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Corporate Reputation Measurement: Alternative Factor Structures, Nomological Validity, and Organizational Outcomes

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Abstract Management scholars have paid close attention to the construct of organizational or corporate reputation (CR), particularly in the applied business ethics and corporate social responsibility (CSR) fields. Extant research demonstrates that CR is one of the key mediators between CSR and important organizational outcomes, which ultimately improve organizational performance. Yet, hitherto the research focused on CR construct has been plagued by multiple definitions, conflicting conceptualizations, and unclear operationalizations. The purpose of this article is to provide theoretical ground for positioning of CR as an assessment construct that is modeled as a second-order factor affecting individual first-order dimensions (having a reflective nature), and to provide methodological and empirical support toward such conceptualization. We assert that intangible, socially complex, and causally ambiguous CR (latent construct) can be accurately estimated through its individual measurable dimensions. Using survey data from Peru, we empirically test the hypothesized second-order reflective model within a hierarchy of nested and non-nested models, and compare its model fit and predictive power (nomological validity) with alternative conceptualizations. Modeling CR as a second-order reflective construct relies on a set of theoretical propositions and yields several methodological advantages, including strong conceptual interpretability and parsimony when tested within a nomological context. We explicitly demonstrate positive organizational outcomes of CR: customer trust, corporate identification, in-role behavior, and extra-role behavior. Then, we demonstrate that the shorter scales of CR can be used as a good proxy for the full construct measure. The paper concludes by highlighting theoretical insights, and methodological and managerial implications of the findings.

Keywords Corporate reputation · Organizational reputation · Trust · In-role behavior · Extra-role behavior · Corporate identification · Reflective versus formative construct

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Introduction

Corporate (organizational) reputation is a stable aggregate perceptual representation of organizational past actions and future prospects in the minds of its stakeholders, measured against some standard (Fombrun 1996; Walker 2010). As such, corporate reputation is rooted in the organization's historical behavior and associations, and influences its relationships with its stakeholders. Numerous prior studies demonstrate that favorable corporate reputation positively influences the decisions of key organizational stakeholders (e.g., customers, creditors, and employees), predisposing them in favor of the company (Ponzi et al. 2011; Fombrun 1996) and positively impacting their attitudes and behaviors (Fombrun and Rindova 1996; Fombrun and Shanley

1990). Predictably, this favorable disposition toward the company has a significant positive effect on its financial performance (Fombrun 2001; Roberts and Dowling 2002; Shamsie 2003; Fombrun and van Riel 2004).

In applied business ethics and corporate social responsibility (CSR) studies, the corporate reputation construct gains particular attention, being scrutinized as one of the most important outcomes of CSR engagement and, as such, as a crucial mediator between CSR and organizational performance (e.g., de Castro et al. 2006; Vallaster et al. 2012). In line with this reasoning, corporate reputation gained through proactive CSR activities has the strategic value for a company (de Castro et al. 2006), being significantly correlated with its financial performance (Pfarrer, Pollock and Rindova 2010; Sánchez and Sotorrío 2007). Prior studies demonstrate the positive impact of CSR-related corporate reputation on important organizational outcomes, such as organizational brand equity (Lai et al. 2010), labor productivity and efficiency (Stuebs and Sun 2010), customer loyalty (Valenzuela et al. 2010), time of recovery from a crisis (Coldwell et al. 2012), and consumer–company identification, brand attitude, and citizenship behaviors (Lii and Lee 2012). It is not a surprise, therefore, that numerous recent studies investigate the CSR-related antecedents and drivers of corporate reputation, such as CSR practices (Hsu 2012; Siltaoja 2006), philanthropy and charity (Maas and Liket 2011; Brammer and Millington 2005; Williams and Barrett 2000), corporate ethics statements (Stanaland et al. 2011), particular organizational actions (Hillenbrand et al. 2012; Reuber and Fischer 2010; Sims 2009), criminal activity (Williams and Barrett 2000), and board diversity (Bear et al. 2010).

The preceding argument suggests that corporate reputation has the potential to become an intangible organizational asset that is valuable, rare, inimitable, and non-substitutable (Boyd et al. 2010), and to form the basis for a Penrosian (resource-driven) sustainable competitive advantage (Barney 1991). This warrants investigating the antecedents and outcomes of corporate reputation; yet, such investigation becomes possible only after clear conceptualization and operationalization of this construct (Walker 2010; Wartick 2002; Berens and van Riel 2004). Alas, as other crucial organizational assets underpinning sustainable competitive advantage, the corporate reputation is intangible, having socially complex and causally ambiguous nature (Barney 1991). This makes the rigorous measurement of corporate reputation construct an arduous task (Lange et al. 2011; Ponzi et al. 2011); and numerous prior calls for clarity in this issue corroborate this point (e.g., de Castro et al. 2006). So far, the research on the corporate reputation construct has been plagued by multiple definitions, conflicting conceptualizations, and unclear operationalizations (Walker 2010; Lange et al. 2011). Precise conceptualization and accurate measurement of corporate reputation are therefore essential for the progress of this crucial research stream and the integration of its findings in the broader body of knowledge. Furthermore, a better conceptualization and operationalization of CR will allow for comparability of studies and consequently for researchers to meaningfully build and integrate their findings. Indeed, "management research is only in its nascency with respect to identifying outcomes and antecedents of organizational reputation, in part because the multidimensional nature of the construct has been underexplored" (Lange et al. 2011, p. 180). In this paper, we posit that corporate reputation should be conceptualized as an intangible, abstract multi-dimensional construct that can be accurately estimated through its individual measureable dimensions. This sets the primary motivation for our study.

Contemporary understanding of the corporate reputation portrays it as a multidimensional construct (Siltaoja 2006; de Castro et al. 2006; Fombrun et al. 2000; Fischer and Reuber 2007; Love and Kraatz 2009; Berens and van Riel 2004). Consequently, it becomes necessary to investigate the construct's theoretical and empirical meaning, its dimensional structure, as well as antecedents and consequences of each dimension (Bagozzi 2011). Although some research has reported the results of comparing different survey instruments for measuring corporate reputation (e.g., Sarstedt et al. 2013), to the best of our knowledge prior studies have never systematically conceptualized and tested the alternative factor structures of corporate reputation. Clear understanding of corporate reputation factor structure would allow drawing systematic conclusions regarding creating and sustaining this intangible asset. For instance, modeling corporate reputation as a formative construct (i.e., dimensions driving overarching construct) would suggest that influencing any dimension independent of others would change the overall reputation. On the other hand, modeling corporate reputation as a reflective construct (overarching construct driving individual dimensions) would suppose that observable reputational aspects are merely reflections of the higher-order latent reputation construct, and only the change of the construct itself could affect the individual dimensions. Therefore, in this paper we address the following two *research questions*: (i) what is the best factor structure of the corporate reputation construct in terms of relational level (i.e., first- vs second-order construct) and relational form (i.e., reflective vs formative model), and (ii) how does the factor structure relate to theoretically relevant organizational outcomes (its nomological validity)?

Drawing on contemporary understanding of corporate reputation, we provide theoretical reasoning for representing the intangible corporate reputation as a second-order construct, affecting its individual measurable first-

order dimensions (i.e., having a reflective nature). With this study, we intend to contribute to the ongoing discussion of corporate reputation as an organizational intangible asset of strategic importance. Our research clarifies the definition of corporate reputation based on a theoretical framework, thereby improving the conceptual understanding of the construct itself, and the causal mechanisms integral to it. We disentangle the focal construct of corporate reputation from its organizational antecedents and outcomes, and empirically demonstrate the directions of causality within the construct itself [from the aggregate corporate reputation to its individual dimensions].

Using customer evaluations of corporate reputation of two companies in Peru, we empirically test the second-order reflective model within a hierarchy of nested and non-nested models, and compare its model fit and predictive power (nomological validity) with alternative conceptualizations of corporate reputation. We explicitly demonstrate the positive organizational outcomes of corporate reputation (trust, corporate identification, in-role behavior, and extra-role behavior). We also show the applicability of a short 4-item emotional appeal CR scale (RepTrak Pulse) as a proxy for the full CR scale (when a summary index of corporate reputation must be estimated, without the need to compare individual dimensions), and discuss the theoretical and managerial implications of our findings.

Corporate Reputation as an Assessment Construct

In the past decade, management scholars have paid close attention to the construct of corporate reputation, which has been plagued by multiple definitions, conceptualizations, and operationalizations (Lange et al. 2011). Barnett et al. (2006) note that the definitional landscape of corporate reputation primarily consists of three distinct clusters of meaning in the definitional statements: reputation as a state of *awareness* (i.e., perceptions of stakeholders or observers of a firm including representations of knowledge), reputation as an *assessment* (i.e., stakeholder or observer evaluative judgments), and reputation as an *asset* (i.e., some attribute of value including intangible, economic, or financial asset). Although distinct, all three meanings are related to each other. More recently, Lange et al. (2011) in their review of the management literature find similar clusters as that of Barnett et al. (2006), labeling the conceptual clusters as: being known (i.e., awareness and familiarity similar to awareness construct), being known for something (i.e., expectation on some attribute similar to asset construct), and generalized favorability (i.e., evaluative judgment similar to assessment construct).

To gain some definitional clarity, we use corporate reputation in its most frequently used meaning, as an *assessment* construct (Fombrun and van Riel 1997; Fombrun 2001; Fischer and Reuber 2007), and define it as a generalized favorability that stakeholders and observers hold toward the company (Lange et al. 2011). The focal understanding of corporate reputation as an *assessment* is one of the consequences of corporate reputation as *awareness*; in other words, a prerequisite for judging a company is actually knowing something about it. The third, *asset* view of corporate reputation, focuses on strategic value of some aspect of corporate reputation as stakeholders' positive or negative disposition toward the company ("being known for something"), and is a consequence of reputation viewed as an *assessment* (Barnett et al. 2006).

