
The impact of environmental uncertainty on trust relationships

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RESUMO

O impacto da incerteza institucional nas relações de confiança

Neste artigo, tem-se como objetivo analisar o impacto da incerteza institucional sobre as relações de confiança dentro das organizações. Especificamente, busca-se compreender as possíveis diferenças nos níveis de confiança entre dois paradigmas: a Velha Economia e a Nova Economia. Inovações institucionais singulares que melhor caracterizam a Nova Economia, na forma de incerteza e instabilidade ambiental, limitam o desenvolvimento da confiança. Para avaliar o impacto da incerteza em confiança, analisaram-se os resultados de extenso banco de dados apresentado por Zanini (2007). Abordando confiança como uma variável dependente em uma perspectiva comparada entre indústrias, foi conduzida uma pesquisa com o uso de questionários no período de julho a outubro de 2004 no Brasil, identificando os níveis de confiança dentro de sete empresas privadas. As empresas foram classificadas em três diferentes grupos: Velha Economia, Nova Economia e categoria alternativa. Duas dimensões singulares de confiança foram consideradas: confiança na gestão e confiança interpessoal. Enquanto a primeira se refere aos antecedentes da confiança, a última diz respeito a específicos relacionamentos de confiança entre pessoas. Os resultados do estudo apresentam evidências de que alta incerteza e instabilidade institucional, relacionada a arcabouços institucionais específicos referentes a indústrias, podem limitar o desenvolvimento da confiança na gestão e da confiança interpessoal.

Palavras-chave: incerteza institucional, confiança na gestão, confiança interpessoal.

1. INTRODUCTION

This article analyzes the impact of environmental uncertainty on trust relationships within business organizations. Environmental uncertainty may affect trust relationships significantly. When faced with an uncertain future,

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individuals change their expectations and behave differently in the present. Long-term expectations cease to be the most rational strategy for them. Mainly due to the present financial and economic crisis, which has raised environmental uncertainty significantly, this article provides relevant information for a better understanding of its consequences on trust relationships within firms.

In general, a business facing a high degree of uncertainty requires more flexibility and decentralization in order to achieve faster market responses. Internally, it demands ongoing reorganizations, such as constant changes in production processes and in the allocation of resources (informational, physical or human). When one considers, in particular, the new competitive market economies, **exogenous uncertainties** create a need for the reallocation of scarce resources in the short-term. The lack of accurate information or very frequent new information within the firm dictates internal changes that affect organizational behavior.

Accordingly, Milliken (1987, p.136) defined uncertainty as:

- “an individual’s perceived inability to predict something accurately because of lack of information or an inability to discriminate between relevant and irrelevant data”.

This suggests a change in the way people interact and their expectations about and contributions to processes. People may be reallocated or even replaced for the organization to cope with the new external demands. Moreover, as soon as those changes occur more often, the internal environment becomes more unstable (FURUBOTN and RICHTER, 2001, p.23-24). Instability refers to the frequency of changes within the environment.

Mayo (1945, p.56) argues that the instability of employment, which upsets the long but necessary socialization period, is the chief enemy of the development of social norms. This means that constant changes in routines, customs, traditions, and conventions are informal constraints that shape peoples’ lives and informally direct social systems. Instability may vary according to different institutional frameworks, affecting the potential development of trust differently. Hömann *et al.* (2002, p.6) note possible differences in the levels of trust among different institutional arrangements concerning the degree of instability:

- “the way trust evolves depends on the stability of the environment. In this context, we might expect differences between established market economies and transition economies”.

Zucker (1986, p.54) also argues that business instability disrupts that trust already established within the social system. On the other hand, stability reduces exploitive and short-term maximizing behaviors, besides providing a trustworthy environment, thus reducing the risk of harm and damage. Yamagishi (2003, p.360) comments that:

- “the stable nature of social and organizational relations reduces social uncertainty and provides security within such relationships”.

Under **environmental uncertainty**, one expects levels of trust within organizations to change because the state of our interactions can change; otherwise, interactions might soon appear to come to an end. Therefore, environmental uncertainty restricts the development of trust within firms because of the growth of behavioral uncertainty. Paradoxically, as Coleman (1990, p.91) noted, when exogenous uncertainty is high and its value is not precisely calculated, enforceable contracts cannot be used easily, making other social arrangements necessary. Therefore, the higher the environmental uncertainty, the greater the need to incorporate risk into decisions, and the greater the need for trust. As Sako and Helper (1998, p.394) note:

- “the greater the degree of **environmental uncertainty**, the greater the benefit from being able to trust a trading partner, because trust facilitates decision making in unanticipated circumstances”.

The article is structured as follows: in Section 2, we define managerial trust and interpersonal trust dimensions. In Section 3, we provide a definition and observe the sources of environmental uncertainty. In Section 4, by taking the information from Zanini (2007), we empirically analyze the consequences of environmental uncertainty on managerial trust and interpersonal trust. Finally, Section 5 presents the article’s conclusions.

2. MANAGERIAL AND INTERPERSONAL TRUST WITHIN ORGANIZATIONS

Trust has been approached from a large number of empirical and conceptual perspectives. A review by Rousseau *et al.* (1998) of a cross-disciplinary array of trust research and theory identified convergence around the following definition of trust, proposed by Mayer, Davis and Schoorman (1995, p.712):

- “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”.

The implicit role of trust in the coordination and control of many organizational tasks has been seen, for example, to facilitate the knowledge transfer process (ROBERTS, 2000; ROLLAND and CHAUVEL, 2000), to improve organizational efficiency and productivity (BRADACH and ECCLES, 1989; RING and VAN DE VEN, 1992; LANE and BACHMANN, 1998; SAKO 1998), to be associated with the effectiveness and quality of organizational communication (MUCHINSKY, 1977; EARLEY, 1986), to be linked to employee citizenship

and cooperative behaviors (AXELROD, 1984; McALLISTER, 1995), and to reduce transaction costs (CHILES and McMACKIN, 1996; BUTTER and MOSCH, 2003). Moreover, Mayer, Davis and Schoorman (1995) link trust to leadership effectiveness, teamwork and labor relations.

In this study, we acknowledge two different trust constructs: **managerial trust** and **interpersonal trust**. The former refers to the **antecedents of trust**, whereas the latter concerns a specific **person-to-person** trust relationship.

Managerial trust concerns “trustworthy managerial behavior” (WHITENER *et al.*, 1998, p.514), i.e., the sorts of behavior that managers may resort to in order to build trust. It refers to employees’ perceptions of managerial trust behaviors and appears to be the **antecedent of trust**.

Interpersonal trust refers to an individual’s willingness to engage in a trust relationship with a specific individual or group. Accordingly, Hardin (2002) argues that trust is essentially a three-part relation defined not only by the characteristics of the trustor (A) and the trustee (B), but also by a specific transactional domain or context (X) in which their relation is embedded. According to Hardin (2002), trust is an “encapsulated interest” and the trustor’s expectations of the trustee’s behavior depend on the assessment of some of the trustee’s motivations. Ripperger (1998, p.93) provides further insights, arguing that two independent conditions have to be satisfied in order to achieve cooperative actions based on interpersonal trust: the coexistence of an expectation of trust and a trust action.

