

Identification-Commitment Inventory (ICI Model): Confirmatory Factor Analysis and Construct Validity

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Abstract

The aim of this study is to confirm the factorial structure of the Identification-Commitment Inventory (ICI) developed within the frame of the Human System Audit (HSA) (Quijano et al., 2000, 2008). Commitment and identification are understood by the Human System Audit at an individual level as part of the quality of human processes and resources in an organization; and therefore as antecedents of important organizational outcomes, such as personnel turnover intentions, organizational citizenship behavior, etc. (Meyer et al., 2006). The theoretical integrative model which underlies ICI (Quijano & Navarro, 2000) was tested in a sample (N=625) of workers in a Spanish public hospital. Confirmatory Factor Analysis (CFA) through Structural Equation Modeling (SEM) was performed. Elliptical Least Square Solution (ELS) was chosen as estimator procedure on account of non-normal distribution of the variables. The results confirm the goodness of fit of an integrative model, which underlies the relation between Commitment and Identification, although each one is operatively different.

Key words: Organizational Commitment, Organizational Identification, Confirmatory Factor Analysis, Structural Equation Modeling, Elliptical Least Square Solution.

Introduction

Organizational commitment (OC) and organizational identification (OI) are very similar concepts, defined as psychological links which bond employees and organizations (Van Knippenberg and Sleebos, 2006). As cognitive and affective mindsets linking the individual to their work environment, they have implications for relevant organizational behaviors (Meyer et al., 2006). Despite recent changes in the nature of work and in work relations, OC and OI play a central role in employees' lives and in organizational outcomes (Van Dick et al., 2006). Due to their importance, the concepts have been intensively discussed by scholars along the last 40 years and several authors have conceptualized and related OC and OI in different ways (see the meta-analysis Mathieu and Zajac, 1990; Meyer et al., 2002; Riketta, 2005; Edwards, 2005).

In spite of numerous studies, there is still a considerable disagreement regarding the way commitment and identification have been defined and operationalized. Present issues are to clarify the relationship between OC and OI and to integrate the research on both constructs. (Van Dick et al., 2006).

Following this trend, some authors (Quijano et al., 2000; Meyer et al., 2006) suggested integrative models for OC and OI. Integrating the research findings about both constructs allows a better understanding of similarities, differences, and the way they on interplay within the organizational system.

Quijano et al. (2000) were among the pioneers working on this new perspective of the research on OC and OI. In order to set a more holistic model, they integrated the attitudinal and the behavioral perspectives of OC; they also integrated the calculative and affective perspectives, considering the commitment not only based on need or exchange but also on affection and values. Additionally, they also defined OI as a type of link between employees and organization which implies cognition, affection and desire. As a consequence of this holistic model, these authors proposed to investigate commitment and identification using a single measurement instrument, the Identification-Commitment Inventory (ICI) that could provide researchers and consultants with a more accurate evaluation process.

The integrative model for OC and OI is part of a broader one, the Human System Audit (HSA), a conceptual frame and a set of tools designed for evaluation and intervention in Human System Quality (HSQ). According to Quijano (2006, 2007, 2008), Quality of Human Processes and Resources (QHPR) represents the level at which management systems are able

to produce favorable results, for themselves and for organizational effectiveness, among employees and groups.

Similarities and differences between OC and OI.

It is possible to summarize the main research on OC in two approaches: the attitudinal and the behavioral (Mowday et al., 1982). Attitudinal commitment reflects the identification with goals and values of the organization and the willingness to make efforts toward them. Behavioral commitment would be related to attributional approaches (Reichers, 1986). From the 90s, multidimensional models of OC have integrated its attitudinal and behavioral aspects, such as Meyer and Allen's three component model (1991). Regarding OI, Ashforth et al. (2008) explained that it is possible to identify narrow and broad formulations. Narrow formulations (Ashforth and Mael, 1989; Bergami and Bagozzi, 2000; Tajfel, 1982) consider the perception of being a member of the organization, the importance added to it and the related feeling, so it can encompass cognitive and affective components. The broader formulation includes more contents for identification, such as congruence of values, goal, beliefs and desire to act on behalf of the organization (van Dick et al., 2005).