Assessment, or generalized favorability conceptualization of corporate reputation, entails judgments about the firm that are based on aggregated multiple organizational attributes rather than specific attributes that meet the idiosyncratic interests of stakeholders. Fischer and Reuber (2007) describe generalized favorability as an aggregate assessment that transcends any particular aspects of the organizations' past or future. Corporate reputation as a generalized favorability builds on Fombrun's (1996) seminal definition of corporate definition as "a perceptual representation of a company's past actions and future prospects that describes the firm's overall appeal to its key constituents when compared to other leading rivals" (p. 72). By adopting this definitional perspective, we intend to avoid confusion on the conceptual and operational definition of corporate reputation by disentangling its antecedents and consequences (Barnett et al. 2006).

In our paper, we present an argument that the most important antecedent of corporate reputation is organizational identity, which is the underlying "core" or basic character of the firm—i.e., central and enduring qualities that define the company and that makes it distinctive from other companies (Albert and Whetton 1985; Barnett et al. 2006; Fombrun and van Riel 2004). Barnett et al. (2006) describe organizational identity as a collection of material and behavioral symbols and their corresponding systems of beliefs, values, and underlying assumptions. Thus corporate reputations are judgments about a firm made by stakeholders and observers that are rooted in perceptions of organizational identity and impressions of its image, often activated by triggering events from a firm's more visible actions (Barnett et al. 2006; Fombrun and van Riel 1996), such as, *inter alia*, CSR strategies (Hsu 2012; Siltaoja 2006), philanthropy (Maas and Liket 2011; Brammer and Millington 2005; Williams and Barrett 2000), corporate ethics communications (Stanaland et al. 2011), organizational actions (Hillenbrand et al. 2012; Reuber and Fischer

2010; Sims 2009), and pursuing management diversity (Bear et al. 2010).

Corporate reputation as an assessment construct is ultimately manifested in its most crucial outcomes—asset constructs (Fombrun 2001; Fombrun et al. 2000; Shamsie 2003; Rindova et al. 2005; Fischer and Reuber 2007; Love and Kraatz 2009), which are defined as something of value and significance to the firm (e.g., economic or financial assets). It entails perceptions that a firm has particular attributes of interest or value to the perceiver and offers the advantage of perceived predictability of organizational outcomes and behavior—what Lange et al. (2011) categorize as the firm "being known for something." For instance, Rindova et al. (2005) refer to the "being known for something" dimension of reputation as 'perceived quality," meaning stakeholders' evaluation of an organization on a specific attribute, namely, the ability to produce quality products. Fischer and Reuber (2007) label this dimension as the "componential perspective on organizational reputation" meaning that organizational reputation constitutes an assessment of a particular attribute or characteristic.

An emerging trend in the literature is for scholars to draw on multiple dimensions of corporate reputation (Deephouse and Carter 2005; Fischer and Reuber 2007; Love and Kraatz 2009; de Castro et al. 2006). Despite conceptual agreement that corporate reputation is a multi-dimensional and multi-faceted construct, scholars, however, continue to operationalize these constructs as antecedents, summated scores, or average scores rather than as dimensions of a higher-order latent construct (e.g., Rindova et al. 2005; Boyd et al. 2010). In other words, while conceptually scholars agree that corporate reputation is a higher-order latent (unobservable) construct with first-order directly observable dimensions, there still remains a gap between its conceptualization and corresponding operationalization.

Corporate Reputation: Alternative Conceptualizations and Hypotheses

Proposed Conceptualization: Second-Order Reflective Model

We contribute to earlier studies, conceptualizing corporate reputation as a second-order reflective construct (see Model 2 in Fig. 1) affecting six first-order dimensions, namely, (a) quality of products/services, (b) vision and leadership, (c) workplace environment, (d) social and environmental responsibility, (e) financial performance, and (f) emotional appeal, reflective at both first and second-order levels. The choice of this set of dimensions (originally proposed in the Reputation Quotient scale by Fombrun et al. (2000)) for capturing the domain of corporate reputation construct is based on a number of reasons. *First*, this set includes most asset conceptualizations in several domains of corporate reputation ("being known for something"), maximizing content validity of the construct as conceptualized in extant literature (discussed, e.g., in Barnett et al. 2006; Walker 2010; Lange et al. 2011). *Second*, the Reputation Quotient scale with six dimensions is most frequently used in existing CR research compared to similar composite scales, thanks to its sound psychometric properties including reliability, convergent validity, and criterion validity (see Sarstedt et al. 2013, for a review and empirical comparison of reputation measurement instruments). *Third*, this operationalization of the CR construct is not stakeholder-specific, being applicable to any of the generalized stakeholder groups based on their social expectations of firm behavior in society (Berens and van Riel 2004). *Finally*, the Reputation Quotient scale is based on solid theoretical grounds: when introducing this scale, Fombrun et al. (2000) clearly demonstrated why the six dimensions capture the whole domain of the theoretical CR construct, thus by this means ensuring its content validity. In the following discussion, we expand the reasoning of the prior studies, demonstrating how the identity-driven nature of corporate reputation construct gets reflected in each of the six listed dimensions.

The hypothesized second-order reflective model implies that corporate reputation is a latent (unobservable) construct existing in the minds of the organizational stakeholders or observers. The overarching second-order construct itself is not directly observable; yet, it influences the observable first-order dimensions (a–f) stated earlier. Reflective model suggests the direction of causality going from the overarching corporate reputation construct to its individual dimensions.[1] Each first-order dimension represents the asset view of different facets of corporate reputation ("being known for something"), being driven by the second-order overarching assessment corporate reputation construct. A second-order reflective construct underlies its dimensions, wherein each dimension is a different manifestation of the multi-dimensional construct, which shares some commonality.[2] In the case of corporate reputation modeled as a second-order reflective construct, such commonality, we argue, is derived from stakeholders' and observers' perceptions of a firm's organizational identity. The scholarly work of Shelley Brickson (2005, 2007)

[1] The opposite conceptualization is formative model—see Model 4 in Fig. 1, discussed later in this paper.

[2] For a more technical discussion of the second-order reflective construct, see Model 2 in "Analysis and Results" section of this paper, and M2 in Fig. 1.

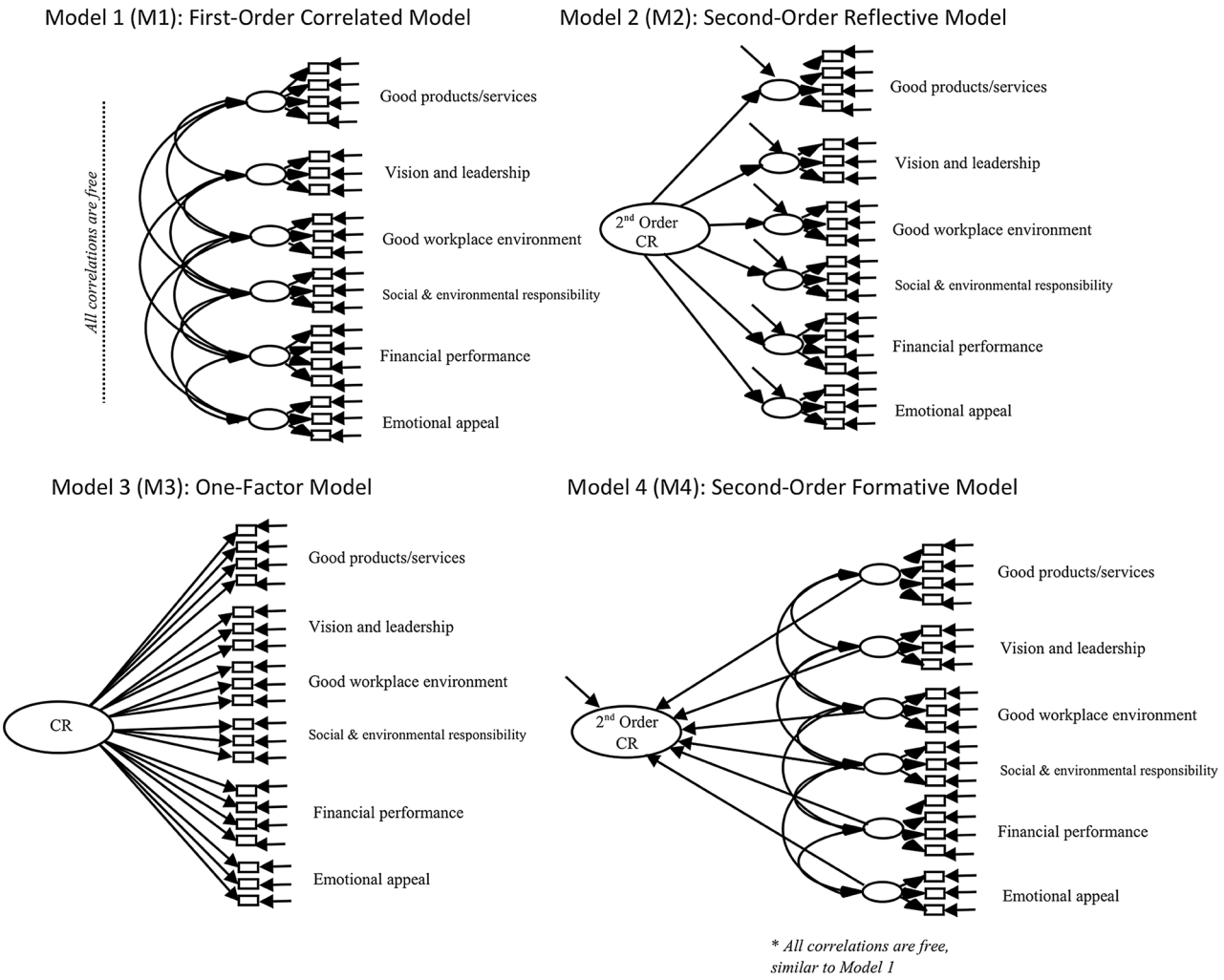


Fig. 1 Alternative conceptualizations of corporate reputation (CR)

draws attention to the distinction between two essential orientations of organizational identity: *individualistic organizational identity* and *collectivist organizational identity*. Individualistic organizational identity focuses on whether or not the firm is driven to succeed in comparison to others. Here, efficiency in maximizing organizational interests is valued in relationships with external stakeholders. By contrast, in a collectivist organizational identity, the locus of organizational self-definition is the larger group of generalized stakeholders, and the focal firm is seen as contributing to their collective welfare. Here, the relationship is neither meant to maximize efficiency nor to foster permanent and strong dyadic ties, but rather to advance a common overarching goal—what Thompson and Bunderson (2003) refer to as an ideological psychological contract.