Regarding managerial trust measures, Whitener *et al.* (1998) identified the characteristics of managerial trust as behavioral consistency, behavioral integrity, sharing and delegation of control, communication and demonstration of concern. Behavioral consistency is the perception that the behavior of a trustee (manager) is predictable and reliable. Behavioral integrity, according to Dasgupta (1988), is the belief that management tells the truth and keeps its promises to employees. Several studies lend support to the notion that employee trust in management is influenced by management’s behavioral integrity and consistency (BUTLER JR., 1991; RING and VEN DE VEN, 1992; MAYER, DAVIS and SCHOORMAN, 1995). Employees often see sharing and delegation of control as an expression of management’s confidence, trust and respect in and for them (ROSEN and JERDEE, 1977). Tyler and Lind (1992) found that employees value being involved with and a part of organizational decision-making, because this indicates that the organization values their contributions. According to Driscoll (1978), employees’ trust in management is greater when they are content with the degree of their involvement with and participation in organizational decision-making and in the determination of their work roles. Studies in organizational communication have identified accuracy of information, explanation for decisions and openness as the three key attributes of employee trust in management. O’Reilly and Rob-

erts (1974), O’Reilly (1977) found a strong association between employees’ perception of managers’ or supervisors’ trustworthiness and the accuracy of the information that is passed on from managers or supervisors to employees. Moreover, an open and free flow of information improves employees’ trust (BUTLER JR., 1991). Other studies on building employee trust emphasize showing concern for employees’ needs and interests, respecting their rights and apologizing to them for unpleasant consequences (GREENBERG, 1993; KONOVSKY and PUGH, 1994; LIND, 1997).

Regarding interpersonal trust measures, Gillespie (2003) developed the Behavioral Trust Inventory (BTI). This was specifically designed to assess willingness to being vulnerable in interpersonal work relationships. Willingness to being vulnerable comprised two different factors, characterized by Reliance and Disclosure. The tool was designed to assess interpersonal trust in work relationships between leaders and their followers, and among peers. It has also been used to assess the trust of leaders and other team members in the work team.

3. ENVIRONMENTAL UNCERTAINTY IN THE NEW ECONOMY

Observing economic activities by means of a cross-industrial analysis, an **industry-specific institutional framework** provides a set of common characteristics (as constraints) for managerial decisions based on common variables related to specific market dynamics. This set of **industry-specific institutional constraints** can be based on a combination of institutional variables, such as specific political and legal constraints for a given industry, the state of technology, market dynamics and cultural parameters embedded in the industry. Thus, the level of competition, the set of legal rules and governmental policies, the barriers to market entry, the availability of substitutes, the market price of products / services, the nature of the production systems, the transaction atmosphere and the required degree of human resources specialization are critical variables that ultimately influence the development of trust, by increasing uncertainty. For example, Anderson and Gatignon (2005, p.420) observe that technological innovations spread differently among industries, depending on certain factors, such as overall competitiveness, reputation, market strength, demand uncertainty and professionalization. Consequently, firms from the same industry tend to share a set of common opportunities and risks in determining their strategies.

High levels of uncertainty and instability can better characterize the business environment in which firms in the information and communication technology industry (ICT) operate. This environment falls under the paradigm of the **New Economy**. It has substantially changed the market dynamics toward a more competitive model worldwide, mainly due to

the liberalization and privatization processes; it has established new flexible network-based forms of production as a response to institutional uncertainties, such as alliances, subcontracting networks, joint ventures and clusters of interconnected firms; and it has affected the work environment, by shifting traditional labor agreements from a **relational contract model** to a more **transactional model** (BURTON-JONES 1999, p.53).

The New Economy (NE) can be defined as a set of **institutional innovations**, as a new macroeconomic configuration in which the advancement of information and communication technologies comprises its means and its driver. What characterizes the NE is the impact of major political, economic and technological institutional changes throughout the economy. This impact, however, affects different industries to different extents. Argandona (2003) discusses how the NE has affected, to varying degrees, the economy as a whole and the different industries. According to the author, the group of firms strongly characterized by the NE effects accounts for the production of goods and services based on information and communication technologies. He highlights:

- “Strictly speaking, the new economy expresses the impact of the technological revolution developed around information and communications, first in the industry that produces ICT (information and communication technology) goods and services; second, in the industries that use these goods as production capital; and third, in the other industries and in the economy as a whole” (ARGANDONA, 2003, p.4).

The ICT industry comprises a variety of technological segments. However, because the spread of ICT across the economy in past years has centered on the new telecom operators and suppliers, the firms in the first group are to be found mainly in the telecom industry (FRANSMAN 2002, p.45-49). They focus on information production, storage, and distribution and their end-activity is to offer technological solutions in the computer and telecom sectors specifically. These firms have unique features as a result of the influence of a set of institutional innovations. The consequences of the institutional innovations that best describe the New Economy are the configuration of a new business environment under high levels of environmental uncertainty, which dictates that firms engage in continuous adaptation to many exogenous changes. We identify three major sources of inter-related environmental uncertainties (figure on the right).

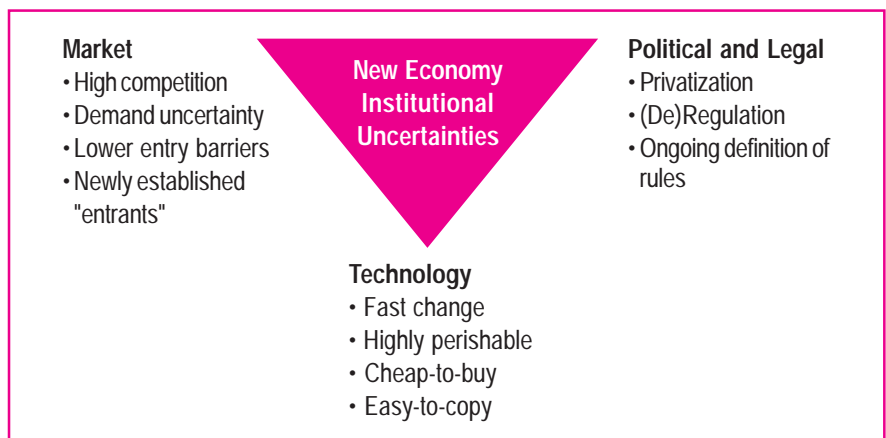
- Uncertainties about market conditions — characterized by deregulated entry barriers, high competition, uncertain and irregular requirements, and the need to manage increasingly complex technologies in a short time span.

- Uncertainties due to legal and political institutional change — removal of the barriers to the mobility of capital, goods and services; market liberalization and deregulation (privatizations); and state of the process of regulating competition between firms after the privatization process. Often, because of the regulation process, such firms operate under market rules that are undefined or undergoing definition.
- Uncertainties surrounding constant technological changes, the ongoing technology innovation process, and the possible pathways and diversification of technology. Here, one should also take into account those uncertainties that concern knowledge—intensive technological production.

