

AN EVALUATION OF ORGANIZATIONAL TRUST: PSYCHOMETRIC CHARACTERISTICS OF THE ITALIAN VERSION OF WORKPLACE TRUST SURVEY (I-WTS)

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Scholars have identified trust as a significant component of successful business practice for firms competing in the global market where risk and uncertainty are growing. Workplace Trust Survey (WTS; Ferres 2002; Ferres & Travaglione, 2003) provides reliable assessment of coworkers, supervisor, and organizational trust. Taking into account also the German version of WTS, an Italian version (I-WTS) was developed. A total of 1,081 employees from different Italian organizations was surveyed. We replicated the three-factor German model using CFA. The hypothesized three-dimensional conceptualization was confirmed. The I-WTS showed both good internal consistency and psychometric characteristics. I-WTS might allow transcultural analysis, useful because of the presence of foreign multinational corporations in the Italian entrepreneurial network; or, it could be the key factor for success in firms and startups in market niches sectors like fashion, design, or non-serial productions, characterized by high levels of innovation which operate in a market at high levels of speed.

Key words: Organizational trust; Coworker trust; Supervisor trust; Italian Workplace Trust Survey; Confirmatory factor analysis.

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Why discuss workplace trust?

The construct of organizational trust seems to be of crucial importance as an interpretative key of the new organizational dynamics (Zuffo, 2015; Zuffo & Maiolo, 2015) and the related negative behaviors and feelings (i.e., job insecurity, organizational cynicism, job performance decline, etc.).

The growing interest in this issue is also demonstrated by the increasing number of publications on trust: between 1981 and 1990, two papers were published on organizational trust (scopus search), 23 between 1991-2000, 217 between 2001-2010, and 301 articles have been published in the last 5 years. In the 90s the contributions on organizational trust significantly increased with the definition of trust with most agreement among scholars dating back to 1995. According to this definition trust is “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” (Mayer, Davis, & Schoorman, 1995, p.712).

Workplace trust could be the interpretative key of the current competitive systems and of the consequent new organizational dynamics (Bartezzaghi, 2015; Zuffo, 2015; Zuffo & Maiolo, 2015), because it enables to manage the effects of competitiveness, R&D innovation (Attolico, 2012; Pero, 2015a; 2015b), the fourth industrial revolution (Schwab, 2016), and/or the employers' participation in lean production (i.e., world class manufacturing).

In addition, organizational trust could support crisis management operations (e.g., survivors, downsizing, intentions to leave, the decrease of commitment or engagement, etc.). In fact, due to the financial crisis, employees and also managers reinforce negative feelings: perceived lack of integrity (Albrecht, 2002; Dean, Brandes, & Dharwadkar, 1998; Johnson & O'Leary-Kelly, 2003), feelings of job insecurity (Goslinga, Hellgren, Chirumbolo, De Witte, Näswall, & Sverke, 2000; Sverke & Hellgren, 2002; Zuffo & Kaneklin, 2006), organizational cynicism (Andersson, 1996; Johnson & O'Leary-Kelly, 2003; Rousseau, 1990) lead employees to several counterproductive organizational behaviors.

As far as Italy is concerned, managing workplace trust is important for both the reasons described above: Italian companies, in fact, are characterized by high levels of innovation (e.g., automotive, robotics, design, fashion, etc.) and by deep crises. Despite the crisis (Istat, 2014) and the reduced investment of the Italian system in R&D, there is a high proportion of innovative companies (Istat, 2015). According to Istat (2013), 32.5% of the family microenterprises are characterized by innovative choices (product, process, organization, marketing). Moreover, some Italian firms like, for example, Alessi, Beretta, Ferrero, Geox, etc., are recognized in the world because they are highly innovative family businesses (De Massis & Frattini, 2016). Yet, concerning innovative startups, the summary of the Companies Register of the Chamber of Commerce (updated to July, the 18th 2016) counts 6,018 startups, of which 30% are specialized in production software and computer consultancy, 15.1% in R&D, 8.1% in information services, and 18.8% work in industry in the strict sense (Infocamere¹, 1st trimester 2016). The positive consequences of trust are numerous: the reduction of transactional costs (Bromiley & Cummings, 1995; Dyer & Chu, 2003; McEvily, Perrone, & Zaheer, 2003; Williamson, 1996); the improvement of job performance (Dyer & Chu, 2003); job satisfaction (Cho & Ringquist, 2011; Hopkins & Weathington, 2006; Kath, Magley, & Marmet, 2010; Perry & Mankin, 2007); organizational commitment (Aryee, Budhwar, & Chen, 2002; Poon, Radzuan, & Othman, 2006); work engagement (Lin, 2010); teamwork (Deery, Iverson, & Walsh, 2006; Jones & George, 1998; McAllister, 1995); organizational citizenship behavior (Aryee et al., 2002; Dirks & Ferrin, 2002); turnover intentions, psychological contract breach and violation (Robinson, 1996). These studies highlighted how trust may influence those variables particularly salient for organizational well-being (Kramer, 1999, 2010; Zaheer, McEvily, & Perrone, 1998) bringing out the need to capture those aspects of the current organizational contexts related to trust.

The relationship between trust and work-related stress has also been stressed in literature (Ali & Allam, 2016; Armour, 1995; Biron, Karanika-Murray, & Cooper, 2012; Comish & Swindle, 1994; Cox, Karanika, Griffiths, & Houdmont, 2007; Guinot, Chiva, & Roca-Puig, 2014; Offerman & Hellmann, 1996; Rhee, 2010; Schill, Toves, & Ramanaiah, 1980), as well as the verification of the relationship between trust and some job stress antecedents, like management style (Alston & Tippet, 2009), or context and quality of the job (Semerciöz, Hassan, & Vatansever, 2010), and outcomes, like commitment (Aryee et al., 2002; Ferres, Connell, & Travaglione, 2003; Semerciöz et al., 2010), or intentions to leave (Aryee et al., 2002; Ferres et al., 2003). Thus, trust evaluation may predict the triggering of job stress.

Several scientific papers have identified trust in its forms of relationships both between and within organizations as a very important component for business-oriented firms (McKnight, Choudhury, & Kacmar, 2002; Tyler & Kramer, 1996; Vidotto, Vicentini, Argentero, & Bromiley, 2008). Furthermore,

trust is particularly important for firms competing in the global market, where risk and uncertainty are growing and where, as cited in Huff and Kelley (2003, p. 81), “partners’ culture, values and goals may be very different (Lane, 1998)”.

As Herting (2002) stated “according to McKnight and Chervany (2000), trust is generally defined as the level of confidence that one individual has in another’s competence and his or her willingness to act in a fair, ethical, and predictable manner” (p. 5). More specifically, Cummings and Bromiley (1996) propose a specific description of organizational trust, as “an individual’s belief, or a common belief among the members of a group, according to which another individual or group (a) makes good faith efforts to behave in accordance with any commitments both explicit or implicit, (b) is honest in whatever negotiations preceded such commitments, and (c) does not take excessive advantage of another even when the opportunity is available” (p. 303).

Since the publication of the article by Mayer et al. (1995), organizational trust has become a focal point in research, as well as in productive contexts, in trade transactions, and in political and institutional environments.

Covey (2006) deals with trust as a managerial product to use in companies he worked for (e.g. Deloitte, Dell, Campbell Soup, etc.). Dietz and Den Hartog (2006) conducted a deep analysis of the extensive organizational and management literature on trust to study the operationalization of workplace trust in the extent to which these measures “reflect the essential elements of the existing conceptualization of trust inside the workplace” (p. 557).

It is significant to underscore that organizational trust “represents an individual’s understanding of a relationship” (Dirks & Ferrin, 2001, p. 456); hence, despite its relational nature, it is reductive to consider trust only as “intimate relationships rather than organizational interactions” (Ferres & Travaglione, 2003, p. 4); or as a personality trait (Rosenberg, 1957); or as a dyadic interpersonal construct (Larzelere & Hutson, 1980; Rempel & Holmes, 1986). Also Schein (1999a; 1999b; 2010) underlines how trust is a specific aspect that connotes the organizational culture and influences deeply the relationship systems.

