



The downsizing effects on survivors: a structural equation modeling analysis

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Abstract

Purpose – The extant scholarly research has been delving into several effects of downsizing, such as job insecurity, organizational commitment and innovative behavior. The purpose of this paper is to develop a model proposing organizational commitment as a mediator between job insecurity and innovative behavior. Downsizing survivors – or the individuals who remain when others exit a firm – may have higher job insecurity and lower organizational commitment post-downsizing, thus lowering their innovative efforts.

Design/methodology/approach – The authors collected 224 questionnaires from Portuguese employees and analyzed simultaneous relations with a structural equation modeling.

Findings – The analysis of mediating effects suggests that the lack of commitment is not a mediating construct between job insecurity and innovative behavior. However, downsizing directly affects both organizational commitment and innovative behavior.

Practical implications – The innovative behavior seems to be directly affected by job insecurity, raising implications regarding the use of downsizing as a short-term practice, without acknowledging the long-term impact on organizational innovative capabilities.

Originality/value – The paper contributes by testing the moderating role of organizational commitment in the relationship between job insecurity and innovative behaviors.

Keywords Employees behaviour, Downsizing, Job commitment, Survivors, Organizational commitment, Innovation

Paper type Research paper

Resumen

El Propósito – La investigación académica reciente ha profundizado en los diversos efectos del *downsizing*, incluyendo entre ellos conceptos como la inseguridad laboral, el compromiso organizacional y el comportamiento innovador. En este estudio hemos desarrollado un modelo que



propone un posible papel mediador del “compromiso organizacional” entre la inseguridad laboral y el comportamiento innovador en un entorno de “*downsizing*”. Se plantea la hipótesis de que los llamados “sobrevivientes” – individuos que se quedan en la empresa después del *downsizing*- registrarán un mayor nivel de inseguridad laboral y un menor compromiso con la organización después de una decisión de *downsizing*, lo que afectará negativamente al su esfuerzo innovador.

La Metodología – Hemos recogido datos de 224 trabajadores portugueses a través de una encuesta y los hemos analizado con un modelo de ecuaciones estructurales.

Los Resultados – El análisis de los efectos de la mediación ha permitido concluir que la falta de compromiso organizacional no es un mediador entre inseguridad laboral y comportamiento innovador. Sin embargo, el *downsizing* afecta directamente tanto el compromiso organizacional y el comportamiento innovador.

Las limitaciones/Implicaciones prácticas – El comportamiento innovador parece estar directamente determinado por la inseguridad laboral, con implicaciones sobre el uso del *downsizing* como una práctica a corto plazo, sin reconocer el impacto a largo plazo sobre la capacidad de innovación organizativa.

La originalidad/El valor – El artículo contribuye por probar el papel moderador del compromiso organizacional en la relación entre la inseguridad laboral y los comportamientos innovadores.

Palabras clave Downsizing, sobrevivientes, compromiso organizacional, innovación

Tipo de artículo Artículo de investigación

Resumo

Propósito/Objetivo – Investigaçãõ recente tem indagado acerca dos efeitos do downsizing, incluindo constructos como segurança no trabalho, compromisso organizacional e comportamento inovador. Neste artigo desenvolvemos um modelo que propõe o compromisso organizacional como mediador entre a insegurança no trabalho e o comportamento inovador. Os sobreviventes ao downsizing – indivíduos que permanecem quando outros deixam a empresa – poderão ter maior nível de insegurança no trabalho e menor compromisso organizacional após um processo de downsizing, diminuindo, assim, os seus esforços inovadores.

Metodologia – Recolhemos dados por questionário de 224 trabalhadores portugueses e analisámos relações simultâneas através de um modelo de equações estruturais.

Resultados – A análise de possíveis efeitos mediadores permitiu-nos concluir que a falta de compromisso organizacional não é um mediador entre a insegurança no trabalho e o comportamento inovador. Contudo, o downsizing afecta directamente tanto o compromisso organizacional como o comportamento inovador.

Limitações/Implicações práticas – O comportamento inovador parece ser directamente determinado pela insegurança no trabalho, com implicações quanto ao recurso ao downsizing como medida de curto-prazo, sem reconhecer o impacto de longo-prazo sobre a capacidade de inovação organizacional.

Originalidade/Valor – O artigo contribui com o teste do papel mediador do compromisso organizacional, na relação entre insegurança no trabalho e comportamentos de inovação.