4. EMPIRICAL SURVEY ON TRUST

To evaluate the consequences of uncertainty on trust, we analyze the results of a large database from Zanini (2007), the result of a large-scale empirical survey of seven Brazilian firms. A questionnaire-based survey on trust as a dependent variable in a cross-industrial comparison was conducted from July to October 2004 in Brazil, to determine the levels of **managerial trust** and **interpersonal trust**. According to Zanini (2007, p.260), 2,140 questionnaires were distributed in the seven participating firms and 1,643 questionnaires were filled in and collected. Thus, the total rate of response was 76.78%. Data cleansing, however, reduced the sample to 1,621 questionnaires considered valid.

The study classified firms into three groups: Old Economy (OE) firms, New Economy (NE) firms, and an Alternative category (ZANINI, 2007, p.173). Below, we present the classification criteria (table 1). Firms’ rates of response were considered statistically satisfactory for the purposes of the study and sufficient observations were obtained to establish two main sub-samples for comparison purposes: the NE sample with 788 observations and the OE sample with 645 observations.



Sources of Institutional Uncertainties in the New Informational Economy

Source: Zanini (2007, p.141).

The remaining 188 questionnaires formed the Alternative sample.

Table 1

Classification of the Organizations in the Study

Industry	Company Name in the Study
New Economy (NE)	
Telecommunications	Telecom 1
Telecommunications	Telecom 2
Telecommunications	Telecom 3
Old Economy (OE)	
Mining	Mining
Steelworks	Steelworks
Petrochemical	Petrochemical
Alternative (A)	
Media	Media

4.1. Criteria for classification of the organizations in the study

The criteria proposed for selecting firms in the Zanini (2007) study had four relevant features, defined in accordance with the literature review and empirical observation of the degree to which those organizations were affected by the issues covered by this research. The first criterion refers solely to the industrial segment. The other criteria are aligned with certain industry-specific characteristics. The said study classified firms by observing the impact of technological innovations on the industry through its effects on estimated demand (expectation of permanence of future demand for the products), the relevance of technological innovation and strength of competition, and the relevance of the diversification of production systems and products for the company's survival in the market. It was possible to identify these relevant aspects more precisely from the data collected from the firms used to validate the company clusters. Thus, the Zanini (2007) classification, which formed the basis for classifying the firms studied in the present survey, was:

- the industrial segment;
- the nature of the production process;
- the dependence on technological innovation; and
- the market volatility.

Details of these four elements follow.

• Industrial segment

The NE firms were classified primarily as producers, providers or network operators of ICT services — namely, ICT industry enterprises. As observed, NE firms have held a historical role in the evolution of ICT. However, the NE and the OE (the traditional manufacturing industrial economy)

are not mutually exclusive. Thus, the NE affects the economy to different degrees. As for OE firms, they only use ICT services as means of production, but not as an end *per se*.

• Nature of the production process

The study looks at the production process according to the impact of estimated future demand on the stability of organizational design, of the division of functions, and of the definition of the personnel's functions. This feature concerns the intensity of external changes and the need for reorganization, as well as flexible organizational structures and labor. In industries that we define as belonging to the OE, such as steelworks, mining and synthetic rubber, the expectation that their product will continue being consumed in 20 years time is very high. The transformation of production systems and methods is relatively slow and, though these industries may resort strongly to new technologies, these are merely a means of production, not an end. These firms do not sell technology. The relatively slow changes in estimated demand in OE sectors allow for a continuous and incremental improvement process, while the work force is educated in parallel, to keep up with the innovations. Technological development is incremental and occurs mainly within the firms' research and development (R&D) labs. Productive processes are relatively stable and needs, predictable, which enables long-term planning.

On the other hand, in enterprises that we define as belonging to the New Economy, such as ICT firms, it is impossible to estimate for how long a product will remain in the market. Sudden technological breakthroughs may make an entire line of products obsolete, killing demand for them. Therefore, production processes tend to change fast and the need for high flexibility stands in the way of developing stable organizational structures. Professional roles and functions are not clearly definable and the personnel are expected to construct their role while they employ their knowledge in the development of new products, services or processes. The importance of innovation and knowledge is fundamental for survival and competitiveness; here, technology development is not a means to an end, but the end in itself. In this case, it may be necessary to replace workers when new technology is acquired. Knowledge becomes a type of asset. In the case of specific investments in personnel training (due, for instance, to switching from analogical to digital technology or, recently, to replacing traditional phone systems by IP systems), the cost of retraining staff and the time it takes can constitute an incentive for the firm to simply replace personnel. Labor contracts tend to be more transactional, varying with each project or with the current technology. In the case of the OE, this relation is reversed. Since technological development occurs incrementally, the personnel tend to become the best experts in the technology used by the firm (this is the case of chemical and petrochemical enterprises,

for instance). Thus, it is highly dependent on its ability to retain its personnel in order to run properly. This enables the existence of certain Human Resources (HR) policies, such as career plans and long-term labor agreements.

- **Dependence on technological innovation**

This feature concerns the need for strong ongoing innovation processes, the application of knowledge being the key production factor in NE firms. In OE firms, although knowledge may be often applied in their production processes, susceptibility to sudden loss of competitiveness as a result of technological innovation is lower than in the NE. Therefore, firms were evaluated according to their dependence on such powerful, ongoing technological innovation processes. Because of strong competition and fast technological obsolescence, the prevalent work dynamics within the NE, where the survival of organizations depends on technological innovation, centers on the development or enhancement of information technologies. Castells (1996, p.17) describes the work dynamics that characterize and distinguish an information-based economy (informationalism, as opposed to industrialism) as:

- “the action of knowledge upon knowledge itself as the main source of productivity. Information processing focuses on improving information processing technology as a source of productivity, in a virtuous circle of interaction between technology knowledge sources and technology applications, to improve knowledge generation and information processing”.

Such dynamics are stronger in ICT industries in which technology is the product and not merely the means to produce something else.

On the other hand, what characterizes OE firms is the relatively major role of the other productive factors of industrialism. Therefore, OE firms are typically capital-intensive or labor-intensive. Their production processes tend to require a lot of capital or large numbers of workers to produce particular goods. OE firms are typically based on industrial plant and assembly lines and their activities are heavily related to economies of scale or mass production systems. Classical examples of capital-intensive industries are oil refining, the automotive industry, steelworks and the metal-mechanical industry. Classical examples of labor-intensive industries are the textile industry, agriculture and restaurants. In these cases, dependence on technological innovation is lower. Technology advances by means of incremental developments that take the form of pathways along existing technological directions. In many cases, these firms have technological developments concentrated in R&D as supporting units, or they outsource the acquisition of new technologies to external research centers, according to their productive processes and market needs, all of which yields relatively slow breakthroughs.