Starting from the contribution of Luhmann (1979), an increasing number of scholars argued that trust and distrust are two different constructs (Lewicki, McAllister, & Bies, 1998; Luhmann, 1979; Sitkin & Roth, 1993) and, although related, they can be treated as separate and not as opposite poles along a single continuum. Trust and distrust both contribute to reducing social complexity (Mishra, 1996) and can co-exist at the same time, especially in situations of ambiguity and complexity, as may be the organizational contexts. The difference between trust and distrust emerges more clearly when you cross these variables, obtaining four different possible situations within organizations: low trust and low distrust, low trust and high distrust, high trust and low distrust, high trust and high distrust (Lewicki et al., 1998).

Dietz and Den Hartog (2006) underlined the importance of this construct through a review of trust measures developed up to 2004: they discovered 14 instruments measuring organizational trust, assuming different referents. According to Dietz and Den Hartog, conceptualization and definition of trust in organizations highlight four principal aspects: (a) the different forms trust can take, (b) the content of trust, (c) the sources of evidence informing it, and (d) the referent of trust. Dietz and Den Hartog (2006) found other measures, of course: Cook and Wall’s (1980) six-item scale, regularly used by some authors (Ferres et al., 2003; Gould-Williams, 2003; Kiffin-Petersen & Cordery, 2003); Roberts and O’Reilly’s (1974) four-item scale; or single-item measures: “Management at this workplace can be trusted to tell things the way they are” (Blunsdon & Reed, 2003; Morgan & Zeffane, 2003). They did not cover measures for interorganizational trust.

It seems that the most corroborated review on the instruments measuring trust is still the one by Dietz and Den Hartog (2006); McEvily and Tortoriello, in 2011, published a work on measuring trust in organizational research, but no new instruments were referred to, rather the authors concluded that the state of the art of trust measurement in the organizational literature was still rudimentary because of the lack of replication, the weak evidence in support of the construct, and the limited consensus on operational dimensions. Still in 2011, Pirson and Malhotra cited the work of Dietz and Den Hartog (2006) in mentioning the existing scales on organizational trust, and Nienaber, Romeike, Searle, & Schewe (2015) found that the “field of trust research appears potentially myopic, being currently too homogeneous in both its theoretical approaches and methodological designs” (p. 519). Also PytlikZillig et al. (2016) have recently tried to fill the gap on the dimensionality of trust.

As for the (a) forms of trust, the existing measures mainly consider only the belief, whilst few tests consider the respondent’s intention to act, and still fewer actual trust-inspired behaviors. More specifically, five of the existing 14 instruments focus exclusively on the trustor’s beliefs — among these, Cummings and Bromiley (1996), who omitted from their short-form inventory the items from their long-form measure pertaining to intended behavior.

With reference to the (b) content of trust, the authors consider four attributes of the trustee to be the most salient because of their frequent appearance: ability, benevolence, integrity, and predictability. They also stated that each of these four content components is significant in itself since the decision to trust someone might be expected to founder if one considers any of the four qualities to be absent in the other party. Thus, “the four components are interdependent (. . .) and the precise combination will be idiosyncratic to the circumstances and to the trustor” (Dietz & Den Hartog, 2006, pp. 560-561).

A considerable debate exists in the literature on the (c) sources of evidence for the respondent’s beliefs about the referents’ trustworthiness, and the decision to trust them. Lane and Bachmann (1998) consider as influencing variables microlevel factors (those variables relationship-specific), and macrolevel factors (those external to the relationship). Whitener, Brodt, Korsgaard, and Werner (1998) distinguish between individual, relational, and organizational factors, while Payne and Clark (2003) divide them into dispositional, interpersonal, and situational factors. In sum, the focus is principally on interpersonal sources (particularly on the trustor’s perceptions of the conduct and character of the trustee; Dietz & Den Hartog, 2006).

As regards the (d) referent of trust, six different kinds of relationships are measured by the 14 instruments (Dietz & Den Hartog, 2006): between employee/s and her/his immediate manager/s (e.g., Gillespie, 2003; Spreitzer and Mishra, 1999; Tyler, 2003; Tzafrir & Dolan, 2004); between an employee and one immediate work colleague (e.g., Gillespie, 2003; McAllister, 1995); between an employee and her/his employer (e.g., Robinson, 1996), or with management representing the employer (e.g., Clark & Payne, 1997; Mayer et al., 1995; Tyler, 2003); between an employee and the rest of the organization (e.g., Huff & Kelley, 2003); between organizational departments (e.g., Cummings & Bromiley, 1996); multiple relationships throughout the organization (Shockley-Zalabak, Ellis, & Winograd, 2000).

Dietz and Den Hartog (2006) identified also other aspects, such as positive and negative wording: the majority of items are positively worded, reflecting the idea that trust is indeed a positive state of mind. Although most of the scales available in the literature are positively worded, the scales of Robinson (1996) and by Cummings and Bromiley (1995) present also items negatively worded.

A lot of studies have highlighted the dimensions used to frame the construct of trust. Some scholars identified three dimensions of trust: Levin (1999) considered the cognitive, affective, and cognitive-affective components as dimensions of trust, other authors agreed with the perspective that trust consists of cognitive, affective, and behavioral dimensions (Albrecht & Sevastos, 1999, 2000; Clark & Payne, 1997;

Cummings & Bromiley, 1996), while Albrecht and Sevastos (1999, as cited in Ferres & Travaglione, 2003) identified five dimensions of trust (dispositional, cognitive, affective, behavioral, and normative-based trust).

The aspects described so far on the different forms of trust, the contents, the sources, the referents or the wording, make one reflect on how this construct could meet different needs and on the variety of applications and contexts in which organizational trust could be of crucial importance.

THE ITALIAN CONTEXT AND OUR INTEREST IN THE WORKPLACE TRUST SURVEY

In this paragraph we describe the reasons that led us to consider the Workplace Trust Survey (Ferres & Travaglione, 2003; Lehmann-Willenbrock & Kauffeld, 2010) an instrument able to detect the various specific features of the Italian production contexts.

In Italy, trust in organization has been discussed mostly in sociological contributions, whilst there are few works within Italian psychological literature: some research papers (e.g., Baccarani & Golinelli, 2011; Bettinardi, Montagner, Maini, & Vidotto, 2008; Bobbio & Manganelli, 2015; Gozzoli, D'Angelo, & Tamanza, 2012; Scrima & Di Maria, 2009; Vidotto et al., 2008), few books, such as the contribution of Farnese and Barbieri (2010) "Costruire fiducia nelle organizzazioni. Una risorsa che genera valore" [Building trust in organizations. A resource that generates value], and few instruments for the measurement of the construct (e.g., as a subscale in a multidimensional instrument, D'Amato & Majer, 2005; Magnani, Majer, & Mancini, 2009; or as validation of an existing instrument, Vidotto et al., 2008).

The need for a powerful instrument to measure intraorganizational trust in Italy is very strong:

1. On the one hand, Italy is a place of innovation (e.g., automotive, robotics, design, fashion, etc.), where innovation requires high levels of speed: trust seems to be one of the key factors for business success (Marino, 2011);

2. On the other hand, Italy is also characterized by an old entrepreneurial structure, in which companies are not able to restructure after organizational changes. So, they grow very slowly, experiencing the crisis very strongly;

3. In addition, many companies are small and medium-sized (SMEs), often family owned (Togni, Cubico, & Favretto, 2010) and founded on the absence (or low presence) of both managers (sometimes it is the owner of the company who acts in their place) and managerial structures, but the need to become international puts them in the condition to overcome these limits: in this sense, intraorganizational trust could enable an evaluation of the firms' level of maturity;

4. Also, many companies are the first interchange partners with Germany, especially in the automotive component industry. In fact, the first target market in exports of the Italian automotive component industries is Germany, for over 2 billion and 18.86% share of total exports (data retrieved from the Italian Association of the Automotive Industry, ANFIA, 2018): a shared instrument could allow a comparison among Italian and German firms;

5. Last but not least, the evaluation of the three referents of trust (in organization, in supervisor, in coworkers) through a parsimonious instrument could be useful to monitor, for instance, organizational changes (e.g., downsizing), and/or firms operating in key sectors (i.e., automotive, oil&gas, original equipment manufacturing, fashion, etc.).

The most used instrument for measuring workplace trust in Italy is the Organizational Trust Inventory (OTI; Vidotto et al., 2008). These authors, on the basis of Cummings and Bromiley's (1996) measurement of organizational trust, adapted and validated OTI and its short 12-item form. The instrument con-

sists of 62 items measuring three dimensions of trust (personal reliability, honesty, and decency) assessed across the three components “affective state,” “cognition,” and “intended behavior” (Crites, Fabrigar, & Petty, 1994) and between various organizational units, departments, divisions, and/or teams.

