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Article

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Assessing the Impact of Phronetic Leadership Behaviors on Management Innovation and Learning Dynamic Capability

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Abstract

Management innovation is the process of introducing new management practices, processes, and structures. It is considered essential to improve organizational performance and develop competitive advantage. While drawing on the rational perspective this research focuses on management innovation at firm level to empirically examine the impact of various phronetic leadership behaviors on learning dynamic capability of organization. The top management due to its prominent position in the organizations possess the ability to significantly affect management innovation to promote organizations' capability for success. Data was collected from 215 executives working at the positions of CEO, top management teams, and senior managers of 400 manufacturing firms. Initially, the use of confirmatory factor analysis (CFA) through AMOS assessed scales validity in the current context of research. Then the use of structural equation modeling (SEM) helped to test the relationships among hypothesized variables. Results found significant positive impact of CEO and top management team reflexivity and senior managers diagnostic and implementation capability as part of phronetic leadership behaviors on management innovation. Also, management innovation mediated the relationship between phronetic leadership behaviors and learning dynamic capability of organization. This study contributes both theoretically and empirically by developing and testing the framework involving management innovation with respect to its antecedents and consequences in the context of manufacturing sector of Pakistan.

Keywords – Management innovation, phronetic leadership behaviors, CEO and top management team reflexivity, senior managers diagnostic and implementation capability, learning dynamic capability.

1. Introduction

Innovation has long been recognized as an essential mean for success and growth (Schumpeter, 1983). A greater part of research so far is devoted to knowing how organizations tend to persuade technological innovation (Crossan & Apaydin, 2010). However, recently some management scholars have started to reassess the advantages of management innovation (Bezdrob & Šunje, 2015; Nieves, 2016). Management innovation refers as a non-technological innovation and is related to the introduction of management practices, structures and processes which are new and aimed to advance organizational goals (Birkinshaw et al., 2008). Early as well as more recent studies clearly reveal how management innovation transform a company to realize potential benefits and also redefine the whole industry through the expansion of new ideas (Birkinshaw et al., 2008; Chandler, 1990). Thus, scholars have drawn their focus to management as a useful account for innovation (Volberda et al., 2013).

Considering its significance for firm's success, surprisingly not much research has been done in explaining the causes and outcomes about management innovation (Volberda et al., 2013). This kind of innovation encompasses a composite and complex type of change to the extent in which work of management is accomplished. For example, companies don't require a dedicated infrastructure for this kind of innovations, these are relatively intangible and abstract, that make them ambiguous and complex (Vaccaro et al., 2012). This highlights the essential and critical role of key persons inside the organization (Birkinshaw et al., 2008), which draws the importance of organizational leadership specifically relevant to innovative management (Vaccaro et al., 2012). This research adds to the emergent discourse of management innovation by two ways. First, it studies management innovation using the organizational level analysis by focusing on the implementation of management innovation which is new to the company, and examines CEO, top and senior management leadership behaviors as essential predictors of management innovation. Second, as part of management innovation outcomes, this research further assesses the effect of management innovation on enhancing the learning dynamic capability of organization in the manufacturing sector of a developing country such as Pakistan's context. This research encompasses the rational perspective regarding management innovation (Damanpour, 2014) which sees the role of leaders as organizations key individuals in achieving the implementation of management innovation.

Today's organizations are operating their businesses in more complex and uncertain conditions. Organizations that choose traditional ways of doing business will not be able to succeed (Hutchinson et al., 2014). However, organizations which focus on developing new ideas, introducing new practices, and following new processes will influence their learning dynamic capabilities (Schoemaker et al., 2018). A key overlay is phronetic leadership behaviors which involve CEOs and top management team reflexivity (Kinsella,

2012), and senior managers diagnostic and implementation capabilities (Harder, 2011). Scholars believe that these leadership behaviors effectively encourage innovative thinking and significantly influences organizational choices (Kinsella, 2012). Management innovation characterizes an encompassing change by which the management work is performed and in this respect leadership behaviors are seen as central issues in knowing how companies initiate and implement such a complex kind of innovation (Vaccaro et al., 2012). Subsequently, the current study pursues two objectives. First objective is to assess how both top and senior management reflexivity and diagnostic and implementation capability as part of organizations' leadership behaviors influence the achievement of management innovation. Second objective is concerned to determining the effect of management innovation on organization learning dynamic capabilities.

The remaining part of this study is structured as such that next section describes the literature review and development of hypotheses. The methodology section contains the detail of sampled population and scales used in this research. The data analysis section provides the information about scales validation and hypotheses testing. Finally, the discussion section presents findings and conclusion. The section also involves various implications, limitation, and directions of future research.

2. Literature Review and Hypotheses Development

2.1 Management Innovation

Management innovation is conceptualized as 'the creation and implementation of a management practice, technique, process, and structure which is new to the firm and is aimed to enhance organizational goals (Birkinshaw et al., 2008). It talks about changes of what managers perform and in what way they perform which is claimed to be really ambiguous and hard to replicate, therefore more likely to increase competitiveness that helps to achieve sustainable advantage (Birkinshaw & Mol, 2006; Hamel, 2012; Teece, 2007). Management innovation thus represents the changes about how managers set goals, coordinate activities, take decisions, and engage people. Scholars have identified four perspectives regarding management innovation which are institutional, rational, fashion, and cultural (Birkinshaw et al., 2008). However, for this study rational perspective has been adopted. It argues that new practices, structures, and processes are deliberately introduced by organizational key individuals to improve the performance of organization.