- **Market volatility**

This involves market uncertainties due to the threat of technological substitution, in combination with a highly competitive model. In this case, uncertainty about future demand and competition is highly dependent on technological obsolescence. The market position of such firms is driven mainly by the possibilities of radical changes in the equilibrium among players, as a result of their capacity to innovate or to stimulate new demand by creating or enhancing new technologies. Thus, market volatility is very dependent on technological volatility. The effects of market volatility are illustrated by the fast change of relative prices encouraged by strong competition and technological obsolescence. In the NE, products have shorter life cycles and are subject to constant substitution or significant improvements. Besides the threat of technological substitution, the competitive industrial model stimulates market volatility. For example, competitive models based on newly established firms (entrants) and privatized or reorganized firms (incumbents) have fostered strong competition, as in the case of the new telecom industry. Therefore, NE firms struggling in a highly competitive market and looking for competitive advantages through technological innovation are subject to constant reorganization. OE firms, on the contrary, enjoy relatively lower market volatility due to the combination of relatively slower technological change and stable demand, which allows relatively slower product change or improvements and less need for reorganizations and internal adaptations in response to environmental changes.

Therefore, according to the aforementioned features and based on the empirical observation of the reality of those organizations, the seven studied firms were classified into three different groups: representative NE enterprises were consisted of three telecom firms (Telecom 1, Telecom 2 and Telecom 3); representative OE firms consisted of Steelworks, Mining and Petrochemical concerns. Regarding several aspects, the comparison of groups proposed by Zanini (2007) was confirmed through the significant differences between the firms' profiles.

4.1.1. A media firm as an alternative enterprise

Media firms have a different set of organizational features and profile and do not fit OE or NE defining criteria. Therefore, they were classified as **Alternative** (ZANINI, 2007, p.228), following an assessment of the relevant aspects of this type of enterprise, which showed a mixed set of features from the two other groups. The media industry was considered a perfect hybrid. The critical production factor, here, is not knowledge application to foster technological innovation, as in the case of NE firms, but, rather, specific personnel (Human Capital). Concerning the first feature, a Media company

is not a producer, provider or network operator, but a high consumer of ICT services.

Although it could not be classified as part of the NE, the media firm studied is not a typically OE enterprise from a traditional industry because it has different means of production and products, combining strong use of new mass ICT, such as the Internet and TV broadcasting, with old mass technologies, such as newspapers and radio transmissions. A media firm is highly sensitive to technological breakthroughs (a typical feature of the NE). The frequency of technological change, the intensity of technological innovation, and the frequency of production system changes that characterize NE firms are of considerable importance for the survival of media enterprises, more so than for OE organizations.

Thus, the threat of technological substitution exists for the media firm in that it is a competitive advantage prerequisite. This is so because the means of production (information channel) is built into the product. Therefore, the threat of technological substitution does not lie in the technology itself as a product, but in the greater impact and relevance that its commercial use has as a means of information for the company. We see that although ICT is not the media firm's end product, the introduction of new ICT technology, in some cases, can be as threatening to it as it is to NE firms. Its assimilation and use by the media firm is a prerequisite for competing in the market, more so than for any of the OE firms.

Another dissimilar factor (highlighted in the data collected from the media company) concerns product and service diversification. It is impossible to define the precise number of products and services provided by all the media and their frequency of change, as the firm is unable to quantify the many frequent changes. This feature may ultimately define a key characteristic of the Alternative group of firms. Their **product**, i.e., information, can count on a reasonably stable and perhaps continuously growing demand, which is a feature of the OE, but the means whereby this is achieved can change as the technological paradigm evolves, which is a feature of the New Economy. In other words, the alternative channels of distribution are heavily dependent on ICT services. The existence of relative demand uncertainty refers to the adoption of new communication channels based on ICT services as alternative media channels; for instance, new communication channels, such as Interactive TV, Digital TV and Internet were not exploited, whether partially or fully, by the company as media alternatives and there was some uncertainty in connection with investing in the use of these channels as potential alternatives. This uncertainty is of the same nature as faced by ICT in estimating future demand and investing in the commercial development and maintenance of new technologies.

Therefore, according to the interviews with company managers, uncertainty is also linked to a degree of dependence on technological innovations that might generate future demand for alternative means of information, strongly tied to the New

Economy. Those uncertainties are also related with another critical competitive factor, i.e., the scale gains that result from geographic coverage. Given limited geographic scope for its commercial activities, alternative media to distribute information is a critical factor for the survival of a company that has the potential to create new products and future demand as an alternative source of profitability. Finally, its classification in the Alternative group, remarkably, was confirmed by the expert ranking in the validation of the grouping of the firms (ZANINI, 2007).

4.2. The survey questionnaire

Zanini (2007) chose two validated questionnaires from previous studies to develop his questionnaire, named the "Trust Inventory Project (TIP) — Brazil". The use of pre-tested questionnaires had the advantage of overcoming the complex and lengthy pre-testing and validation process. The original questionnaire was first developed in English and later translated into Portuguese, as the survey occurred in Brazil.

The full questionnaire used had two parts. The first, Part A, assessed **interpersonal trust** within firms through three different dimensions: trust in the supervisor, in a peer and in the work team. The second, Part B, **assessed managerial** trust behavior using a scale of five items: consistency, integrity, concern for employees' welfare, sharing and delegation of control, and communication. In the following sections, we explain the two parts of the TIP questionnaire.

4.2.1. Part A — Assessing dimensions of interpersonal trust

This was designed by Nicole Gillespie from the Melbourne Business School, University of Melbourne, Australia (GILLESPIE, 2003). It is called "Behavioral Trust Inventory" (BTI) and was originally presented in 2003, at the Academy of Management Conference, Seattle, USA. According to Ms. Nicole Gillespie, up to April 2005, this questionnaire had been used to measure interpersonal trust in eight different countries.

It was specifically designed to evaluate the willingness to be vulnerable in interpersonal work relationships. The tool aimed at assessing interpersonal trust in the work relationships between leaders and their followers, and between peers. It has also been used to assess the extent to which leaders and members trust their work team. There are 30 questions that use a 7-item Likert scale divided into 3 versions of 10 questions each, representing 3 different dimensions of trust: trust in the immediate superior, in a team member, and in the work team. The BTI formed the first part of our questionnaire with 30 questions in total: 10 assessing interpersonal trust between the respondent and his superior, 10 assessing interpersonal trust between the respondent and one chosen peer, and 10 assessing interpersonal trust between the respondent and his/her work

team. Moreover, the trust scales for each dimension are divided equally into 2 parts. The first 5 of the 10 questions of the trust scales were designed to measure trust within a specific situation related to dependence on work related tasks. The last 5 of the 10 questions of the trust scales were designed to measure trust in a specific situation related to disclosure of personal and sensitive information to others. As Gillespie (2003) observes, whereas the first 5 questions are based on **professional** forms of trust, on a more calculating basis, related to professional relationships, the last 5 questions are based on **personal** forms of trust. The latter have a clearly stronger emotional and relational basis than the first 5 questions.

4.2.2. Part B – Managerial trust

This comprises 15 questions from the 5-item Likert scale measuring managerial trust and was designed and validated by Isaiah O. Ugboro from North Carolina A&T State University, North Carolina, USA. It was originally published in the *Journal of Behavioral and Applied Management* (UGBORO, 2003).