Palavras-chave Downsizing, sobreviventes, compromisso organizacional, inovação

Tipo de artigo Artigo de investigação

Introduction

Downsizing strategies are recurrently employed to turnaround firms in distress. The benefits of downsizing are well known and understood, especially those relating to the cost savings that emerge from firing personnel (Cameron, 1994; Morris *et al.*, 1999). Less well understood is how the remaining members – the survivors – react post-downsizing. However, it is arguable that the firms' future performance is dependent on the performance of these employees. Three constructs that manifest the effects

on survivors – job insecurity, organizational commitment and innovative behavior (IB) – are among the most often used in the extant research in studying the consequences of downsizing (Gandolfi and Neck, 2005; Sahdev, 2003; Ugboro, 2003). The IB, in particular, may be especially important in leading firms back to a track record of success.

The extant research on the downsizing effects has taken multiple paths. Some studies referred to the firms' financial performance post-downsizing (Suárez-González, 1999; Hillier *et al.*, 2007) or to their stock market value (Worrell *et al.*, 1991; Wertheim and Robinson, 2000). Also, when downsizing occurs, there are noteworthy effects on the surviving personnel, namely on their morale (Makawatsakul and Kleiner, 2003), commitment (Sahdev, 2003) and innovativeness (Reynolds-Fisher and White, 2000). A topic that emerged as one of the most important among researchers is job insecurity (Sverke and Hellgren, 2002; Sahdev, 2003; Ugboro, 2003; Hartley, 1998; De Witte and Naswall, 2003).

In this paper we seek to understand the relationship between job insecurity and organizational commitment and employees' IB. We put forward a model where organizational commitment is a mediator between job security and IB. These three constructs are especially important for instance in the context of downsizing where the surviving employees may feel insecure as to their current jobs wondering about future downsizing prospects and hold second thoughts regarding how worthy is the firm of their commitment. Moreover, in the current competitive landscape it is increasingly important for firms to develop and hold internally the ability to innovate products and processes, valuable for capturing a position in the market, improve efficiency, have a better customer service and so forth. From both a theoretical and practitioner point of view, there is a need for a more comprehensive understanding of the downsizing effects on the survivors, in particular concerning their IBs. Understanding survivors' behaviors and attitudes post-downsizing, such as those we examine, is also of particular interest to managers.

The paper is organized in four main parts. First we review the literature and advance a set of theory-driven hypotheses. Second, we present the method, including sample and variables followed by the results of the empirical tests. We conclude with a broad discussion of the main results, pointing out avenues for future research, limitations and implications for theory and practice.

Theory review and hypotheses

The downsizing phenomenon has become more intense over the last two decades, and has affected a considerable number of firms, domestic and international, worldwide. The extant research has delved into a multitude of effects that may emerge following downsizing strategies, ranging from individual to organizational outcomes. A number of these studies focused on the firms' financial performance post-downsizing (Suárez-González, 1999; Morrow *et al.*, 2004; Hillier *et al.*, 2007) or their stock market value (Worrell *et al.*, 1991; Wertheim and Robinson, 2000).

Other studies aimed at examining individual consequences, for instance, the effects on managers who had to implement layoffs (Grunberg *et al.*, 2006). Managers who issued downsizing notices seem to have more self-reported health problems, sleep difficulties, feelings of depersonalization and showed an intent to exit the organization (Grunberg *et al.*, 2006). Yet other scholars focused on the effects on survivors – the employees who were not laid off (Brockner *et al.*, 2004) – observing the impact of job insecurity (Sahdev, 2003), lower levels of organizational commitment (Reisel and

Banai, 2002; Sahdev, 2003), the influence on their innovation efforts (Fisher and White, 2000), increased stress (Gregory, 1999) and lowered motivation (Mishra, 1996).

It is worth pointing out that recent research has taken an increased focus on the effects of downsizing on firms' innovative ability (Johannessen *et al.*, 2001), especially by looking at the survivors' IBs and the factors that determine those behaviors (Scott and Bruce, 1994; Kleysen and Street, 2001; Jong and Kemp, 2003). Innovation has become an important factor for all sorts of organizations, partly due to the technological advances that increasingly require the adoption of new technologies and processes and partly for the contribution that the knowledge generated, products and processes improved, may have on firms' competitiveness. Innovation is a research and exploration process aiming at gestating new products, new techniques, new organizational forms and new markets (Lundvall, 1992). Innovation may be simply defined as a process that involves the generation and implementation of ideas (Scott and Bruce, 1994). Albeit the wealth of research on the multiple facets of downsizing, to our knowledge no other study has positioned organizational commitment as a mediating variable linking job insecurity to IB. These effects may be of particular significance for evaluating the downsizing effects on firms' performance.

