**ORIGINAL ARTICLE** 



# The interplay of organisational culture, transformational leadership and organisation innovativeness: Evidence from India

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# Abstract

Management scholars highlight that organisational culture and leadership have a predominant multilayer impact on corporate learning leading to innovativeness. Nevertheless, the management literature is insufficient to address the issue because the previous empirical studies about organisational culture and leadership only apply to some partial and simple conceptualisations. Drawing from the competing values framework for culture, leader-member exchange and organisational learning theories, we contribute by conceptualising a four-dimensional model of organisational culture for Indian firms. We tested and found support for the culture—innovativeness relationship moderated by transformational leadership. Finally, we discuss implications, limitations, and future directions for research.

**Keywords** Organisational culture · Transformational leadership · Organisational innovativeness · India

# Introduction

Previous research has shown that conducive organisational culture and positive leadership styles influence organisation's learning and innovation to ensure the organisation's survival in a hyper-competitive work environment (Bahadur & Ali, 2021). However, efforts at testing and customising leadership styles impacting firms' innovativeness have remained elusive (Jaiswal & Dhar, 2015; Lakshman & Rai, 2021). Moreover, a prevalent challenge in today's business environment is the integration of theories pertaining to organisational culture and learning. This challenge demands for building a culture that facilitates, encourages, and nurtures the organisation's knowledge and innovation (Baer & Frese, 2003; Von Krogh et al., 2012). Ironically, the traditional literature on organisational culture and leadership has

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limited potential for explaining the moderating role of leadership on the relationship between organisational culture and leadership (Lakshman & Rai, 2021). Lately, some studies (Gruda & Kafetsios, 2020) have empirically examined the relationship between a leader's knowledge, knowledge sharing culture, and a firm's innovation capability. Despite the contribution of contextual studies (Lakshman & Rai, 2021), scholars have ignored the cultural impact to justify the multilayer and integrative theoretical framework (Gruda & Kafetsios, 2020).

The change in leadership style is also sought to bring in fundamental change in the organisational culture to enhance and exploit organisational capabilities optimally. The global economic and socio-culture contexts inevitably require organisations be ready for sustainable change. Indian organisations are also confronting increased organisational change. Pertinent to the current situation, transformational leaders have the ability to manage change effectively specially in an environment where dependency on knowledge and information is evident. The twenty first century has witnessed an intensified research focus on the leadership and innovativeness in studies on organisations' socio-economic, psychological, and technological milieu (Lakshman & Rai, 2021). The reason can be attributed to the belief that innovativeness fundamentally contributes to organisational performance and sustainable competitive advantage (Dotzel et al., 2013; Hyytinen et al., 2015). Many studies which focus on link between various organisational factors and innovativeness have recognised transformational leadership as a significant determinant (Bass et al., 2003; Gumusluoglu & Ilsev, 2009).

In addition, the extant literature suggests that one of the important organisational factors that influence innovativeness is organisational culture (Gruda & Kafetsios, 2020). The organisational cultural theory claims that the prerequisite for innovation is building a culture that is characterised by adhocracy and clan types (Baer & Frese, 2003; Cameron & Quinn, 2011). Therefore, the assessment of the organisational culture is required to capture the internal reality and to explore the possible effect on organisational innovativeness. These arguments have led us to theorise a holistic view incorporating leadership, culture, and organisational innovativeness. In this contextual study, we have integrated culture, leadership, and organisational learning theories to understand the dynamics in the Indian context.

The present study builds on these relationships and extends previous research in multiple ways. First, the management literature acknowledges the positive influence of organisational culture on innovativeness. Yet, there is a paucity of research to study the impact of organisational culture on innovativeness in the context of an emerging market (Neelam et al., 2015). The lack of empirical investigation into the effect of different types of organisational culture on organisational innovativeness is still noted. This challenge poses a question of which culture or combination of cultures best supports innovativeness (Fischer, 2009; Malik & Pereira, 2016). The significance of studying organisational culture in the dynamic global business environment and its possible impact on innovativeness demands more contextual research (Crossan & Apaydin, 2010). Therefore, the present study attempts to fill this gap in the Indian context (e.g. Damanpour et al., 2012).

Second, while there is agreement that transformational leadership improves innovativeness (Bass et al., 2003; Gumusluoglu & Ilsev, 2009), there is a scarcity

of research on how leaders fit into the culture of organizations operating in emerging markets. Previous studies state that the transformational leadership style acts differently in different settings to create a suitable work environment described by teamwork and cooperation to support innovation (Lakshman, 2009). However, the literature has failed to establish how transformational leaders positively impact innovativeness in different cultures possessed by an organisation (Lakshman & Rai, 2021). The present study deals with this issue by considering transformational leadership as a moderator between organisational culture and innovativeness.

Third, this study also attempts to assess the combination of various types of organisational culture possessed by Indian organisations. This is because of the rapid change in the business scenario where organisations are confronting severe competition. This has led to a situation where organisations are finding it difficult to define organisational culture clearly. Moreover, the presence of subculture, orthogonal culture, and counterculture makes organisational culture more complex to capture accurately, thus making it elusive, although quite significant (Vijayakumar & Padma, 2014). The current research has adopted competing values framework of organisational culture in the Indian context. The framework explains that organisational complexity breeds four different types of culture comprising of clan, adhocracy, market, and hierarchy (Cameron & Quinn, 2011; Westrum, 2004). Therefore, we propose a comprehensive framework to empirically validate how types of organisational culture drive organisational innovativeness and to explore the moderating effect of transformational leadership on the proposed relationship, thus contributing to existing research gap in the domains of organisational culture, organisation innovativeness, and transformational leadership in the Indian context. In doing so, we draw from theories of culture (Baer & Frese, 2003; Cameron & Quinn, 2011), organisational innovativeness (Crossan & Apaydin, 2010; March, 1991), and leadership (Bass, 1999). The theory of organisational culture (Cameron & Quinn, 2011) conceptualises four types of organisational culture clan, adhocracy, market, and hierarchy-that span multilayer. We also examine the moderating impact of leadership, a critical variable in the organisational learning theory (Lakshman & Rai, 2021; ), on the relationship between organisational culture and its innovativeness. Classically, scholars agree that leadership and culture theories are inadequate in explaining innovativeness (Lakshman, 2009; Lakshman & Rai, 2021; Von Krogh et al., 2012). Although, transformational leadership, an important form of leadership, has been identified to promote innovation (Bass, 1999). Nevertheless, the literature does not provide clear theoretical explanations of how transformational leadership interplays with organisational culture to influence organisational innovativeness (Baer & Frese, 2003; Gruda & Kafetsios, 2020). Therefore, the following research questions guide our research in this study: (a) Which type(s) of organisational culture influence(s) organisational innovativeness in Indian organisations? (b) How does a transformational leadership style moderate the nexus of organisational culture and innovativeness in India?

In this study, we focus primarily on different types of culture contributing to an organisation's innovativeness. First, we examine the nature and strength of association of different types of culture with innovativeness. Second, we investigate whether transformational leadership moderates the relationships between types of culture

and innovativeness. Finally, using our research findings, we develop a framework explaining the direct influences and moderation roles among organisational culture, innovativeness, and leadership styles to guide future research and offer implications for organisational development.