In Ugboro’s work, managerial trust was assessed using five scales proposed by Whitener *et al.* (1998), which measured behavioral consistency, behavioral integrity, sharing and delegation of control, communication, and demonstration of concern. All of this was measured using a 3-item scale, each derived from earlier works on trustworthy managerial behavior (BUTLER JR., 1991; ROBINSON and ROUSSEAU, 1994; GREEN and UHL-BIEN, 1995; WHITENER *et al.*, 1998). Behavior consistency scales dealt with employees’ ability to predict the future behavior of management based on past behavior, whether employees generally perceive past behavior

of management as consistent, or whether they can rely on the organization’s every word. Behavior integrity is also measured using a three-item scale that dealt with whether management tells the truth to employees in all situations, if it keeps its promises to employees, and if they have been disappointed when they rely on what management says in all situations. Concern for employees’ welfare was assessed by the extent to which management takes into account employees’ welfare and interest when making organizational decisions that may affect them. Sharing and delegation of control was assessed by employees’ perception of their involvement in organizational decision-making, signifying how the organization values their contributions. Communication was assessed by the accuracy of information, explanation of decisions and openness as three key attributes of employees’ trust in management.

5. STUDY RESULTS

The study used the comparison of means, i.e., the Analysis of Variance (ANOVA/t-test) to assess the levels of managerial trust and interpersonal trust for the three study samples: the NE sample, the OE sample and the Alternative sample. Table 2 shows the results of the means comparison for **managerial trust**. Tables 3, 4 and 5 show the results of the means comparison for **interpersonal trust**. These tables present the variable number (Var.) associated with its specific statement, the respective *p*-value, the corresponding means of each sub-sample (New Economy sample, noted as [NE], Old Economy sample, noted as [OE] and Alternative sample, noted as [A]) and the relationship between the means of these sub-samples according to the multiple comparison test.

Table 2
Managerial Trust Measures

Var.	Statements	Dimension	p-value	Means			Statistical Difference
				New	Old	Alt	
B 01	Based upon the past decisions of management of this organization, I am able to predict what management will do in the future.	Consistency	< 0.0001	2.86	3.89	3.23	OE > NE > A
B 02	Since my employment in this organization, management's behavior and decisions have been consistent.		< 0.0001	3.12	4.01	3.23	OE > NE, OE > A
B 03	I can always rely on every word of the management of this organization.		< 0.0001	2.95	3.95	3.14	OE > NE > A
B 04	The management of this organization tells the truth to employees in all situations.	Integrity	< 0.0001	2.95	3.82	3.21	OE > NE > A
B 05	The management of this organization always keeps its promise to employees.		< 0.0001	3.17	4.12	3.36	OE > NE > A
B 06	I have never been disappointed whenever I rely on what management says in all situations.		0.0003	2.94	3.88	3.10	OE > NE, OE > A

(Continues...)

Table 2
Managerial Trust Measures

(...continued)

Var.	Statements	Dimension	p-value	Means			Statistical Difference
				New	Old	Alt	
B 07	In this organization, management seeks the inputs of employees when making decisions that affect employees.	Sharing and Delegation Authority	< 0.0001	2.71	3.74	2.98	OE > NE > A
B 08	In this organization, management makes a great deal of effort to involve employees in all aspects of the decision-making process.		< 0.0001	2.61	3.69	2.94	OE > NE > A
B 09	Whenever possible, management delegates decision-making authority to employees.		< 0.0001	2.81	3.58	2.94	OE > NE, OE > A
B 10	The management of this organization is always sensitive to the interests of employees when making critical decisions.	Demonstration of Concern	0.0007	2.72	3.74	2.87	OE > NE, OE > A
B 11	In this organization, management gives employees' welfare high priority.		< 0.0001	3.11	4.13	2.83	OE > NE > A
B 12	In all situations, management takes the extra step to protect the interests of employees.		< 0.0001	2.87	3.73	2.81	OE > NE, OE > A
B 13	The management of this organization provides employees with accurate information about the affairs of the organization.	Communication	< 0.0001	3.03	4.18	3.57	OE > NE > A
B 14	The management makes an effort always to explain major organizational decisions to the employees.		< 0.0001	3.25	4.16	3.69	OE > NE > A
B 15	The management of this organization freely shares ideas with the employees.		< 0.0001	2.83	3.70	3.09	OE > NE > A

Source: TIP database (ZANINI, 2007).

Table 3
Interpersonal Trust Measures — Trust in Superior

Var.	How willing you are to do the following with your <u>MANAGER</u> ?	p-value	Means			Statistical Difference
			New	Old	Alt	
A1	Rely on your manager's task-related skills and abilities.	< 0.0001	5.70	6.10	5.61	OE > NE, OE > A
A2	Depend on your manager to handle an important issue on your behalf.	< 0.0001	5.17	5.62	5.02	OE > NE, OE > A
A3	Rely on your manager to represent your work accurately to others.	< 0.0001	5.43	5.96	5.30	OE > NE, OE > A
A4	Depend on your manager to back you up in difficult situations.	< 0.0001	5.40	5.86	5.34	OE > NE, OE > A
A5	Rely on your manager's work-related judgments.	< 0.0001	5.36	5.81	5.23	OE > NE, OE > A
A6	Share your personal feelings with your manager.	0.0001	4.21	4.50	3.89	OE > NE > A
A7	Discuss work-related problems or difficulties with your manager that could potentially be used to disadvantage you.	< 0.0001	4.90	5.33	4.63	OE > NE, OE > A
A8	Confide in your manager about personal issues that are affecting your work.	< 0.0001	4.24	4.76	4.09	OE > NE, OE > A
A9	Discuss with your manager how you honestly feel about your work, even negative feelings and frustration.	< 0.0001	4.80	5.24	4.64	OE > NE, OE > A
A10	Share your personal beliefs with your manager.	0.0007	4.65	4.92	4.37	OE > NE, OE > A

(Response scale: 1 = Not Willing at All and 7= Completely Willing)

Source: TIP database (ZANINI, 2007, p.222).

Table 4
Interpersonal Trust Measures — Trust in a Peer

Var.	How willing you are to do the following with <u>Team Member X?</u>	p-value	Means			Statistical Difference
			New	Old	Alt	
A11	Rely on Team Member X's task-related skills and abilities.	< 0.0001	5.72	6.00	5.45	OE > NE > A
A12	Depend on Team Member X to handle an important issue on your behalf.	< 0.0001	5.33	5.67	5.17	OE > NE, OE > A
A13	Rely on Team Member X to represent your work accurately to others.	< 0.0001	5.32	5.65	5.20	OE > NE, OE > A
A14	Depend on Team Member X to back you up in difficult situations.	< 0.0001	5.42	5.84	5.51	OE > NE, OE > A
A15	Rely on Team Member X's work-related judgments.	< 0.0001	5.38	5.80	5.34	OE > NE, OE > A
A16	Share your personal feelings with Team Member X.	0.0049	4.85	5.11	4.78	OE > NE, OE > A
A17	Discuss work-related problems or difficulties with Team Member X that could potentially be used to disadvantage you.	< 0.0001	5.00	5.46	5.01	OE > NE, OE > A
A18	Confide in Team Member X about personal issues that are affecting your work.	< 0.0001	4.73	5.15	4.76	OE > NE, OE > A
A19	Discuss with Team Member X how you honestly feel about your work, even negative feelings and frustration.	< 0.0001	5.12	5.56	5.20	OE > NE, OE > A
A20	Share your personal beliefs with Team Member X.	0.0082	5.16	5.41	5.18	OE > NE

(Response scale: 1 = Not Willing at All and 7= Completely Willing)

Source: TIP database (ZANINI, 2007, p.223).