As Mayer and Davis (1999) observed, “the trustee must be specific, identifiable, and perceived to act with volition” (p. 124): Cummings and Bromiley’s inventory (1996) measures the relationships between organizational departments, supposing that the employee has adequate knowledge, information, and experience to express an overall judgement on an entire department. Dietz and Den Hartog (2006) underlined this issue: in Cummings and Bromiley’s inventory the respondent is expected “to be sufficiently experienced and informed enough to appraise her/his own department’s collective assessment (i.e., not her/his *own* view) of another organizational department *en masse*, aggregating impressions of every member of that department into an overall assessment of the department’s perceived trustworthiness” (p. 570).

The absence of a specific and identifiable trustee (or referent) may be considered a limit of the Organizational Trust Inventory (Cummings & Bromiley, 1996; Vidotto et al., 2008), making it difficult to draw up targeted interventions.

Another limitation of the abovementioned instrument is that the full version (OTI-LF, 62-item) “may be overly long,” as the authors themselves stated (Cummings & Bromiley, 1996, p. 317). To overcome this limit, they assessed a short version (OTI-SF, 12-item) which focuses on the trustor’s beliefs (authors omitted from the 12-item version the ones pertaining to intended behavior, and selected four items per factor — two affect worded and two cognitive worded). Probably, the OTI-SF sacrifices some measurement assets.

In addition, it is argued in literature that trust and distrust are two different constructs (Lewicki et al., 1998; Luhmann, 1979; Sitkin & Roth, 1993; Van De Walle & Six, 2014) and that the use of reverse coded trust items may not be measuring trust (Kramer, 1996, as cited in Ferres, Connell, & Travaglione, 2005). Generally, distrust is used to protect oneself from risk; on the contrary, trust is used to feel comfortable with taking risks (Luhmann, 1979) and, according to Sitkin and Roth (1993), it comes from the perceived incongruence of one’s cultural values. In the OTI-LF, 34 items are reversed, while in OTI-SF, five items out of 12 are negatively worded (item examples: “We feel we cannot depend on X to fulfil its commitments to us,” “We intend to question X’s statements regarding their capabilities”).

Concerning innovative behavior, and as confirmed by Lehmann-Willenbrock & Kauffeld (2010), trust generates innovation. This is also true in Italian contexts, even if in different ways: as was stated above, some Italian firms operate in markets at high levels of speed (short time-to-market), innovation, and creativity, because of the product life cycle (i.e., manufacturing, robotics, fashion, design, etc.) and trust seems to be one of the key factors for business success. Often, these firms as yet do not have (or cannot have) defined and standardized managerial systems; so, adaptability must be very high to survive in the competitive market. Trust in organization or in supervisor and colleagues becomes a key factor of the business.

Concluding, considering the limits of the OTI highlighted in the literature and bearing in mind also the importance, in Italy, of the evaluation of workplace trust (and its different referents) through a parsimonious instrument which enables a comparison among different cultural contexts (e.g., English and/or German, as well as in family firms or in different business sectors), it seemed to us that the Workplace Trust Survey (Ferres & Travaglione, 2003) might be more appropriate because it could identify the management structure limits, because it could answer well to the Italian context needs described above, and because it has also been validated in the German context (G-WTS, Lehmann-Willenbrock & Kauffeld, 2010).

THE WORKPLACE TRUST SURVEY

Ferres and Travaglione (2003) developed and validated the Workplace Trust Survey (WTS) because of the lack of “an informative measure of workplace trust looking at various echelons within an organization” (p. 5). They considered three different foci of trust (e.g., managers, organization, coworkers) and each of the possible trust dimensions (cognitive, affective, behavioral, normative), “keeping in mind the potential overlap between these categories” (p. 5).

The authors developed 72 items rated on a 7-point disagree-agree Likert scale, 18 within each of the cognitive, affective, behavioral, and normative response modes (Table 2). Each of these categories contained six questions *per* subscale (coworker, supervisor, and organizational trust). Authors deleted negative-worded items to prevent the problems of measuring distrust as the opposite of trust (Kramer, 1996, as cited in Ferres & Travaglione, 2003). Each category was made up of an equal number of items, so the final version of the instrument was made up of 36 questions, 12 items to measure trust in organization (item example: “I think that processes within X are fair”), 12 items to assess trust in supervisor (item example: “I feel that my manager at X listens to what I have to say”), and 12 items to evaluate coworker trust (item example: “I proceed with the knowledge that my coworkers are considerate of my interests”).

In 2010, Lehmann-Willenbrock and Kauffeld, according to Ferres and Travaglione (2003), validated the German version of WTS, G-WTS. They captured the need for a broader perspective to allow a comprehensive analysis of trust in the workplace, noting that “trust should no longer be considered as a monolithic entity as a target of employees’ attitudes and work behaviors” (Lehmann-Willenbrock & Kauffeld, 2010, p. 3). G-WTS was obtained through a translation of the English WTS by two bilingual translators, independently. The two translations were then back-translated into English by the respective other translator and the results were compared to assess the equivalence and consistency of the German translation. Items that represent the opinion of the whole staff rather than individual opinions were not included in the G-WTS (e.g., “Most employees at X believe that coworkers are reliable”): in fact, the items reflecting the opinion of others showed rather ambiguous factor loadings in the WTS (Ferres & Travaglione, 2003). Leaving out the nine more global items, the G-WTS comprised 27 items, nine for each subscale.

Lehmann-Willenbrock & Kauffeld (2010) validated a 27-item version of WTS and hypothesized also a relationship among the three dimensions of the instrument and other constructs, like job satisfaction, group cohesion, innovative behavior, and affective organizational commitment. Their results confirmed these relations, except for the hypothesis that coworker trust would be a positive predictor of group cohesion, which was not fully supported: in fact, also supervisor trust predicted cohesion, while organizational trust showed no significant relation with cohesion (Lehmann-Willenbrock & Kauffeld, 2010).

All of these efforts to define and measure the construct of trust underline how relevant it is in organizational studies, especially in big organizations; also in Germany, a nation with high levels of innovation and patents, the multifoci distinction adopted by Ferres and Travaglione (2003) applied to trust in organizations as well.

AIM AND HYPOTHESES

The present research was aimed at developing and validating an equally economic and psychometrically valid version of the WTS (Ferres, 2002; Ferres & Travaglione, 2003; Lehmann-Willenbrock & Kauffeld, 2010) in Italian (I-WTS). It was expected to find three factors (organizational trust, coworker

trust, and supervisor trust). For greater completeness, we first tested the 36-items (Ferres & Travaglione, 2003) and then, as suggested by Lehmann-Willenbrock and Kauffeld (2010), we tested the 27-item version. The invariance of the measurement structure was assessed, in order to test the relations among sets of variables, and to evaluate whether these relations differ, showing different patterns among factors (Green, 1992; Pentz & Choud, 1994). Macroeconomic sector differences among trust factors were also analyzed.

It was also expected that I-WTS would predict job stress outcomes. As has been stated before, there is a relationship between trust and work-related stress, as well as between trust and some job stress outcomes. So, it was hypothesized that I-WTS may predict the job stress outcomes, through the Multifactor Organizational Stress Risk Questionnaire (M.O.S.R.Q.; Zuffo & Ferretti, 2012), an instrument that consists of six subscales, three representing antecedents or sources of stress (management style, job-related fatigue, context and quality of the job) and three representing consequences, or outcomes of work-related stress (symptoms, emotional detachment from work, commitment). The M.O.S.R.Q. outcomes were used to test its relationship with I-WTS. The instrument will be described in the Subsection “Measures.”

METHOD

Data Collection and Participants

Participants were recruited during the assessment of work-related stress which occurred in different companies operating in different sectors (health care, chemical, manufacturing, consulting). The HR managers (or other managers) of these companies were informed about the study purpose, that is the Italian adaptation of the WTS.

After getting approval from the top management, the questionnaire was administered to the employees of these organizations, individually, or in small group meetings. Researchers provided information to participants regarding the consent-for-data-processing and the aims of the study prior to their enrolment. The anonymity of the participants' answers was also guaranteed. Upon completion of the survey, participants could return the questionnaires to the respective researcher.