Job insecurity effects on organizational commitment

The consequences of downsizing on survivors are varied. For instance, survivors have been shown to respond with lower levels of commitment, higher job insecurity (Sahdev, 2003; Ugboro, 2003; Maertz *et al.*, 2010) and with lower creative, or IBs (Fisher and White, 2000; Pech, 2001) post-downsizing. In fact, job insecurity following downsizing is one of the most studied hazards (Sverke and Hellgren, 2002). Job insecurity is the "perceived powerlessness to maintain desired continuity in a threatened job situation" (Greenhalgh and Rosenblatt, 1984, p. 438) and a meta-analytic study on job insecurity by Cheng and Chan (2007) found a negative association between job insecurity and job performance. Hartley (1998), for example, found a positive association between job insecurity and lower organizational commitment, suggesting that job insecurity is a predictor of lower dedication to the firm. Ugboro (2003) using data from transport companies that underwent downsizing, examined the impact of downsizing on the survivors' perceptions of job insecurity, organizational commitment and their trust in management.

To assess job insecurity Ugboro included measures of perceived threats on the continuity of employment, employment characteristics and the feeling of being unable to control and prevent potential threats. These components are similar, albeit not identical, to those identified by Ashford *et al.* (1989): employment, characteristics of the employment and perception of powerlessness (PP). Ugboro (2003) found that downsizing increased the continuance organizational commitment component, but reduced affective organizational commitment and increased job insecurity. In a meta-analysis, Meyer *et al.* (2002) concluded that there was a median correlation between the affective and the normative components, but a weak correlation between the affective and the continuance, and between the normative and continuance components.

Organizational commitment has been under scrutiny since the 1930s (Barnard, 1938). Kanter (1968) explained organizational commitment as the willingness of the employee to devote energy and loyalty to an organization. Porter *et al.* (1974, p. 604) defined commitment as:

[...] a strong belief in and acceptance of the organization's goals and values, a willingness to exert considerable effort on behalf of the organization, and a definite desire to maintain organizational membership.

Ugboro (2003) and Meyer and Allen (1991) defined and measured organizational commitment using three components: affective, continuance and normative. The affective component shows the individuals' desire to be identified with a particular organization and it is induced by the employee's emotional attachment to, identification with, and involvement in an organization for its own sake, and his desire to see the organization succeed. The continuance component assesses the individuals' decision to remain in the organization because of his personal investment and career track. It may also emerge from a perceived lack of opportunities in other firms. The normative component expresses the feelings of obligation, or internal pressures of a cultural nature, to remain in the organization despite other, and better, employment opportunities elsewhere.

Despite the studies concluding that job insecurity and lack of organizational commitment are among the negative effects of downsizing strategies on survivors, the empirical evidence is scarce. For instance, Hartley's (1998) study on a large public company, with the initial aim of analyzing relationships between pro-change attitudes, organizational commitment and job insecurity after a planned organizational change, concluded that job insecurity was associated with a lower level of organizational commitment. Ashford *et al.* (1989), following the study by Greenhalgh and Rosenblatt (1984), concluded that insecurity was associated with a decrease in employees' commitment, in their confidence on the organization, and in lower job satisfaction. De Witte and Naswall (2003) concluded that job insecurity was closely associated with lower levels of organizational commitment and lower levels of satisfaction at work. Finally, Reisel and Banai (2002), based on the works of Greenhalgh and Rosenblatt (1984) and Ashford *et al.* (1989), argued that job insecurity had a negative impact on organizations by reducing employees' commitment and confidence, and creating an intention to exit the firm.

In sum, it seems reasonable to suggest, that employees' organizational commitment is negatively influenced by job insecurity following downsizing (Ashford *et al.*, 1989; Hartley, 1998; Reisel and Banai, 2002; De Witte and Naswall, 2003). In this study we seek to confirm the impact of perceived job insecurity, in downsizing environments, on the decrease, or lack altogether, of commitment to the organization of the surviving employees:

H1. The employees' perceived job insecurity, following downsizing, has a negative impact on their organizational commitment.

Job insecurity effects on IB

The generation and implementation of ideas required in innovation processes (Scott and Bruce, 1994) call for suitable IBs from the employees. They need a suitable level of motivation, capability and knowledge, for innovative effort to be successful (Jong *et al.*, 2001). Fried *et al.* (2003) studying employees of organizations enduring downsizing, realized that employees have generated maximum results when there is clarity and job security. Organizational memory may be defined as the information stored throughout the organization's history, which may be used to make decisions (Walsh and Ungson, 1991).

This memory is stored in individuals and when downsizing forces some employees to exit, organizational memory, or at least a part of it, is lost (Meyer *et al.*, 2002). A loss of these individuals' memories creates a gap in the collective memory. Loss of memory is especially hazardous for innovation since it jeopardizes the generation and implementation of ideas over time.