Considering the complexity of the theoretical background of both concepts, recently several authors attempted to refine the most distinctive traits of OC and OI. Van Knippenberg and Sleebos (2006) considered that OI reflects the self-definitional aspect of organizational membership, while OC does not, because it is more contingent on social exchange processes, e.g. make efforts and show loyalty in exchange for pay, support and recognition. Ashforth and Mael (1989) and Meyer et al. (2006) also reinforced the self-definition aspect of OI as an important way to distinguish it from OC.

Edwards (2005) explains that in different studies, the same words seem to be used to describe different concepts, such as attachment, feeling of membership, belonging, affection, congruence of goals and values, loyalty and so on. He also explains that in a general sense it could be sensible to distinguish commitment and identification saying that the former includes the latter.

The ICI and the HSA model

ICI model integrates OC and OI. It is based on a theoretical approach to understand the interplay between concepts within a broader integrative model, the Human System Audit (HSA). The model "*emerges as an integrated proposal, made from the context of Work and*

Organizational Psychology, for the Assessment of Intangibles, for the Assessment of Quality in models of excellence, and in general for the diagnosis of and intervention in the Human System in Organizations, as well as for research on human behavior in them” (Quijano et al, 2008,92).

Specifically, the ICI model is one of the most important contributions of HSA. It reinforces the importance of the link as a core concept to understand the relationship between employee and organization (Buchanan, 1974; Reichers, 1985; O’Reilly and Chatman, 1986; and others). The strength of this link can be understood as a result of the psychological and psychosocial processes related to Human Resources Management Systems (HRMS) within the organization, taking into account the context where OC and OI are developed.

According to ICI model (see Figure 1), OC constitutes the psychological link that employees develop towards the organization for different reasons. As an attitude it is based on beliefs, evaluation process, feelings and early behaviors. At the same time behavior is a result of commitment and an inferential indicator of it. Following Quijano and Navarro (2000) OC can be considered as a theoretical concept with four different dimensions: value, affection, exchange and need. Value and affection compose the personal commitment; exchange and need together could be named instrumental commitment.

Affective commitment refers to the affective link between employee-organization resulting from affiliation needs. When it is present, it means that there is more than a contract between the parts. Value commitment is related to the recognition of common goals and values between individual and organization. Employees accept the goals and values of the organization because they are seen as congruent with their own.

Instrumental commitment is related to the rewards which the individual expects from the organization. Quijano and Navarro (2000) distinguish between need and exchange in an attempt to differentiate better the types of link that, despite the same instrumental base, induce distinct patterns of behavior toward the organization. So, need implies a weaker link focused only on the maintenance of the job as a way of survival, because there is not another opportunity of work for the individual. Exchange is based on more or less satisfactory retributions/compensations (intrinsic or extrinsic) received from the organization.

Based on the model of organizational identification proposed by Ashforth and Mael (1989), Quijano and Navarro (2000) also define OI as a type of link with the organization. From this perspective, OI implies cognition, affection and desire, and it is composed of three dimensions: pride, categorization and cohesion. Pride implies self-esteem for being part of

the group; categorization means being aware of belonging; and cohesion implies desire of continuous belonging to the organization along the time.

In fact, empirical results show (Quijano and Navarro, 2000; Quijano et al., 2007) that personal commitment, specifically affective commitment, and OI have a strong relationship. In this sense, Quijano and Navarro (2000) suggested that personal commitment and OI could interact and happen at the same time: OI leads to personal commitment and could reinforce it. They consider that the OI, although similar to affective commitment, includes the following aspects: categorization, pride and cohesion. In other words, awareness of membership, self-esteem for being an organizational member and desire to stay in the organization. All these topics exceed the OI concept and complement it.

According to the HSA two groups of dimensions describe the Quality of Human Processes and Resources (QHPR): Person organization relationship (POR) and Person work relationship (PWR). POR includes the following constructs: commitment and identification, perception of shared vision, management and leadership, suitability of participation, psychological climate and satisfaction. PWR includes arousal, motivation, stress and burnout.

