, et al., 1953; Parsons and Smesler, 1956) and Schwandt (1995, 1997), the organizational performance subsystem is defined as:

> A complex social system of actions, actors, symbols and processes that enables an organization to transform resources into valued products and/or services, which in turn increases its ability to meet the demands of the societal community (Johnson, 2000).

This statement of performance is general in nature and includes all actions of the organization. One equates the "organization's actions" to the performance of the collective whole. This enables the researcher to use the concept of performance to understand the relationship between the organizational actions and the output of the system.

1.6.1 Functional Prerequisites

The performance subsystem is also dependent on four functional prerequisites that account for the survival of the system in the same manner as discussed above in the learning system (See Figure 5).

> **Acquisition of Resources Subsystem** is the *adaptation* function responsible for screening, obtaining, and putting in service organizational resources in an effort to respond to the needs of the internal collective as they perform goal attainment actions. It is also the subsystem in which the organization maintains the energy to adapt to its environment (Parsons & Smelser, 1956; Schwandt, 1995).
>
> **Production/Service Subsystem** is the *goal attainment* function which incorporates all of those actions and processes that the organization must perform to produce a product or reach a goal. This subsystem has traditionally been the major focus of management efforts. It is the performance of objectives, their associated tasks, and necessary actions that make up this subsystem (Parsons & Smelser, 1956; Schwandt, 1995).
>
> **Management and Control Subsystem** is the *integration* function in which objects and actions represent the process for linking human skills with the requirements of the task and the standards of performance required so that separate acts can be integrated into the collective effort. This subsystem includes management control processes, job design, training, organizational development, and operational and strategic planning (Parsons & Smelser, 1956; Schwandt, 1995).
>
> **The Reinforcement Subsystem** is the *latency* function comprised of those elements that contribute to the maintenance and management of tensions regarding the standards, norms, and values that the organization uses to reinforce the organization's performance. This subsystem is comprised of actions associated with appraisal, rewards, compensation, and quality standards.

These four prerequisite functions and their associated subsystems of actions describe the organizational performing subsystem. Each must be operable for the organization to change and be able to adapt to its environment. The dynamic model of organizational performing actions served as framework for developing measures specific to each of the respective constructs.

1.7 Organizational Performance Measures

Literature pertaining to measuring organizational performance was reviewed to provide a background to operationalize the organizational performance measures used in this study. Writers on organizational learning (Crossan, et al., 1995; Fiol and Lyles, 1985; Mills and Friesen, 1992) have discussed the importance of the relationship between organizational performance and learning to differing degrees. Fiol and Lyles (1985) discuss that through their literature review they found there was an assumption being made that learning at all levels will improve future performance. Garvin (1993) states that the third step of organizational learning is "performance improvement, with changes in behavior leading to a measurable improvement in results: superior quality, better delivery, increased market share, or other tangible gains." In this study, the authors hypothesized that both learning and performing actions affect organizational performance positively. In regard to the relationship between performing actions and organizational performance, much of the

performance management and job design literature discusses this in detail (Lawler, 1973; Hackman and Oldham, 1980; Mohrman, Resnick-West, and Lawler, 1989).

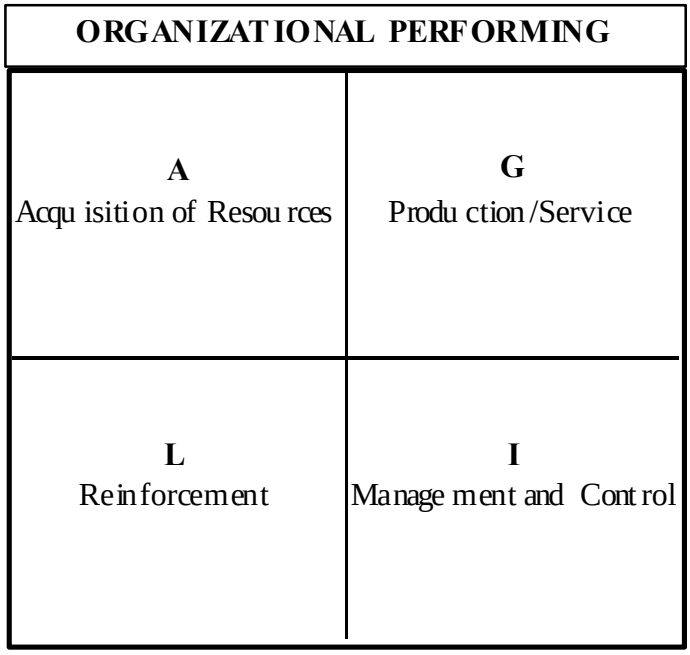

Figure 5. Differentiated Subsystems of the Organizational Performing Action System. Adapted from Schwandt (1997).

Venkatraman and Ramanujam (1986) describe business performance as represented by financial indicators such as sales growth, profitability, earnings per share, and operational performance—market share (Day & Wensley, 1988), product/service quality, and new product development (Walker & Ruekert, 1987). A broader approach to organizational performance includes customer satisfaction (Ulrich and Lake, 1992), firm value (Reimann, 1987), and overall performance (Jaworski and Kohli, 1993). The measures used in this study need to relate to both the context of the research and the organization being studied. For the Federal Agency that participated in this study, '*contribution to force readiness*' refers to their capability to produce products and services that support military readiness of line commanders by increasing and protecting the health of the war fighter both prior to deployment and when deployed in the theater of operations.

Venkatraman and Ramanujam (1986) indicate that caution should be used when developing organizational performance indexes because of the multidimensionality of the construct. Based on this perspective, a factor structure for OrgPerfm was not hypothesized *a priori*, and a principal component exploratory factor analysis was performed to identify the dimensions to be used as measures for the dependent variable OrgPerfm. The purpose of performing an exploratory factor analysis was to identify the underlying factors that explain the pattern of correlations within the set of observed measures of organizational performance (SPSS, 1999). By performing the exploratory factor analysis, the problem of collinearity among the observed measures of organizational performance is solved through combining the highly correlated variables into a single variable (Mueller, 1996).

2. EMPIRICAL DEVELOPMENT

The Organizational Action Survey was developed to measure the theoretical work of Parsons and Schwandt as outlined above. The reader is referred to Figure 6 (the path model) and Appendix 1 (sample OA Survey items by construct) throughout the rest of the paper to aid in the discussion.

The development of indexes to specifically measure each of the four functional dimensions of the performing and learning constructs, as well as the overall organizational performance, was done prior to the study. The methods employed in the development of the indexes and the writing of specific items are based on the recommendations of Babbie (1992), Churchill (1979 & 1991), Hinkin (1995), and Sudman and Bradburn (1982).