The bases of both individualistic and collectivist organizational identity are rooted in stakeholders' and observers' perceptions of organizational trust. In keeping with the literature on trust, we conceptualize trust as including the element of risk or vulnerability, and define it as the psychological willingness of a party (individual or organization) to be vulnerable to the actions of another based on positive expectations regarding the other party's motivations and/or behavior (Mayer et al. 1995; Rousseau et al. 1998). Even though stakeholders are classified within certain groups (stakeholder categories), the origin of stakeholder trust in the focal firm is grounded in an individual perspective and is directed toward the organization by accepting vulnerability to the actions of the focal firm based on positive expectations (Zaheer et al. 1998). Three basic characteristics of the trustee that explain a large portion of trustworthiness are: *ability, benevolence, and integrity* (Mayer et al. 1995).

Ability refers to the set of skills, competencies and characteristics that enables a firm to effectively perform in a specific domain. Ability-based trust stems from trustor's perceived managerial and technical competences of the

firm (Madhavan and Grover 1998; Verona 1999). *Benevolence* is the extent to which a trustee is believed to want to do good to the trustor, aside from an egocentric motive. *Integrity* refers to the trustor's perception that the trustee adheres to a set of principles—personal and moral integrity that is deemed acceptable to the trustor.

We argue that a firm's individualistic organizational identity (Brickson 2007), built on ability-based trust by stakeholders (perceived technical competence and managerial competence), will result in corporate reputation as an assessment construct that is reflected by three asset constructs: (a) *good products and services*, (e) *financial performance*, and (c) *good workplace environment*.

We further argue that a firm's collectivist organizational identity (Brickson 2007), built on integrity-based trust by stakeholders, will result in corporate reputation as an assessment construct that is reflected by two other asset constructs: (d) *social and environmental responsibility* and (b) *vision and leadership.* Stakeholders and observers must perceive the focal firm as honest, forthcoming, transparent, and upholding the values of integrity when evaluating corporate reputation dimensions of social and environmental responsibility and vision and leadership.

Finally, Fombrun et al. (2000) add an emotional appeal dimension (f), which conforms to the overall assessment dimension of generalized favorability (embracing, for instance, admiration, respect and general positive disposition toward the company). Although some authors argue against including the emotional appeal dimension to the overall CR construct (e.g., Sarstedt et al. 2013; Schwaiger et al. 2009), considering it a consequence rather than a component of CR, we do not agree with eliminating this essential facet of reputation. We argue that a firm's collectivist organizational identity built on the third type of trust, i.e., benevolence-based trust, will result in corporate reputation as an assessment construct that is reflected by the emotional appeal dimension. Because of vulnerability, stakeholders will look at the organization's concern for their well-being and whether they genuinely care for them—i.e. benevolence-based trustworthiness. Hence, without emotional appeal, the CR operationalization would lack the benevolence-based trustworthiness, which becomes salient when psychological contracts shift from primarily transactional to relational in nature, and when closer ties are developed manifesting in favorable emotional appeal (Brickson 2007; Mayer et al. 1995; Schoorman et al. 2007).

In summary, corporate reputation is a latent assessment construct driven by both individualistic and collectivist organizational identities built on trust; it exists apart from the individual asset conceptualizations of corporate reputation ("being known for something"), and yet influences all asset conceptualizations. Therefore, we posit that:

Hypothesis 1a (*Factor Structure Test*) Corporate reputation modeled as a second-order reflective construct positively influences its first-order dimensions: (a) quality of products/services, (b) vision and leadership, (c) workplace environment, (d) social and environmental responsibility, (e) financial performance, and (f) emotional appeal.

The preceding hypothesis aims at testing the model fit of a second-order reflective CR measurement. In addition to testing the factor structure of CR, we also need to establish its nomological validity, i.e., second-order reflective CR embedded within a nomological network. This network includes a set of consequences and outcomes of reputation that are theoretically related in expected direction (similarly to other studies of CR measurement, such as Fombrun et al. 2000; Walsh and Beatty 2007; Walsh et al. 2009; Sarstedt et al. 2013). In other words, as a second step in model validation we need to test the predictive validity of the overall second-order CR measured using the six first-order dimensions (see Model M2 in Fig. 2). For this, we use the theoretical outcomes of corporate reputation that were already demonstrated in prior literature. Particularly, existing in the minds of organizational stakeholders and observers, the higher-order latent assessment corporate reputation *theoretically* should influence the stakeholders' attitudes and intentions regarding the company, such as *in-role behavior* [loyalty, intentions to continue the relationship, commitment] and *extra-role behavior* [supporting the organization among external stakeholders, word-of-mouth] (Walsh and Beatty 2007; Walsh et al. 2009; Sarstedt et al. 2013). In addition to these, prior studies demonstrate—theoretically and empirically—that the composite CR should lead to formation of the stakeholders' *corporate identification*, or the match between individual and organizational identities (e.g., Lii and Lee 2012). Finally, numerous studies demonstrate that an important consequence of corporate reputation is development of perceived *trust* in the minds of organizational stakeholders (e.g., Walsh and Beatty 2007; Walsh et al. 2009; Sarstedt et al. 2013). These outcomes of assessment corporate reputation are used in the current paper as theoretical consequences of this construct when testing the predictive power (nomological validity) of alternative conceptualizations and operationalizations. Hence:

Hypothesis 1b (*Nomological Validity Test*) Corporate reputation modeled as a second-order reflective construct positively influences stakeholders' attitudes and intentions toward the company by way of: (1) in-role behavior; (2) extra-role behavior; (3) corporate identification; and (4) trust.

In this paper, we assert that the second-order reflective model (Hypothesis 1) is the most theoretically appropriate

conceptualization of the corporate reputation construct, stemming from this construct's theoretical essence rooted in individualistic and collectivist organizational identity. Yet, other conceptualizations of corporate reputation were proposed in prior literature. To accommodate the prior results, in the next sections we summarize the argument for alternative corporate reputation models, and propose corresponding hypotheses for further testing. This allows us to compare the empirical results of our conceptualization (second-order reflective model) with that of alternative factor structures. Hence, the following alternative conceptualizations are discussed for comparison purposes only.

Alternative Conceptualization 1: First-Order Correlated Model

We discuss the issue of *relational level* (i.e., second-order vs first-order) between a multidimensional construct and its measures. Relational level indicates whether the multidimensional construct exists at a deeper level than its dimensions (second-order) or it exists at the same level (first-order), as a combination of its dimensions (Law et al. 1998). The first-order correlated model assumes that the dimensions are different and distinct from each other, and therefore conceptually not identical, albeit often correlated [see Model 1 in Fig. 1]. This approach is conceptually clear and potentially adds richness to the model, since the antecedents and consequences of individual asset dimensions ("being known for something") can differ. However, it also adds complexity to the corporate reputation model, requiring a greater number of hypotheses and increased demands in theory generation (Lee and Cadogan 2013). Further, first-order correlated model negates the conceptualization of corporate reputation as a higher-order construct we argue for in the current study (see prior section of the paper).

We posit that corporate reputation is developed as a second-order construct, which exists at a deeper and embedded level of abstraction. That is, perceivers categorize corporate reputation as a higher-order, abstract category containing a hierarchy of knowledge structures. Theoretically, higher-order constructs embody long-standing and implicit attitudes that are stable due to their chronic accessibility and the personal relevance that people might hold. Methodologically, Edwards and Bagozzi (2000) note that the association between a construct and its measures is generally *stable* for reflective measures provided these measures correlate more highly with one another than with measures of other constructs. As such, implicit attitudes are activated automatically, and are thus easy to retrieve as a well-learned conditioned response, which further enhances their accessibility and diagnosticity in influencing behavior (Feldman and Lynch 1988; Wilson et al. 2000). Such conditioned response occurs instantly at the category level—i.e., category-based affective processing—as opposed to lower-level piecemeal processing when categorization is successful. This higher-order affective response is therefore holistic and automatic, implicating the self, and often difficult to explicate (Cohen and Areni 1991; Fiske and Pavelchak 1986). For reasons of cognitive economy (Bettman and Sujan 1987; Dabholkar 1994), perceivers access higher-order abstraction of corporate reputation, which serves as a halo construct activating, in turn, perceptions of first-order dimensions as reflections of such a phenomenon.

Nevertheless, to accommodate the reasoning for the first-order correlated model as a possible representation of corporate reputation (e.g., Rindova et al. 2005), we posit the following hypothesis for comparison purposes:

Hypothesis 2 (*Nomological Validity Test*) Corporate reputation modeled as a first-order correlated model (i.e., the six first-order dimensions of corporate reputation) positively influences stakeholders' attitudes and intentions toward the company by way of: (1) in-role behavior; (2) extra-role behavior; (3) corporate identification; and (4) trust.

Notably, we do not formulate any hypotheses for the factor structure of the first-order correlated model, as this model does not assume any correlations between first-order dimensions: conceptually, they can be either correlated or not correlated with each other. However, we do empirically estimate the factor structure fit of the model for comparison purposes as it forms part of the nested hierarchy of models (see the discussion of Model 1 in Analysis and Results section of this paper, and M1 in Fig. 1).

Alternative Conceptualization 2: One-Factor Model

The one-factor model is a first-order model in which all indicators of the first-order dimensions of corporate reputation are loaded on one factor, namely, one-factor corporate reputation [see M3 in Fig. 1]. By the laws of reflective measurement (Bollen 2002), first-order constructs in a second-order reflective model are interchangeable, and the same applies to measurement items within each first-order construct. Thus the unidimensional imperative requires that all observed items of each of the first-order constructs are also measures of the second-order construct, and that there is no need to include the first-order constructs. That is, there is no need or benefit gained from inclusion of first-order dimensions, and so a reflective second-order model is needless and a non-parsimonious approach (Lee and Cadogan 2013).