## The Indian context for organisational research

India has embarked on making itself a manufacturing hub and aspires to emerge as the third-largest economy in the world (Bahadur & Ali, 2021; Lakshman, 2007). In this direction, the government of India has launched several significant initiatives to promote innovation. These state level initiatives include the new intellectual property rights policy, Uchchatar Avishkaar, Atal Tinkering Labs, Yojana, and many others (Government of India, 2020). Therefore, Indian organizations need a global leader to make them more innovative so that they may get a competitive edge and benefit from government schemes (Lakshman, 2009; Malik & Pereira, 2016). According to the Global Innovation Index, 2020, India is ranked 48th in the world due to the amazing work done by private and public Indian organisations (Global Innovation Index, 2020). However, Economic Survey-2021 sounds critical of Indian Organisations saying that "mere reliance on Jugaad innovation can risk the country missing crucial opportunities" (Government of India, 2021); and hence an indepth analysis of the prevailing environment in the Indian organisations is required (Fransen et al., 2018; Neelam et al., 2015). Therefore, the organisations in India must shift their reliance on "Jugaad innovation" to more frugal innovations to emerge as a third-largest economy in the world. This has prompted the researchers to perform study on organisational innovativeness in Indian context in recent times.

#### Literature review

#### Organisational innovativeness

Organisational innovativeness refers to an organisation's intentions to adopting new approaches/ideas to create a competitive advantage (Avlonitis & Salavou, 2007). Organisational innovativeness is an extension of organisational learning theory (Crossan & Apaydin, 2010; Crossan et al., 1999). The innovativeness of any organisation depends on how good that firm is in making proper use of organisational knowledge and converting the same in the form of new and better products/services etc. We conceptualise innovativeness as an organisation's ability to produce innovative products/services/processes to gain market superiority (Baer & Frese, 2003). In this study, innovativeness encompasses creativity, risk-taking ability to anticipate future demands, and proactively respond to those demands. This conceptualisation is relevant in the Indian context, where market demands change frequently (Bahadur & Ali, 2021; Damanpour et al., 2012).

Organisations are increasingly embracing supportive innovation cultures and related business models to enable innovation at the workplace (Crossan & Apaydin,

2010; Gumusluoglu & Ilsev, 2009), including the Indian market (Donate & De Pablo, 2015; Lakshman & Rai, 2021). Innovative capabilities further strengthen the performance of an organization. It enhances the organization's capacity to find solutions to its daily difficulties (Bass et al., 2003). This shift towards creativity and innovation is due to the limited success of other growth strategies, such as mergers and acquisitions (Zuraik & Kelly, 2019). The fundamental shift towards improving innovativeness is uncertainty and instability in the current market to maintain or increase their competitiveness. Organisations which exploit new opportunities can achieve higher and efficient levels of the process, technology, product, and market innovations for their sustainable advantage (Wiklund & Shepherd, 2005). Turning business opportunities into practical projects requires the innovative capability (Engelen et al., 2014) that determines the ability of the organisation to apply new and untested ideas to produce innovations.

Innovative organisations are likely to facilitate entry into new arenas and renew their position in the current market (Dotzel et al., 2013). For this reason, innovativeness is an essential tool for long-term competitive ability of organisations (Berson et al., 2006; Crossan et al., 1999). Lately, innovativeness is recognised as one of the significant determinants of organisation performance in an emerging economy like India (Bahadur & Ali, 2021; Damanpour et al., 2012; Lakshman & Rai, 2021). Innovativeness leads to dynamic capability creation that increases the organisation's value (Menguc & Auh, 2006). Literature also suggests that this relationship holds well irrespective of types and levels of innovativeness (Crossan & Apaydin, 2010). In addition, apart from financial outcomes, radical innovations have positive indirect effects on the organisation's brand, image, and reputation (Dotzel et al., 2013; Hurley & Hult, 1998).

#### Organisational culture

Organisation culture has been a popular research subject because of its association with various organisational and individual outcomes. For example, organisational culture is found to be associated with CEO turnover (Fiordelisi & Ricci, 2014), entrepreneurial orientation (Engelen et al., 2014), corporate performance (Halisah et al., 2021), and organisational effectiveness (Cox & Blake, 1991). However, the change in context can change the results (Johns, 2017). Therefore, a clear understanding of organisational culture is essential for leaders and top management team, as it determines how the workforce would react to the complex business environment (Gruda & Kafetsios, 2020).

Organisational culture has been defined using different perspective and approaches by different authors. Deal and Kennedy (1983) define organisational culture as "the way things get done around here" and emphasise its strategic importance. Schein (1985) perceives that organisational culture is a set of basic assumptions, values, and norms that can be invented, discovered, developed, or integrated to cope with external adaptation. According to Cameron and Quinn (2011) and Schein (1985), culture defines the "core values, assumptions, interpretations and approaches that characterise an organization". Barney (1986) states that organisation



culture is a source of sustained competitive advantage. However, national culture is somehow inherited in the local organisations. Therefore, exploring the importance of adaptability and the fit between an organisation and its environment in the Indian context has unique value which should lead to innovation (Fransen et al., 2018; Lakshman, 2009; Malik & Pereira, 2016; Neelam et al., 2015).

Empirical investigations identify organisational culture as a critical factor to organisational effectiveness (Cox & Blake, 1991; Deal & Kennedy, 1983) and to innovation (Donate & De Pablo, 2015). Trice and Beyer (1993) relate culture t the business environment as a collective response to uncertainty and chaos. The explicit model developed Denison and Mishra (1995) explains that organisational culture incorporates four traits—involvement, consistency, adaptability, and mission. Since culture is a complex phenomenon, diversity of views exists regarding a general theory. Therefore, the Indian context is unique to test the general theories relating to organisational culture to achieve sustainable competitive advantage (Malik & Pereira, 2016).

Although culture may have many variations, the competing values framework of organisational culture categorises it in two-dimensional space (Cameron & Quinn, 2011; Schein, 1985). The first dimension elucidates orientation towards flexibility vs. control orientation. The second dimension classifies orientation based on the focus on activities occurring within or outside the organisation. These dimensions are instrumental in organising and interpreting a variety of organisational phenomena. The four dominant culture types—hierarchy, market, clan, and adhocracy emerge from this framework. Each of these cultures is operationalized based on six underlying dimensions namely, dominant characteristics organisation governance, management of employees, organisation glue, strategic emphases, and criteria for success (Vlaicu et al., 2019). The literature suggests that hierarchy-culture is characterised by bureaucracy, i.e., formal rules, formalisation, specialisation, departmentalisation, and less autonomy (Fiordelisi & Ricci, 2014). A hierarchy-dominated organizational culture prioritizes maintaining efficient, dependable, fast, and smooth-flowing production (Cameron & Quinn, 2011; Cox & Blake, 1991). The market culture focuses on competitiveness and productivity, which can be achieved by emphasising external positioning and control (Denison & Spreitzer, 1991). The market culture gathers information from customers, contractors, suppliers, regulators and respond to the external environment accordingly (Dotzel et al., 2013; Westrum, 2004). The basic assumption in a market culture is that the organisation should transform its environment and leadership to stratify the external stakeholders. For example, consumers are choosy and interested in value, suppliers work for resources, and the government needs taxes. All these external stakeholders put pressures on organisation to adopt innovation practices for their processes and products. Another critical factor to promote innovation is a clan-culture. The typical characteristics of clan-type organisations include teamwork, employee involvement programs, and corporate commitment to the employee (Hartnell et al., 2011). Clan culture is based on the assumptions that the business environment and external factors can be managed through internal factors. Also, organisations characterised by clan type develop a humane work environment in their businesses (Deal & Kennedy, 1983; Engelen et al., 2014). Such organisations are held together by loyalty and tradition. They emphasise the

long-term benefit of individual development, through high cohesion and morale (Cameron & Quinn, 2011). Adhocracy culture means an excellent environment to promote innovation in the organisation. The primary goal of an adhocracy culture is to foster creativity, adaptability, and flexibility among employees in a complex business environment (Schein, 1985; Trice & Beyer, 1993). An essential challenge of organisations working in developing economies is to produce innovative products and services and to exploit new business opportunities quickly (Baer & Frese, 2003; Gumusluoglu & Ilsev, 2009). The adhocracy culture emphasises individuality and risk-taking attitude by anticipating organisation's future need and thus, facilitates innovation. In general, organisations combine all four types of organisational culture (Fischer, 2009; Westrum, 2004) in different departments to provide a standard frame of reference to support learning behaviour.