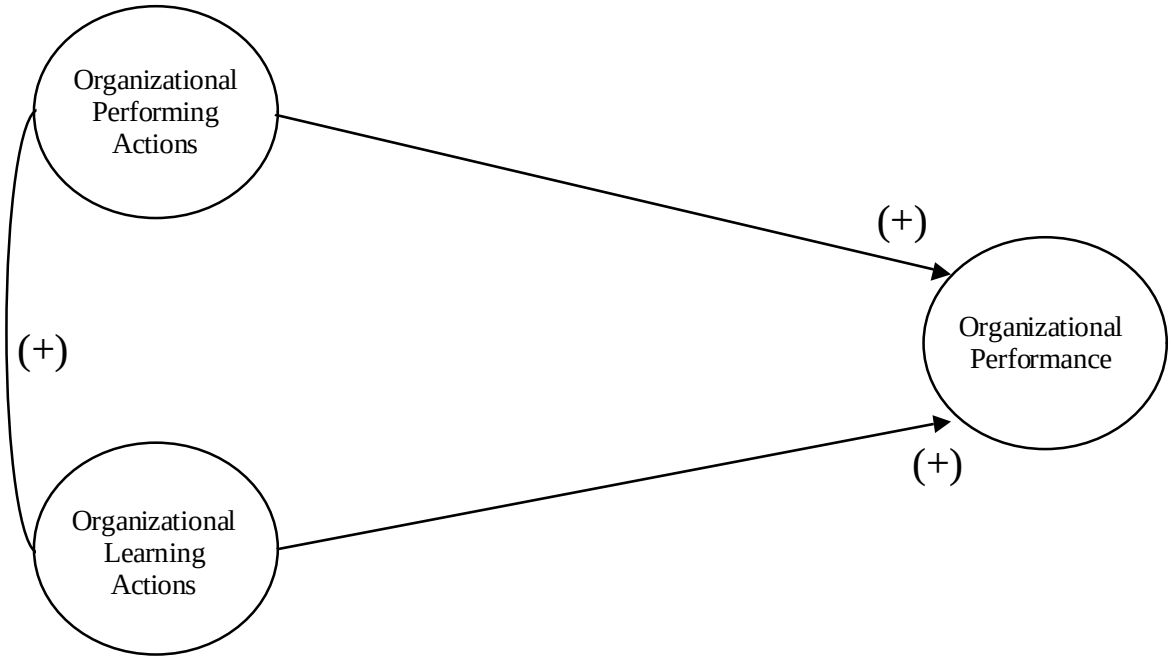

Figure 6. Organizational Action Systems Path Model

2.1 Development of Items

The development of indexes to specifically measure each of the four functional dimensions of the organizational performing and learning subsystems and organizational performance was required for the research. Three steps were performed to increase the face validity of the individual items and indexes:

1. Two hundred items were reviewed by an expert panel which resulted in 144 items being selected for use in a pilot study.

2. A pilot study was run with three sub-groups from two different organizations (N=26, 48 and 30) to evaluate the individual survey items in terms of readability, applicability to organizations, ease of understanding, and whether or not the organizational actions described actually reflected possible action the organization would or could take.

3. The revised version of the 144 question survey instrument was piloted. Two hundred and thirty six respondents participated in the pilot study resulting in a

response rate of 30 percent. This pilot study data was used to complete the testing of the index construction phase of the final survey developed.

2.2 Initial Reliability and Validity Assessment

An initial assessment of reliability and validity of each of the individual indexes was conducted using the pilot data study. Coefficient alpha was used to measure the internal consistency of the index items. It is widely accepted that an alpha of at least 0.70 is required to demonstrate internal consistency (Nunnally, 1978). However, Nunnally (1967 & 1978) suggests that for early stages of basic research, indexes with alphas ranging from 0.50 to 0.60 should be considered sufficient (Churchill, 1979; Van de Ven and Ferry, 1980). Using the governmental agency data and the items selected for the final survey instrument that emerged after completing the previous steps to index construction, the reliability of the measures based on internal consistency was performed on the eight main indexes (Acquisition of Resources α=0.62, Production/Service α=0.76 Management and Control α=0.76, Reinforcement α=0.71, Environmental Interface α=0.78, Action Reflection α=0.64, Dissemination/Diffusion α=0.81, and Meaning and Memory α=0.74).

A two step process was used to validate the initial indexes: item analysis and item intercorrelation. The index validation process is an iterative process. Babbie (1992) proposes the use of cross tabulations performing either a gamma or a Kendall's Tau-b coefficient as the statistical means for item analysis in which a table is created and the index is the independent variable and each item is taken in turn as the dependent variable. Item-intercorrelation is another measure of internal consistency and is measured through item-remainder coefficient. The item-remainder coefficient is the correlation of each measure with the sum of the remaining measures (Spector, 1992). The results of these two validation procedures show that gamma ranged from a low of 0.35 to a high of 0.86 and the tau-b ranged from a low of 0.28 to a high of 0.73 for the item analysis. The difference in the respective low and high coefficient scores is a result of how gamma measures ordinal association by excluding tied pairs from its computation. The gamma is calculated because "tau-b score is difficult to interpret as a measure that designates a proportional reduction of error in prediction" (Nachmias and Nachmias, 1987, p. 421).

2.3 Survey Administration

The Organizational Action (OA) survey was administered to 262 randomly selected Federal employees through electronic survey software via the internet. The subjects who participated in this study were employees of a medium sized public sector health and engineering organization located in the Mid-Atlantic region of the United States. The organization consisted of a 1200 member workforce composed of active duty military officers and enlisted personnel, Federal civilian employees, and contractor personnel. The administration process resulted in obtaining 212 usable responses (80% response rate).

2.4 Statistical Methodology to Evaluate the Items

Bagozzi and Phillips (1991), in their article titled *Assessing Construct Validity in Organizational Research,* discuss the weaknesses of classic methods for analyzing construct validity and point out that confirmatory factor analysis "is a powerful method for addressing construct validity and makes fewer assumptions and provides more diagnostic information about reliability and validity" (p. 429). Mueller (1996) points out that estimating reliability from an internal consistency method, coefficient alpha, has three short comings: (1) the reliability of single items cannot be assessed, (2) it does not allow for correlated measurement errors of items or scales [indexes], and (3) observed variables cannot be indicators for more than one underlying construct. To overcome these short comings, Mueller (1996) suggests using confirmatory factor analysis to estimate the proportion of variance in an observed variable that is accounted for by all latent constructs that are hypothesized to affect it (Bagozzi and Phillips, 1991). Construct validity is broadly defined as the extent to which an operationalized index achieves theoretical and empirical meaning (Campbell and Fiske, 1959; Bagozzi and Phillips, 1991; Mueller, 1995). Construct validity includes convergent and discriminant validity (Campbell and Fiske, 1959).