However, in modeling corporate reputation as a one-factor model, we are forcing observable measures to

share common properties linked to the one single factor. This is inconsistent with the current literature on corporate reputation that considers it as a higher-order construct and treats differential antecedents and consequences of the first-order dimensions (Lange et al. 2011). For instance, while there will be some correlation, each of the six first-order dimensions are theoretically expected to have different antecedents and consequences. A multidimensional construct shares common variances that are shared across all first-order dimensions. This is in addition to group variances common to some first-order dimensions, specific variances unique to each dimension, and random variation (Law et al. 1998; Nunnally 1978). We assert that perceptions of individualistic and collectivist organizational identity based on organizational-based trust discussed earlier form the basis of corporate reputation as a second-order construct, and that the resulting common variances across all first-order dimensions is a reflection of such commonality. Of course, each of the first-order dimensions also would share group and unique variances that are explained by differential antecedents and correlates. Nonetheless, for comparison purposes we posit that[3]:

Hypothesis 3a (*Factor Structure Test*) Corporate reputation modeled as a one-factor model positively influences all first-order reflective indicators belonging to first-order dimensions: (a) quality of products/services, (b) vision and leadership, (c) workplace environment, (d) social and environmental responsibility, (e) financial performance, and (f) emotional appeal.

Hypothesis 3b (*Nomological Validity Test*) Corporate reputation modeled as a one-factor model positively influences the stakeholders' attitudes and intentions toward the company by way of: (1) in-role behavior; (2) extra-role behavior; (3) corporate identification; and (4) trust.

Alternative Conceptualization 3: Second-Order Formative Model

Here we discuss the issue of *relational form* (i.e., reflective vs formative) between a construct and its measures (Diamantopoulos and Winklhofer 2001; Law et al. 1998): i.e., the higher-order latent construct influencing individual dimensions, or being influenced (formed) by them. The modeling of a reflective construct to describe a phenomenon of interest takes a substantive interpretation prior to and apart from its empirical testing. That is, a latent construct in reflective models exists as real entity apart from and independent of its measurements, but which influences scores on their associated measures (Edwards and Bagozzi 2000). This is in sharp contrast to a formative construct, wherein the estimation of parameters depends on the dependent variable and the composite that best predicts the dependent variable[4] (see M4 in Fig. 1). Some scholars (Helm 2005) argued for formative measure of corporate reputation. In such models, the latent construct is not ascribed any real existence, and therefore does not exist apart from the measurement (Borsboom et al. 2003; Heise 1972). These are simply composites defined by the researcher as part of the construct definition, and therefore "does not exist at a deeper conceptual level than its dimensions" (Law et al. 1998: 743). To test the appropriateness of modeling the corporate reputation as a second-order formative construct, we formulate:

Hypothesis 4a (*Factor Structure Test*) Corporate reputation modeled as a second-order formative construct is positively influenced by its first-order dimensions: (a) quality of products/services, (b) vision and leadership, (c) workplace environment, (d) social and environmental responsibility, (e) financial performance, and (f) emotional appeal.

Hypothesis 4b (*Nomological Validity Test*) Corporate reputation modeled as a second-order formative construct influences the stakeholders' attitudes and intentions toward the company by way of: (1) in-role behavior; (2) extra-role behavior; (3) corporate identification; and (4) trust.

Method

Data Collection and Sample

To test the proposed hypotheses we employ a cross-sectional survey research design measuring the respondents' perceptions of different dimensions of corporate reputation and its potential consequences. To address our research questions in the optimal way, we made three important choices with regards to the research design.

First, we limited the stakeholder groups to customers only. This choice allows us to ensure the internal validity of our analysis (by removing confounding factors associated with different types of stakeholders), also making it

[3] Although we a priori conceptualize CR as a second-order construct, which makes first-order operationalization of CR a sort of a "straw man argument," we follow the established methodology for testing second-order constructs (Rindskopf and Rose 1988). Within this methodology, the one-factor model (M3) must be tested within the hierarchy of nested models.

[4] As a result, formative models are context-dependent and the construct's empirical realization may diverge from its conceptual meaning, leading to what scholars call "interpretational confounding'. For technical details of the issue, refer to Howell et al. (2007) and Wilcox et al. (2008).

comparable to prior studies of corporate reputation, most of which scrutinized customers as the most crucial stakeholders for the corporate reputation as an intangible asset (Walsh and Beatty 2007; Sarstedt et al. 2013). This improvement of internal validity somewhat comes at the expense of external validity (i.e., we are not testing the applicability of our theoretical framework to other stakeholders), but this is a natural choice when the task is to rigorously test the refined conceptualization of the intangible construct. The strength of the employed Reputation Quotient scale is that it is generic rather than stakeholder-specific (Fombrun et al. 2000; Sarstedt et al. 2013). Of course, some dimensions are more salient for particular stakeholders. To account for this, in the modeling process we always free up the factor loadings (rather than keeping them fixed), to get the stakeholder-specific estimates. In other words, even despite the possibility of major differences in the perception of particular dimensions by different stakeholders (e.g., customers vs investors vs regulators), our estimation technique allows and accounts for such differences.

Second, we intentionally limit the organizations to a single industry (telecommunications), for the same reasons: to make sure that the internal validity of the study is not compromised by omitted confounding industry-specific variables, and to make our results comparable with previously reported ones (such as a comprehensive analysis of Sarstedt et al. 2013).

Finally, following the call by numerous recent studies (e.g., Walsh et al. 2009; Ponzi et al. 2011), which point out the need to test the corporate reputation construct in countries beyond the traditional markets of North America and Western Europe, we collected the primary data in the Latin American country of Peru. However, the current paper is not a cross-cultural validation study, and we have no theoretical reasons to predict that the results obtained in the Peruvian sample might be different from those obtained in other countries/cultural contexts.

The mall-intercept interview method of survey-based data collection was conducted by a professional marketing research firm based in Lima, Peru. Six locations were selected in the city that had complete computer and Internet access, and respondents were intercepted based on demographic stratification and encouraged to participate in the survey. The respondents were invited to answer a set of questions about two major Peruvian phone companies, of which they were customers (of either or both). The survey was conducted in Spanish; two academic experts made sure that the translation of the original English scales was made appropriately. Respondents were allowed to answer the questions about the company they know about (either of the two, or both). The resulting sample contains 400 responses (50/50 gender split). The sample characteristics are: (1) age distribution: 20 % under 25 years, 33 % 25–40 years, 41 % 41–60 years, 6 % over 60 years; (2) accomplished education: 46 % elementary or high school, 26 % short-term or technical degree, 11 % incomplete university degree, 14 % complete university degree, 3 % MS or PHD degree; (3) occupation: 73 % employed, 13 % housewives, 11 % students, 3 % pensioners. From the total sample of 400 respondents, 226 provided information only on the first company (company A), 140—only on the second company (company B), and 34—on both (being the clients of both companies simultaneously). To eliminate the possibility of introducing bias (correlated errors) through incorporating two responses from respondents who provided information on both companies, we randomly spitted the latter 34 responses in two equal groups and incorporated only information about the first company from group one and about the second company from group two. This generated a final sample of 400 observations (243 about company A and 157 about company B) to be used in further analyses.

Measures

The survey instruments for different facets of corporate reputation construct and its potential consequences were developed on the basis of existing scales (see Table 4 in Appendix), translating them to Spanish. We used Fombrun's 20-item scale to measure corporate reputation, which has the best characteristics (convergent and criterion validities) among other reflective instruments for measuring this construct (Sarstedt et al. 2013). All items were measured on the 6-point Likert scale (1 = "Absolutely disagree," 6 = "Absolutely agree"). Psychometric details on scale items including means, standard deviations, reliability, and average variance extracted are provided in Table 4 in Appendix and Table 1. Guided by the research of Lii and Lee (2012), we added a set of expected organizational outcomes of corporate reputation, to test the alternative factor structures in the nomological network. The nomological constructs included were: in-role behavior and extra-role behavior (Walsh and Beatty 2007), trust (Morgan and Hunt, 1994), and corporate identification (Bergami and Bagozzi 2000; Kreiner and Ashforth 2004).

Measurement Model

For our analyses, we used the maximum likelihood estimation method in MPlus 7. We performed confirmatory factor analysis (CFA) to estimate the measurement model, which included 10 latent factors and 37 indicators. [6 latent constructs relate to the 20-item Fombrun corporate reputation (CR) scale (Fombrun et al. 2000) and 4 latent constructs relate to nomological constructs consisting of 17 items]. Constructs related to CR scale included: Company

has good product/services (4 items); Company has vision and leadership (3 items); Company has good workplace environment (3 items); Company practices social and environmental responsibility (3 items); Company has good financial performance (4 items); and Company has emotional appeal (3 items). Constructs related to nomological network included: In-role behavior (3 items); Extra-role behavior (4 items); Corporate identification (5 items); and Trust (5 items). The measurement model fit the data reasonably well: $\chi^2 = 1441.38$, $df = 584$, $p < .01$; $\chi^2/df = 2.47$; *RMSEA* = .061, *NNFI* = .938, *PNFI* = .800, *CFI* = .946, *Standardized RMR* = .059.

Using CFA we also tested for the reliability and convergent and discriminant validity of the measurement model. Both the composite reliability (CR) and average variance extracted (AVE) values were well above the recommended minimum levels of .70 and .50 respectively (see Table 4 in Appendix). This established the reliability of the measurement scales.

Convergent validity is established if item loadings are equal to or above the recommended cut-off level of .60. Of a total of 37 indicators, the distribution of loadings was: 1 item 0.37 (financial performance dimension—"low risk investment"), 1 item 0.68, 3 items in 0.7–0.8 range, 20 items in 0.8–0.9 range, and 12 items in 0.9–1.0 range. This confirmed satisfactory convergent validity of the composite constructs in the obtained sample.