Analyzing "IB performance", characterized by the permanent search for and implementation of new ideas, Fried *et al.* (2003) showed that downsizing negatively affects motivation, morale, commitment and loyalty. Moreover, they pointed these were crucial elements for IBs – essential to the development of new products, new techniques, new organizational forms and the discovery of new markets. Pech (2001) also argued that the employees' creative behavior was affected. Moreover, layoffs may be perceived by employees as a violation of the psychological contract that binds them to the firm, resulting in decreased trust and greater stress in the workplace (De Meuse *et al.*, 2004). In fact, layoffs have been associated with increased job insecurity, decreased commitment and lower survivors' productivity (Brockner, 1992; Sahdev, 2003). These negative effects may be more costly for high-involvement workplaces, as these rely more heavily on the employees' dedication and motivation (Zatzick and Iverson, 2006). Zatzick and Iverson (2006) also found a negative relationship between high-involvement work places and productivity in workplaces with higher layoff rates. Hence, innovative environments and efforts may be negatively affected by layoffs because they need employees to get involved:

H2. The employees' perceived job insecurity, following downsizing, has a negative impact on their IB.

Job insecurity effects on IB: a matter of organizational commitment

Organizational commitment concerns the degree to which employees identify themselves with the goals of the firm. Hence, in firms whose strategies require that an effort be put on innovation and new product or process development, committed employees should devote more of their energy to these tasks (Kanter, 1968) and make a proactive effort to adopt the required IBs. A similar endeavor is required to improve existing products and processes to better efficiency, for instance, or to proceed with incremental innovations in any stage of the value chain. However, in those cases where the level of organizational commitment diminishes, such as following downsizing strategies (Sahdev, 2003; Ugboro, 2003), it is likely that employees will not engage in IBs, at least to the best of their abilities.

Fostering the generation and exploitation of novel ideas requires actions directed at cultivating the employees' IB. Innovative individual behaviors may be conceptualized as the individual actions bound to the generation, introduction and/or application of beneficial innovations on some level of the organization (West and Farr, 1989). Employees' innovative ability refers to the ability to generate new ideas, products, technologies and services, changes in procedures or the application of new ideas or technologies in the production process, to improve effectiveness and efficiency (Jong *et al.*, 2001; Kleysen and Street, 2001).

Dougherty and Bowman (1995) studied the impact of downsizing on product innovation, comparing firms with high and low levels of downsizing. They concluded that downsizing damages the innovative capacity of a company, reducing the effectiveness of strategies by cutting the informal network of relations – a type

of network that is essential for innovation (Dougherty and Bowman, 1995). It is through their personal, and often informal, networks that employees access much of the information needed for endeavoring innovations (Macdonald and Piekkari, 2005). Cooper (2005) argued that innovators create different networks to reach specific goals, and specifically, networks around ideas, information and solution gathering or just about what is happening in a specific area. These networks, essential in innovative areas, are likely to be broken following downsizing strategies, when important actors are fired or exit the firm. Since job insecurity is associated with a lower level of organizational commitment (Hartley, 1998; Reisel and Banai, 2002), we summarize these arguments in the following hypothesis:

H3. Organizational commitment mediates the impact of job insecurity on IB.

Method

We analyzed the relations between two effects of downsizing – perceived job (in)security and organizational commitment – on employees' IB. Our model reflects how downsizing influences, simultaneously, employees' perceived job insecurity, commitment to the organization and their relation to the survivors' IB.

Data and sample

The data for this study were collected by survey from Portuguese employees, in four companies. We used the pooled dataset comprising 224 valid surveys to test the relationships hypothesized. The surveys were sent to all operational employees. Some employees worked on companies that had actually suffered downsizing and were among the survivors. Overall, the response rate was just short of 18 percent, which is within the ranges recommended by Paul and Bracken (1995), who noted that the typical response rate for surveys mailed to employees ranges from 15 to 30 percent.

Variables

We elaborated a survey following the reviewed literature and a few in-depth interviews with professors and researchers that researched downsizing enquiring on the set of issues that were more relevant. The survey was pre-tested on a group of professors and doctoral students. The final survey comprised four sections. The first, referred to job insecurity, the second to commitment and the third section focused on IB and the fourth included items pertaining to demographic data. The items in the survey used a five-point Likert-type scale (anchored in 5 – very likely, strongly agree, very frequent, and 1 – very unlikely, strongly disagree, unusual).

Job insecurity was measured with items v1.1 to v1.10 in its two main components (Greenhalgh and Rosenblatt, 1984): perceived threat to one's total job (PTTJ) or perceived threat to job features (PJF) and PP. We used Ugboro's scale to measure job insecurity since Ugboro (2003) examined the impact of downsizing on the survivors' perceptions of job insecurity, organizational commitment and managerial trust. Employees perceive a threat to one's total job when some or all functions of a department are outsourced. Moreover, employees perceive threat to job features when they are reassigned to a lower level job position. Finally, employees perceive powerlessness when they do not feel in control over events that threaten one's total job or job features.