Confirmatory factor analysis differs from exploratory factor analysis in that it requires the researcher to specify *a priori* how the items, indexes, and latent constructs should be related theoretically versus just statistically, and then statistically tests for validity of the model. Bagozzi and Phillips (1991) give four advantages of confirmatory factor analysis for assessing construct validity: "(1) allows methods to affect measures of traits in different degrees and to correlate freely among themselves; (2) provides measures of the overall degree of fit; (3) provides estimates as to if and how well convergent and discriminant validity are achieved; and (4) partitions variance into trait, method, and error components" (p. 429).

Confirmatory factor analysis was used to investigate the organizational learning and organizational performing constructs. To determine the fit of the sample data to the hypothesized factor structure, the LISREL output examined was as follows: feasibility of parameter estimates, adequacy of the measurement model, goodness-of-fit of the overall model, subjective goodness-of-fit indices for overall model, and goodness-of-fit of individual model parameters (Byrne, 1989).

2.5 The Causal Models

The purpose of this section is to discuss the hypothesized structure underlying the Organizational Action Survey's measures and the validation of related constructs. Three models were hypothesized in the original research study (refer to Johnson, 2000). Of the three, the model presented in Figure 7—Latency Control OAS Model showed the strongest fit and will be represented in this article.

Figure 7 delineates the exogenous variable, Organizational Performing Actions, as being operationalized as consisting of four functional dimensions—AdptPerfg (Acquisition of Resources), GAPerfg (Production/Service), IntPerfg (Management and Control), and LatPerfg (Reinforcement) (Parsons, 1956; Schwandt, 1995). The second exogenous variable, Organizational Learning Actions, is operationalized as consisting of the following four functional dimensions: AdptLrng (Environmental Interface), GALrng (Action

Reflection), IntLrng (Dissemination and Diffusion), and LatLrng (Meaning and Memory) (Schwandt, 1994).

The Latency Control OAS Model is based on Parsonian cybernetic hierarchy in which the latency function has the greatest normative control. It depicts the Latency Constructs for the Organizational Acts of Performing and Organizational Acts of Learning being correlated with the respective functional constructs (e.g., LatnLrng correlates with AdaptLrng, GoalLrng, and IntgLrng). In this figure, the observed X-variables of the structural model are estimated latent variable scores obtained through LISREL analysis of

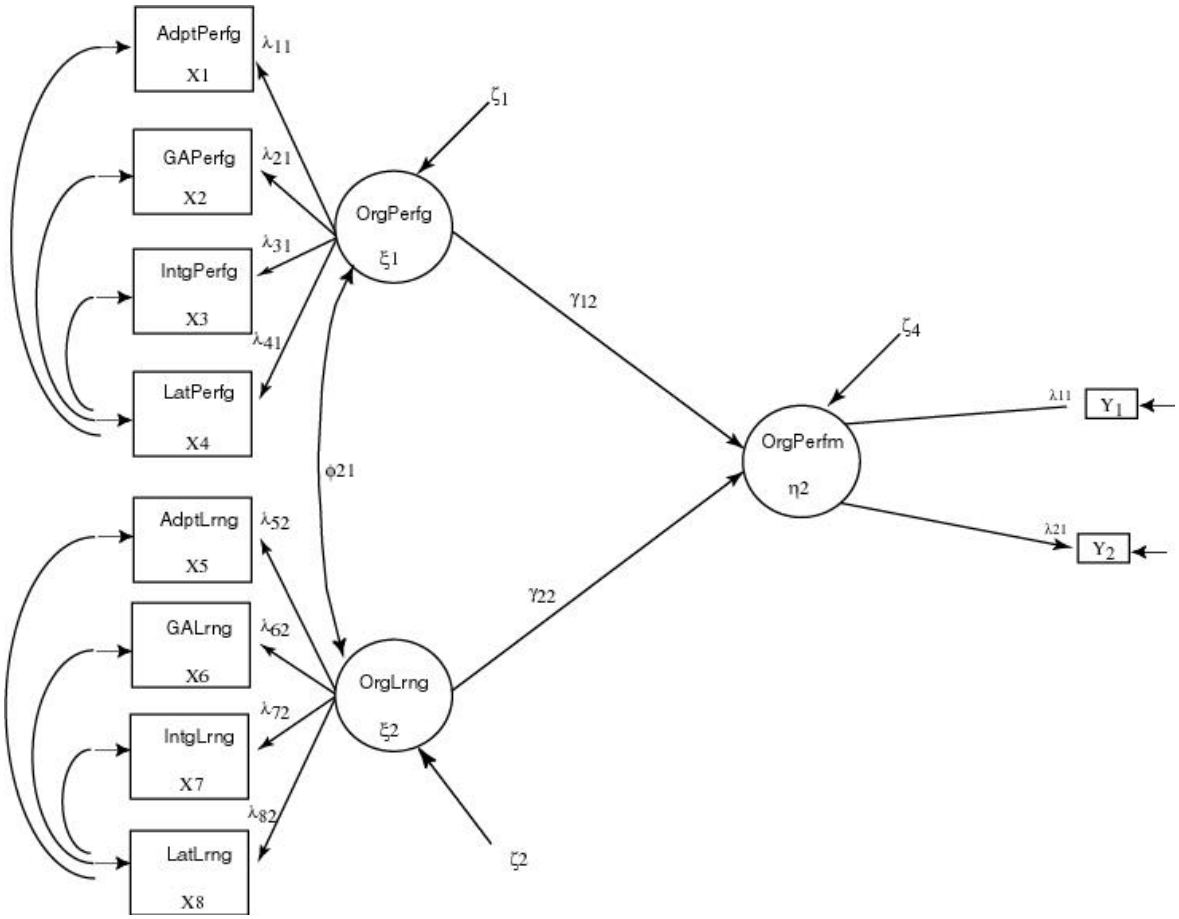

Figure 7. Latency Control Organizational Action Systems Model

the CFA models for OAPerfg and OALrng. The endogenous variable, Organizational Performance (OrgPerfm), is operationalized through two measures: SumOPrfm index and overall organizational performance. To allow for two observable measure for the OrgPerfm construct, an organizational performance summary measure was kept out of the exploratory factor analysis. The analysis of the nine organizational performance items—using varimax rotation, and extraction based on eigenvalues greater than 1.0—resulted in a single factor that explained 63.48% of the variance. A new index (SumOPrfm) for organizational performance was created by averaging the nine survey items (Yuan, Bentler, & Kano, 1997).

3. ANALYSIS AND RESULTS

Before an analysis of the data concerning the hypothesis testing and some preliminary analyses were performed. First, some basic statistical tests were performed to examine the data for outlying data points and to understand the appropriateness of the data to be used in factor analysis. This initial analysis showed there were no outlying data points detected and the observed points approximated a normal distribution. In addition, efforts were taken to account for biases. However, no non-response bias or role bias were found.