The questionnaire included some descriptive variables (e.g., macroeconomic sector, employee classification, seniority, etc.), the I-WTS, and the M.O.S.R.Q. The response rate was about 69%.

A total of 1,081 employees was obtained (397 employees filled in the M.O.S.R.Q.). Even if psychologists often select samples for convenience (Fabrigar & Wegener, 2014), we tried as much as possible to obtain a heterogeneous and representative sample for the macroeconomic sector: participants were selected taking into account the number of workers per sector, 70.8% belong to public and private services, and 29.2% belong to industry (production and construction). The sample is slightly unbalanced if we consider the percentage of Italians that work in industry (33.4%) and services (66.6%) sectors. Industry was underrepresented, whilst services were overrepresented. In particular, our sample is unbalanced (data source: Unioncamere, 2015, 3rd trimester) in favor of health care (public) services (29%).

The gender ratio was fairly even (53.4% male and 38.4% female). As for age, 12.5% of participants was less than or equal to 30 years old, 29% was aged 31-40, 29.1% had an age ranging from 41 to 50, and 15.2% was 51 years old or more. The majority (26.8%) had been working in their firm for 11-25 years, 16.1% for 6-10 years, 12.7% for 3-5 years, 9.2% for 1-2 years, and 9.2% for more than 25 years. The sample characteristics are described in Table 1.

TABLE 1
Sample characteristics

	<i>N</i>	%		<i>N</i>	%
Gender			Length of service (years)		
Male	577	53.4	1-2	99	9.2
Female	415	38.4	3-5	137	12.7
Total	992	91.8	6-10	174	16.1
Missing	89	8.2	11-25	290	26.8
			More than 25	100	9.2
			Total	800	74.0
			Missing	281	26.0
Age			Educational qualification		
< 30 years old	135	12.5	Primary school	3	0.3
31-40 years old	313	29.0	Secondary school	91	8.4
41-50 years old	315	29.1	Professional certificate	98	9.1
51-60 years old	151	14.0	High school	248	22.9
> 60 years old	13	1.2	Bachelor's degree	100	9.3
Total	927	85.8	Master's degree	212	19.6
Missing	154	14.2	Master/Ph.D.	52	4.8
			Total	804	74.4
			Missing	277	25.6
Professional qualification			Professional field		
Top manager	40	3.7	Industry	316	29.2
Middle manager	112	10.4	Services	591	54.7
White collar	328	30.3	<i>Services companies</i>	49	4.5
Specialized blue collar	22	2.0	<i>Trade</i>	185	17.1
Blue collar	124	11.5	<i>Credit</i>	12	1.1
Professional	14	1.3	<i>ICT</i>	27	2.5
Health social operator	17	1.6	<i>Transport</i>	4	0.4
Nurse	177	16.4	<i>Healthcare</i>	314	29.1
Nurse manager	9	0.8	Correctional system	56	5.2
Physician	11	1.0	Other	118	10.9
Prison officer	56	6.2	Total	1,081	100.0
Total	910	85.2			
Missing	171	14.8			

Measures

Following Lehmann-Willenbrock and Kauffeld (2010), the English version developed by Ferres and Travaglione (2003) was translated into Italian. Next, a native English speaker translated the Italian version back into English (Brislin, 1970). The original survey was then compared with the back-translated

version and the Italian formulation was refined. Comprehensibility of the translated items was assessed by research colleagues and company representatives.

In addition, in order to prevent the central tendency, the 7-point response range of the English WTS was changed into a 6-point disagree-agree Likert scale, as in the G-WTS version. Weijters, Cabooter, and Schillewaert (2010) discuss the question of whether or not to include a midpoint. Authors concluded that the inclusion of a midpoint depends on the research goals (Nowlis, Kahn, & Dhar, 2002, as cited in Weijters, Cabooter, & Schillewaert, 2010) and also on the risk of misresponse to reversed items. Even if authors suggest avoiding scales without a midpoint, they admit the use of a 4- or 6-point scale format if: (a) respondents have clear-cut answers (so neither ambivalence nor indifference can arise) and (b) where no reversed coded items are present in the scale. Other authors (Perrone, 1977) prefer scales without a midpoint to force respondents to take a position, in the assumption that “real” uncertain people probabilistically are distributed in equal parts” (p. 382). Since WTS has no reversed coded items, considering that also in the German version a 6-point scale was adopted, and considering that we support Perrone’s point of view, the 7-point scale of the English WTS version was changed into a 6-point scale.

After the first translation of the instrument, the questionnaire was administered to 20 employees of a head hunting organization and feedback was asked through short interviews about difficulties in completing the questionnaire. Based on these feedbacks, the protocol was revised and then modified, obtaining an Italian version very similar to the original version of the instrument.²

Together with I-WTS we also administered a questionnaire for measuring work-related stress, the M.O.S.R.Q. (Zuffo & Ferretti, 2012). The instrument is made up of 38 items rated on a 6-point disagree-agree Likert scale, 19 items related to organizational stressors and 19 to strains. As has stated before, the M.O.S.R.Q. consists of six subscales, three representing antecedents or sources of stress (management style, job-related fatigue, context and quality of the job) and three representing consequences, or outcomes of work-related stress (symptoms, emotional detachment from work, commitment).

The management style (nine items) refers to organizational culture, inequity, decision making participation, communication, and reward system; item example: “L’azienda è sempre disponibile ad aiutarmi e a rispondere alle mie esigenze professionali” [The company is always available to help me and to answer my professional needs], reversed item.

The context and quality of the job (six items) refers to work environment (pleasant environment, physical characteristics of the environment, good relationships among colleagues, etc.); item example: “Io e i miei colleghi ci aiutiamo molto” [Me and my colleagues help each other a lot], reversed item.

The job-related fatigue (four items) refers to employees’ excessive workload perceptions; item example: “La pressione del tempo è tale che sono costretto a lavorare male” [I feel so much pressure that I am forced to work badly].

The emotional detachment from work (three items) refers to detachment and strong resistance to go to work; item example: “Faccio alcune assenze perché non mi trovo bene nella mia azienda” [I do some absences at work because I don’t feel good in my company].

The commitment (nine items) here refers to the organizational unwellness which derives from the lack of satisfaction in job compensation or personal growth and which translates into a lack of confidence in the organization, sense of not belonging to the organization and intentions to leave. Low scores indicate higher levels of commitment; item example: “Mi sento parte integrante di questa azienda” [I feel belonging to this company], reversed item.

The symptoms (seven items) refers to physical and psychological symptoms (health outcomes) as worry, tension, nervousness, insomnia; item example: “Il lavoro spesso mi preoccupa e faccio fatica ad ad-

dormentarmi o mi sveglio nel corso della notte” [The work often worries me and I find it hard to fall asleep or I wake up during the night].

To test structural invariance between sectors, the groups services ($N = 591$) and industry ($N = 316$) needed to be balanced; so, the group services (which included services companies, trade, credit, ICT, transports, and health care, see Table 1) was balanced by randomly excluding about a half ($N = 170$) of the participants belonging to health care (public) services.

Data Analysis

The present study investigated whether the items of the Italian translation could be attributed to the three dimensions of organizational, coworker, and supervisor trust as well as in WTS and G-WTS.

Considering the already existing assumptions of three dimensions of trust (Ferres and Travaglione, 2003), the factorial structure of the instrument was first tested through an exploratory factor analysis (EFA) by using the same method proposed by the authors (i.e., 36 items, principal component analysis, oblimin rotation). This initial EFA was performed before we finished the data collection on a sample of 728 participants; analyses were conducted with the aid of SPSS 19.