Discriminant validity was tested in three different ways. *First*, we examined the correlations of research constructs (see Table 1). Discriminant validity is implied if all of the correlation estimates are significantly different from 1 (Bagozzi and Yi 1988). The performed bootstrapping analysis (1,000 resamples) of correlation coefficients between composite constructs revealed that none of them included 1 in the 95 % confidence interval. In the *second* method, discriminant validity is achieved if the square root of the AVE is larger than the correlation coefficient (Fornell and Larcker 1981). In all of the 45 pairs of correlations between composite constructs (see Table 1), this criterion was met except in 12 cases. In the *third* method, the correlation between each of the two composite constructs in the study was freely estimated in the first model (i.e., a two-factor model) but set to 1 in the second model (i.e., a one-factor model). A Chi square difference was examined between the two models to determine whether the two constructs are significantly different. Results indicated that all pairs of constructs had significant difference at $p < .001$. Taking these findings together, it is reasonable to conclude that acceptable discriminant validity was achieved. In summary, the scale items were both reliable and valid for structural model testing.

Common method variance (CMV) was also statistically tested. Since we relied on self-report measures from the same respondents for obtaining all constructs, the study results potentially could be distorted by common method variance bias (Podsakoff et al. 2012). We statistically tested for this bias. Firstly, the Harman's statistical test did not reveal a single factor simultaneously affecting all studied composite constructs: the exploratory principal component analysis extracted 4 principal components with eigenvalues greater than 1. Similarly, in CFA (measurement model) linking each indicator to a single construct (factor capturing the potential common method variance) rather than 10 separate ones resulted in a major drop in the model's fit (the altered model's $\chi^2 = 5277.29$, $df = 629$; in comparison to the general measurement model $\Delta\chi^2 = 3835.91$, $df = 45$, $p < .001$).

Adding a common latent factor linked with each indicator of the existing 10 composite scales in the measurement model did not change the significance of the factor loadings (all remained significant at $p < .001$), although did improve the model fit (the altered model's $\chi^2 = 1157.94$, $df = 547$; in comparison with the general measurement model $\Delta\chi^2 = 283.44$, $df = 37$, $p < .001$). Similarly, adding common latent factor and a marker variable factor (we used respondent age and years of experience with the company as indicators of a marker variable theoretically unrelated to the scrutinized 10 composite constructs) did not lead to insignificance of the factor loadings in the measurement model, although did improve the model fit (the altered model's $\chi^2 = 1287.19$, $df = 610$; in comparison with the general measurement model $\Delta\chi^2 = 154.19$, $df = 26$, $p < .001$; yet, PNFI (parsimony adjusted NFI), which is more appropriate for comparing non-nested models, dropped from .800 to .760).

Finally, as recommended by Lindell and Whitney (2001), we adjusted the correlation matrix between composite scales by partialling out the impact of the factor with the smallest positive correlation with others (Corporate Identification, in our case). All adjusted partial correlations between remaining 9 composite scales remained statistically significant at $p < .001$ level and did not include 0 in their 95 % confidence intervals (bootstrapping results with 1,000 resamples).

Therefore, we conclude that common method variance is unlikely to represent the problem in the current study.

Analysis and Results

Testing the Alternative Factor Structures: Nested Hierarchy Approach

We followed the recommendation of the foundational paper by Rindskopf and Rose (1988) concerning a hierarchy of models for factor structure comparisons, specifically

Table 1 Correlation of constructs employed in the study

Variable	Mean (SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
Composite constructs															
1. Good products/services	4.558 (0.914)	**.838**													
2. Vision and leadership	4.718 (0.854)	.783**	**.853**												
3. Good workplace environment	4.616 (0.851)	.803**	.941**	**.849**											
4. Social and environmental responsibility	4.479 (0.888)	.686**	.856**	.916**	**.882**										
5. Financial performance	4.553 (0.768)	.736**	.910**	.879**	.815**	**.708**									
6. Emotional appeal	4.585 (0.970)	.704**	.776**	.808**	.803**	.860**	**.918**								
7. In-role behavior	4.684 (1.009)	.692**	.781**	.748**	.756**	.824**	.919**	**.893**							
8. Extra-role behavior	4.671 (0.966)	.726**	.768**	.775**	.773**	.830**	.909**	.937**	**.906**						
9. Corporate identification	3.978 (1.123)	.411**	.454**	.477**	.600**	.491**	.626**	.628**	.597**	**.870**					
10. Trust	4.606 (0.941)	.698**	.753**	.770**	.753**	.823**	.889**	.894**	.904**	.625**	**.890**				
Controls (single item scales)															
11. Company id (dummy)	0.393 (0.489)	−.084	−.083	−.095	−.078	−.094	−.142**	−.120*	−.113*	−.083	−.137**	NA			
12. Experience with the company (years)	4.639 (3.813)	.049	.069	.029	.045	.077	.050	.112*	.074	.043	.085	.233**	NA		
13. Respondent's gender (dummy)	0.500 (0.501)	.033	.008	.032	.052	.047	.068	.049	.051	.069	.068	.036	.041	NA	
14. Respondent's age (years)	39.370 (14.520)	.028	.064	.034	.037	.038	−.012	−.017	−.020	−.007	−.015	.234**	.186**	−.035	NA

$N = 400$. * p (two-tailed) $< .05$, ** p (two-tailed) $< .01$. Figures on the main diagonal (bold font) of the correlation matrix = SQRT (AVE)

SD standard deviation

when testing for a second-order factor model. The scrutinized models M1–M4 are graphically presented in Fig. 1.

The "full" model (i.e., the least restricted model) is a bi-factor model consisting of one general factor (M3) plus group factors (M1). The bi-factor model (M_{full}) is included as part of the nested hierarchy of models for empirical testing only, and serves as a baseline model, even though it does not form part of our formal hypothesis. The first nested model is the first-order correlated model M1, comprising individual dimensions of the corporate reputation construct represented as correlated yet independent first-order group factors. Next in the hierarchy of nested models is the second-order reflective model (M2), which is in fact a special case of group factor correlated model M1. The second-order reflective model imposes a specific structure on the pattern of correlations among the first-order group factors, implying that any association between first-order factors can happen only because of the impact of the second-order factor. Then, the one-factor model (M3) is a special case of the second-order model, where the unique variances of the first-order factors are set equal to zero. The one-factor model is the most restrictive model in the hierarchy. Finally, we introduced the second-order formative model M4, where the first-order factors serve as causal formative indicators of the second-order formative corporate responsibility construct. As recommended in the literature (Walsh and Beatty 2007; Sarstedt et al. 2013), for identification of the second-order formative model M4 we added two reflective indicators of second-order corporate reputation construct: "This company has a good reputation in the market," and "This company is highly reputable" (1 = "Absolutely disagree," 6 = "Absolutely agree").

Table 2 summarizes the results of the hypotheses testing discussed in the next two sections.

Factor Structure Comparisons

Table 3 presents the model fit results of alternative conceptualizations of corporate reputation. A brief look at the factor structure comparisons of corporate reputation (Table 3) immediately indicates that the one-factor model (M3) does not fit the data, despite having all factor loadings significant (hence, *Hypothesis 3a is not supported*). All remaining models—second-order models (M2, M4) and first-order model (M1)—demonstrate acceptable fit.

The second-order reflective model (M2) fits the data reasonably well ($\chi^2 = 417.11$, $df = 164$, $p < .01$; $\chi^2/df = 2.54$; *RMSEA* = .062, *NNFI* = .957, *PNFI* = .812, *CFI* = .963, *Standardized RMR* = .035); furthermore, in this model all six first-order dimensions of corporate reputation are significantly loaded on the second-order factor. Ergo, *Hypothesis 1a is supported*.

Judging by the model fit (χ^2/df, *RMSEA*, *CFI*, *NNFI*, and *Standardized RMR*), the second-order formative model (M4) seems to be demonstrating superior results (best values of parameters are marked bold in Table 3). Yet, this result is misleading: Unlike M1–M3, M4 is a non-nested model (formative construct requires two additional indicators for identification, and has different nature of the second-order construct: endogenous versus exogenous), and so we can only compare model parsimonious fit indices (such as parsimony adjusted NFI—PNFI). All other indicators and indices are not directly comparable; all we can infer from them is that models M1, M2 and M4 pass the basic fit threshold, without being able to rank them. In terms of PNFI, the best model is the second-order reflective construct (M2). Moreover, whereas the second-order reflective model (M2) has all second-order factor loadings significant (i.e., all dimensions of corporate reputation are driven by the higher-order construct), in the case of the second-order formative model (M4) only three out of six paths to the higher-order construct are significant. This result suggests that in the model M4 the formative higher-order corporate reputation construct is driven only by three dimensions (good products/services, financial performance and emotional appeal), with no impact of vision and leadership, good workplace environment, social and environmental responsibility; this result directly contradicts theoretical conceptualizations of corporate reputation (Fombrun et al. 2000). The formative model M4 demonstrates a poor result on one additional test. The R^2 of the second-order construct is only 73.9 percent, suggesting problematic content validity: more than 25 % of variance of the resulting composite corporate reputation construct is not explained by the focal six first-order dimensions. Therefore, *Hypothesis 4a is not supported*.

Finally, with regards to factor structures comparison, the models M1 (first-order correlated) and M2 (second-order reflective model) are similar to each other: whereas less restrictive M1 is better in terms of model fit and absolute fit indices (χ^2/df, *RMSEA*, *CFI*, *NNFI*, and *Standardized RMR*), the more complex M2 is better in terms of parsimonious fit index (PNFI).

Nomological Validity Testing

In order to establish the robustness of these findings, we next test the validity of the four models (M1, M2, M3, and M4) within a nomological net context. Model comparison was performed by embedding each conceptualization of corporate reputation separately within a nomological net comprising four outcome variables: in-role behavior, extra-role behavior, corporate identification, and company trust (see structural modeling results for M1–M4 in Fig. 2).

Table 2 Summary of hypotheses testing

Hypotheses	Focal model	(a) Factor structure test	(b) Nomological validity test
Hypothesis 1	Second-order reflective (M2)	Supported	Supported
Hypothesis 2	First-order correlated (M1)	(*Not hypothesized*)	Not supported
Hypothesis 3	One-factor (M3)	Not supported	Not supported
Hypothesis 4	Second-order formative (M4)	Not supported	Supported

Additionally, to ensure sample homogeneity with regards to respondents' demographic characteristics and possible company effects, we included four control variables in the analysis: company id (dummy-coded, 0 or 1), respondent's experience with the company (years), respondent's gender (dummy, 0 for males and 1 for females), and respondent's age (years).