The review of literature discussed above demonstrates that organisational culture is an independent variable which influences organisational innovativeness (outcome), and transformational leadership (moderator) interacts with the relationship between organisational culture and organisational innovativeness. While all the constructs discussed above provide a macro view of the day-to-day operations of an organisation and its subunits, it is necessary to examine the constructs that represent individual's perceptions about functioning of the organisation based on routine experiences responsible for successful organisation (Strutton et al., 1993). As already discussed, all these variables either influence individuals or vice versa.

# Hypotheses development

#### Organisational culture and innovativeness

Organisational culture ideally provides a standard frame of reference for innovation performance. Extant literature stresses organisational culture as a significant contributor to innovation at the workplace (Jassawalla & Sashittal, 2002) but needs context (Johns, 2017). When organisations have different cultures, the workforce has different interpretations and perceptions about the organisational environment, affecting employees' learning behaviour and willingness to adapt to change (Crossan et al., 1999; Lau & Woodman, 1995). Organisation's innovative ability primarily dependents on knowledge acquisition, which is enabled by cross-functional boundaries through cooperation and teamwork (Grant, 1996; Lakshman, 2007).

Organsiational culture has been related to knowledge management, which is one of the primary drivers for successfully building an innovative culture by combining the expertise of other units (Grant, 1996). The organizational culture facilitates the dissemination of information (Barney, 1986; Deal & Kennedy, 1983). When a culture does not encourage cooperation and teamwork, sharing and creative ability are constrained (Denison & Spreitzer, 1991; Lakshman & Rai, 2021). Cooperation and teamwork promote knowledge processing across functional boundaries (Donate & De Pablo, 2015). Organizations possess a variety of cultures or a mix of cultures. However, they are unquestionably dominated by a single culture, and if they are not, they prioritize each culture equally (Cameron & Quinn, 2011). Consistent with

this, Prajogo and McDermott (2005) found that an organization is able to execute even contrasting cultures in harmony. It is also crucial to comprehend the effect of every culture on the innovativeness of an organization. A company may develop a set of principles and beliefs to foster new ideas and encourage innovation. Although these topics have been addressed in a small number of recent studies (Halisah et al., 2021), empirical research on the effect of different forms of culture on innovativeness is lacking in the literature (Fischer, 2009; Jassawalla & Sashittal, 2002). This study seeks to address this void by empirically examining the relationship between the two in an Indian context (Malik & Pereira, 2016). The direct association between a hospitable organizational culture and organizational innovation has been demonstrated and studied extensively (Crossan & Apaydin, 2010). For instance, research indicates that a clan culture fostered teamwork, hence this organizational culture has a beneficial impact on innovation (Khazanchi et al., 2007). However, if an organization's main culture is hierarchy, this has a negative impact on the organization's innovativeness (Crossan & Apaydin, 2010). According to some experts, a market culture is built on the organization's market orientation, market competitiveness, and the organizations' need to innovate (Hurley & Hult, 1998). Therefore, it may be hypothesized that market culture has a favorable effect on the innovation of the organization (Jassawalla & Sashittal, 2002). Similarly, adhocracy culture, which is built on encouraging employees' creativity and vigor, has a favorable correlation with organizational innovation (Zuraik & Kelly, 2019). Based on the above discussion, the following hypotheses were formulated:

**Hypothesis 1a** Adhocracy (AD) culture will have a positive influence on organisational innovativeness (OI).

**Hypothesis 1b** Clan (CL) culture will have a positive influence on organisational innovativeness (OI).

**Hypothesis 1c** Hierarchy (HR) culture will have a negative influence on organisational innovativeness (OI).

**Hypothesis 1d** Market (MR) culture will have a positive influence on organisational innovativeness (OI).

# Transformational leadership as a moderator

There is a consensus that leadership in an organisation plays a central role in creating and maintaining a set of cultural values in the organisation (Schein, 1985; Bavik et al., 2021; Von Krogh et al., 2012). Nevertheless, at the same time, larger organisations have an influential culture, and leaders struggle to bring change and may decide to quit if unable to achieve the organisational objectives (Fiordelisi & Ricci, 2014). Leaders can develop and infuse their values, motivate employees to pursue goals, encourage the need for change, and convey the means to achieve that change (Trice & Beyer, 1993). Cooperative behaviours stimulates the thinking process in groups to achieve a more creative solution (Kahai et al., 2003). Leaders focus on achieving goals and objectives through better cooperation by inducing a sense of belongingness among people (De Cremer & van Knippenberg, 2002; Hirst et al., 2004).

Leaders need to behave and customise their behaviour in propagating cultural norms in an organisation (Bass & Avolio, 1993). Transformational form of the leadership is based on the business interests and transactional in nature (Bass et al., 2003; Sinha & Sengupta, 2020). Transformational leaders exert a strong influence on group behaviour and improve creativity at individual level (Gumusluoglu & Ilsev, 2009; Luthra & Singh, 2019). So, when the nature of the job requires subordinates to develop new ideas, the transformational leaders inspire their employees to complete the task beyond their abilities (Berson et al., 2006).

The transformational leadership style has four dimensions: individualised consideration, idealised influence, intellectual stimulation, and inspirational motivation, (Bass, 1985; Bass & Avolio, 2004). Individualised consideration of the subordinate is the degree to which leaders provide personal attention and encouragement to followers (Bass, 1985; Bass & Avolio, 2004). Idealised influence is how leaders utilise charisma to facilitate followers' identification and emotional attachment with them (Bass, 1999). Intellectual stimulation is the degree to which leaders challenge existing assumptions of an employee about product/service/process and stimulate new ideas to deal with task creatively (Bass, 1985). Inspirational motivation is the degree to which leaders articulate a compelling vision among the subordinates (Bass et al., 2003). In a dynamic environment, organisations need to bring in new ideas, skills, and knowledge to encourage innovation (Engelen et al., 2014; Hartnell et al., 2011). Transformational leaders persuade group dynamics, reciprocate trust (Bass & Avolio, 2000), support proactive and risk-taking attitudes (Neelam et al., 2015), and enhance creativity (Kahai et al., 2003; Von Krogh et al., 2012). Such leaders also promote collaboration to turn creative ideas into innovative products and services (Bahadur & Ali, 2021; Dotzel et al., 2013).