Then, a confirmatory factor analysis (CFA) was conducted with AMOS 18.0 (Arbuckle, 2011) by using maximum likelihood (ML) estimates from the sample covariance matrix, using the same procedure adopted by Lehmann-Willenbrock and Kauffeld (2010). So, we replicated the German procedure by testing one-factor, two-factor, and three-factor models, both with uncorrelated and intercorrelated factors (before with 36 items, then 27). Using a cross-validation procedure, the total sample ($N = 1,081$) was divided randomly into two subsamples ($S1 = 558$; $S2 = 523$), so the CFA was executed on the first sample $S1$, and the structural invariance was tested across these two subsamples. The goodness of fit of the models was tested using χ^2 , χ^2/df , GFI, AGFI, CFI, TLI, and RMSEA test statistics were calculated. To compare the models also BIC and AIC were calculated. The χ^2 is considered satisfactory when it is not significant; however, as it is dependent upon sample size, other indicators independent of this characteristic were considered, in particular the goodness-of-fit-index (GFI; Jöreskog & Sörbom, 1989; Tanaka & Huba, 1984), adjusted goodness-of-fit-index (AGFI; Jöreskog & Sörbom, 1989), comparative fit index (CFI; Bentler, 1990), Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and root mean square error approximation (RMSEA; Steiger, 1990). To evaluate the goodness of fit we followed the cut-off criteria of Schermelleh-Engel, Moosbrugger, and Müller (2003). Structural invariance was tested through the multigroup confirmatory factor analysis (MG-CFA; Cheung & Rensvold, 2002; Vandenberg & Lance, 2000; Chan, 2008).

Testing for measurement invariance consists of a series of model comparisons that define more and more stringent equality constraints (Byrne, 2016). Invariance exists if this baseline model has a good fit and the same loadings are significant in all groups. (Hirschfeld & von Brachel, 2014; Koh & Zumbo, 2008). MG-CFA nested models have become the most commonly used technique to evaluate measurement invariance across different groups (Koh & Zumbo, 2008). Model 1 (M1) served as a baseline model where no parameters were constrained between groups; in Model 2 (M2) only the factor loadings (i.e., measurement weights) are constrained equal across groups; in Model 3 (M3) all estimated factor loadings, as well as factor variances and covariances (i.e., structural covariances), are constrained equal across groups; and in Model 4 (M4) all estimated factor loadings, factor variances, factor covariances, and error variances (i.e., measurement residuals) constrained equal across groups (Byrne, 2016).

Finally, also measurement invariance across sectors (industry and services) was examined with the MG-CFA (Bagozzi and Foxall, 1995; Jöreskog & Sörbom, 1989). Lastly, a relationship between trust and work-related stress was expected: it was hypothesized that I-WTS may predict the job stress outcomes (the M.O.S.R.Q. subscales commitment, emotional detachment from work, and symptoms), through multiple regression analyses, one for each specific outcome.

RESULTS

Exploratory Factor Analysis

First of all, we tested the WTS (Ferres & Travaglione, 2003) 36-item factorial structure by using the same method proposed by authors. Also in the Italian version some items (i.e., Item 30, 33, and 36) loaded onto more than one factor, or had low factor loadings. Reliability in terms of internal consistency was calculated with Cronbach's α coefficient. The internal consistency values of the I-WTS were good ($\alpha = .93$ for coworker trust) or excellent ($\alpha = .95$ for organizational trust, and $\alpha = .94$ for supervisor trust). Factor loadings resulted from EFA ($N = 728$) and Cronbach's α coefficients are shown in Table 2.

Confirmatory Factor Analysis

Since skewness and kurtosis showed values between ± 1 , we proceeded to CFA using ML. We compared through a CFA the 36-item three-factor model with the 27-item three-factor model, both with intercorrelated and orthogonal factors, and we found a better fit in the 27-item model (see Table 3). So, we proceeded with the analyses as in the German study. The items not included in the final version were the ones that represented the opinion of the whole staff rather than individual opinions (e.g., "Most employees at X believe that coworkers are reliable"), as in the G-WTS.

We proceeded assessing one-factor, two-factor, and three-factor models, both with uncorrelated and intercorrelated factors. The one-factor model considers organizational trust as a monolithic concept, while the two-factor model describes interpersonal trust (i.e., coworker trust or supervisor trust) versus impersonal trust (organizational trust). The three-factor model refers to the hypothesized G-WTS structure (Lehmann-Willenbrock & Kauffeld, 2010). Table 3 summarizes the fit statistics for the confirmatory models compared with those of the German study. The intercorrelated three-factor model achieved the best fit to the data, recording also an acceptable fit (Schermmelleh-Engel, Moosbrugger, & Müller, 2003): $\chi^2 (321, N = 558) = 1230.004$ (significant at a level of $p < .001$), $\chi^2/df = 3.83$, GFI = .85, AGFI = .82, NFI = .89, CFI = .91, and RMSEA = .07, RMSEA 90% confidence interval (CI) = [.067, .076]. For structural coefficients (standardized estimates) see Table 4.

Concerning correlations among latent variables, correlations greater than .60 were found between trust in supervisors and trust in coworkers ($\phi = .63$), and between trust in supervisors and trust in organization ($\phi = .72$). However, despite the high correlations, the two-factor models do not fit well with the data as well as the intercorrelated three-factor model.

TABLE 2
Factor loadings, items' description and Cronbach's α of the I-WTS and WTS (the factor loadings of WTS in brackets)

I-WTS ^a Item	Component	Factor loadings		
		Trust in organization	Trust in coworkers	Trust in supervisor
I-WTS_ORG_1 ^b	Normative	.81 (.93)		
I-WTS_ORG_4	Affective	.81 (.82)		
I-WTS_ORG_7	Behavioral	.65 (.82)		
I-WTS_ORG_10	Cognitive	.81 (.74)		
I-WTS_ORG_13	Cognitive	.80 (.73)		
I-WTS_ORG_16 ^b	Normative	.88 (.70)		
I-WTS_ORG_19	Behavioral	.83 (.69)		
I-WTS_ORG_25 ^b	Normative	.82 (.65)		
I-WTS_ORG_26	Cognitive	.86 (.67)		
I-WTS_ORG_28	Behavioral	.82 (.60)		
I-WTS_ORG_31	Affective	.62 (.52)	.36	
I-WTS_ORG_34	Affective	.71 (omitted)		
I-WTS_COL_2	Affective		.66 (.87)	
I-WTS_COL_5	Behavioral		.63 (.84)	
I-WTS_COL_8 ^b	Cognitive		.69 (.84)	
I-WTS_COL_11	Normative	.34	.67 (.83)	
I-WTS_COL_14	Affective		.70 (.79)	
I-WTS_COL_17	Affective		.86 (.79)	
I-WTS_COL_20 ^b	Cognitive		.82 (.79)	
I-WTS_COL_22	Behavioral		.78 (.74)	
I-WTS_COL_23	Behavioral		.71 (.63)	
I-WTS_COL_29	Normative		.50 (.74)	
I-WTS_COL_32	Cognitive		.79 (.73)	
I-WTS_COL_35 ^b	Normative		.86 (.73)	
I-WTS_SUP_3	Affective			-.79 (.87)
I-WTS_SUP_6	Behavioral			-.88 (.86)
I-WTS_SUP_9	Behavioral			-.87 (.86)
I-WTS_SUP_12	Cognitive			-.74 (.85)
I-WTS_SUP_15	Behavioral			-.76 (.84)
I-WTS_SUP_18	Cognitive			-.71 (.83)
I-WTS_SUP_21	Affective			-.81 (.81)
I-WTS_SUP_24	Cognitive			-.70 (.75)
I-WTS_SUP_27	Affective			-.63 (.74)
I-WTS_SUP_30 ^b	Normative	.36		-.45 (Omitted)
I-WTS_SUP_33 ^b	Normative	.50		-.37 (Omitted)
I-WTS_SUP_36 ^b	Normative			-.41 (Omitted)
Initial eigenvalues	WTS	16.83	3.76	1.75
	I-WTS	16.65	4.27	1.98
% of variance	WTS	52.57	11.74	5.47
	I-WTS	46.24	11.86	5.51
α	WTS	.95	.94	.95
	I-WTS	.95	.93	.94

Note. Exploratory factor analyses (principal component analysis, Oblimin-rotated factor loadings on three factors). English version's source: Ferres & Travaglione (2003); four items omitted. Coefficients < .30 suppressed.

^aI-WTS EFA's Sample $N = 728$; ^bItems omitted in the I-WTS final 27-item version. α = internal reliability coefficient.