Table 5
Interpersonal Trust Measures — Trust in Work Team

Var.	How willing you are to do the following with <u>your Team?</u>	p-value	Means			Statistical Difference
			New	Old	Alt	
A21	Rely on your team's collective task related skills and abilities.	< 0.0001	5.71	6.03	5.57	OE > NE, OE > A
A22	Depend on your team to handle an important issue on your behalf.	< 0.0001	5.28	5.71	5.11	OE > NE, OE > A
A23	Rely on your team to represent your work accurately to others.	< 0.0001	5.32	5.72	5.14	OE > NE, OE > A
A24	Depend on your team to back you up in difficult situations.	< 0.0001	5.41	5.83	5.20	OE > NE, OE > A
A25	Rely on your team's collective work-related judgments.	< 0.0001	5.36	5.76	5.16	OE > NE > A
A26	Share your personal feelings with your team.	< 0.0001	4.16	4.56	4.10	OE > NE, OE > A
A27	Discuss work-related problems or difficulties with your team that could potentially be used to disadvantage you.	< 0.0001	4.55	5.12	4.45	OE > NE, OE > A
A28	Confide in your team about personal issues that are affecting your work.	< 0.0001	3.83	4.52	3.95	OE > NE, OE > A
A29	Discuss with your team how you honestly feel about your work, even negative feelings and frustration.	< 0.0001	4.33	4.99	4.51	OE > NE, OE > A
A30	Share your personal beliefs with your team.	< 0.0001	4.60	4.98	4.61	OE > NE, OE > A

(Response scale: 1 = Not Willing at All and 7= Completely Willing)

Source: TIP database (ZANINI, 2007, p.223).

Results from the TIP database (ZANINI, 2007) show that all **managerial trust** and **interpersonal trust** variables and dimensions yielded a strong statistical significance between the NE sample (higher uncertainty) and the OE sample (lower uncertainty).

The levels of **managerial trust** and **interpersonal trust** are strikingly different between the NE and the OE firms regarding the three dimensions of interpersonal trust (trust in superior, trust in peers and trust in work team) and the five dimensions of managerial trust (behavioral consistency, behavioral inte-

grity, sharing and delegation of control, communication and demonstration of concern). We verified that the NE group presented lower levels of managerial trust and interpersonal trust than the OE group. All variables of managerial and interpersonal trust dimensions of the two groups of firms yielded a high statistical difference (see tables 2, 3, 4, and 5).

The study shows the analysis of the dimension **trust in superior**, and suggests a different relationship between subordinates and superiors in OE firms vs. NE firms. In the OE, under lower environmental uncertainty, long-term socialization prospects among firm personnel are likely to produce stronger bonds of trust between subordinates and superiors, connected with dependence on work-related tasks and within specific situations that concern disclosure of personal and sensitive information. Equally, the study indicates that strong bonds of trust are more likely to be found between hierarchic peers in the OE, suggesting that, here, peers are more likely to cooperate informally. This facilitates, for instance, the tacit transfer of knowledge by the sharing of sensitive information. Moreover, in the OE, people also trust their work team more. It suggests that in OE firms work team related tasks are more likely to produce better informal cooperation and a willingness to expend extra effort to solve problems and conflicts together (DIRKS and FERRIN, 2001, p.456). Such differences in the trust levels between the NE and the OE suggest that the development of informal cooperation based on trust relationships is likely to yield better employee commitment and satisfaction in the OE. On the other hand, the lower trust levels found in NE firms suggest difficulties in developing informal cooperation.

Moreover, the study analyses the **managerial trust** dimension and suggests different employee perceptions of management trustworthiness between OE and NE firms. In the OE, with lower uncertainty and long-term prospects, employees feel that they can better predict management’s future behavior based on past behavior and rely on the organization’s every word. As compared with the employees of NE firms, who work under higher uncertainty, OE firms’ employees perceive that management tells the truth and keeps its promises to them. They see a greater concern for their welfare and interest when management makes decisions that may affect them and also see themselves as more involved in organizational decision-making, as they feel that management values their contributions. Finally, employees in OE firms perceive more accuracy and openness in the communication process.

Other data collected from participating firms enforced the relative higher uncertainty and instability and the high frequency of external and internal change in NE firms. For instance, mean customer retention expressed as a numbers of years was relatively low among the NE firms as compared to

that of OE firms. Telecom 1, Telecom 2 and Telecom 3 reported, respectively, 3 to 6, 3.5 and 3 years, whereas Mining, Steelworks and Petrochemical reported, respectively, 15, 10 and 10 years. Moreover, the planning profile of these two groups of firms reflected striking differences. Managers were asked to consider short-term (1 to 3 years), middle-term (4 to 6 years) and long-term (7 to 10 years or more) scenarios related to dominant time orientation for investments and expected results. The interviews suggested that the dominant time orientation was a critical distinguishing factor between the NE and the OE group of firms. Telecom 1, Telecom 2 and Telecom 3 presented, respectively, short-term, short-term to middle-term, and short-term scenarios, whereas Mining, Steelworks and Petrochemical all presented long-term scenarios.

Finally, the observation of differences in HR management data complements the above aspects. Observing the employee retention averages of the firms, Telecom 1, Telecom 2 and Telecom 3 posted, respectively, 3.5, 4 and 3.5 years, whereas Mining, Steelworks and Petrochemical posted, respectively, 13.5, 13 and 12.5 years. Furthermore, observing the employee turnover rates of the firms in Zanini (2007, p.308), in 2004 and 2003 respectively, we found a strong statistical significance of results (table 6).

6. CONCLUSIONS

This article is timely, in that it helps one to understand the general impact of the current financial and economic crisis on the work force, in which now faces increased environmental uncertainty. The analysis of the empirical results of Zanini (2007) provides valuable information for a better understanding of the development of **managerial trust** and **interpersonal trust** levels within business organizations, which can be seen, respectively, as **antecedents of trust** and **person-to-person trust** dimensions.

The relatively high environmental uncertainty made it possible to identify lower levels of managerial trust and interper-

Table 6
Employee Turnover Rates Comparison

Company \ Year	Employee Turnover Rates				P-value < 0.0001
	2004	2003	2002	2001	
Telecom 1	37.32	39.00	18.00		Means NE 24.0271 OE 4.2367
Telecom 2	19.50	16.42			
Telecom 3	21.10	16.85			
Steelworks	4.33	4.71	4.69	5.00	
Mining	3.70	3.90	4.40	2.16	
Petrochemical	3.40	3.02	3.59	7.94	

sonal trust in New Economy (NE) firms relative to Old Economy (OE) firms.