3.1 Appropriateness of Data for Factor Analysis

In addition to ensuring that data is free of outliers and non-linearity, three crucial assumptions need to be met: 1) normality of independent variables, 2) homoscedasticity, and 3) non-existence of collinearity among independent variables. These tests of normality show that the data distribution is normal. Tests for homoscedasticity by regressing survey items on the dependent variable (overall organizational performance) showed that heteroscedasticity was not present. In addition, test for collinearity showed that by creating the SumOPrfm index resolved the issue of collinearity (Mueller, 1996).

3.2 Confirmatory Factor Analysis Models

In this section, the results of analysis for each of the Confirmatory Factor Analysis (CFA) models will be presented. It should be restated that CFA is based on the assessment of whether observed data "fits" the *a priori* theorized structure of a specific model.

3.2.1 CFA for Organizational Performing Actions

The first CFA model tested postulates *a priori* that Acts of Organizational Performing (OAPerfg) empirically fit a four factor structure consisting of Adaptive Performing Actions (AdaptPrfmg), Goal Oriented Performing Actions (GoalPrfmg), Integrative Performing Actions (IntgPrfmg), and Latent Performing Actions (LatnPrfmg). It is depicted in Figure 8. This CFA model hypothesizes *a priori* that: (1) OAPerfg responses can be explained by the four factors: AdaptPrfmg, GoalPrfmg, IntgPrfmg, and LatnPrfmg; (2) There are 13 observed measures. Each sub-scale measure has a non-zero loading on the OAPerfg factor that it was designed to measure and a zero loading in all other factors; (3) The four OAPerfg factors are correlated per Parsonian theory; (4) Error terms for each measure are assumed to be uncorrelated.

Next, the reliability of the 13 measures in the model was determined by examining the squared multiple correlations (R^2) for each observed variable (see Table 1). Upon examination of the correlation coefficients, item GP1, a measure of goal oriented action, was the most reliable ($R^2 = .88$) and item IP3 was least reliable ($R^2 = .56$). Overall, the R^2 of the 13 items were well within the accepted range (greater than 0.50 for new instruments) (Nunnally, 1978).

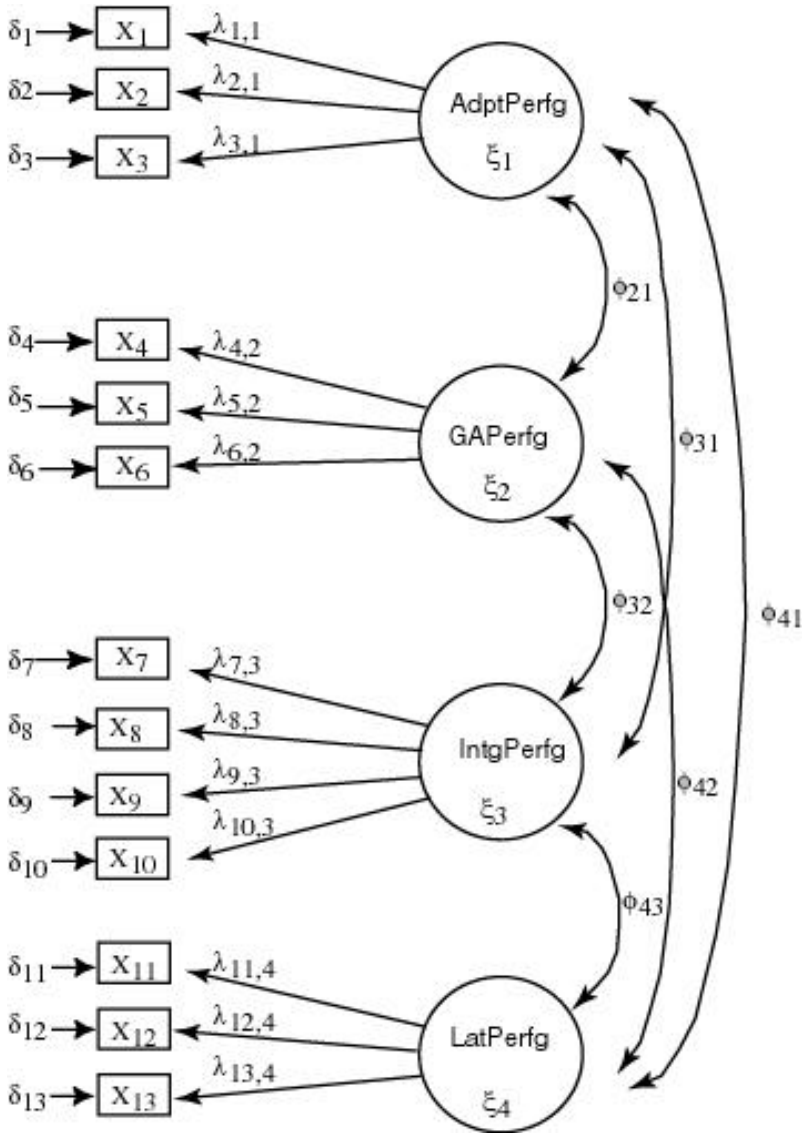

Figure 8. Hypothesized Structure of Four-Factor Model of Organizational Performing Actions.

3.2.1.1 Assessment of Fit

An examination of the multiple goodness-of-fit indices show (1) that there was good overall data-model fit (GFI = 0.97, AGFI = 0.95, NFI = 0.90, NNFI = 0.93, CFI = 0.95); (2) the indices that depend more on sample size gave some indications of data-model inconsistencies (χ^2 = 115.21, p = 0.00004, χ^2 /df = 1.953); (3) all factor loadings were positive and significant; and, (4) weakness in fit seems to be a result of discrepancy of fit between the sample and hypothesized covariance matrices. Overall, the data-model fit contributes further support for the hypothesized model of the four-factor structure of OAPerfg.