Over the years, several research findings have reported the relationship between transformational leadership and creativity in organisations (Bass, 1999; Zuraik & Kelly, 2019). Transformational leaders influence followers by inducing a sense of identity among their followers (Bass, 1985). During the period of change, leader's job is to promote cooperation among team members through frequent internal communication, which, in turn, creates an environment conducive for open discussion, sharing of information through collaboration, and eventually results in cultivation of new ideas (Von Krogh et al., 2012). Although the direct relationship between the conducive organisational culture for innovation and leadership to promote creativity is well studied. Still, the interplay of the organisation's culture and transformational leadership on innovation has its dimensions to prove the moderating role. For instance, organisation characterized by clan culture routed in collaboration has enhanced level of innovation. When employees feel included as part of the organisational culture, they tend to be more committed, involved, creative and innovative (Jaiswal & Dyaram, 2020). The transformational leader strengthens this positive effect (Gruda & Kafetsios, 2020; Gumusluoglu & Ilsev, 2009; Lakshman & Rai, 2021). However, if hierarchy culture is dominant in the

organisation, due to structure and control, the transformation leader can only reduce this negative effect on the organisation's innovativeness (Crossan & Apaydin, 2010; Donate & De Pablo, 2015). According to other scholars, a market culture is based upon the market orientation of the organisation, competition in the market, and demands the market to go for innovation as per organisational ecological perspective (Bahadur & Ali, 2021; Hurley & Hult, 1998). If an organisation is market leader in terms of market share, transformational leader strengthens the relationship between the organisation's market culture and innovativeness (Bass & Avolio, 2000; Khazanchi et al., 2007).

These features enable a better understanding of the moderating role of transformational leadership on the relationship between types of organisational cultures and organisational innovativeness. Therefore, the following hypothesis has been formulated:

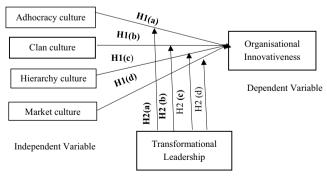
**Hypothesis 2a** The relationship of adhocracy (AD) culture with organisational innovativeness will be positively moderated by transformational leadership (TL).

**Hypothesis 2b** The relationship of clan (CL) culture with organisational innovativeness will be positively moderated by transformational leadership (TL).

**Hypothesis 2c** The relationship of hierarchy (HR) culture with organisational innovativeness will be positively moderated by transformational leadership (TL).

**Hypothesis 2d** The relationship of market (MR) culture with organisational innovativeness will be positively moderated by transformational leadership (TL).

These hypotheses constitute the model of the study. The conceptual model (Fig. 1) presents both direct effects of four types of culture and moderating effect of transformational leadership on organisational innovativeness. The model is tested concerning the degree to which transformational leadership moderates the influence of four types of culture on organisational innovativeness.



**Moderating Variable** 

Fig. 1 Conceptual framework

# Method

This section deals with the sample, measures, data collection procedure, description of the sample, and data analysis technique.

#### Data collection procedure

To empirically validate the framework, survey questionnaires were distributed to 500 Indian organisations across various industries with the approval and assistance of the company's human resource department. The targets were managers at different level, including chief executive officers/managing directors, chief financial officers finance managers, chief operating officers (COO) and production managers. Out of 500 surveys 352 responses were received. Out of these 352 responses 26 responses were discarded because of missing data. 326 Responses were used for final analysis, which corresponds to a response rate of 65.2%. The survey instrument had two sections. First section, comprised information related to demographic profile, e.g. age, education, work experience, sector type etc. The second section had 65 items to measure transformational leadership, organisational culture, and organisational innovativeness. All items were measured on a five-point scale.

#### **Demographic profile**

The demographic information revealed that majority of respondents (71.30%) were males and (28.70%) were females. Over half of the respondents were found to be in the age group of less than 30 years (53.68%). Similarly, 53.37% of respondent possessed less than 5 years of experience. Additionally, 57.67% of respondent were working in private organisation, and remaining (42.33%) were employed in public organisations (see Table 1).

#### Measures

A five-point Likert scale (1 = expressing strong disagreement to 5 = expressing strong agreement) was used to standardise the survey instrument. Organisational Culture scale consisted of four different types of culture, having 24 items to measure clan, hierarchy, adhocracy, and market. Culture items were adopted from the study of Cameron and Quinn (2011). Each type of culture had six items. Transformational leadership scale was adopted from Bass and Avolio (2004) having 20 items. Finally, the organisational innovativeness was measured using a scale developed by Shoham et al. (2012), having 21 items.

| Table 1Descriptivecharacteristics of the | Category             | Frequency | Percent | Cumulative percent |
|--|----------------------|-----------|---------|--------------------|
| participants                             | Type of Organization |           |         |                    |
|  | Private              | 188       | 57.67   | 57.67              |
|  | Public/Government    | 138       | 42.33   | 100.0              |
|  | Total                | 326       | 100.0   |                    |
|  | Sex                  |           |         |                    |
|  | Male                 | 234       | 71.30   | 71.3               |
|  | Female               | 92        | 28.7    | 100.0              |
|  | Total                | 326       | 100.0   |                    |
|  | Age                  |           |         |                    |
|  | Less than 30         | 175       | 53.68   | 53.68              |
|  | 30–35                | 57        | 17.48   | 71.17              |
|  | 35–40                | 27        | 8.28    | 79.45              |
|  | 40-45                | 16        | 4.91    | 84.36              |
|  | 45-50                | 26        | 7.98    | 92.33              |
|  | Above 50             | 25        | 7.67    | 100.00             |
|  | Total                | 326       | 100.0   |                    |
|  | Experience           |           |         |                    |
|  | Less than 5          | 174       | 53.37   | 53.37              |
|  | 5-10                 | 65        | 19.94   | 73.31              |
|  | 10–15                | 18        | 5.83    | 78.83              |
|  | 15-20                | 28        | 8.59    | 87.42              |
|  | 20-25                | 15        | 4.60    | 92.02              |
|  | >25                  | 26        | 7.98    | 92.64              |
|  | Total                | 326       | 100.0   | 100.00             |

#### **Statistical analysis**

The study used the partial least squares-structural equation modelling (PLS-SEM) approach to assess and evaluate the model owing to its ability to analyse complex data, including moderation. PLS-SEM, a nonparametric method (Willaby et al., 2015) was preferred over other technique because the study aimed to explain and examine the causal relationship for theory confirmation and to determine the model's predictive ability (Hair et al., 2017; Rigdon et al., 2017). For this purpose, the SmartPLS 4 software was used.

SmartPLS tested the hypothesised model in two stages. In the first stage, the measurement model was evaluated by examining the internal consistency, reliability, and validity of constructs. In the second stage, the structural model was evaluated to test the proposed hypothesis (Hair et al., 2021). Bootstrapping procedure with 5000 subsamples (95%, bias-corrected and accelerated) with the no sign changes option was used to generate path estimates for the structural model. The model used higher-order construct reflective-reflective. Before evaluating the measurement and structural model, the data were tested for common method bias and multicollinearity (Hair et al., 2017).

Harman's single-factor test checks if the study suffers from common method bias. The Harman single-factor test requires conducting exploratory factor analysis to check the emergence of a single factor, or a majority of covariance explained by a single factor (Podsakoff et al., 2003, p. 889). An exploratory factor analysis conducted for 65 items explained 63.17% variance. The largest factor explained 18.31% variance, far below the cut off value of 50%, ensuring the absence of common method bias in the data of this study (Podsakoff et al., 2012). In addition, we applied Kock's (2015) procedure for assessing common method bias, which is based on model-based collinearity, wherein full variance inflation factors (FVIF) is evaluated for all latent variables. FVIF value was below the critical value of 3.3, suggesting the absence of common method bias in the data.

Further, the multicollinearity was assessed by calculating VIF to rule out any bias for regression results in line with the structural model assessment procedure outlined by Hair et al. (2021). All VIF values were below 5 (see Table 2), suggesting absence of multicollinearity (Hair et al., 2021).