TABLE 3
Goodness-of-fit indices of confirmatory factor analysis models

Model	χ^2	<i>df</i>	χ^2/df	GFI	AGFI	NFI (TLI)	CFI	RMSEA	90% CI	AIC	BIC
One-factor model											
G-WTS (<i>N</i> = 427)	3024.29**	324	9.33	.52	.44	.64	.66	.14	-		
I-WTS (S1, <i>N</i> = 558)	3530.586***	324	10.90	.53	.45	.67 (.67)	.69	.13	[.13, .14]	3638.59	3872.10
Two-factor model ^a											
G-WTS (<i>N</i> = 427)	2339.07**	324	7.22	.61	.55	.72	.75	.12	-		
I-WTS (S1, <i>N</i> = 558)	2709.637***	324	8.36	.64	.58	.75 (.75)	.77	.12	[.11, .12]	2817.64	3051.15
Two-factor model ^b											
G-WTS (<i>N</i> = 427)	2111.37**	323	6.54	.62	.57	.75	.78	.11	-		
I-WTS (S1, <i>N</i> = 558)	2343.86***	323	7.26	.65	.60	.78 (.79)	.81	.11	[.10, .11]	2453.86	2691.70
Two-factor model ^c											
G-WTS (<i>N</i> = 427)	2510.09**	324	7.75	.58	.51	.70	.73	.12	-		
I-WTS (S1, <i>N</i> = 558)	3024.241***	324	9.33	.60	.51	.72 (.72)	.74	.12	[.12, .13]	3132.24	3365.61
Two-factor model ^d											
G-WTS (<i>N</i> = 427)	2236.44**	323	6.92	.59	.52	.73	.76	.12	-		
I-WTS (S1, <i>N</i> = 558)	2620.76***	323	8.11	.61	.54	.76 (.76)	.78	.11	[.11, .12]	2730.76	2698.60
Three-factor model ^e											
G-WTS (<i>N</i> = 427)	1445.29**	324	4.46	.81	.77	.83	.86	.09	-		
I-WTS (S1, <i>N</i> = 558)	1816.88***	324	5.61	.81	.77	.83 (.85)	.86	.09	[.09, .10]	1924.88	2158.40
Three -factor model ^f											
G-WTS (<i>N</i> = 427)	1016.19**	321	3.17	.85	.83	.88	.91	.07	-		
I-WTS (S1, <i>N</i> = 558)	1230.004***	321	3.83	.85	.82	.87 (.91)	.91	.07	[.07, .08]	1344.00	1590.49
I-WTS (S2, <i>N</i> = 523)	1238.183***	321	3.86	.84	.81	.89 (.91)	.92	.07	[.07, .08]	1352.18	1594.98

(Table 3 continues)

Table 3 (continued)

Model	χ^2	<i>df</i>	χ^2/df	GFI	AGFI	NFI (TLI)	CFI	RMSEA	90% CI	AIC	BIC
I-WTS (Industry, <i>N</i> = 316)	2240.208***	321	3.49	.80	.77	.85 (.88)	.89	.06	[.06, .06]	2468.21	1594.98
I-WTS (Services, <i>N</i> = 421)	872.480***	321	2.72	.86	.84	.90 (.93)	.94	.06	[.06, .07]	986.48	1216.91
Three-factor model ^f 36 items (<i>N</i> = 1,081)	4029.395***	591	6.8	.80	.77	.87 (.88)	.89	.07	[.07, .08]	4179.40	4553.32
Three-factor model ^e 36 items (<i>N</i> = 1,081)	5238.078***	594	8.8	.77	.74	.83 (.84)	.85	.09	[.08, .09]	5382.08	5741.04
Three-factor model ^f 27 items (<i>N</i> = 1,081)	2001.753***	321	6.2	.87	.84	.91 (.91)	.92	.07	[.07, .08]	2115.75	2399.94
Three-factor model ^e 27 items (<i>N</i> = 1,081)	3169.256***	324	9.8	.82	.79	.85 (.86)	.92	.09	[.09, .09]	3277.26	3546.48

Note. GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index; NFI = normative fit index; TLI = Tucker-Lewis index; CFI = comparative fit index; RMSEA = root mean square error of approximation; CI = confidence interval; AIC = Akaike information criterion; BIC = Bayesian information criterion.

****p* < .001. Final model in bold.

^a coworker and supervisor versus organizational trust, orthogonal factors

^b coworker and supervisor versus organizational trust, intercorrelated factors

^c coworker versus supervisor and organizational trust, orthogonal factors

^d coworker versus supervisor and organizational trust, intercorrelated factors

^e orthogonal factors

^f intercorrelated factors

TABLE 4
 Confirmatory factor analysis (three-correlated factor model). Structural coefficients: standardized estimates

Trust in Organization					Trust in supervisor					Trust in coworkers				
Item	S1 (N = 558)	S2 (N = 523)	Industry (N = 316)	Services (N = 421)	Item	S1 (N = 558)	S2 (N = 523)	Industry (N = 316)	Services (N = 421)	Item	S1 (N = 558)	S2 (N = 523)	Industry (N = 316)	Services (N = 421)
34	.75	.75	.66	.71	27	.60	.67	.57	.64	32	.79	.81	.75	.79
31	.69	.73	.60	.70	24	.71	.75	.70	.77	29	.78	.85	.74	.83
28	.83	.88	.72	.87	21	.75	.74	.78	.64	23	.86	.88	.77	.89
26	.84	.84	.75	.85	18	.69	.77	.64	.71	22	.78	.80	.65	.82
19	.85	.86	.74	.87	15	.81	.80	.80	.83	17	.83	.83	.79	.83
13	.79	.80	.61	.87	12	.80	.84	.75	.80	14	.76	.84	.81	.81
10	.87	.89	.82	.86	9	.67	.69	.72	.77	11	.81	.83	.74	.85
7	.64	.67	.49	.69	6	.62	.68	.60	.71	5	.69	.72	.57	.80
4	.84	.83	.77	.80	3	.79	.76	.72	.72	2	.56	.58	.50	.66

Generalizability of the Structure

Having assessed the theoretical model, the hypothesis of structural invariance across the different groups ($S1 = 558$; $S2 = 523$) was tested. So, the first sample $S1$ ($N = 558$) was compared to a second sample $S2$ ($N = 523$) by assigning equality constraints on specific parameters (i.e., constrained equal across groups).

Although the difference in χ^2 from the configural model was statically significant ($\Delta\chi^2_{(24)} = 26.443$), the other indices met the recommended criteria: the ΔCFI ($\Delta CFI_{M2-M1} = .000$; $\Delta CFI_{M3-M2} = .000$), the improvement of the RMSEA ($RMSEA = .049$), and the decrease of the AIC ($AIC_{M3-M2} = -27.06$) demonstrated a strong goodness of fit of the model in question. Using these other indices as the criterion upon which to determine evidence of invariance, we concluded the factor loadings to be operating similarly across the two samples. Table 5 shows results.

The hypothesis of structural invariance between sectors (industry and services) was also assessed through the MG-CFA nested models. The first step was to estimate a multigroup baseline model which estimated separate parameters for industry and services (see Table 6). Then the invariance of the parameters between groups was performed. The baseline model was compared with a model which constrained the parameters to be equal across the industry group and the services group. The difference between the chi-squared of $M1$ and that of $M2$ was significant but the ΔCFI was below the cut-point of .01 ($\Delta CFI = .002$, see Table 6; Chen, 2007; Cheung & Rensvold, 2002). Since χ^2 is sensitive to sample size, we considered the measurement invariance verified and we progressed to test structural invariance. Next, the $M2$ model was compared to a model which constrained the parameters and the correlations among the latent factors to be equal across industry and services. In this case, the comparison between $M2$ and $M3$ showed not satisfactory results as the difference in χ^2 was significant, as well as ΔCFI , which was above the cut-point of .01 ($\Delta CFI = .019$). This finding indicates that researchers may use I-WTS both for industry and services, even if the measurement structure is not robust enough for such modifications.

The Relationship between I-WTS and M.O.S.R.Q.

Concerning the relationship between trust and work-related stress, it was hypothesized that I-WTS may predict the job stress outcomes. Correlational analyses are shown in Table 7. Results revealed that the symptoms were predicted by all the I-WTS subscales, $F(3, 394) = 18.49$, $p < .001$, $R^2 = .12$, which explained 12% of the variance, whilst the commitment, $F(3, 394) = 35.58$, $p < .001$, $R^2 = .21$, and the emotional detachment from work, $F(3, 394) = 17.11$, $p < .001$, $R^2 = .12$, were partially predicted by I-WTS subscales, explaining 21% and 11% of the variance, respectively (see Table 8).