Table 1
Weighted Least Squares Parameter Estimates for OAPerfg

LAMBDA-X

	AP	GP	IP	LP
Q50ap5	0.82 (0.03) 25.35	- -	- -	- -
Q61ap10	0.76 (0.03) 24.94	- -	- -	- -
Q80ap14	0.76 (0.04) 20.52	- -	- -	- -
Q66gp12	- -	0.88 (0.03) 30.49	- -	- -
Q79gp13	- -	0.78 (0.03) 27.23	- -	- -
Q87gp18	- -	0.76 (0.03) 22.43	- -	- -
Q47ip3	- -	- -	0.56 (0.04) 14.87	- -
Q53ip7	- -	- -	0.82 (0.03) 23.72	- -
Q86ip17	- -	- -	0.78 (0.03) 22.73	- -
Q88ip19	- -	- -	0.65 (0.04) 16.38	- -
Q56lp8	- -	- -	- -	0.76 (0.05) 16.08
Q60lp9	- -	- -	- -	0.75 (0.04) 17.73
Q81lp15	- -	- -	- -	0.76 (0.04) 20.39

PHI

	AP	GP	IP	LP
AP	1.00			
GP	0.98 (0.02) 39.88	1.00		
IP	0.98 (0.03) 33.45	0.93 (0.02) 38.57	1.00	
LP	0.85 (0.03) 24.30	0.81 (0.04) 21.11	0.95 (0.02) 39.38	1.00

THETA-DELTA

Q47ip3	Q50ap5	Q53ip7	Q56lp8	Q60lp9	Q61ap10
0.68 (0.08) 8.42	0.33 (0.09) 3.74	0.33 (0.09) 3.74	0.43 (0.10) 4.33	0.43 (0.09) 4.58	0.42 (0.08) 5.04
Q66gp12	**Q79gp13**	**Q80ap14**	**Q81lp15**	**Q86ip17**	**Q87gp18**
0.23 (0.09) 2.66	0.40 (0.08) 4.87	0.42 (0.09) 4.73	0.42 (0.09) 4.66	0.39 (0.09) 4.53	0.43 (0.09) 5.00
Q88ip19					
0.57 (0.09) 6.65					

Squared Multiple Correlations for X-Variables

Q47ip3	Q50ap5	Q53ip7	Q56lp8	Q60lp9	Q61ap10
0.32	0.67	0.67	0.57	0.57	0.58
Q66gp12	**Q79gp13**	**Q80ap14**	**Q81lp15**	**Q86ip17**	**Q87gp18**
0.77	0.60	0.58	0.58	0.61	0.57
Q88ip19					
0.43					

3.2.2 CFA for Organizational Learning Actions

The Organizational Learning Actions (OALrng) CFA model tested postulates *a priori* that it is a four factor structure consisting of Adaptive Learning Actions (AdaptLrng), Goal Oriented Learning Actions (GoalLrng), Integrative Learning Actions (IntgLrng), and Latent Learning Actions (LatnLrng). The OALrng CFA model hypothesizes *a priori* that: (1) Measures of OALrng in this study can be explained by the four factors: AdaptLrng, GoalLrng, IntgLrng, and LatnLrng; (2) There are 15 observable measures; (3) Each sub-scale measure has a non-zero loading on the OALrng factor that was designed to measure and a zero loading in all other factors; (4) The four OALrng factors are correlated per Parsonian theory; (5) Error terms for each measure are uncorrelated.

3.2.2.1 Assessment of Fit

An examination of the LISREL output showed that the hypothesized four factor model was misspecified based upon the data obtained from the 15 observed variables. In summary, the latent factor correlation matrix was not positive definite due to factor correlations exceeding unity. This identification problem was resolved by combining the correlated factors into a single latent factor, which is discussed next. In addition, it was

found that the latent factor scores were not equal or perfectly correlated. This finding and the overestimation of specific elements in the four factor model will need to be investigated further in future research (Wothke, 1993).

The step taken regarding the PHI matrix being not positive definite was to follow the recommendations of Wothke (1993) for resolving perfectly correlated latent factors by combining the respective factors into a single latent factor. This resulted in reparameterizing the four factor OALrng model to the three factor OALrng model as described above. Figure 9 graphically depicts the three factor OALrng model to be estimated.

The reliability of the 15 measures in the OALrng Model was determined by examining the squared multiple correlations (R^2) for each observed variable (see Table 2). The examination showed correlation coefficients ranging from 0.88 (item AC3, measure of Adaptation Learning) to 0.62 (items IL3 & LL2, measures of integration & latency learning). Thus, all 15 items were all within the acceptable range suggested by Nunnally (1978).

An examination of the multiple goodness-of-fit indices for the OALrng Model showed that there was good overall data-model fit (GFI = 0.97, AGFI = 0.95, NFI = 0.92, NNFI = 0.95, CFI = 0.95). Overall the factor loadings were positive and significant between the sample and hypothesized covariance matrices. Based on these findings, the three factor OALrng model had a good overall data-model-fit. Comparing the three and four factor OALrng models, no real difference can be found except for the PHI matrix being positive definite in the three-factor model. The RMSEA for the three-factor model was 0.001 lower and both parsimony fit measures were 0.02 higher.

3.2.3 Organizational Action System Model

In this section, outcomes of the Organizational Action System Measurement Model are discussed. The OAS Model previously introduced presents the *a priori* hypothesized causal paths to be tested. The model includes two exogenous variables, Organizational Performing Actions (OAPerfg) and Organizational Learning Actions (OALrng) and one endogenous variable Organizational Performance (OrgPerfm). In the model, OAPerfg and OALrng are shown to positively correlate and to have a direct causal effect on Organizational Performance (OrgPerfm).

Using the SumOPrfm and the overall organizational performance items ,the latent construct OrgPerfm was measured with two observed variables. The latent factor scores from the CFA analyses of OAPerfg and OALrng were used as the observed variables for the respective exogenous variables. As was determined by the CFA analysis, the data for the exogenous variable OALrng more appropriately fit a three-factor structure model verses the hypothesized four-factor structure. Therefore in the OAS causal model, the latent variable OALrng was measured through three latent factor scores and four latent factor scores for OAPerfg. Maximum likelihood method of estimation based on the appropriate correlation matrix (Pearson, polychoric, and polyserial/tetrachoric) and the corresponding structural coefficients was performed.