Organizational commitment was measured with Ugboro's (2003) scale including the three components of commitment: affective commitment (AC) with items v2.1 to v2.4,

continuance commitment (CC) with v2.5 to v2.7 and normative commitment (NC) with items v2.8 to v2.10. The IBs were measured with items v3.1 to v3.13 drawn from Jong and Kemp's (2003) scale (The Appendix).

The most suitable method for analyzing simultaneous relations is structural equation modeling. First, using SPSS, we carried out an exploratory and confirmatory factor analysis to assess how the variables were grouped. The variables least adjusted to our theoretical model were eliminated. We further verified the reliability of the constructs with Cronbach's α (Cronbach, 1951; Hair *et al.*, 1999). The magnitude and significance of the simultaneous regression coefficients were estimated with LISREL software.

Results

Exploratory and confirmatory factor analysis

After a factor analysis and depuration according to the analysis correlation matrix, to the factor scores and Cronbach's α values (Cronbach, 1951), variables V3.7, V3.13, V3.3, V2.7, V2.5 and V.2.6 had smaller scores than 0.5, and were not considered (Bagozzi and Yi, 1988). Moreover, due to crossed saturations in distinct factors simultaneously, v3.3. was eliminated since it relates to two factors at same time.

For all factors, the Cronbach's α value was greater than 0.6 (minimum value of 0.65 for PP construct), showing that the analysis is adequate. After an initial confirmatory analysis, we proceed to some corrections. Items v2.4 and v3.3 were removed because it was related to two factors simultaneously, v2.5 was eliminated because it was not related to any factor, v2.6, v2.7, v3.7 and v3.13 were also eliminated due to their low factor scores. The elimination of the v2.5, v2.6 and v2.7 could be related to the multi-dimensional nature of the continuance component of organizational commitment. De Frutos *et al.* (1998) recommended dividing the continuance component into two dimensions – “high cost of leaving the organization” and “perceived alternatives of employment”. Thus, the continuance construct might be unfolded in two dimensions: one related to the perceived cost of exiting the organization, other related to the continuance based on the perceived employment opportunities. With these corrections we obtained the values in Table I, thus showing good results for the factors created, as to the one-dimensionality and reliability.

Table II shows the global confirmatory factor analysis and the several depurations with respective re-specifications. We may suggest a causal model so as to prove the theoretical model presented. After several confirmatory analyses, RMSEA value reached 0.06, CFI = 0.92 and NFI = 0.85. Hence, we conclude that our model has an acceptable fit.

In Table III we present the reliability analysis, verifying the scale reliability. Cronbach's α s were higher than 0.6 (minimum α = 0.65 for PP) and the extracted variance was higher than (or equal to) 0.5 (only one construct did not reach the 0.5, albeit very close to that value: 0.43 for job insecurity (INS). Hair *et al.* (1999) recommended that the composed reliability reached values around 0.7. All dimensions reached higher values than 0.7 (minimum ρ = 0.76 for PTTJ), except PP, albeit very close (ρ = 0.66).

Concerning convergent validity, we conclude that the items used to measure the constructs were significant and strongly correlated with the corresponding constructs. Observing the *t*-values and the standardized coefficients of the first-level analysis,

Construct	Variables	Factor analysis	Confirmatory analysis (partial)	α
PJF	v.1.1	One factor	Degrees of freedom = 0	0.70
	v.1.2	65.5 percent of the variance explained		
	v.1.3	Factor scores > 0.816		
PTTJ	v.1.4	One factor	$\chi^2 = 41.5$ (5) $p = 0.00$ CFI = 0.91 RMSEA = 0.18	0.81
	v.1.5	58 percent of the variance explained		
	v.1.6	Factor scores > 0.651		
	v.1.7			
	v.1.8			
PP	v.1.9	One factor	Degrees of freedom = - 1	0.65
	v.1.10	74.2 percent of the variance explained Factor scores > 0.861		
AC	v.2.1	One factor	$\chi^2 = 0.246$ (5) $p = 0.88$	0.84
	v.2.2	68.9 percent of the variance explained		
	v.2.3	CFI = 1		
	v.2.4	RMSEA = 0.00 Factor scores > 0.731		
NC	v.2.8	One factor	Degrees of freedom = 0	0.78
	v.2.9	69.9 percent of the variance explained		
	v.2.10	Factor scores > 0.817		
IB	v.3.1	One factor	$\chi^2 = 168.2$ (35) $p = 0.00$ CFI = 0.90 RMSEA = 0.13	0.92
	v.3.2	59.2 percent of the variance explained		
	v.3.4	Factor scores > 0.676		
	v.3.5			
	v.3.6			
	v.3.8			
	v.3.9			
	v.3.10			
	v.3.11			
	v.3.12			