#### Evaluation of measurement model

This study used a reflective-reflective measurement model; therefore, to validate the measurement model, as suggested, the model was tested for internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2021). Internal consistency reliability was assessed by evaluating Cronbach's  $\alpha$ , composite reliability, and Dijkstra-Henseler's  $\rho$  values. Convergent validity was assessed by examining the outer loadings and the average variance extracted (AVE). Discriminant Validity was assessed by comparing the square root of AVE with the correlations between the constructs (Fornell & Larcker, 1981) and the Heterotrait-Monotrait (HTMT) ratio of correlation criterion (Hair et al., 2021; Henseler et al., 2015). All Cronbach's  $\alpha$ , composite reliability, and Dijkstra-Henseler's  $\rho$  values were greater than the threshold values of 0.70, suggesting good internal consistency for each construct (see Table 2) (Dijkstra & Henseler, 2015). The results showed all factor loading ranging from 0.706 to 0.921, which were above the threshold value of 0.70, and all AVE values were greater than 0.5 (see Table 2), ensuring convergent validity. In addition, the results showed that the square roots of all AVE were higher than the inter-construct correlation values, indicating adequate discriminant validity. Furthermore, HTMT ratios were lower than the cut-off value of 0.85, indicating statistically distinguishable components, thus, provided further support for the discriminant validity (Franke & Sarstedt, 2019). Overall, the proposed models' measurement criteria confirmed valid and reliable construct measures.

#### Assessment of the structural model

The structural model was assessed by evaluating the statistical significance of the path coefficient estimates, the effect sizes  $(f^2)$ , the coefficient of determination  $(R^2)$ , predictive relevance  $(Q^2)$  the blindfolding-based cross-validated redundancy measure  $Q^2$  are evaluated. (Hair et al., 2021).

| <b>Table 2</b> Factor loadings, Cronbach's $\alpha$ , $\rhoA$ , CR, AVE and VIF | ch's $\alpha$ , $\rho_{-}$ A, CR, AVE and VIF |                   |                 |                     |             |       |       |       |
|---|---|-------------------|-----------------|---------------------|-------------|-------|-------|-------|
| Higher order construct  | Lower order construct                         | Measurement items | Factor loadings | Cronbach's $\alpha$ | $\rho_{-}A$ | CR    | AVE   | VIF   |
| Adhocracy   | Adhocracy                                     | ADI               | 0.809           | 0.909               | 0.911       | 0.93  | 0.688 | 2.223 |
|   |   | AD2               | 0.787           |                     |             |       |       | 2.053 |
|   |   | AD3               | 0.855           |                     |             |       |       | 2.834 |
|   |   | AD4               | 0.825           |                     |             |       |       | 2.339 |
|   |   | AD5               | 0.83            |                     |             |       |       | 2.316 |
|   |   | AD6               | 0.866           |                     |             |       |       | 2.731 |
| Clan  | Clan  | CL1               | 0.839           | 0.913               | 0.914       | 0.932 | 0.697 | 2.37  |
|   |   | CL2               | 0.814           |                     |             |       |       | 2.199 |
|   |   | CL3               | 0.84            |                     |             |       |       | 2.525 |
|   |   | CL4               | 0.85            |                     |             |       |       | 2.707 |
|   |   | CL5               | 0.821           |                     |             |       |       | 2.242 |
|   |   | CL6               | 0.843           |                     |             |       |       | 2.416 |
| Hierarchy   | Hierarchy                                     | HRI               | 0.921           | 0.949               | 0.953       | 0.959 | 0.797 | 4.717 |
|   |   | HR2               | 0.899           |                     |             |       |       | 3.804 |
|   |   | HR3               | 0.86            |                     |             |       |       | 2.802 |
|   |   | HR4               | 0.859           |                     |             |       |       | 2.944 |
|   |   | HR5               | 0.904           |                     |             |       |       | 3.886 |
|   |   | HR6               | 0.911           |                     |             |       |       | 4.306 |
| Market  | Market  | MR1               | 0.776           | 0.875               | 0.875       | 0.905 | 0.615 | 1.79  |
|   |   | MR2               | 0.776           |                     |             |       |       | 1.83  |
|   |   | MR3               | 0.777           |                     |             |       |       | 1.785 |
|   |   | MR4               | 0.784           |                     |             |       |       | 1.918 |
|   |   | MR5               | 0.798           |                     |             |       |       | 2.028 |
|   |   | MR6               | 0.792           |                     |             |       |       | 1.902 |
| Organizational Innovativeness   | Creativity                                    | OICR1             | 0.727           | 0.785               | 0.785       | 0.853 | 0.538 | 1.61  |
|   |   | OICR2             | 0.734           |                     |             |       |       | 1.82  |

| ¥ | Higher order construct      | Lower order construct        | Measurement items | Factor loadings | Cronbach's $\alpha$ | ρ_Α   | R     | AVE   | VIF   |
|---|-----------------------------|------------------------------|-------------------|-----------------|---------------------|-------|-------|-------|-------|
|   | 0                           |                              |                   | o               |                     | -     |       |       |       |
|   |                             |                              | OICR3             | 0.759           |                     |       |       |       | 1.781 |
|   |                             |                              | OICR4             | 0.719           |                     |       |       |       | 1.742 |
|   |                             |                              | OICR5             | 0.728           |                     |       |       |       | 1.727 |
|   |                             | Future Orientation           | <b>OIFO1</b>      | 0.765           | 0.768               | 0.771 | 0.852 | 0.59  | 1.854 |
|   |                             |                              | OIF02             | 0.818           |                     |       |       |       | 2.121 |
|   |                             |                              | OIF03             | 0.766           |                     |       |       |       | 1.902 |
|   |                             |                              | OIF04             | 0.721           |                     |       |       |       | 1.619 |
|   |                             | Openness to Change           | OIOPCI            | 0.76            | 0.727               | 0.728 | 0.83  | 0.55  | 1.791 |
|   |                             |                              | 010PC2            | 0.706           |                     |       |       |       | 1.742 |
|   |                             |                              | OIOPC3            | 0.784           |                     |       |       |       | 1.831 |
|   |                             |                              | OIOPC4            | 0.714           |                     |       |       |       | 1.615 |
|   |                             | Proactiveness                | OIPRO1            | 0.738           | 0.739               | 0.741 | 0.836 | 0.561 | 1.626 |
|   |                             |                              | OIPRO2            | 0.765           |                     |       |       |       | 1.682 |
|   |                             |                              | OIPRO3            | 0.763           |                     |       |       |       | 1.754 |
|   |                             |                              | OIPRO4            | 0.73            |                     |       |       |       | 1.595 |
|   |                             | Risk Taking                  | <b>OIRT1</b>      | 0.814           | 0.822               | 0.824 | 0.882 | 0.652 | 2.042 |
|   |                             |                              | <b>OIRT2</b>      | 0.792           |                     |       |       |       | 1.865 |
|   |                             |                              | OIRT3             | 0.81            |                     |       |       |       | 2.056 |
|   |                             |                              | OIRT4             | 0.814           |                     |       |       |       | 1.95  |
|   | Transformational Leadership | Individualized Consideration | TLICI             | 0.811           | 0.83                | 0.831 | 0.887 | 0.663 | 1.743 |
|   |                             |                              | TLIC2             | 0.802           |                     |       |       |       | 1.687 |
|   |                             |                              | TLIC3             | 0.809           |                     |       |       |       | 1.761 |
|   |                             |                              | TLIC4             | 0.835           |                     |       |       |       | 1.891 |
|   |                             | Idealized Influence          | TLIF1             | 0.787           | 0.924               | 0.926 | 0.938 | 0.654 | 2.167 |
|   |                             |                              |                   |                 |                     |       |       |       |       |