Similar to earlier results, both reflective and formative second-order models (M2 and M4, respectively) and the first-order correlated model (M1) demonstrate good fit to the data (see Table 3). The one-factor model (M3) does not fit the empirical data within the nomological network (despite having all four nomological paths significant—see M3 in Fig. 2); thus, *Hypothesis 3b is not supported*.

The following points are noteworthy. First, the second-order reflective model (M2) demonstrates acceptable fit, and is the best with regards to PNFI. Particularly important for nomological validity testing, corporate reputation construct in this model is a significant predictor of all four outcomes (trust, in-role behavior, extra-role behavior, and corporate identification—see M2 in Fig. 2). Finally, all second-order loadings and in this model are significant as well. This *corroborates Hypothesis 1b*.

Second, although first-order correlated model (M1) has the best fit (in terms of χ^2/df, *RMSEA*, *CFI*, *NNFI*, and *Standardized RMR*—see Table 3), out of 24 expected nomological paths (from each of the six dimensions to the four outcomes), only 6 are significant [see M1 in Fig. 2]. The three essential dimensions (vision and leadership, good workplace environment, financial performance) do not predict a single outcome—a surprising result contradicting conceptualization of the corporate reputation construct. Therefore, *Hypothesis 2 is not supported.*

Finally, although second-order formative model (M4) is very similar to the second-order reflective model (M2) with regards to absolute model fit (χ^2/df, *RMSEA*, *CFI*, *NNFI*, and *Standardized RMR*—see Table 3), M2 remains better with regards to parsimony (PNFI), and, as it was argued before, PNFI is the only proper way to compare these two non-nested models. Moreover, as structural model M4 in Fig. 2 reveals, out of six first-order dimensions of corporate reputation, only two (good products and services and emotional appeal) are significant predictors of the composite formative second-order corporate reputation construct. Yet, all four nomological paths from the second-order formative corporate reputation construct to its hypothesized outcomes are significant (see M4 in Fig. 2); hence, *Hypothesis 4b is supported*.

Robustness Checks

We performed a series of robustness checks, to ensure the validity of reported above findings.

The first robustness check involved cross-validation of our results using the split sample to test for generalizability. Its goal is to improve the external validity of the obtained results, ensuring that the findings are not sample-specific. The model was estimated for analysis sample (company A, 243 observations). Then, the same model was estimated for holdout sample (company B, 157 observations), with latent factor indicator loadings, latent factor covariances and latent factor regression coefficients fixed to values estimated during the first (analysis sample) model estimation. The results of cross-validation (available from the authors upon request) suggest that the prior findings are not sample-specific, but support the generalizability of the proposed model thus corroborating our conclusions.

The second robustness check tested the possibility of existence of more than one second-order factors, when the individual six first-order dimensions are loaded to two or more latent second-order corporate reputation constructs (e.g., Berens and van Riel 2004). This possibility is warranted by our prior justification of the reflective higher-order nature of the corporate reputation construct. We made the distinction between two essential orientations of organizational identity, a key determinant of corporate reputation: individualistic organizational identity and collectivist organizational identity. It is conceivable that these two orientations drive their respective dimensions; hence, rather than one, we might conceivably find two (or more) second-order corporate reputation factors. Then, these second-order constructs *might* form the third-order overarching corporate reputation factor.

To test the unidimensionality of the second-order corporate reputation, we ran the exploratory factor analysis (EFA, with maximum likelihood extraction method) on the factor scores of the six first-order dimensions of the corporate reputation. The analysis yielded one factor with eigenvalue of 5.1 (accounting for the 85 % of variance). The next largest factor had an eigenvalue of .4 (6 % of variance). All loadings of the six dimensions on the single

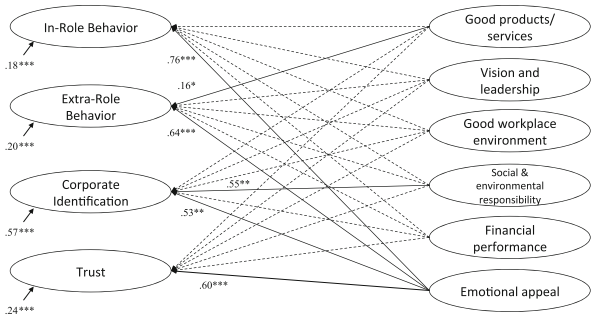
Table 3 Alternative corporate reputation factor structure models: summary of model fit comparisons (overall sample, 400 observations)

Corporate reputation (CR) factor structures	χ^2 (df)	χ^2/ df	*RMSEA*	*CFI*	*NNFI*	*PNFI*	*SRMR*	*Model Fit*	*Coefficients' significance*[a]
CR Factor Structure Model—Corporate reputation construct only									CR components
Bi-factor model (M_{full})	269.66 (135)	2.00	0.050	0.980	0.972	0.683	0.024	Baseline model	
First-order correlated model (*M1*)	362.42 (155)	2.34	0.058	0.970	0.963	0.774	0.030	Acceptable fit	All loadings & correlations between dimensions are significant
Second-order reflective model (*M2*)	417.11 (164)	2.54	0.062	0.963	0.957	**0.812**	0.035	Acceptable fit	All loadings are significant. The second-order construct is loaded on all dimensions
One-factor model (*M3*)	1622.56 (170)	9.54	0.146	0.787	0.762	0.688	0.065	*Unacceptable Fit*	All loadings are significant
Second-Order formative model (*M4*)	412.67 (188)	**2.20**	**0.055**	**0.971**	**0.965**	0.772	**0.029**	Acceptable fit	All loadings are significant. 3 out of 6 paths to second-order CR are significant (from good products/services, financial performance & emotional appeal dimensions)
CR Factor Structure Model—Nomological validity[b] (see Fig. 2)									Nomological validity: regression weights
Bi-factor model (M_{full})	1560.57 (696)	2.24	0.056	0.946	0.936	0.775	0.059	Baseline model	6 out of 24 nomological paths significant
First-order correlated model (*M1*)	1649.97 (716)	**2.30**	**0.057**	**0.941**	**0.933**	0.793	**0.060**	Acceptable fit	All 4 nomological paths (from CR to consequences) are significant
Second-order reflective model (*M2*)	1915.05 (745)	2.96	0.063	0.926	0.920	**0.821**	0.066	Acceptable fit	All 4 nomological paths (from CR to consequences) are significant
One-factor model (*M3*)	3088.55 (751)	4.11	0.088	0.853	0.841	0.752	0.071	*Unacceptable fit*	All 4 nomological paths (from CR to consequences) are significant. 2 out of 6 paths to second-order CR are significant (from good products/services & emotional appeal dimensions)—see M4 in Fig. 2
Second-order formative model (*M4*)	1948.84 (811)	2.40	0.059	0.933	0.926	0.805	0.062	Acceptable fit	

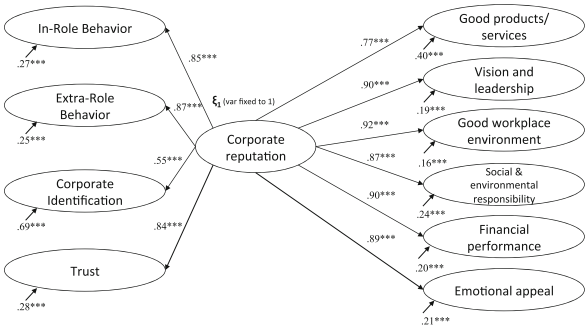
Best values of each indicator for models M1–M4 are marked bold

[a] Standard errors are estimated by bootstrapping (1,000 resamples). Significance level is $p < .05$ (two-tailed)

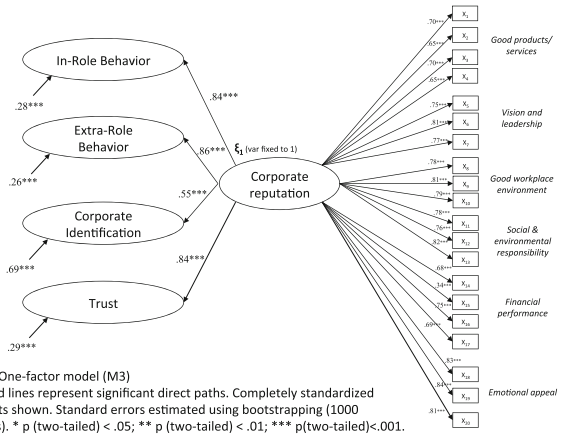
[b] The hypothesized organizational outcomes of CR (trust, in-role & extra-role behavior, corporate identification) are regressed on CR and four control variables: Company id (dummy), Experience with the company (years), Respondent's gender (dummy), and Respondent's age (years)—see models M1–M4 in Fig. 2



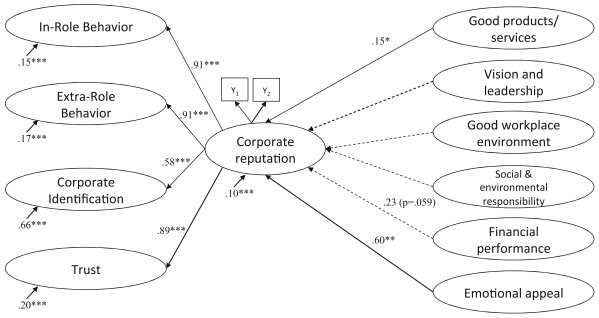
Model 1: First-Order Correlated Model (M1)
Note. All 6 exogenous constructs are freely correlated with each other. Solid lines represent significant direct paths. Completely standardized coefficients shown.
* p (two-tailed) < .05; ** p (two-tailed) < .01; *** p(two-tailed)<.001.
Standard errors estimated using bootstrapping (1000 resamples).
Control variables include: Company id (dummy), Experience with the company (years), Respondent's gender (dummy), and Respondent's age (years)



Model 2: Second-order reflective model (M2)
Note. Solid lines represent significant direct paths. Completely standardized coefficients shown.
* p (two-tailed) < .05; ** p (two-tailed) < .01; *** p(two-tailed)<.001.
Standard errors estimated using bootstrapping (1000 resamples).
Control variables include: Company id (dummy), Experience with the company (years), Respondent's gender (dummy), and Respondent's age (years)



Model 3: One-factor model (M3)
Note. Solid lines represent significant direct paths. Completely standardized coefficients shown. Standard errors estimated using bootstrapping (1000 resamples). * p (two-tailed) < .05; ** p (two-tailed) < .01; *** p(two-tailed)<.001.
Control variables include: Company id (dummy), Experience with the company (years), Respondent's gender (dummy), and Respondent's age (years)



Model 4: Second-order formative model (M4)
Note. All 6 exogenous constructs are freely correlated with each other. Solid lines represent significant direct paths. Completely standardized coefficients shown.
* p (two-tailed) < .05; ** p (two-tailed) < .01; *** p(two-tailed)<.001
Standard errors estimated using bootstrapping (1000 resamples).
Control variables include: Company id (dummy), Experience with the company (years), Respondent's gender (dummy), and Respondent's age (years)

Fig. 2 Structural parameters of alternative models

largest factor exceeded .8. Therefore, we conclude that the second-order corporate reputation construct is unidimensional, with no possibility of multiple higher (third-) order factors.