Recently, empirical studies pursued within the Leonardo Project for Health Care Sector in Europe, contributed to the model's adjustment. Several studies, first conducting Exploratory Factor Analysis (EFA) and in an advanced stage applying Confirmatory Factor Analysis (CFA), reinforcing the ICI model as part of HSA Quality of Human Processes and Resources (QHPR) (Quijano et al, 2007. Not published).

Method

Participants

The sample was composed of 625 subjects from a public hospital in Catalonia, Spain. Table 1 shows some segmentation data of the sample. In all cases, the participants were informed about the objectives and characteristics of their participation and the properties of the questionnaires administrated.

INSERT TABLE 1

Questionnaire

The ICI includes 20 items to measure OC and OI. The original version of the questionnaire was in Spanish. The items were translated and back translated and adapted to Catalan, the official language of Catalonia.

According to the theoretic model which underlies the questionnaire (Quijano et al, 2000) OC is a third-order factor composed of two second-order factors: personal commitment and instrumental commitment. Personal commitment includes two first-order factors: affective commitment and value commitment. Instrumental commitment includes exchange commitment and need commitment. Some examples of OC items are: “I feel that there is a big similarity between my personal values and those of this hospital” (i94 - value commitment); “The success of my trust is my success” (i87 - affective commitment); “An important reason why I continue working in this hospital is that I don’t feel that other hospitals can offer me better compensation” (i90 - exchange commitment); “I would not recommend to any family member or friend that they should work in this hospital” (i93 - need commitment).

OI is a first-order factor composed of eight observable variables. Despite its unidimensionality, it is possible to recognize three clear dimensions for OI: categorization, e.g. “I feel part of this hospital” (i85); pride, e.g. “I feel pride when I tell others that I work in this hospital” (i101); and cohesion, e.g. “I think about being a member of this hospital for life” (i95). The authors also included one item related to general identification: “I identify myself with my trust” (i108).

INSERT FIGURE 1

Procedure

According to employees’ requests the Spanish and the Catalan versions of the questionnaire were used. During one month and a half, employees answered the questionnaires and sent them back to the researchers using mailboxes, in order to ensure anonymity and confidentiality. The rate of participation was around 65%.

SEM with a CFA approach was performed using EQS for Windows 6.1 version. Structural coefficients, error variances and the covariances between the factors were estimated using Elliptical Least Square Solution (ELS) due to the fact that the observed variables presented distributions with non symmetrical curve and non-normal multivariate distribution.

Results

The general results of Confirmatory Factor Analysis show an acceptable goodness of fit to the theoretical model according to the path diagram of figure 1. Table 2 shows the general results of this model. Although the chi-square goodness-of-fit test could have been employed it was decided, given that type I error increases with sample size, to use other indicators such as the root mean squares residual (RMR), root mean square error of approximation (RMSEA), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI) and the comparative fit index (CFI). Results show that the model adequately represents the observed data.

INSERT TABLE 2

In addition to the matrix $(R-\Sigma)$, the off-diagonal absolute standardized residuals are not so high (.0462). The residual values range from -.2 to .2, with 91.9% of residual values ranging from -.1 to .1. The largest standardized residual is .222; and the observed distribution follows the normal distribution with mean equal to .000 and variance .002.

The general Cronbach's Alpha was .941. According to the usual criteria, this coefficient of reliability is indicative of the internal consistency of the responses across the set of items (Schumacker and Lomax, 2004, Muñiz, 1992).

Another step in the model fit is the analysis of the individual parameter estimates; this means whether their value and signs are appropriate and if they are significant (Schumacker and Lomax, 2004). In a general sense, the regression coefficients estimated were positive, high and significant ($p = .05$), which shows a high correlation between the observable variables and the factors as postulated by the proposed model. Table 3 represents the estimation of each coefficient (λ_{ij}) as a fixed parameter and estimation above described.