It was also possible to confirm the striking differences between the NE and the OE. The primary distinction identified in this study between the firms chosen to represent the NE and those of the OE was the intensity of the rupture that technological changes can create in these organizations, and which has an impact on future demand estimates. Thus, we observed that a central feature of work in the NE is dealing with uncertainty. Consequently, work conditions in the NE were also characterized as unstable and uncertain, being conducted under a short-term **transactional** perspectives. The NE environment suggests that trust could be highly desirable as a control mechanism to coordinate specific tasks connected with the nature of information and knowledge-intensive production systems. However, the limitations of the industry-specific in-

stitutional framework stand in the way of the development of appropriate levels of managerial trust and interpersonal trust. In other words, even if trust is highly desirable, this study confirmed empirically that NE firms face considerable constraints in developing trust as an efficient mechanism, due to high uncertainty and instability. Thus, the study provides substantial evidence that environmental uncertainty related to industry-specific institutional frameworks constrains the development of managerial trust and interpersonal trust. It also provided empirical evidence that firms, acting under different industry-specific institutional framework constraints, differ in their capacity to develop trust in their hierarchies. More specifically, it we found that under the effects of higher relative uncertainty and instability, firms face significant limitations in the development of the structuring elements needed to establish and maintain managerial trust and interpersonal trust. ◆

NOTE

In this regard, the study used the Tukey-Kramer HSD multiple comparison test for an α set at 0.10. To facilitate interpretation of the data and to aid future Meta-Analyses, the p -values were reported. The study highlighted and considered, for inferential analyses, p -values <0.10 . In the unlikely event that there are problems with the parametric assumptions (though, here, outliers are unlikely in the scaled

ranges that we are working with for the questions in the survey), the study used the Wilcoxon Rank Sum Test for the ANOVA comparisons and the Wilcoxon Signed Rank Test for binary Comparisons. In this case, we used the Hettmansperger (1991) MCT derived for the Kruskal-Wallis test, which is the same as the Wilcoxon test. This is a simple sample size-weighted Bonferroni-type adjustment.

REFERENCES

- ANDERSON, E.; GATIGNON, H. Firms and the creation of new markets. In: MÉNARD, C.; SHIRLEY, M.M. (Ed.). *Handbook of New Institutional Economics*. New York: Springer, 2005. p.401-431.
- ARGANDONA, A. The new economy: ethical issues. *Journal of Business Ethics*. New York, v.44, n.1, p.3-22, Apr. 2003.
- AXELROD, R. *The evolution of cooperation*. New York: Basic Books, 1984.
- BRADACH, J.L.; ECCLES, R.G. Price, authority and trust: from ideal types to plural forms. In: THOMPSON, G. et al. (Ed.). *Markets, hierarchies & networks — the coordination of social life*. London: Sage, 1989/1998. p. 277-292. (Originally published in: *Annual Review of Sociology*, London, v.15, n.34, p.97-118, 1989).
- BURTON-JONES, A. *Knowledge capitalism — business work and learning in the new economy*. London: Oxford University Press, 1999.
- BUTLER JR., J.K. Towards understanding and measuring conditions of trust: evolution of a condition of trust inventory. *Journal of Management*, New York, v.17, n.3, p.643-663, Feb. 1991.
- BUTLER JR., J.K.; MOSCH. *Trade, trust and transaction costs*. Department of Economics, Vrije Universiteit Amsterdam, and Tinbergen Institute, Discussion paper. Versão de 7 de outubro de 2003. Disponível em: <papers.ssrn.com/sol3/papers.cfm?abstract_id=459501>. Acesso em: 13 jul. 2004.
- CASTELLS, M. The rise of the network society. In: *The information age — economy, society and culture*, Oxford, UK: Blackwell, 1996/2000. v.3.
- CHILES, T.H.; McMACKIN, J.F. Integrating variable risk preference, trust and transaction cost economics. *The Academy of Management Review*, New York, v.21, n.1, p.73-99, Mar. 1996.
- COLEMAN, J. *Foundations of social theory*. Cambridge, MA: Harvard University Press, 1990.
- DASGUPTA, P. Trust as a commodity. In: GAMBETTA, D. (Ed.). *Trust: making and breaking cooperative relations*. Cambridge, MA: Basil Blackwell, 1988.
- DIRKS, K.T.; FERRIN, D.L. The role of trust in organizational settings. *Organization Science*, Pittsburgh, v.12, n.4, p.450-467, July / Aug. 2001.
- DRISCOLL, J.W. Trust and participation in organizational decision making as predictors of satisfaction. *Academy of Management Journal*, New York, v.21, n.1, p.44-56, Mar. 1978.