Emotional Appeal (RepTrack^{TM} Pulse) Scale as a Proxy for Corporate Reputation

The prior conceptual argument and empirical results demonstrate that the superior method of modeling corporate reputation is the second-order reflective model, with 20 indicators and six first-level dimensions. Yet, in practice, sometimes there is a need to get a corporate reputation score using a simpler instrument with fewer survey questions. For instance, there might be the need to use corporate reputation as an auxiliary construct (moderator; control variable) in research projects that scrutinize other constructs. Similarly, in numerous practitioner applications (rankings; consulting projects), there is a need to measure corporate reputation using a reliable proxy, comprising 3–4 questions, without the need to investigate its individual components. For such situations, Ponzi et al. (2011) proposed a short 4-item measure of corporate reputation, relying solely on the three questions about emotional appeal from the scale of Fombrun et al. (2000)—"I have a good feeling about this company," "I admire and respect this company," "I trust this company"—and adding the fourth general question "This company has a good overall reputation." The authors note that this proxy captures the emotional response (or consequence) to the overall corporate reputation.

To test the appropriateness of using the RepTrack^{TM} Pulse scale (Ponzi et al. 2011) as a measure of the full second-order reflective scale (M2), we estimated the model with the short 4-item scale (RepTrack^{TM} Pulse, reflective first-order construct) and the full M2 scale as correlated exogenous latent factors. The modeling results revealed a statistically and practically significant correlation between the constructs measured using short and full scales ($r = .873$, $p < .001$), consistent between the two

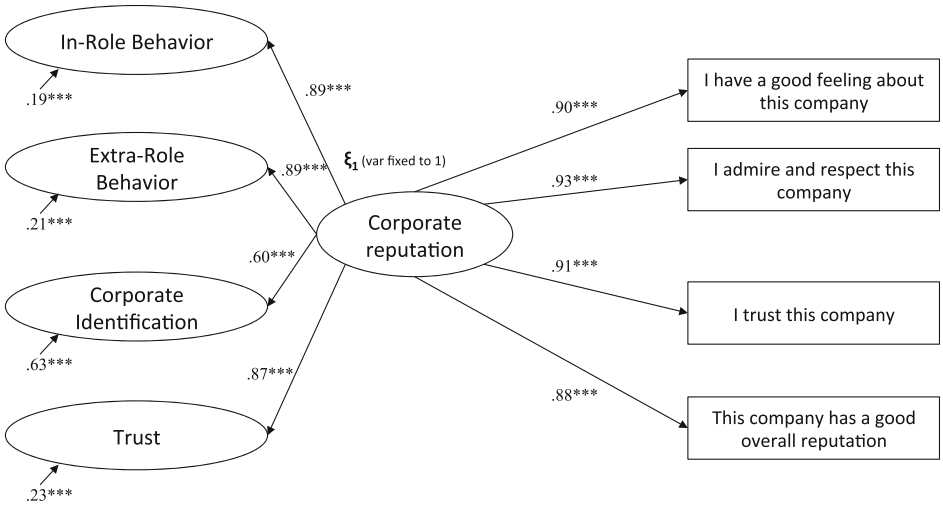


Fig. 3 Testing the short-form measure of the corporate reputation: nomological network

RepTrack™ Pulse short scale analysis
Note. Solid lines represent significant direct paths. Completely standardized coefficients shown.
* p (two-tailed) < .05; ** p (two-tailed) < .01; *** p(two-tailed)<.001.
Standard errors estimated using bootstrapping (1000 resamples).
Control variables include: Company id (dummy), Experience with the company (years), Respondent's gender (dummy), and Respondent's age (years)

subsamples ($r = .890$, $p < .001$ for company A; $r = .899$, $p < .001$ for company B). Therefore, the variables share more than 75 % of variance, and hence the short 4-item RepTrack™ Pulse scale *can* be used as a rough proxy for the overall full second-order reflective corporate reputation scale (M2). Moreover, putting the short scale in the nomological network instead of the second-order reflective construct (M2) also yields appropriate results: the model fit is acceptable ($\chi^2 = 714.05$, $df = 247$, $p < .01$; $\chi^2/df = 2.89$; *RMSEA* = .069, *NNFI* = .946, *PNFI* = .784, *CFI* = .955, *Standardized RMR* = .072), and the short-form corporate reputation turns out to be a significant predictor of all four focal outcomes: in-role behavior, extra-role behavior, trust, and corporate identification (see Fig. 3).

Summary of the Empirical Findings

The foregoing analysis reveals the following insights. *First*, the full empirical support of Hypothesis 1 in both factor structure test and nomological validity test and lack of full support of Hypotheses 2–4 (see the summary in Table 2) suggests that corporate reputation can be best modeled as a second-order reflective assessment construct (generalized favorability), influencing a set of first-order asset dimensions ("being known for something"). Although demonstrating acceptable fit, alternative conceptualizations of the corporate reputation (first-order correlated model, second-order formative model, one-factor model) nevertheless fall short of the second-order reflective conceptualization. Yet, while both theoretical argument and empirical findings of this paper favor the reflective second-order conceptualization and operationalization of corporate reputation, other conceptualizations may also be tenable under specific boundary conditions (see the discussion in the Future Research and Limitations section below). *Second,* the measured corporate reputation unambiguously leads to a set of valuable organizational outcomes: customer trust, favorable attitudes (corporate identification), and positive behavioral intentions (in-role, extra-role). *Third*, shorter scales of corporate reputation (such as the 4-item RepTrack™ Pulse scale) can be used as a good proxy for the full corporate reputation measure.

Discussion

Theoretical Insights: Corporate Reputation as a Second-Order Reflective Construct

Overall, in the paper we discuss theoretically three issues: (1) the mechanisms effecting perception of CR in the minds of organizational stakeholders (collectivist and individualistic organizational identity and underlying trust mechanisms); (2) alternative conceptualizations of CR; and (3) the predictive (nomological) validity of CR, i.e., the predictive power of different conceptualizations and operationalizations of CR with regards to the four theoretical outcomes: in-role and extra-role behaviors, corporate identification and development of trust. The mechanisms

effecting CR (point (1) above) are crucial for our theoretical discussion, justifying conceptualizing and operationalizing CR as a second-order reflective construct driving six firs-order dimensions. The empirical part of the paper tests points (2) and (3)—alternative factor structures of CR and their predictive power in a nomological network.

A key finding of this study is the conceptual argument for and empirical validation of the second-order reflective model against competing conceptualizations of corporate reputation. Our results provide sufficient evidence on the reliability, validity, and generalizability of the second-order reflective factor structure of corporate reputation. Using the relational level criterion (Law et al. 1998), while the factor structures of both first-order and second-order reflective models are tenable, it is the second-order reflective model that performs best within a nomological network, as only this model has all structural coefficients significant. Our results demonstrate that the second-order reflective corporate reputation model functions well as a point variable, and is therefore modeled correctly (Howell et al. 2007; Wilcox et al. 2008). In contrast, we find that the second-order formative model fails to function as a point variable thus lacking in external consistency, albeit having good model fit. Therefore, forcing the first-order dimensions of corporate reputation is not advisable as they share different sets of antecedents and consequences (Howell et al. 2007; Bollen and Lennox 1991; Jarvis et al. 2003).

This empirical insight corroborating our a priori conceptual argument has crucial theoretical implication: corporate reputation exists in the consumers' minds as an overarching evaluative judgment, influencing all area- and context- specific evaluations of the company (individual first-order dimensions—quality of products, corporate citizenship, workplace environment, etc.). It is important to note that while satisfactory model fit index values are important in model comparison, they do not necessarily guarantee correct specification of models (Diamantopoulos et al. 2008; MacKenzie et al. 2005). Model specification needs to be conceptually and theoretically justified a priori as adhered to in the current study.

In this paper, we assert that because second-order reflective corporate reputation is a higher-order (i.e., *assessment*), long-standing construct formed on the basis of organizational identity, trust, signals and experiences received over time, its implicit attitude is automatically activated instantiating perceptions of first-order dimensions (i.e. *asset constructs*), thus offering cognitive economy (Wilson et al. 2000). The stability of corporate reputation as a second-order construct characterized by the primacy of implicit attitude is therefore not likely to be threatened in the face of isolated negative information received by the individual as it tends to override contextual-based explicit attitudes (Wilson et al. 2000). Unlike formative models, where it is a challenge to superimpose an overarching theoretical framework as they do not necessarily share the same cause, the second-order reflective model fits well within a theoretical interpretation.