GENERAL DISCUSSION

As has been previously underlined, organizational trust may be the interpretative key factor of the current competitive systems and of the consequent new organizational dynamics, because it enables to manage the effects of competitiveness and innovation. In addition, organizational trust could support crisis management operations or the effects of negative behaviors and feelings like job insecurity, organizational

TABLE 5
Test of the invariance of the I-WTS across randomized groups (S1, $N = 558$; S2, $N = 523$)

Model		χ^2	df	$\Delta\chi^2$	Δdf	χ^2/df	CFI	ΔCFI	RMSEA	90% CI	TLI	AIC	ΔAIC
M1	Unconstrained	2468.19	642	–	–	3.85	.92	–	.05	[.05, .05]	.91	2804.19	–
M2	Measurement weights	2494.63	666	26.4	24	3.75	.92	.000	.05	[.05, .05]	.91	2782.63	–21.56
M3	Structural covariances	2521.57	693	26.9	27	3.64	.92	.000	.05	[.05, .05]	.91	2755.57	–27.06
M4	Measurement residuals	2535.37	699	13.8	6	3.63	.92	.000	.05	[.05, .05]	.91	2757.38	1.80

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; CI = confidence interval; TLI = Tucker-Lewis index; AIC = Akaike information criterion.

TABLE 6
Test of the invariance of the I-WTS across macroeconomic sectors (industry, $N = 316$; services, $N = 421$)

Model		χ^2	df	$\Delta\chi^2$	Δdf	χ^2/df	CFI	ΔCFI	RMSEA	90% CI	TLI	AIC	ΔAIC
M1	Unconstrained	2240.21	642	–	–	3.49	.89	–	.06	[.06, .06]	.88	2576.21	–
M2	Measurement weights	2292.52	666	52.31	24	3.44	.88	.00	.06	[.06, .06]	.88	2580.52	4.31
M3	Structural covariances	2554.19	672	38.33	6	3.80	.87	.02	.06	[.06, .07]	.86	2830.19	249.7

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; CI = confidence interval; TLI = Tucker-Lewis index; AIC = Akaike information criterion.

TABLE 7

Means, *SDs*, reliability values (Cronbach's α), and correlation indices (Pearson's r) among the subscales of the I-WTS and the M.O.S.R.Q ($N = 397$)

	Mean (SD)	1	2	3	4	5	6	7	8	9
1. Trust in organization	3.7 (1.10)	(.92)								
2. Trust in coworkers	4.0 (0.85)	.52**	(.90)							
3. Trust in supervisor	4.2 (0.99)	.67**	.63**	(.92)						
4. Commitment	3.1 (0.46)	-.27**	-.15**	-.28**	(.86)					
5. Management style	3.3 (0.43)	-.18**	-.11**	-.20**	.73**	(.78)				
6. Job-related fatigue	3.6 (0.67)	-.23**	.04	-.18**	.47**	.39**	(.78)			
7. Context and quality of the job	3.4 (0.46)	-.22**	-.14**	-.23**	.70**	.65**	.37**	(.71)		
8. Symptoms	3.1 (0.74)	-.21**	-.03	-.18**	.53**	.38**	.65**	.40**	(.90)	
9. Emotional detachment from work	2.6 (0.75)	-.09**	-.03	-.20**	.58**	.34**	.46**	.47**	.66**	(.85)

Note. Internal consistency values calculated with Cronbach's α are presented diagonally in parentheses.

** $p < .01$.

TABLE 8

Results of multiple linear regression analyses ($N = 397$)

	Commitment	Emotional detachment from work	Symptoms
Predictor	β	β	β
Trust in organization	-.29***	.08	-.25***
Trust in coworkers	.02	.20***	.20***
Trust in supervisor	-.23***	-.48***	-.21**
R^2	.21***	.12***	.12***
R^2_{adj}	.21	.11	.12

Note. ** $p < .01$. *** $p < .001$.

cynicism, or job performance decline. Workplace trust also leads to many positive consequences (i.e., reduction of transactional costs, job satisfaction, work engagement, organizational citizenship behavior, etc.). In addition, the procedures in which competitiveness and employees' participation in lean production are realized involve the issue of trust and its management. Furthermore, particularly in Italy, to manage workplace trust is important especially for those companies that operate in international developed markets and/or in competitive markets.

Due to its remarkable application in organizational contexts (i.e., for firms competing in the global market), many scholars have tried to study, operationalize, and measure workplace trust, as demonstrated by the increasing number of articles in the literature on this issue. Up to 2004, 14 instruments measured organizational trust.

Literature identified four principal aspects in conceptualizing and defining organizational trust: the different forms trust can take, the content of trust, the sources of evidence informing it, and the referent of trust. In particular, Ferres and Travaglione (2003) — with WTS — and then Lehmann-Willenbrock and Kauffeld (2010) — with G-WTS — clearly captured the three directions of workplace trust (supervisor, coworker, and organizational trust) through a survey that represents the construct well.

In line with these previous studies, the aim of this study was to adapt and validate an Italian version of the WTS. Despite the presence of other instruments measuring intraorganizational trust (i.e., Organizational Trust Inventory, Vidotto et al., 2008), we chose to adapt and validate the Workplace Trust Survey for various reasons, described below.

As for the forms of trust, some of the existing 14 instruments focus exclusively on the trustor's beliefs — among these, Cummings and Bromiley (1996) who omitted from their short-form inventory the items pertaining to intended behavior — while WTS considers normative, affective, behavioral, and cognitive components. As regards the referent of trust, whereas Cummings and Bromiley focused on the relationship between organizational departments, WTS pays attention to the three referents, organization, managers, and coworkers. Another point is about positive and negative wording and the *querelle* on trust and distrust considered as different constructs and not as opposite poles of the same construct, so that the use of reverse coded trust items may not be measuring trust: almost half the items produced by Cummings and Bromiley are negative worded, while WTS present only positive-worded items. Last, but not least, as has been repeatedly stressed, we evaluated important the fact that WTS was also validated in the German context (G-WTS), to allow the comparison among the Italian firms and the multinational corporations (Anglo-Saxon and/or German) present in the Italian area and, conversely, to allow also the comparison among the Italian firms and their branches located in these same foreign areas.

First of all, the analyses that were conducted, by processing different models, excluded the possibility that organizational trust in the specific sample group can be considered as a one-dimensional construct even if it has not been evaluated the goodness of fit of a second-order factor model to examine the possibility of obtaining a single score of organizational trust.

These results, while confirming research described in the literature with regard to the multidimensional nature of the construct, also reveal a number of special aspects regarding the characteristics of the important dimensions.

As in the Australian and the German version of the WTS, also in Italy the items appropriately reflect the examined construct; the analyzed trust components constitute substantial and articulated factors that confirm the validity of the instrument and its articulation according to the theoretical model.

The outcome of the comparison between the orthogonal model and the correlated factor model lies in favor of the latter, confirming the existence of the three constructs that, while distinct, are closely correlated.

The data support the three-factor model over models with one or two factors despite the high levels of correlation between the dimensions. Therefore, the measure of trust proposed by Ferres and Travaglione (2003) transposes well to the Italian context. As in the German study, high correlations among the three components of trust were found. However, despite high correlations being found between coworkers and supervisors, the two-factor model does not fit well with the data as well as the intercorrelated three-factor model. It is interesting to note that as in G-WTS version (Lehmann-Willenbrock & Kauffeld, 2010), also in the Italian version the items not included in the final version were those that represented the opinion of the whole staff rather than individual opinions (e.g., “Most employees at X believe that coworkers are reliable”).

In addition, our research demonstrated that the measurement structure is stable across different samples. Multisample analyses models (both across randomized groups and across macroeconomic sectors) achieved a good level of generalizability of the emerging structure. Nevertheless, further research is required in order to confirm these findings, more specifically by taking into consideration different work organizations to overcome the possible limit that our sample was not strictly representative of the Italian population.

In sum, the same measurement structure applied to German employees in the G-WTS version (Lehmann-Willenbrock & Kauffeld, 2010) was found also in Italian employees by using I-WTS. Also, as regards the generalizability across macroeconomic sectors, findings indicate that I-WTS can be used both for industry and services, even if only the measurement invariance was demonstrated. When residual variance varies across groups there may be “differences in vocabulary, idioms, grammar, syntax, and in the common experiences of different cultures . . . (Malpass, 1977)” as reported in Cheung and Rensvold (2002, p. 237). Further research is needed to clarify this point. These results provide evidence about the validity and reliability of this measure, so this survey is suitable to be used in a large variety of research topics within organizations as a measure of a global level of trust or in relation to specific units or departments.