| Table 2 (continued)    |                          |                   |                 |                     |             |       |       |       |
|------------------------|--------------------------|-------------------|-----------------|---------------------|-------------|-------|-------|-------|
| Higher order construct | Lower order construct    | Measurement items | Factor loadings | Cronbach's $\alpha$ | $\rho_{-}A$ | CK    | AVE   | VIF   |
|                        |                          | TLIF2             | 0.836           |                     |             | -     |       | 2.728 |
|                        |                          | TLIF3             | 0.75            |                     |             |       |       | 1.894 |
|                        |                          | TLIF4             | 0.843           |                     |             |       |       | 2.731 |
|                        |                          | TLIF5             | 0.793           |                     |             |       |       | 2.137 |
|                        |                          | TLIF6             | 0.82            |                     |             |       |       | 2.483 |
|                        |                          | TLIF7             | 0.772           |                     |             |       |       | 2.082 |
|                        |                          | TLIF8             | 0.864           |                     |             |       |       | 2.963 |
|                        | Intellectual Stimulation | TLIS1             | 0.823           | 0.862               | 0.863       | 0.906 | 0.706 | 1.935 |
|                        |                          | TLIS2             | 0.86            |                     |             |       |       | 2.177 |
|                        |                          | TLIS3             | 0.846           |                     |             |       |       | 2.094 |
|                        |                          | TLIS4             | 0.833           |                     |             |       |       | 1.903 |
|                        | Inspirational Motivation | TLMOT1            | 0.848           | 0.85                | 0.851       | 0.899 | 0.69  | 2.058 |
|                        |                          | TLMOT2            | 0.824           |                     |             |       |       | 1.893 |
|                        |                          | TLMOT3            | 0.807           |                     |             |       |       | 1.736 |
|                        |                          | TLMOT4            | 0.844           |                     |             |       |       | 2.023 |
|                        |                          |                   |                 |                     |             |       |       |       |

#### Significance and relevance of the path coefficient

Next, we calculated the statistical significance of the path coefficient estimates for all direct paths and moderating effects.

## Direct effects

In this study we examined the direct effect of Adhocracy Culture (AD), Clan Culture (CL), Hierarchy Culture (HC), and Market Culture (MR) on Organisation Innovativeness (OI). The results showed there existed evidence of a significant positive impact of AD (H1a— $\beta_{AD\rightarrow OI}$ =0.256, *t*=4.109, [CI 0.151, 0.352], *p*<0.001), CL (H1b— $\beta_{CL\rightarrow OI}$ =0.172, *t*=2.242, [CI 0.047, 0.291], *p*<0.001), and MR (H1c— $\beta_{MR\rightarrow OI}$ =0.233, *t*=3.522, [CI 0.110, 0.327], *p*<0.001), on OI, whereas significant negative relationship between HR and OI (H1d— $\beta_{HR\rightarrow OI}$ =-0.072, *t*=1.765, [CI-0.139,-0.002], *p*<0.039). As the bootstrap critical *t*-values were greater than ± 1.65 (one-tailed test) (see Table 3), and these constructs jointly explained 43.4% of the variance in OI (*R*<sup>2</sup>=0.446), hence H1a, H1b, H1c, H1d were supported.

### Moderating effect

To analyse the moderating effect of transformational leadership (TL), the authors followed the product indicator method in SmartPLS 4.0. As depicted in Table 3, the interaction effect of AD and TL (H2a— $\beta_{AD\times TL} \rightarrow OI = 0.116$ , t=2.281, [CI 0.032, 0.199], p < 0.011), CL and TL, (H2b— $\beta_{CL\times TL} \rightarrow OI = 0.122$ , t=1.639, [CI 0.032, 0.199], p < 0.051), and MR and TL (H2c— $\beta_{MR\times TL} \rightarrow OI = 0.121$ , t=2.024, [CI 0.023, 0.208], p < 0.022) were found to be statistically significant, thereby confirming H2a, H2b and H2c. Hence, it can be stated that TL strengthens the positive relationship between AD and OI, CL and OI, and MR and TL (H2d— $\beta_{HR\times TL} \rightarrow OI = -0.081$ , t=1.957, [CI–0.154, -0.016], p < 0.025) was found on OI (Fig. 2).

Figures 3, 4, 5 and 6 show the moderation graphs. The grey and black lines show the low (mean -1SD), mean and high (mean +1SD) levels of moderator, respectively. Figures 3, 4, and 6 depicts that high transformational leadership strengthens the positive relationship between OI and AD, CL, and MR, as proposed in H2a, H2b, and H2d respectively. However, Fig. 5 shows high TL strengthens the negative relationship between OI and HR as proposed in H2c.

#### Overall model fit and predictive ability

The standardised root mean square residual (SRMR) was used as an index for model validation to assess the overall model fit. The values below 0.08 are considered favourable (Hu & Bentler, 1999). The estimation SRMR value was found to be 0.07, which indicated an overall acceptable goodness-of-fit of the model (see Table 4). We further determined the predictive ability of the structural model. For this purpose, coefficient of determination ( $R^2$ ),  $f^2$  effect size, and  $Q^2$  value were evaluated.  $R^2$  value without moderating variable was 0.448, whereas with moderating variable

| Relationship                 | Original sample (O)      | (STDEV)          | T-values       | p values        | Bias corrected 95% CI   | Result    | $R^2$ Without moderation | $R^2$ With moderation |
|------------------------------|--------------------------|------------------|----------------|-----------------|---|-----------|--------------------------|-----------------------|
| H1a: AD→OI                   | 0.256**                  | 0.062            | 4.109          | 0               | (0.151, 0.352)  | Supported | 0.434                    | 0.581                 |
| H1b: $CL \rightarrow OI$     | $0.172^{**}$             | 0.077            | 2.242          | 0.013           | (0.047, 0.291)  | Supported |                          |                       |
| H1c: HR → OI                 | $-0.072^{**}$            | 0.041            | 1.765          | 0.039           | (-0.139, -0.002)  | Supported |                          |                       |
| H1d: MR $\rightarrow$ OI     | $0.233^{**}$             | 0.066            | 3.522          | 0               | (0.11, 0.327)   | Supported |                          |                       |
| H2a: AD *TL→OI               | $0.116^{**}$             | 0.051            | 2.281          | 0.011           | (0.032, 0.199)  | Supported |                          |                       |
| H2b: CL $*TL \rightarrow OI$ | 0.122*                   | 0.074            | 1.639          | 0.051           | (-0.008, 0.233)   | Supported |                          |                       |
| H2c: HR *TL → OI             | $-0.081^{**}$            | 0.041            | 1.957          | 0.025           | (-0.154, -0.016)  | Supported |                          |                       |
| H2d: MR *TL $\rightarrow$ OI | $0.121^{**}$             | 0.06             | 2.024          | 0.022           | (0.023, 0.208)  | Supported |                          |                       |
| AD Adhocracy, CL Clan        | ı, HR Hierarchy, MR Mark | et, TL Transforn | national Leade | trship, OI Orga | AD Adhocracy, CL Clan, HR Hierarchy, MR Market, TL Transformational Leadership, OI Organisational Innovativeness' |           |                          |                       |
| p < 0.10; **p < 0.05         |                          |                  |                |                 |   |           |                          |                       |