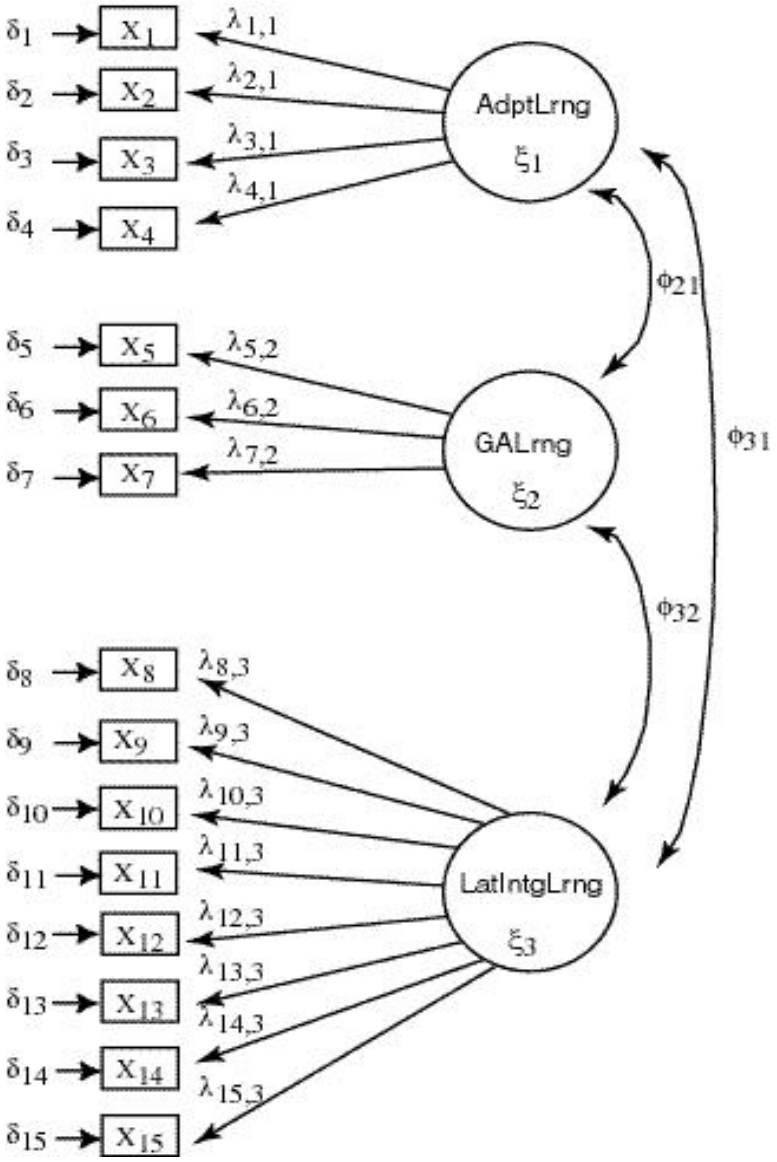

Figure 9. Three-Factor Model Structure of Organizational Learning Actions.

3.2.3.1 Assessment of the Organizational Action System Model

In this section, the assessment of the Latency Control OAS Model presented in Figure 10 is discussed. The process used to assess the structural equation model was similar to the process used above in the CFA analysis of the OALrng and OAPerfg models. The Latency Control Model sets the error of the Latency function within each of the subsystems to covary, OALrng and OAPerfg, and therefore to be correlated with the Adaptive, Goal Oriented, and Integrative functions (e.g., LatnPrfmg with AdaptPrfmg, GoalPrfmg, and IntgPrfmg).

Table 2
Weighted Least Squares Parameter Estimates for the Three Factor OALrng Model

LAMBDA-X

	AL	GL	LLL
Q45al1	0.70	--	--
	(0.03)		
	21.35		
Q48al2	0.72	--	--
	(0.03)		
	23.05		
Q51al3	0.88	--	--
	(0.03)		
	30.77		
Q54al4	0.77	--	--
	(0.03)		
	30.41		
Q64gl9	--	0.73	--
		(0.02)	
		29.14	
Q65gl10	--	0.72	--
		(0.03)	
		21.88	
Q93gl19	--	0.81	--
		(0.02)	
		34.98	
Q58il6	--	--	0.75
			(0.03)
			26.77
Q63il8	--	--	0.81
			(0.02)
			32.80
Q78il13	--	--	0.62
			(0.04)
			16.02
Q85il16	--	--	0.74
			(0.03)
			25.15
Q67ll11	--	--	0.86
			(0.02)
			39.05
Q77ll12	--	--	0.62
			(0.04)
			16.34
Q83ll14	--	--	0.68
			(0.03)
			23.07
Q91ll18	--	--	0.79
			(0.03)
			26.27

PHI

	AL	GL	LLL
AL	1.00		
GL	0.88	1.00	
	(0.03)		
	30.28		
LLL	0.92	0.97	1.00
	(0.02)	(0.01)	
	43.43	72.23	

THETA-DELTA

Q45al1	Q48al2	Q51al3	Q54al4	Q58il6	Q63il8
0.50	0.48	0.23	0.40	0.43	0.34
(0.08)	(0.08)	(0.09)	(0.08)	(0.08)	(0.08)
6.05	5.80	2.72	5.11	5.33	4.22
Q64gl9	**Q65gl10**	**Q67ll11**	**Q77ll12**	**Q78ll13**	**Q83ll14**
0.47	0.47	0.26	0.61	0.61	0.54
(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
6.04	5.65	3.29	7.32	7.25	6.71
Q85il16	**Q91ll18**	**Q93gl19**			
0.45	0.38	0.34			
(0.08)	(0.08)	(0.08)			
5.53	4.50	4.33			

Squared Multiple Correlations for X-Variables

Q45al1	Q48al2	Q51al3	Q54al4	Q58il6	Q63il8
0.50	0.52	0.77	0.60	0.57	0.66
Q64gl9	**Q65gl10**	**Q67ll11**	**Q77ll12**	**Q78ll13**	**Q83ll14**
0.53	0.53	0.74	0.39	0.39	0.46
Q85il16	**Q91ll18**	**Q93gl19**			
0.55	0.62	0.66			

The Latency Control OAS Model reported a χ^2 = 147.33 with 54 degrees of freedom (p-value = 0.000) and RMSEA = 0.09. The GFI and AGFI for the Latency Control Model were 0.87 & 0.77, respectfully. The χ^2 to degrees of freedom ratio was computed as 2.73 with an RMR equaling 0.062. The incremental goodness-of-fit indices for the LISREL output were reported as NFI = 0.93 and NNFI = 0.92 showing a good fit. The CFI = 0.95 also indicated a good overall fit to the independence model. The Latency Control Model, based and justified by theory, showed that the controlling nature of the latency function did have an influence on the other functional dimensions.

The remainder of this section focuses on testing the relationship between the learning and performing constructs and the effect learning and performing actions have on organization performance. The relevant structural equation analysis from LISREL for the hypothesized OAS Models will be presented in the following sections.