INSERT TABLE 3

The above table shows, in general, high values in standardized estimation (statistically different from 0), small error measurement and significant coefficient of determination. Except for the results obtained in the Item89 and Item90 (with poor coefficient of determination), the rest of the items present a good fit to the theoretical model of measurement. As a consequence of these results, we can conclude that the theoretical model fits to the observed data, to the construct validity derived from the adjusted model.

Conclusions and discussion

The aim of this study was to provide evidence to the factorial structure of the Identification-Commitment Inventory (ICI), conceptually developed in the frame of the Human System Audit. The elaboration of the questionnaire was essential for us, in order to be able to carry out more exhaustive research in the future, regarding the integrative approach to identification and organizational commitment.

The fuzzy relationship between OC and OI has been discussed by different authors along years of research, and recent integrative models are important attempts to understand better how OC and OI interplay within the organizational context. In this sense, ICI offers researchers and consultants not only a theoretical model which integrates the concepts, but also a single tool to measure them at the same time.

The results of the SEM, confirm the goodness of fit of the integrative model, which underlies the relation between Commitment and Identification, although each one is operatively different (Riketta, 2005; Edwards, 2005).

There are two exceptions, the results obtained in Item89 ('The members of this hospital consider working here all their lives') and Item90 ('An important reason why I continue working in this hospital is that I don't feel that other hospitals can offer me better compensation') (with poor coefficient of determination). A content analysis of these items shows that Item89 is written in third person, while the other items are in first person. That suggests that these items could be reformulated in a new version. Item90 is a negative item and that could affect the subjects' answers, as was shown in other studies (for example Tomás and Oliver, 1999, related to self-esteem).

Nevertheless, the general fit and the value of α 's Cronbach suggest a good internal consistency. On the other hand, the results obtained from the residuals shows a normal distribution and a mean value equal to 0. This situation corresponds to a good fit of the general measurement model and can be interpreted as construct validity. In consequence, the

factorial structure and, also, the theoretical definition of each latent variable have been confirmed. Considering the limitations referred to in the two items above mentioned, we think that it is important to continue research on the integrative model and its scale in different cultural samples and branches to get a deeper insight into the ICI.