Table I.
One-dimensional and
reliability analyses
in an exploratory and
confirmatory factor
analysis (by construct)

Note: Total: 65.3 percent of total variance explained

Models	χ^2	p	Degrees of freedom	CFI	RMSEA	NFI	Re-specifications
Confirmatory 1	680.26	0.000	316	0.88	0.07	0.79	v.1.3 removed by small SMC ^a value; z4 fixed in 0.05
Confirmatory 2	646.9	0.000	292	0.88	0.07	0.80	V1.8 removed by small SMC value
Confirmatory 3	582.6	0.000	268	0.89	0.07	0.81	V3.5 and v3.8 removed by crossed saturations
Confirmatory 4	425.01	0.000	223	0.91	0.06	0.84	V1.7 removed by small SMC value
Confirmatory 5	373	0.000	202	0.92	0.06	0.85	-

Table II.
Global confirmatory
factor analysis

Note: ^aSquared multiple correlation < 0.3

Dimensions	Variables	Standardized coefficients	<i>t</i> -value	α	$\rho_{ve(n)}$	ρ
PJF	v.1.1	0.69	–	0.75	0.61	0.76
	v.1.2	0.88	6.73			
PTTJ	v.1.4	0.80	–	0.83	0.63	0.84
	v.1.5	0.76	10.98			
	v.1.6	0.81	11.38			
PP	v.1.9	0.63	–	0.65	0.5	0.66
	v.1.10	0.77	5.73			
AC	v.2.1	0.62	–	0.84	0.59	0.85
	v.2.2	0.80	9.32			
	v.2.3	0.85	9.62			
	v.2.4	0.79	9.23			
NC	v.2.8	0.67	–	0.78	0.55	0.79
	v.2.9	0.85	8.51			
	v.2.10	0.69	8.46			
	v.3.1	0.60	9.39			
	v.3.2	0.70	11.24			
	v.3.3	0.70	11.24			
IB	v.3.4	0.63	9.88	0.91	0.55	0.91
	v.3.6	0.81	–			
	v.3.9	0.82	14.05			
	v.3.10	0.74	12.08			
	v.3.11	0.73	12.04			
	v.3.12	0.85	14.70			

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Notes: “–” denotes fixed parameters in 1; α , Cronbach’s α ; $\rho_{ve(n)}$, extracted variance; ρ , composed reliability

Table III.
Reliability analysis (first level)

we may conclude that all *t*-values were higher than 2 and the standardized coefficients were greater than 0.6 (overall mean = 0.67).

At the second-level analysis, only two parameters were lower than 0.6 (Table IV) and all the average extracted variance values were higher than the correspondent quadratic correlation, ensuring a discriminant validity (Table V).

The whole average extracted variance values were within the recommended by Fornell and Larcker (1981), indicating that our measures were assessing one only concept. However, the pair INS-LC (job insecurity-lack of commitment) had an average extracted variance (0.43) equal to the correspondent quadratic correlation (0.43), indicating that each measure may be not measuring a single concept and that they have a certain proximity. However, with a new factorial analysis with these constructs together, no differences were found compared to the previously stated.

Second-level constructs	First-level constructs	Standardized coefficients	<i>t</i> -value	$\rho_{ve(n)}$	ρ
Insecurity	PTTJ	0.54	–	0.43	0.69
	PJF	0.69	4.34		
	PP	0.72	4.28		
Lack of commitment	AC	0.94	–	0.5	0.62
	NC	0.32	3.64		

Table IV.
Reliability analysis (second level)

Structural model

The fit of our first model, “Causal 1”, was already acceptable, according to CFI (0.92), NFI (0.85) and RMSEA (0.06) values. With the re-specification (correlation of e17 and e21), the model fits better to the data matrix (CFI 0.93, NFI 0.85 and RMSEA 0.06). The “Causal 2” model is strongly adapted to the data matrix. It is acceptable in respect to all the fit indexes (Figure 1).

Our model shows that job insecurity is manifested essentially by PP (PP: 0.72) and the lack of commitment by its affective component (AC: 0.94), as shown on Table IV (Table VI).

As we expected, there is a positive relation between job insecurity and lack of commitment (0.67), corroborating *H1* (Table VII). Thus, greater job insecurity may lead to lower level of employee commitment to the organization.

H3 was not corroborated (Table VII) given that the lack of organizational commitment shows a negative, albeit not significant, relation to the IB of workers (−0.24).

Correlations	<i>r</i>	ρ_{ve1}	ρ_{ve2}	<i>R</i> ²
INSEC-LC	0.66	0.43	0.5	0.43
INSEC-IB	−0.45	0.43	0.55	0.20
IB-LC	−0.44	0.55	0.5	0.19

Table V.