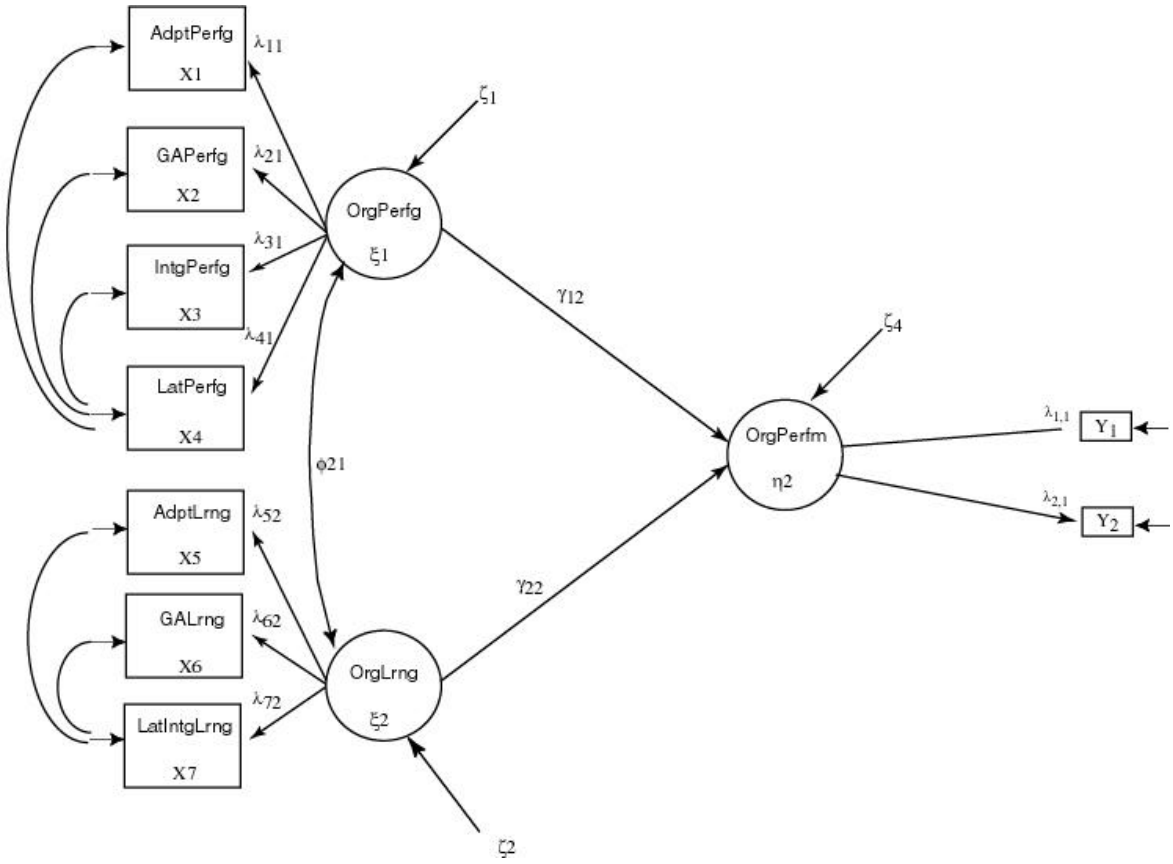

Figure 10. Revised Confirmatory Factor Analysis Model for Duality of the Action Frame of Reference for the Latency Control Model.

3.3 OALrng Positively Correlates with OAPerfg

The OA survey was developed based on the theoretical belief that the domains of organizational learning and performing are social actions that are related but differentiable. The estimated strengths of association among the latent variables are expressed as co variances which LISREL uses to estimate correlation coefficients among the variables (Mueller, 1996). The estimated correlation between OALrng and OAPerfg was hypothesized to be significant and positively related to each other. The current research showed a positive significant relationship (0.89, t = 52.24) between the two constructs.

3.4 OALrng and OAPerfg are Positively Correlated with OrgPerfm

The LISREL standardized correlation matrix of ETA (endogenous variables) and KSI (exogenous variables) was examined to test for this relationship. Based on the data, it was found that both OALrng and OAPerfg were significantly correlated with OrgPerfm (0.78, t = 2.20; 0.80, t = 5.33 respectively).

3.5 OAPerfg and OALrng have a Direct Effect on OrgPerfm

The last part of the study focused on measuring if the dependent variable OrgPerfm is directly effected by the independent variables OAPerfg and OALrng. Figure 10 depicts these relationships in the structural equation model with the paths labeled γ_{12} and γ_{22}. Using the reduced form of the GAMMA coefficient, the results showed that OAPerfg had a significant positive direct effect on OrgPerfm (0.50, $t = 4.23$) and OALrng had a positive and significant direct effect (0.34, $t = 3.01$) as measured by the OA Survey. The standardized square multiple correlation coefficient in reduced form indicates that 66% of the variance in the construct can be accounted for by the endogenous variables OALrng and OAPerfg.

4. CONCLUSIONS

The present study was performed to both advance the theoretical and empirical understanding of organizational action systems as a dual process of the action frame of reference by developing and validating two latent subsystems: Organizational Learning and Organizational Performing Subsystems. The study also investigated the impact of each directly on Organizational Performance. Confirmatory factor analysis and structural equation modeling methodologies were used to test the validity and reliability of the Organizational Action Survey as observed measures of the four Organizational Actions System Model constructs. The confirmatory factor analysis results from this initial study indicate that each of the four constructs may well fit their respective hypothesized models. In addition, the Organizational Actions Systems model was found to adequately fit the data.

There is a significant positive relationship between the OAPerfg and OALrng factors. This is both supported by theory and by the data. Parsons (1953, p. 198) indicates that "performing and learning are, in our view two aspects of the same process, both are continually going on in all systems of action." Based on this and the data, further research needs to be performed on the relationship between these two constructs. Investigations regarding the interaction of the latent factors and the respective observed variables would provide useful insight and relevant knowledge to the field of human and organization studies and more specifically, those interested in organizational learning and its relationship and effect on organizational performance (Bollen and Paxton, 1998; Yang-Jonsson, 1997).

The results of this analysis showed that the direct effects of OALrng and OAPerfg on OrgPerfm were supported by the data and were both positive and significant. This finding is important in two ways. First, it provides empirical support, limited as it is, that organizational learning does effect organizational performance. Organizational learning scholars (Crossan, et al., 1995; Fiol and Lyles, 1985; Huber, 1991; Levitt and March, 1988; Meyer-Dohm, 1992; Mills and Friesen, 1992; Weick, 1993) have discussed and made different assumptions regarding the importance of the relationship between organizational learning and organizational performance. The fact that a direct effect was found in this study lends additional support to the need to do further research in this area.

Consequently, the findings of the study provide strong support for the operationalization and measurement of the Organizational Action Systems Model and underlying theoretical framework. The contributions of this study to the academic field of Organization Studies include an advancement and integration of organizational learning, organizational theory and social systems theory to an organizational level framework that describes the concept constructs and systemic relationships among them. Empirically, the

study provided an initial approximation of the relationships that were studied, while providing a theoretically grounded model that can guide future empirical inquiry.