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POST-PRINT VERSION

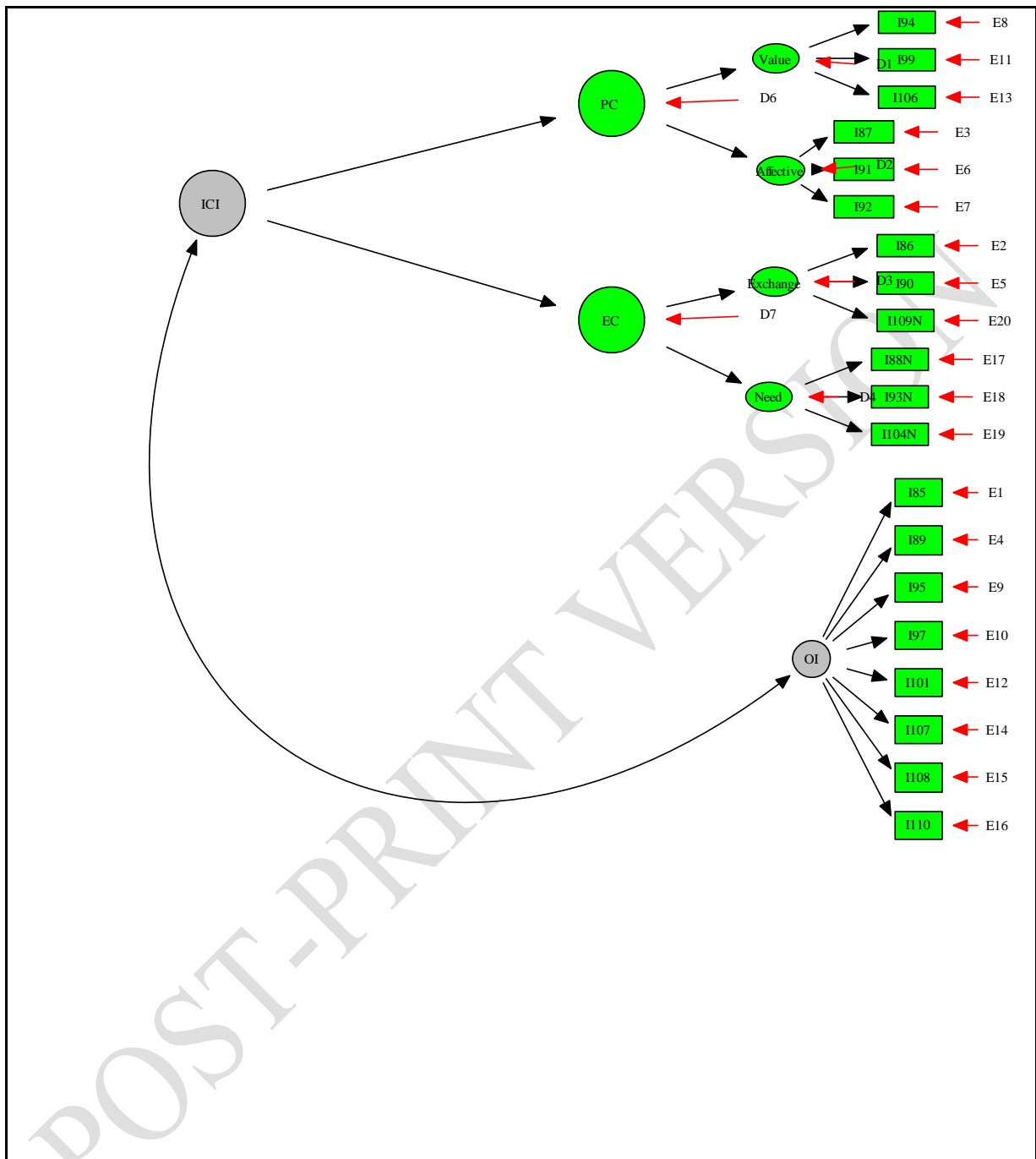


FIGURE 1: Path Diagram of Factorial Model

Category		
Supervisor	Yes	62
	No	433
Sector	Nursing	175
	Health care assistant	114
	Scientific and technical	119
	Doctors	106
	Others	98
Shift	Fix	56
	Rotary	500

TABLE 1: Segmentation data

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RMSEA	RMR	GFI	AGFI	CFI
.029	.049	.980	.972	.994

TABLE 2: Goodness of Fit Index of Confirmatory Factor Analysis

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Item	Parameter	Estimation	Measurement Error (ϵ_i)	Coef. of Determination (R^2)
Item94	λ_{11}	.836	.549	.699
Item99	λ_{21}	.556	.831	.309
Item106	λ_{31}	.709	.705	.503
Item87	λ_{42}	.514	.858	.264
Item91	λ_{52}	.585	.811	.343
Item92	λ_{62}	.735	.678	.540
Item86	λ_{73}	.515	.818	.331
Item90	λ_{83}	.213	.977	.046
Item109N	λ_{93}	.538	.843	.289
Item88N	$\lambda_{10.4}$	.474	.880	.225
Item93N	$\lambda_{11.4}$	.746	.666	.557
Item104N	$\lambda_{12.4}$	.837	.547	.701
Item85	$\lambda_{13.5}$	.632	.775	.400
Item89	$\lambda_{14.5}$	.312	.950	.097
Item95	$\lambda_{15.5}$	.601	.800	.361
Item97	$\lambda_{16.5}$	.691	.723	.477
Item101	$\lambda_{17.5}$	.795	.606	.632
Item107	$\lambda_{18.5}$	.815	.579	.664
Item108	$\lambda_{19.5}$	.711	.703	.506
Item110	$\lambda_{20.5}$	.715	.699	.511
Second order	λ_{16}	.851	.525	.724
Second order	λ_{26}	.952	.307	.906
Second order	λ_{37}	.835	.550	.697
Second order	λ_{47}	.923	.384	.852

TABLE 3: Estimation of each free parameter and measurement error and Coefficient of Determination (General expression of the measurement model $x_{ij} = \lambda_{ij}\zeta_j + \epsilon_i$)