**Table 3** Significance testing results and  $R^2$  of the structural model path coefficient

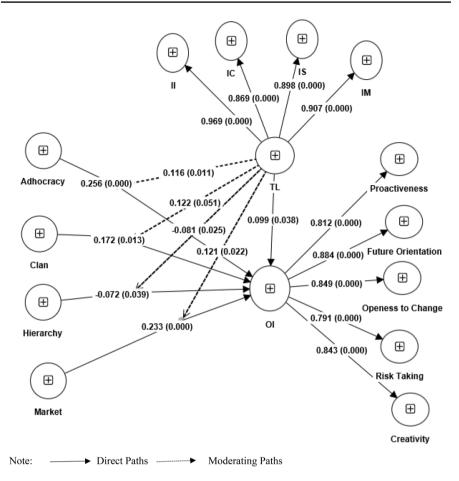


Fig. 2 Measurement and Structural Model Results

was 0.587 (see Table 4), which was way above the acceptable levels (Hair et al., 2021). The effect size, referred to as an  $f^2$ , provided an estimate of the predictive ability of each independent construct in the model. The effect size for AD, CL, HR, and MR, were 0.067, 0.027, 0.009 and 0.059 respectively which ranged from small to medium effect as per Cohen's (1988) guidelines (see Table 4).

# Discussion

Building on the theories from knowledge management and leadership disciplines, our findings suggest that integration between organisational culture and transformational leadership can ensure organisation's innovativeness. Organisational culture assists the standard process of acquiring knowledge and understanding through

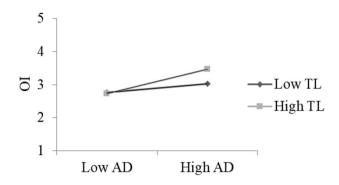


Fig. 3 Moderating effects of TL on relationship between AD and OI

thoughts, experiences, the senses; and thus, enhances ability of organisation to think beyond limits (Kululanga et al., 2001). The organisations that are adaptive, consistent in their values, engaging to employees, and embracing common missions in their cultures, have a higher tendency to exploit their innovativeness to uncover prominent issues, to seek methods to reduce costs, to look into the future, and to act proactively (Zhang et al., 2010). Indian organizations with clan culture are able to achieve synergy through teamwork. The clan culture has less focus on structure and control. Such characteristic provides a greater concern for flexibility thus contribute to innovative ability of organisation (Kumar et al., 2018).

The adhocracy culture has a significant and positive association with organisational innovativeness. This is supported by the long-held view of researchers regarding the characteristics of adhocracy culture, which is characterized by adaptability, flexibility, and decentralized power. As per reports (TOI, 2010), Indian firms have greater adaptability which helps them to overcome the challenges in external environment and turn them into opportunities. Firms provide better work–life balance programs to their employees, which keep them motivated and committed towards their work. Information flows more freely in all the directions within a decentralized structure. Flexibility at workplace provides employees opportunity for work organisation, task prioritization; and thus, creates opportunities for individuals to take initiative (Hill, 1996). This encourages the ability of organisation to innovate through processing and proper utilization of information.

Organisations dominated by market culture focuses on transacting with outside environment (Kumar et al., 2018). Such organisations observe their competitors, customers, and market conditions and gather external information. The integration of internal knowledge with external information enables organisations to improve upon its innovative ability. Whereas in case of hierarchy culture, the team members do not have adequate autonomy to think and act according to the demands of situation. Members expect to be directed and communicated regarding their functions, and about what is expected of them. In addition, organisations follow a top-down approach for communication, which results in less amount of information sharing across the hierarchy, and with other departments. Thus, the generation of knowledge hinders, and innovativeness declines.

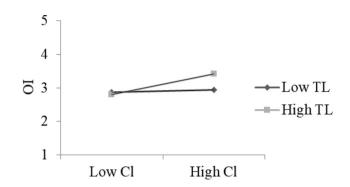


Fig. 4 Moderating effects of TL on relationship between CI and OI

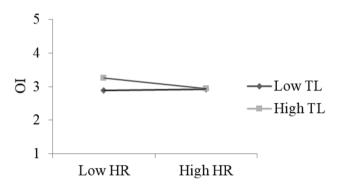


Fig. 5 Moderating effects of TL on relationship between HR and OI

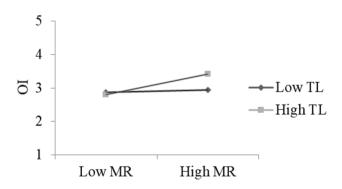


Fig. 6 Moderating effects of TL on relationship between MR and OI

Our theorisation and empirical results are partially consistent with literature suggestions to include both moderating and direct forms of leadership impact on innovativeness (see, Lakshman, 2009) in the effort to build an accurate and comprehensive framework in the Indian context (Damanpour et al., 2012; Fransen et al., 2018; Lakshman, 2009; Neelam et al., 2015).

| <b>Table 4</b> Results of predictive relevance and Model fit: $f^2$ , $Q^2$ | Relationship                 | $f^2$ | $Q^2$ | SRMR Value |
|---|------------------------------|-------|-------|------------|
| and SRMR Value  | H1a: $AD \rightarrow OI$     | 0.067 | 0.559 | 0.07       |
|   | H1b: $CL \rightarrow OI$     | 0.027 | 0.571 |            |
|   | H1c: HR $\rightarrow$ OI     | 0.009 | 0.71  |            |
|   | H1d: MR $\rightarrow$ OI     | 0.059 | 0.432 |            |
|   | H2a: AD $*TL \rightarrow OI$ | 0.016 | 0.332 |            |
|   | H2b: CL $*TL \rightarrow OI$ | 0.017 | 0.336 |            |
|   | H2c: HR *TL $\rightarrow$ OI | 0.016 | 0.344 |            |
|   | H2d: MR *TL $\rightarrow$ OI | 0.013 | 0.432 |            |

In the context of India, even if people are competent enough, they seek support, guidance, and encouragement to make decisions (Sinha, 1995). Transformational leaders generate a climate of support and collaboration in the organisation. This cooperative interaction can further be facilitated by transformational leadership style especially during a period of major change (Paulsen et al., 2009). This, in turn, reduces employees' fear and increases their openness to change and prepares them to respond to change proactively. In an uncertain business environment where change is inevitable, they become the change agents and align the individual goals with the organisation goals. Transformational leaders generate greater consciousness and acceptance of the mission of the organisation and foster a shared vision (Garcia-Morales et al., 2012). They promote cooperation among members and create environment that fosters learning. Organisational culture that is adaptive, flexible, and decentralized provides a more viable support to transformational leaders to encourage experimentation, exploration, communication, and dialogue in organisations (Menguc et al., 2007; Slater & Narver, 1995). These mechanisms provide support for fostering innovativeness in a more efficient and organised way. Organisations following adhocracy culture are more prone to ambiguity and vulnerability. A wrong anticipation of future may result in total breakdown. Organisations with transformational leadership style are more acquainted with techniques to tackle such kind of situations. They make their followers adapt quickly to the new environment. Quick adaptability and flexibility reduce chances of failure when the environment is uncertain. When employees are more adaptable and flexible in their approach, they are likely to anticipate environmental changes rapidly, process information better, and learn fast to respond to the external environment. This finding also supports the views of Shao et al. (2012) who emphasize the role of transformational leadership in enhancing organisational innovativeness by stating that in order to stimulate employees' intrinsic motivation to facilitate sharing of organisational knowledge, the organisations need to promote a trust-oriented culture that focuses on belongingness and participation by expressing concern for followers.