- EARLEY, P.C. Trust, perceived importance of praise and criticism, and work performance: an examination of feedback in the United States and England. *Journal of Management*, New York, v.12, n.4, p.457-473, Dec. 1986.
- FRANSMAN, M. *Telecoms in the internet age* — from boom to bust to...? New York: Oxford University Press, 2002.
- FOMBRUN, C.; GARDBERG, N.; SEVER, J. The reputation quotient: a multistakeholder measure of corporate reputation. *The Journal of Brand Management*, Hampshire, v.7, n.4, p.241-255, Feb. 2000.
- FURUBOTN, E.G.; RICHTER, R. *Institutions and economic theory* — the contributions of the new institutional economics. US: The University of Michigan Press, 2001.
- GILLESPIE, N. Measuring trust in working relationships: the behavioral trust inventory. *Journal of Applied Psychology*, Melbourne, Australia: University of Melbourne, 2003.
- GREEN, G.B.; UHL-BIEN, M. Relationship-based approach to leadership: development of leader-member exchange (LMX) theory of leadership over 25 years: applying a multi-domain perspective. *Leadership Quarterly*, London, v.6, n.2, p.219-247, Summer 1995.
- GREENBERG, J. The social side of fairness: interpersonal and informational classes of organizational justice. In: CROPANZANO, R. (Ed.). *Justice in the workplace*, Hillsdale, NJ: Lawrence Erlbaum Associates, 1993. p.79-103.
- HARDIN, R. *Trust and trustworthiness*. New York: Russell Sage Foundation, 2002.
- HENKOFF, R. Getting beyond downsizing. *Fortune*, New York, v.10, n.1, p.58-64, Jan. 1994.
- HÖMANN, H.; KAUTONEN, T.; LAGEMAN, B.; WELTER, F. Entrepreneurial strategies and trust: a position paper. In: HÖMANN, H.; WELTER, F. (Ed.). *Entrepreneurial Strategies and Trust*, Working Papers of the Research Centre for East European Studies, n.37, Bremen, p.04-10, June 2002.
- KONOVSKY, M.A.; PUGH, S.D. Citizenship behavior and social exchange. *Academy of Management Journal*, New York, v.37, n.3, p.659-669, Dec. 1994.
- LANE, C.; BACHMANN, R. *Trust within and between organizations* — conceptual issues and empirical applications. UK: Oxford University Press, 1998.
- LIND, E.A. Litigation and claiming in organizations: antisocial behavior or quest for justice? In: GIACALONE, R.A.; GREENBERG, J. (Ed.). *Antisocial behavior in organizations*. Thousand Oaks, CA: Sage, 1997.
- MAYER, R.C.; DAVIS, J.H.; SCHOORMAN, F.D. An integrative model of organizational trust. *Academy of Management Review*, New York, v.20, n.3, p.709-734, July 1995.
- MAYO, E. *The social problem of an industrial civilization*. Boston: Graduate School of Business Administration, Division of Research, Harvard University, 1945.
- McALLISTER, D.J. Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal*, New York, v.38, n.1, p.24-59, Feb. 1995.
- MILLIKEN, F.J. Three types of perceived uncertainty about the environment: state, effect and response uncertainty. *Academy of Management Review*, New York, v.12, n.1, p.133-143, July 1987.
- MUCHINSKY, P.M. An intraorganizational analysis of the Roberts and O'Reilly organizational communication questionnaire. *Journal of Applied Psychology*, Washington, v.62, n.2, p.184-188, Apr. 1977.
- O'REILLY, C.A. Supervisors and peers as information sources, group supportiveness, and individual decision-making performance. *Journal of Applied Psychology*, Washington, v.62, n.5, p.632-635, Oct. 1977.
- O'REILLY, C.A.; ROBERTS, K.H. Information filtration in organizations: three experiments. *Organizational Behavior and Human Performance*, London, v.11, n.2, p.253-265, Summer 1974.
- RING, P.S.; VAN DE VEN, A.H. Structuring cooperative relationships between organizations. *Strategic Management Journal*, New York, v.13, n.7, p.483-498, Oct. 1992.
- RIPPERGER, T. *Ökonomik des Vertrauens*. Tübingen: Mohr Siebeck Press, 1998.
- ROBERTS, J. From know-how to show-how? Questioning the role of information and communication technologies in knowledge transfer. *Technology Analysis and Strategic Management*, London, v.12, n.4, p.429-443, Dec. 2000.
- ROBINSON, S.L.; ROUSSEAU, D.M. Violating the psychological contract: not the exception but the norm. *Journal of Organizational Behavior*, New York, v.15, n.3, p.245-259, May 1994.
- ROLLAND, N.; CHAUVEL, D. Knowledge transfer in strategic alliances. In: DESPRES, C.; CHAUVEL, D. (Ed.). *Knowledge horizons: the present and the promise of knowledge management*. Boston, MA: Butterworth Heinemann, 2000. p.225-236.
- ROSEN, B.; JERDEE, T.H. Influence of subordinate characteristics on trust and use of participative decisions strategies in a management simulation. *Journal of Applied Psychology*, New York, v.62, n.5, p.628-631, Oct. 1977.
- ROUSSEAU, D.M.; SITKIN, S.B.; BURT, S.R.; CAMERER, C. Not so different after all: a cross-discipline view of trust. *Academy of Management Review*, New York, v.23, n.3, p.393-404, Jan. 1998.
- SAKO, M. Does trust improve business performance? In: LANE, C.; BACHMANN, R. (Ed.). *Trust within and between organizations*. Oxford: Oxford University Press, 1998.
- SAKO, M.; HELPER, S. Determinants of trust in supplier relations: evidence from the automotive industry in Japan and

REFERENCES

- the United States. *Journal of Economic Behavior & Organization*, New York, v.34, n.3, p.387-417, Mar. 1998.
- TYLER, T.R.; LIND, E.A. A relational model of authority in groups. In: ZANNA, M. (Ed). *Advances in experimental social psychology*. Academic, San Diego, CA, v.25, n.1, p.115-191, July 1992.
- UGBORO, I.O. Influence of managerial trust on survivors perceptions of job insecurity and organizational commitment in a post restructuring and downsizing environment. *Journal of Behavioral and Applied Management*, Colorado, v.4, n.3, p.231-253, Winter 2003.
- WHITENER, E.M.; BRODT, S.E.; KORSGAARD, M.A.; WERNER, J.M. Managers as initiators of trust: an exchange relationship framework for understanding managerial trustworthy behavior. *Academy of Management Review*, New York, v.23, n.3, p.513-530, July 1998.
- YAMAGISHI, T. Cross-societal experimentation on trust: a comparison of the United States and Japan. In: OSTROM, Elinor; WALKER, James (Ed.). *Trust and reciprocity*. New York: Russell Sage Foundation, 2003.
- ZANINI, M.T. *Trust within organizations of the new economy — a cross-industrial study*. Deutscher Wiesbaden: Universitäts-Verlag, 2007.
- ZUCKER, L.G. Production of trust: institutional sources of economic structure 1840-1920. *Research in Organizational Behavior*, New York, v.8, n.1, p.53-111, July 1986.

ABSTRACT

The impact of environmental uncertainty on trust relationships

This article aims to analyze the consequences of environmental uncertainty on trust relations within business organizations. Specifically, this study tries to understand the possible differences in the levels of trust between two paradigms: the Old Economy and the New Economy. The unique institutional innovations that best characterize the New Economy, in the form of environmental uncertainty and instability, set considerable constraints on the development of trust. In order to evaluate the consequences of uncertainty on trust, we analyze the results of a large database presented by Zanini (2007). Addressing trust as a dependent variable in a cross-industrial comparison, a questionnaire survey was carried out from July to October 2004 in Brazil, assessing the levels of trust within seven private-sector companies. The study classified the companies into three different groups: 'Old Economy' companies, 'New Economy' companies, and an alternative category. Two singular trust dimensions were considered: trust in management and interpersonal trust. Whereas the first refers to the antecedents of trust, the latter refers to specific person-to-person trust relationships. This study provides substantial evidence that high institutional uncertainty and instability related to industry-specific institutional frameworks can constrain the development of trust in management and interpersonal trust.

Keywords: environmental uncertainty, trust in management, interpersonal trust.

RESUMEN

El impacto de la incertidumbre institucional en las relaciones de confianza

El objeto en este artículo es analizar el impacto de la incertidumbre institucional sobre las relaciones de confianza dentro de las organizaciones. Específicamente, se busca comprender las posibles diferencias en los niveles de confianza entre dos paradigmas: la Vieja Economía y la Nueva Economía. Innovaciones institucionales singulares que mejor caracterizan la Nueva Economía, en la forma de incertidumbre e inestabilidad ambiental, limitan el desarrollo de la confianza. Para evaluar las consecuencias de la incertidumbre en lo referente a confianza, se analizaron los resultados de un amplio banco de datos presentado por Zanini (2007). Enfocando confianza como una variable dependiente dentro de una perspectiva de análisis comparativo entre industrias, se llevó a cabo en Brasil una investigación con el uso de cuestionarios en que se buscó identificar los niveles de confianza dentro de siete empresas privadas, en el período comprendido entre julio y octubre de 2004. El estudio clasificó a las empresas en tres diferentes grupos: "Vieja Economía", Nueva Economía" y una categoría alternativa. Se tuvieron en cuenta dos dimensiones singulares: confianza en la gestión y confianza interpersonal. Mientras que la primera se refiere a los antecedentes de la confianza, la última se refiere a las relaciones específicas de confianza entre personas. Los resultados presentan evidencias de que tanto la alta incertidumbre como la inestabilidad institucional, referentes a entramados institucionales específicos de industrias, pueden limitar el desarrollo de la confianza en la gestión y de la confianza interpersonal.

Palabras clave: incertidumbre institucional, confianza en la gestión, confianza interpersonal.