4.1 Implications

One of the major contributions this study brings to the Organization Studies field is the use of a well-grounded theory as the basis of a theory of organizational actions of learning and performing. Johnson (2000) provided a detailed discussion regarding the theoretical foundations used to both develop the survey and the OAS Model. It integrated the conceptual frameworks of organizational learning theory and the theory of organizations. This theoretical foundation, in conjunction with the results of this study, provide an initial theoretical contribution to the field that can serve as a means to further development. The literature discusses what theory is (Dubin, 1978; Cohen, 1980; Weick, 1989 & 1995b) and what constitutes a theoretical contribution (Whetten, 1989; Bacharach, 1989), but what actually occurs in academic practice is a divergent evolutionary process of theorizing (Weick, 1995b). With this in mind, this study outlined a system of constructs and the respective variables used as measures of the constructs. It discussed the relationships between the constructs and tested hypotheses regarding both the constructs and the stated relationships. The use of existent theory provides well-founded explanations for why the system relationships exist and within what boundary conditions. It conceptually adds to the work of organizational theorists and theoretically builds upon the work in the area of organizational learning. In summary, the study contributes to the development of a conceptual framework based on social systems theory that can be used to "weave back and forth between intuition and data-based theorizing and between induction and deduction" (Weick, 1989, p. 518).

The need for empirical research regarding the study of organizational learning has been discussed by almost all authors writing on the issue. This study provides strong evidence that the constructs relevant to organizational learning and organizational action can be operationalized and measured. The fact that the survey went through a rigorous piloting and development process helped insure the psychometric properties were adequate for the initial testing of the OAS Model. The use of CFA in this study provides the initial step of validating the Organizational Action Survey and the respective theoretical model it is based upon. Particular to an individual study, Mueller (1996) points out that the validity of a latent construct can be assessed by the magnitude of a factor loading through the standardized structural coefficients. The results of this study show that the standardized structural coefficients for each of the observed variables are high, particularly those that were hypothesized to measure Organizational Learning Actions, Organizational Performing Action, and Organizational Performance (see Table 3, part 1). In addition to the factor loading, the examination of the agreement between hypothesized and estimated relationships among the latent variables can be used as another assessment of validity (Mueller, 1996). Results from this study show that the estimated correlations between the latent constructs support the theoretical hypothesized relationships and thus give additional support of the initial validity of the OA Survey for the organization being studied (see Table 3, part 2). It is important to remember that this is an initial study and that further research is needed to truly test the overall validity of the survey and OA Model. Cross-validation studies need to be run to compare validity results across different samples.

The issue of reliability is also pertinent to the issue of empirical validity. The use of the squared multiple correlation coefficients (R^2) are an estimate of a measure's reliability. The estimated reliability coefficients from this study show that all estimated factor scores

were highly reliable. (see Table 3, part 3). On a whole, the R^2 indicate an acceptable level of reliability of the OA survey with the present sample.

Table 3
Validity and Reliability Measures of the Organizational Action System Model

Part 1

Completely Standardized Solution

LAMBDA-Y

	OrgPerfm
OP115	0.83
ORGPRFMX	0.98

LAMBDA-X

	OAPrfg	OALrng
APFS	0.99	- -
GPFS	0.97	- -
IPFS	0.97	- -
LPFS	0.85	- -
AL3FS	- -	0.91
GL3FS	- -	0.96
LLIL3FS	- -	1.00

Part 2

Correlation Matrix of ETA and KSI

	OrgPerfm	OAPrfg	OALrng
OrgPerfm	1.00		
OAPrfg	0.81	1.00	
OALrng	0.76	0.89	1.00

Part 3

Squared Multiple Correlations for Y - Variables

OP115	ORGPRFMX
0.69	0.96

Squared Multiple Correlations for X - Variables

APFS	GPFS	IPFS	LPFS	AL3FS	GL3FS	LLIL3FS
0.98	0.94	0.94	0.71	0.82	0.92	0.99

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APPENDIX 1

Sample Organizational Action Survey Items

Measures of **Organizational Performing** Actions by the Respective Four-Factors

Acquisition of Resources (AdaptPrfmg)	
46.	...is there intense competition among organizations within your industry?
50.	... does your organization effectively allocate and distribute resources?
61.	... does your organization effectively use organizational resources?
80.	...this organization effectively identifies and acquires external resources required to meet its goals.
Production/Service (GoalPrfmg)	
52.	...does your organization hold work groups accountable for achieving established goals?
66.	... are your organization's leaders effective at achieving organizational goals?
79.	...this organization has clear performance goals.
87.	...this organization has established an achievable organizational mission.
Management and Control (IntgPrfmg)	
47.	...are people in your organization held responsible for the decisions they make?
53.	...does your organization implement changes to help the employees be more effective in doing their jobs?
86.	…the managers and leaders of the organization have the skills needed to guide organizational change.
88.	...the end products of work groups in this organization are of much higher quality than any one of us could have produced alone.
Reinforcement (LatnPrfmg)	
49.	…does your organization use stories and make references to its history to let people know how they should perform their jobs?
56.	... does your organization publicly acknowledge employees for outstanding performance (e.g., featuring them in newsletter, plaques, etc.)?
60.	...does your organization believe it needs to continuously improve customer service?

81.	...this organization has a strong culture of shared values that guide the daily work activities.

Measures of **Organizational Learning** Actions by the Respective Four-Factors

Environmental Interface (AdaptLrng)		
45.	... do members of your organization share external information?	
48.	...does your organization predict the changes occurring in the industry?	
51.	...does your organization continuously track how your competitors improve their products, services and operation?	
54.	...does your organization deliberately reflect upon and evaluate external information?	
Action Reflection (GoalLrng)		
64.	... does your organization have set goals for researching and developing new products and/or services?	
65.	... do members of the organization effectively use organizational structures (e.g., chain of command, personal networks) when sharing ideas and innovations?	
93.	...this organization has clear goals for individual and organizational development.	
Dissemination and Diffusion (IntgLrng)		
58.	...does your organization provide opportunities for employees to develop their knowledge, skills, and capabilities?	
63.	...do your organization's leaders support quick and accurate communication among all employees?	
78.	...there are established ways to share new operational processes and procedures throughout the organization.	
85.	...this organization has established work groups, networks, and other collaborative arrangements to help the organization adapt and change.	
Meaning and Memory (LatnLrng)		
67.	...does your organization use ideas and suggestions from its employees?	
77.	...this organization believes that continuous change is necessary.	
83.	...people in this organization believe that evaluating what customers say is critical to reaching organizational goals.	
91.	...this organization has a strong culture of shared values that support individual and organizational development.	

Measures of Organizational Performance

Items

1.	Contribution of “Force Readiness”
2.	Allocation of appropriated funds in meeting its “Force Readiness” mission requirements
3.	Meets “Force Readiness” mission expectations
4.	Operates within appropriated budget
5.	Quality of Products and/or Services
6.	New Product Development
7.	Process Improvement
8.	Management Practices
9.	Overall Employee Satisfaction
10.	Overall Organization Performance