Methodological Implications

From a methodological perspective, corporate reputation measured as a higher-order reflective construct exists apart from its measurement, and its nominal meaning is distinct from its empirical meaning. The benefit of a second-order reflective corporate reputation model is that it can be easily identified, and it allows for prescriptive measures for scale improvement as measurement error (or reliability) can be determined at the individual item level and at the first-order factor level. In addition to statistical evidence, non-statistical considerations also point toward the favorability of the second-order reflective conceptualization. Parsimony of the factor structure and interpretability are two additional considerations in the selection of models (Rindskopf and Rose 1988). Our finding indicates that the second-order reflective corporate reputation model is more parsimonious than a first-order correlated model. This parsimonious model is especially useful when a structural equation modeling technique is adopted for examining related constructs within a nomological network. The second-order factor model reduces the number of parameters that require estimation, which simplifies the complex measurement structure and caters to the principle of scientific parsimony. Further, the second-order reflective corporate reputation model is a congeneric model meaning that the factor loadings and residual variances of the first-order dimensions are both free to vary. This implies that each of the first-order dimensions represents the superordinate construct not necessarily to the same degree or to the same level of precision.

Ponzi et al. (2011) recently validated a four-item short measure of corporate reputation (RepTrak^{TM} Pulse) by using the 3-item emotional appeal scale and adding a fourth item on overall corporate reputation. Our study validates that the emotional appeal can be used as a good proxy for corporate reputation in cases when this construct is not of the primary attention of the researcher (e.g., a moderator or a control variable). Such a short measure has strong psychometric properties in cross-cultural studies, and is managerially appealing (e.g., reduces fatigue, demand artifact, and redundancy, etc.). It, however, loses rich information on individual first-order facets of corporate reputation. Scholars and research analysts interested in obtaining diagnostic information on the multi-faceted nature of organizational reputation for management-oriented action can only find it in the second-order reflective model of

corporate reputation. Using the full, second-order reflective model of CR becomes particularly essential when comparing perceptions of reputation by different stakeholders, for whom—as it was argued before—different CR facets will have different levels of salience (e.g., financial performance for investors or product quality for customers).

Practical Implications

In this paper, we argue for the second-order assessment construct as the best representation of the corporate reputation. This thesis has major practical implications.

First, the overall reputation is not a sum of individual context-specific dimensions ("being known for something"). Rather, overall reputation creates a "halo" effect influencing each first-order dimension (but not controlling either of them totally—the loadings from the second-order construct to first-order dimensions are substantive but not unity, meaning that the first-order dimensions have some individual variance). The second-order reputation construct is formed through organizational identity, image, and actions (Fombrun and van Riel 1997; Barnett et al. 2006). Hence, development and sustenance of this valuable organizational asset can be done through the latter three mechanisms, rather than focusing on individual first-order dimensions (quality of products/services, vision and leadership, workplace environment, social and environmental responsibility, financial performance, and emotional appeal).

Second, the overall reputation (second-order construct, general evaluative judgment of the company) has a major influence on context-specific reputation dimensions, accounting for 60–90 % of the variance of the latter. Hence, nurturing the general organizational reputation will enhance each of the context-specific first-order dimensions, or compensate for temporary problems in some of them (such as quality problems; CSR crises, financial downturns, etc.).

Finally, we demonstrated that the general corporate reputation directly leads to a set of valuable organizational outcomes (trust, corporate identification, in-role behavior, extra-role behavior). Leveraging these advantages allows a company to gain competitive advantage, creating additional value for all its stakeholders.

Future Research and Limitations

The findings of this study open up a set of new questions for future research.

First, we acknowledge that the current research report merely demonstrates the optimal (from empirical point of view) approach for conceptualization and measuring corporate reputation, supporting this finding with an a priori theoretical justification. This is an important first step; however, we are not setting the boundary conditions for our theoretical framework. Now, once it becomes clear that corporate reputation is conceptually and empirically a second-order assessment construct influencing individual first-order asset dimensions, it becomes essential to see if this observation holds true in all contexts. It is conceivable that in some industries or with some stakeholder groups, the most appropriate conceptualization of corporate reputation becomes different (e.g., one of the other acceptable models discussed in this paper—model without second-order construct M1 or with formative second-order construct M4). Therefore, we encourage further studies of this issue, scrutinizing boundary conditions of applicability of the second-order reflective conceptualization of organizational reputation, e.g., in the form of categorical or continuous moderators, such as *individual factors* (person's cognitive psychological traits—e.g., need for cognition, holistic/analytic thinking), *transactional factors* (e.g., experience of work with the company), or *situational factors* (e.g., situational psychological states—e.g., negative affectivity).

Second, the CR could turn out to be inherently non-recursive (both formative and reflective), with individual dimensions driving the "halo" effect, which, in its turn, influences the dimensions. To test such non-recursive model, we encourage future researchers to collect longitudinal data (to prove temporal sequence of effects) with additional instrumental variables (needed for SEM identification of recursive links).

Third, in the current study we concentrated on corporate reputation as perceived by only one stakeholder group—customers. This decision was made to increase the internal validity of the study, and to impose reasonable limits on its scope. Yet, we acknowledge that corporate reputation relates to all organizational stakeholders (Fombrun 1996), including, *inter alia*, employees, shareholders, regulators, financial analysts, and media. Predictably, different dimensions of CR are more salient for different stakeholders (e.g., workplace environment for potential employees; financial performance for investors). Despite scarcity of studies of corporate reputation related to stakeholders beyond customers, we encourage future researchers to seriously consider this path, which can lead to new non-trivial insights even with regards to the proposed theoretical framework.

Fourth, concurring with Ponzi et al. (2011), we encourage testing the alternative conceptualizations and measures of corporate reputation construct in different cultural settings. At the very least, such validation may yield different weights of the individual corporate reputation components (e.g., CSR vs product quality vs financial

strength). Moreover, such inquiries might reveal different structures of corporate reputation, depending on the cultural norms of a particular country.

Fifth, in this paper we concentrate solely on valuable organizational outcomes of corporate reputation. Further studies could scrutinize its antecedents, such as corporate identity, image, and actions. Our theoretical framework (conceptualizing the corporate reputation as a second-order reflective construct) would benefit from validating the nomological network comprising of the construct's antecedents, or even the combination of antecedents and outcomes.

In addition to the preceding avenues for further research, we must acknowledge some limitations of this study. *First*, the current analysis is based on a single method—self-report survey measures obtained from a single informant—potentially vulnerable to a set of biases. Even though we conducted numerous tests and robustness checks, we would encourage replication of the study using other methods (such as behavioral observation or experiment). *Second*, the static nature of the research phenomenon (association between dimensions of perceived corporate reputation) made the cross-sectional design appropriate. Future enquiries could be designed using a longitudinal panel data, moving from study of associations to study of causation. *Finally*, the reported research was based on a sample from a single industry, and would benefit from replication using different samples, improving, by this means, the study's external validity. Expanding on this point, the benefit of the current study is testing the validity of the corporate reputation construct in a new cultural setting (Latin America: Peru), which was never studied before (most prior studies rely on the data from North America or Western Europe). Yet, this choice has potential threats to our finding's external validity: it is possible that the observed empirical patterns are peculiar to the focal country (Peru), region (North America) or cultural context, and the replication of the study in different countries is highly desirable.

Conclusions

In conclusion, we believe our research provides an accurate understanding of corporate reputation as a second-order reflective construct, and gives clear methodological implications for researchers and practitioners. Methodologically, our use of the nested and non-nested hierarchy of models provides a robust test of the reliability, validity, and generalizability of the proposed reflective nature of the second-order construct. Modeling corporate reputation as a second-order reflective construct yields several methodological advantages including, estimating reliability at the item and first-order factor level, conceptual interpretability, and parsimony when tested within a nomological context. Our argument is based on the notion that corporate reputation modeled as a higher-order reflective construct exists apart from its measurement, and that its nominal meaning is distinct from its empirical meaning.

Appendix 1

See Table 4.

Table 4 Psychometric properties of scale items

Constructs	Scale items[a]	Average variance extracted (AVE)	Composite reliability (CR)
Dimensions of corporate reputation (CR)[b]			
1. Good products/services	This company has an efficient after-sales service for all its products	.703	.904
	This company develops innovative products and services		
	This company offers high quality products and services		
	This company offers products and services that are a good value for the money		
2. Vision and leadership	This company has an excellent leadership	.728	.889
	This company has a clear vision for its future		
	This company recognizes and takes advantage of market opportunities		
3. Good workplace environment	This company is well managed	.721	.886
	This company looks like a good company to work for		
	This company looks like a company that would have good employees		

Table 4 continued

Constructs	Scale items[a]	Average variance extracted (AVE)	Composite reliability (CR)
4. Social & environmental responsibility	This company supports good causes that benefit society	.777	.913
	This company is an environmentally responsible company		
	This company maintains high standards in the way it treats people		
5. Financial performance	This company has a strong record of profitability	.501	.789
	This company looks like a low risk investment		
	This company tends to outperform its competitors		
	This company looks like a company with strong prospects for future growth		
6. Emotional appeal	I have a good feeling about this company	.842	.941
	I admire and respect this company		
	I trust this company		
Consequences (nomological constructs)[c]			
1. In-role behavior	I am a loyal customer of this company	.798	.922
	I have developed a good relationship with this company		
	I am willing to continue to do business with this company		
2. Extra-role behavior	I would say something positive about this company	.822	.948
	I would recommend this company to my friends and relatives		
	If my friends were looking for a new company of this type, I would tell them to try this place		
	I am likely to support a cause that was associated with this company		
3. Corporate identification	My self-identity greatly overlaps with the identity of this company	.756	.939
	When someone criticizes this company, it feels like a personal insult		
	This company's successes are my successes		
	When someone praises this company, it feels like a personal compliment		
	When I talk about this company, I usually say "we" rather than "they"		
4. Trust	I trust this company	.792	.950
	I have great confidence in this company		
	This company has high integrity		
	I can depend on this company to do the right thing		
	This company can generally be trusted		

[a] All items are measured on a 6-point Likert scale (from 1 = "Absolutely Disagree," to 6 = "Absolutely agree," with no neutral point)

[b] Scale source for corporate reputation: Fombrun et al. (2000)

[c] Scale source for nomological constructs: In-role behavior—Walsh and Beatty (2007); Extra-role behavior—Walsh and Beatty (2007); Trust—Morgan and Hunt (1994); Corporate identification—Bergami and Bagozzi (2000) and Kreiner and Ashforth (2004)

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