Discriminant validity of the constructs

Notes: ρ_{ve} , extracted variance for construct *i*; σ , standard deviation; r^2 , quadratic correlation; *r*, correlation coefficient

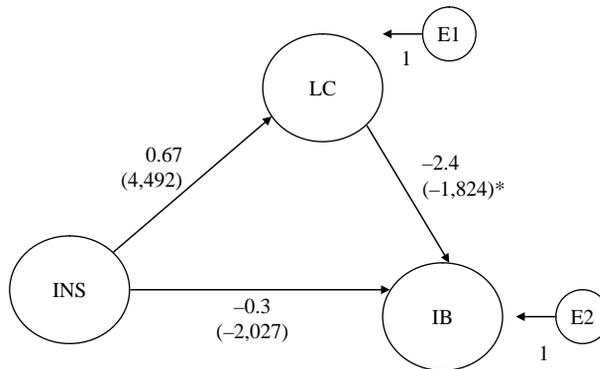


Figure 1.

Final model: perceived job insecurity and lack of organizational commitment to IBs

Note: Not sig. at: *0.05

Effect of/in	Direct	INSEC Indirect	Total	Direct	LC Indirect	Total
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Table VI.

Standardized effects matrix: direct, indirect and total effects

LC	0.67	–	0.66	–	–	–
IB	−0.29	−0.16*	−0.46	−0.24*	–	−0.24*

Note: *Not significant

Table VII. Hypotheses

<i>H1.</i> The employees' perceived job insecurity, following downsizing, has a negative impact on their organizational commitment	Corroborated Greater job insecurity may lead to lower level of employee commitment to the organization
<i>H2.</i> The employees' perceived job insecurity, following downsizing, has a negative impact on their IB	Corroborated Employees' IBs may be negatively impacted by perceived job insecurity
<i>H3.</i> The employees' lack of organizational commitment, following downsizing, has a negative impact on their IB and thus, organizational commitment mediates the impact of job insecurity on IB	Not corroborated Commitment is not a mediating construct between job insecurity and IB. IB was determined, primarily, by job insecurity

Hence, commitment is not a mediating construct between job insecurity and IB. IB was determined, primarily, by job insecurity.

The relation between employees' job insecurity and IB was significant and negative (-0.29), thus confirming *H2* (Table VII). The results indicate that employees' IBs may be negatively impacted by perceived job insecurity.

Discussion and concluding remarks

In this paper we seek to understand the simultaneous relations between job insecurity, organizational commitment and employees' IB. We analyze a model of employees' perceived job insecurity and level of organizational commitment and whether, and how, these constructs are related to the IB of the workers. In fact, it is worth pointing out that these are three crucial aspects of downsizing. For instance, employees' job insecurity has emerged as a main concern following downsizing (Hartley, 1998; Sverke and Hellgren, 2002; De Witte and Naswall, 2003; Sahdev, 2003; Ugboro, 2003). Several effects of downsizing were examined in prior studies but the extant research has not advanced a mediating role of employees' organizational commitment on their IB. How employees act is always important for firms and, perhaps, even more important when firms face the need to change. The relevance of this study is well manifested in the fact that one of the challenges organizations face is to catch the innovation train and never lose it, maintaining both their sustainability and their performance. Firm-level innovation requires employees to put the mind and the effort. Even though it is a fact that IB is an extremely contemporary and in vogue theme, only a few studies relate the referred downsizing effects with the creative or IB.

Our study corroborates *H1* and *H2*. We expected, insecurity and lack of commitment are positively related, corroborating *H1*. That is, employees' perceived job insecurity contributes negatively to their commitment to the firm. Moreover, there is a significant negative impact of job insecurity on IB (-0.297). The results relating organizational commitment to the employees' IBs is negative, as suggested, but not significant. Hence, we may not conclude of a mediating effect of the lack of commitment on the relationship between job insecurity and IB. We may only conclude that IB is determined, at least, by job insecurity.

In conclusion, job insecurity caused by downsizing leads to a lack of organizational commitment, probably owing to the exit of employees who integrated the work teams and, as a consequence, the informal network relations disappear. Since an innovation process requires the employees to be active in applying their abilities and knowledge

to the exploration and implementation of ideas, perceived job insecurity is likely to affect the employees' IB. It is beyond our scope to speculate on the underlying processes that may explain these effects but we put forward that downsizing has a negative impact on the future of the firms by destroying part of its memory (Walsh and Ungson, 1991; Meyer *et al.*, 2002). When employees exit the firm, they take their specific technical knowledge, the more architectural knowledge on "how things work around here", on "who is who" and thus erode on the firms' competences and their earning ability (Fisher and White, 2000). The negative outcomes are perhaps more straightforward on the innovative processes, since any innovation requires pooling together diverse bits and pieces of knowledge and individuals, and thus it becomes obvious that the innovation processes will be hurt by a loss of organizational memory, following the exit of employees that were downsized. It is also worth speculating that a possible explanatory variable for the direct relationship between job (in)security and IB is risk taking. The rationale is that IBs require people to take risks and employees will be less likely to engage in any form of risk taking when they feel insecure, or scared, of loosing their jobs. Our empirical results indicate that IB is not mediated by organizational commitment in a possible indication that it is only determined by job insecurity.