Regression analyses showed that I-WTS could predict some negative feelings which may lead to counterproductive behaviors at work. In detail, commitment was predicted by trust in organization and trust in supervisor, so that the more the employees trust in organization (and in supervisors) and the less they exhibit lack of commitment, that is the organizational *un*-wellness which derives from the lack of satisfaction in job compensation or personal growth and which translates into a lack of confidence in the organization, sense of not belonging to the organization, and intentions to leave; emotional detachment from work was negatively related to trust in supervisors and positively related to trust in coworkers. It seems that trust in coworkers may increase both symptoms and emotional detachment from work and this result seems to be counterintuitive. The fact that trust in supervisors and trust in organization follow the same trend is a realistic data, since in most of the surveyed enterprises (SMEs mostly) there is not much hierarchical distance between supervisors and organization; on the contrary, these two roles often coincide. In order to achieve a more comprehensive interpretation of this result further investigations are probably needed. A consideration that we may attempt concerns the fact that in contexts where the relationships among the supervisors and the organization are preserved, it might be possible to find between colleagues a perceived lack of appreciation and recognition, competition, or a lack of successful communication that may lead to a lack of coworker trust. However, these reflections cannot find at this level empirical evidence from the data collected. Further studies should investigate this type of relationship.

No relationship was found between commitment and coworker trust, as well as in Lehmann-Willenbrock and Kauffeld (2010). In Ferres and Travaglione (2003), affective commitment was an outcome of all of the three trust factors, whereas in Lehmann-Willenbrock and Kauffeld (2010) organizational trust was the only significant predictor of affective organizational commitment because the organizational level component of trust is linked to the organizational level outcome of affective commitment. According

to the authors, this may be because the sample of Ferres and Travaglione (2003) was fairly homogeneous (employees from one healthcare organization), while their sample was heterogeneous at the organizational level (i.e., several branches of employment).

We need to make a clarification on the negative connotation of the commitment scale: the items express the antecedents and outline a positive (or negative) P-O fit (eg., wage dissatisfaction, personal growth dissatisfaction, lack of organizational trust, intentions to leave). At the time, the factor was labeled commitment (Zuffo & Ferretti, 2012) because in business terms it was clearer and more recognizable than other, perhaps more relevant constructs, such as organizational citizenship behaviors, engagement, cynicism, etc. Today, the authors (Zuffo & Ferretti, 2012) could label this factor as organizational engagement, a term more used in the usual current managerial language.

Another aspect that needs attention regards the percentages of variance explained, that were less powerful. Organizational trust is not the only predictor of work-related stress, which is predicted by a set of factors like, for example, management style (Alston & Tippet, 2009), context and quality of the job (Semerciöz et al., 2010).

Furthermore, we could consider I-WTS a good instrument for many reasons: the presence of a specific and identifiable trustee (organization, supervisor, and coworkers), its parsimony (27 items), because it measures trust only through positive-worded items (to distinguish trust from distrust), the generalizability to different cultural contexts (Italian, English, German, as well as in family firms or in different business sectors).

In conclusion, the results demonstrate that more knowledge and understanding can be obtained when, in addition to developing adequate psychological theories, we also construct and apply formal theories that can be used in the various areas of psychological research.

Theoretical and Practical Study Contributions

Even though multiple instruments measuring organizational trust have been developed, they do not analyze trust as a complex phenomenon consisting of several interrelated elements. We think that I-WTS allows the practitioner — as well as the researchers — to assess each component of trust, developing a customized approach in managing the organization.

Workplace trust can moderate the relationship between employees and their organizations, including groups working both in different functions within the same company and among different organizations (Jones, 2000; McAllister, 1995; Vidotto et al., 2008; Zuffo & Ferretti, 2012).

As also Vidotto et al. (2008) stated, trust in organization is necessary to make sure of gaining “support behaviors and to work harder than contracted” (p. 571). Literature (Settoon, Bennett, & Liden, 1996; Eisenberger, Fasolo, & Davis-LaMastro, 1990) has demonstrated that people are able to offer valuable resources for the organization, excellent work performance, and innovation achievement, if trustworthy relationships are built. For all these reasons, it is important to have a reliable measurement tool in order to deeply investigate the quality of the relationships within an organization and, consequently, to assess and promote any organizational adjustments (Vidotto et al., 2008).

Moreover, an Italian validation of the WTS would be interesting for many reasons. First of all, as was previously stated, the Italian economy is connoted by the presence of foreign multinational corporations (e.g., American or German) in the entrepreneurial network and in different productive sectors and services. Thus, a comparison among these countries might allow an interesting transcultural analysis, in

terms both of definition of gains and of compatible managerial strategies, and in terms of better communication among foreign multinational corporations' management (and the consequent corporate cultures) and their Italian branches.

Further, it seems interesting to adapt WTS into Italian because of the labor market structure. In fact, in Italy (a) atypical contracts are particularly common (about the 19,8% of the employees, according to Istat, 2011), and often lead to an increment of job insecurity (Zuffo & Kaneklin, 2006; Sverke & Hellgren, 2002), so reinforcing trust may have a positive effect also on the job security; (b) entrepreneurial reality is often characterized by micro and small enterprises and by a strong presence of owner systems (family firms; Togni et al., 2010) where trust is positively or negatively vicarious and where there is often an absence of evolved and rational managerial systems; (c) there is a growing presence of firms in market niches sectors (i.e., fashion, design, or non-serial productions) characterized by high levels of innovation which operate in a market at high levels of speed (e.g., the high speed in fashion) and where trust seems to be one of the key factors for success; (d) managing trust is important especially for those companies (e.g., oil&gas, manufacturing) that operate in Anglo-Saxon or German developed markets (to allow the comparison among countries); (e) to distinguish trust in organization, in supervisors and in coworkers, help managers to identify the source on which to intervene to restore and reinforce trust. Consequently, it was argued here that the construct of trust articulated in its three dimensions (Ferres & Travaglione, 2003; Lehmann-Willenbrock & Kauffeld, 2010) and measured by the WTS may potentially capture the specific aspects of the Italian entrepreneurial network. If trust is consolidated, managers and coworkers could accept "the risk concerned with starting to give own part expecting uncertainty about the future" (Vidotto et al., 2008, p. 571).

In conclusion, we argue that the Italian version of the questionnaire has the necessary characteristics for use in research as well as in applied contexts because the three dimensions that emerged from the present study are those described in the previous Australian and German studies to explain and analyze trust in organization.

Limitations and Future Research

Although this study provides an important contribution to the literature on trust, more future research is needed to better understand the differences in organizational trust across cultures. In order to infer generalizations, despite the effort to draw a representative sample, it would be recommended to collect data from other industrial contexts to determine how this might affect trust in organizations. Moreover, our sample was heterogeneous, consisting of a wide variety of working contexts (e.g., prison officers, physicians, nurses, practitioners, white collars, blue collars, entrepreneurs, etc.), but it was not possible to assess structural invariance across these clusters due to the low number of participants within groups. Future research could focus on enlarging the sample, with the dual aim of both investigating this limit and allowing best practice benchmarking among firms in terms of dimensions (i.e., small, medium, and large enterprises), properties (public or private), and sectors (services, industry, handicrafts, etc.), to be completely useful to managers. As was stated in the discussion, it may be convenient to evaluate the goodness of fit of a second-order factor model in order to examine the possibility of obtaining a single score of organizational trust.

In addition, to better understand the consequences of workplace trust in the Italian context, it would be useful to test also the predictive validity of the instrument, by studying those trust-related constructs, such as working climate, job performance (Dyer & Chu, 2003), job satisfaction (Kath et al., 2010; Perry & Mankin, 2007), organizational commitment and organizational citizenship behaviors (Aryee et al., 2002; Dirks & Ferrin, 2002).

Also, in order to achieve a more comprehensive interpretation of the relationship between coworker trust and some job stress outcomes (i.e., emotional detachment from work and symptoms) resulted from regression analyses, further investigations are probably needed. Because the ability to develop trusting relationships within global partners continues to increase in importance, it would be interesting if other researchers joined our efforts to more thoroughly understand not only the differences, but also the nature of trust and the process by which it develops in different cultures.

NOTE

1. Retrieved from <http://startup.registroimprese.it/>
2. Italian version of the items is available upon request from the first author.

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