Transformational leaders make their followers realize the importance of competitiveness in such a dynamic environment. They understand the importance of the external information outside the boundary of organisation and align external knowledge with knowledge that belongs to the organisation. This is critical in order to improve organisational learning especially when the firm is market-oriented. They monitor the process of information sharing and accessibility of the information, which is essential to advance organisational knowledge that can be used for creativity. The preceding arguments provide a support for the moderating role of transformational leadership in excelling the organisational innovativeness when the organisations are characterized by adhocracy and market cultures.

Transformational leadership also has interaction effect with clan culture on organisational innovativeness. The typical characteristics of clan culture are teamwork, employee involvement programs, and organisation commitments to employees, the firms encompass internal focus. Due to focus on such characteristics, clan culture elevates transformational leaders' ability to stimulate and encourage creativity in their followers, and enable leaders to nurture and develop people to learn. Indian organisations, mostly, have hierarchical structure, which restricts leaders' opportunities to make their followers engage in learning. Due to high power distance, leaders find it difficult to create an environment of trust and cooperation, develop work teams' capabilities, provide resources, and support, and give them discretion to act independently (Bass, 2000). Highly centralized organisations inhibit employees' awareness and reduce their involvement in work-related decisions, constraining available communication channels, and hindering employees' access to important information (Tannenbaum & Dupuree-Bruno, 1994) and, consequently, restrict organisational innovativeness.

#### Theoretical implications

Our research has three main theoretical implications. First, this research contributes to the management literature by conceptualising a theoretical framework comprising organisational culture, transformational leadership, and organisational innovativeness that helps in understanding the interactions between organisation culture and transformational leadership and how it contributes to organisation's innovativeness. The results of the study re-emphasise the integration and interplay of organisational culture theories and leadership theories to enhance organisation's innovative ability. Moreover, the results of the study confirm that leader's knowledge and knowledge sharing culture (saddled in knowledge-based theory) are crucial for any organisation's innovativeness. While leaders' knowledge gain stems from the kind of leadership style followed (transformational leadership in this case), on the other hand strong knowledge sharing culture is based upon knowledge value network that ensure creation of knowledge within an organisation. We strongly suggest that for enhancing knowledge sharing culture the organisation must emphasise upon the value network that is derived based on an interactive process involving system dynamics, social/organisational network analysis, process modelling workflow analysis, and asset management (Allee, 2008). Second, the empirical results of the study confirm the moderating transformation leadership in the culture-innovation that further echoes with recent research involving leadership and innovation, albeit without cultural connotations. This study extends this research further by inclusion

of organisation culture in the equation and provide a platform for future researchers to further develop and conceptualise theories involving all the three variables. It assumes much importance as role of knowledge leadership and conducive culture might play a crucial role to strengthen the culture-innovation link is critical in emerging economies like India (Damanpour et al., 2012; Lakshman, 2009; Neelam et al., 2015). Thus gaining more theoretical grounds in this domain will help emerging economies to flourish further. Last but not least, the study's findings add to the emergent dialogue on the role of leaders, as well as organization culture, to enhance organisational innovativeness. Thus, more research involving these factors and inclusion of addition factors (i.e. knowledge value-chain network, value-network analysis, business model innovation), can help theorising a solid base for developing innovative organisations.

#### Practical implications

This research has implications for Indian managers and organisations in specific and emerging markets in general. The study has certain implications for industry and academic fraternity. The information can be used by managers to improve innovative behaviour in organisations. The managers can create a type of culture that emphasizes idea generation, flexibility, adaptability, and risk-taking behaviour. Through collaboration and teamwork, leaders can further enhance the innovative capability of individuals, groups and, in turn, organisations. Transformational leaders can create an environment where people are able to make use of external information and process the same into usable knowledge which may further foster innovativeness. Leaders can act as change agents and monitor the information gathered through transactions with external constituencies including, suppliers, customers, market, and competitors. Management should adopt transformational leadership style to help employees to provide an adequate environment to facilitate innovation. They can also obliterate the information, which is inadequate and futile.

Our study also suggests that organisation in emerging markets need to focus on providing a culture conducive to innovation by recruiting transformational leaders who motivate, encourage, and inspire subordinates to focus on the organisation's innovativeness (Bass, 1999; Jassawalla & Sashittal, 2002). Organisational culture refers to specific types of culture, including behaviours, which we identified, i.e. Clan Culture and Adhocracy Culture of the organisations. Moreover, in emerging markets, organisational development is possible by focusing on leaders' behaviours to support employee motivation and creativity (see, Bahadur & Ali, 2021). Building positive behaviours vis-à-vis skills associated can ensure that workforce is aware of the market innovation trends and impart learning in the appropriate context within which it is occurring. Second, the workforce, including leadership in the emerging market organisations, should be trained to foster knowledge management practices possible through an organisational atmosphere—Clan Culture, Market Culture and Adhocracy Culture—conducive to organisational learning to promote innovativeness.

#### Limitations and future research

Like other studies, our research does have certain limitations. This study is conducted in India, which would limit the generalization of our findings to other cultures, therefore we suggest that scholars must test our model in other countries with different cultures to further validate the findings, as national culture affects innovation (Espig et al., 2021). Second, the leaders usually inherit the organisational culture from their previous employees and impose on newly joined organisations without contextualisation. Such cultural inheritance may harm organisational innovativeness (Gelfand et al., 2006). Therefore, we recommend scholars to assume a division/department/group within an organisation as a data collection unit and take a case study approach to analyse the same industry for future research (Cox & Blake, 1991). Third, since our study is based on self-reported measures in the same phase, our findings may be susceptible to common method bias. However, the Harman Single factor test we conducted suggest that there is little potential of common method bias. To improve the measurement, further research could consider exploring the relationship by conducting longitudinal study. The study considers cross-sectional data, which constrains the ability to make causal relations. Whereas, innovativeness is a dynamic process, and to firmly show relationships, the use of longitudinal study is necessary. Fourth, questionnaire has been used to collect data. The respondents were assured about the confidentiality of responses and their anonymity while conducting survey. However, there might have been occurrence of social desirability. Fifth, the findings suggest that transformational leadership significantly moderates relationship between organisation culture and organisation innovativeness. However, it is likely that both individual and contextual variables can predict organisational innovativeness. Future studies can expand the present work by testing the interactive effects of other emerging leadership styles—shared, ethical and their impact on a firm's innovation (Bahadur & Ali, 2021; Fransen et al., 2018) using experimental design (Eden, 2021).

### Conclusion

Our purpose in this research was to identify the appropriate organisational culture linked to innovation and the role of leadership styles to strengthen this nexus. Our quest has resulted in the theorisation, development, and testing of a contextual framework for emerging markets like India. Our findings confirm the general belief that the interaction among an organisation's conducive culture and transformational leadership impact organisational innovativeness. Corporate research about an organisation's knowledge, culture, and leadership approaches are increasingly applicable across many economies, including India. However, the literature on organisational culture, leadership and innovativeness has been mainly theoretical to date, except for a few empirical studies. Our research is an attempt to fill this contextual gap using an emerging market context. Despite our theoretical and contextual contributions, the literature on organisational culture and leadership is still in its infancy and is



demanding more research studies to be conducted. Only sustained research efforts by management scholars in this direction are likely to generate the most crucial knowledge about innovation vis-a-vis organisational challenge in different contexts.

Data Availability The data that support the findings of this study are available from the corresponding author upon request.

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