This study has acknowledged limitations that may drive future research. We included a sample comprising a single case of an enterprise that downsized, and an additional three cases that did not undertake any downsizing strategy. Richer insights may emerge by taking into account additional downsizing occurrences thus enhancing the variance. Moreover, this study was based on a retrospective view of the changes felt by workers. Nonetheless, a longitudinal study would be a better vehicle to set comparisons within the same company but in different time frames and moments, especially with respect to the downsizing effects studied. We may further suggest a multi-group procedure, by company type, that implemented a downsizing and that did not, to allow analyzing the moderating effects of firm's characteristics on survivors. Finally, our sample comprises firms and employees from a single country and in this sense, the findings are not generalizable across countries or industries, albeit some inferences may be made.

For theory and practice there are some contributions amidst the need to better understand the true impact of downsizing strategies beyond the most often financial (cost savings) perspective. While firms are increasingly deploying downsizing and other restructuring solutions to solve short-term problems, it is important to understand the internal dynamics that underlie and those effects that may persist post-downsizing. In particular in what concerns survivors – those employee that are not fired or laid-off, managers need to understand how downsizing impacts motivation, commitment and IBs. It seems reasonable to suggest that downsizing strategies are likely to destroy the social fabric that ties and binds co-workers and erodes the organizational memory. This is the fabric that is called upon for R&D efforts and to come up with novel products and processes. For theory we call the need to better understand those same internal processes after a downsizing.

Downsizing is a short-terms solution to arguably proceed with a turnaround. The long-term consequences need to be carefully considered to prevent greater hazards and the definite loss of competitive capacity and firm-specific capabilities.

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Appendix. List of variables

Job insecurity

- v1.1 Do you have the possibility of moving ahead in your organization and remaining in your organization?
- v1.2 Is it difficult to keep your current pay or to attain pay increases?
- v1.3 Do you have current freedom to schedule your own work in a manner you see fit?
- v1.4 Do you believe you can lose your job and be moved to a lower level within the organization?
- v1.5 Do you think your future in this organization is uncertain?
- v1.6 Do you believe you can lose your job and be fired?

- v1.7 Do you think it is probable that you will remain in your organization three months from now?
- v1.8 Will you lose your job by being pressured to accept an early retirement?
- v1.9 Do you have enough power in this organization to control events that affect your job?
- v1.10 In this organization, can you prevent negative things from affecting your work situation?

Commitment

- V2.1 Would you be very happy to spend the rest of your career with this organization?
- V2.2 Do you really feel as if this organization's problems are yours?
- V2.3 Do you feel a sense of belonging to this organization?
- V2.4 Do you feel emotionally attached to this organization?
- V2.5 Right now, is staying in this organization a matter of necessity?
- V2.6 Would too much of your life be disrupted if you decided that you wanted to leave your organization at this time?
- V2.7 Do you feel that you have too few options to consider leaving your organization?
- V2.8 Do you feel an obligation to remain with your current employer?
- V2.9 Even if it were to your advantage, do you feel it would not be right to leave your organization now?
- V2.10 Would you not leave your organization right now because you have a sense of obligation to the people in it?

Innovative behavior

- v3.1 Do you search out new technologies, processes, techniques and/or product ideas?
- v3.2 Do you generate creative ideas?
- v3.3 Do you read magazines, journals, attend courses or conferences to learn of new ideas or solutions?
- v3.4 Do you generate ideas or solutions to solve problems or difficult situations?
- v3.5 Do you present new ideas and solutions?
- v3.6 Do you present improvement initiatives?
- v3.7 Do you try to persuade the others of the importance of a new idea or solution?
- v3.8 Do you promote the ideas and solutions so they have a greater possibility of being implemented?
- v3.9 Do you experiment with the new ideas or solutions?
- v3.10 Are you aware of the bugs of new solutions before they are applied to new products, processes, technologies or markets?

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- v3.11 Do you help your colleagues in their new ideas and solutions?
v3.12 Do you like to do things in a new way?
v3.13 Do you test the new ideas or solutions?

Demographic

- v4 Sex.
v5 Age.
v6 Educational level.
v7 Marital status.

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