Self-managed team has been cited as an example of management innovation. In this form of team people involved take care of their own core functions, set up priorities, and make decisions in the organization (Bunderson & Boumgarden, 2010). Procter & Gamble introduced the idea of self-managed teams which reflected change in management innovation's three facets comprising of practices, processes, and structures (Vandekerckhove & Giovagnoli, 2015). Management practices states what managers perform on a daily basis as part of their job – defining and establishing goals and related procedures, arranging and organizing tasks and functions, identifying and developing

potential and talent, and meeting stakeholders' different demands (Mol & Birkinshaw, 2009). The execution of self-managed teams at Procter & Gamble altered the managers' work as individuals in the company became responsible of setting their own objectives and deciding about the time and means by which tasks were to be completed. Management processes denotes the procedures that administer the managers' work, drawing from abstract thinking and converting them into actionable tools. This among others typically involves strategic planning, project management, and performance evaluation (Birkinshaw et al., 2008; Hamel, 2008). Procter & Gamble overhauled its reward and promotion systems after introducing the concept of self-managed teams. Company started determining the pay in relation to employees' skill that in turn became the reason for their promotion, and interestingly the fellow team members were involved to evaluate this whole process themselves. Organizational structure involves how organizations arrange and organize communication, and align and connect efforts of its members (Cooren et al., 2011). This was also changed at Procter & Gamble as after adopting the idea of self-managed teams, company removed unnecessary hierarchical layers.

2.2 Phronetic Leadership and Management Innovation

Developing a management innovation is a difficult process (Vaccaro, 2010), as it seriously requires the visionary and inspirational direction of internal change agents, relentless involvement of key individuals and elevated level of managerial commitment. They all, first initiate the process and then drive it further (Birkinshaw et al., 2008). Subsequently a tacit, typically intangible, and complex type of management innovation comes out without a specified infrastructure (Vaccaro et al., 2012). Scholars believe that leaders because of their prominent positions in the organizations influence organizational conditions in which management innovation can be introduced and implemented (Crossan & Apaydin, 2010; Hambrick, 2007). Research also shows that leaders that pay special attention to their followers' job-specific, personal well-being and career development needs, they show more tolerance to their followers' difference of opinions and mistakes which encourage them to exhibit more innovative behaviors at their workplaces (Wang et al., 2021).

This study emphasizes on specific actions of key individuals in organizations due to which creation and adoption of new techniques and approaches become possible. To assess how specific type of leadership behaviors influence the choice of new processes, practices, and structures, the study focuses on two important characteristics of phronetic leadership, namely, CEO and top management team reflexivity, and senior managers' diagnostic and implementation capabilities. Phronesis or Practical Wisdom is set of abilities/capacities which individuals develop over time (Zinke, 1989). Practical Wisdom is the kind of knowledge and capacity which guides action (Spillane, Halverson, & Diamond, 2001). Phronesis is the individuals' cognitive capacity which coordinates judgment, understanding and insight that lead to effective action. Cycle of phronesis is only complete if it offers an opportunity to reflect upon and transform the practice (Halverson, 2004). Based on this and reviewing other literature on phronetic leadership behaviors, we develop

certain hypotheses that show how CEO and top management team reflexivity, and senior managers' diagnostic and implementation capability affect management innovation.

2.2.1 CEO and Top Management Team (TMT) Reflexivity

Organization scholars believe that both CEO as organization's top man and members of TMT can explore and reflect the need for change (Ling et al., 2008). As management professionals they can recommend probable solutions, and as authority figures in organization they can exploit the required motivation for altering managerial practices (Baer & Frese, 2003). Through phronetic ability, CEO and TMTs are able to reflect to recognize, formalize, and prioritize organizational concerns which require to be addressed by means of managerial innovation (Mihalache & Mihalache, 2012). It is not sufficient to recognize essence, as a part of TMT after necessary reflection you have to share it and pass it on to others. There are specific TMT processes which after getting the CEO support initiate a system that challenge the status quo to stimulate managerial innovation (Ou et al., 2014). Top management's reflexivity is the degree to which members of this team reflect on collectively and adapt objectives, processes, and strategies of their team (Schippers et al., 2015). It presents a logical way in which members of this cohort question and challenge the existing managerial practices that allows for further discussion and selection of best possible alternatives (O. Mihalache et al., 2012). Reflexivity also demands that all team members should possess the ability to bring everyone on board prompting them to action, unifying and synthesizing everybody's knowledge and hard work in pursuit of various objectives (Wang et al., 2021). Team reflexivity stimulates the interaction and communication of its members. This enables the expansion and reframing of new ideas and insights in the processes (Chen et al., 2016). Phronesis is suggested as a necessary organizational contingency attribute for the effectiveness of this group's processes in introducing new management practices (Kinsella, 2012). Companies possessing high level of phronesis have the capabilities to encourage CEO and TMT reflexivity in finding and implementing new management practices in pursuit of management innovation. Subsequently, following hypothesis is proposed:

- **H₁:** CEO and TMT reflexivity is positively associated with the implementation of management innovation in an organization.

2.2.2 Senior Managers' Diagnostic and Implementation Capability

Diagnostic capability is the ability of organizational managers to identify the situation of a perceived problem, offers an opportunity to enhance performance and formulate management solutions which either resolve the problem or avail the opportunity. Whereas, implementation capability is the organizational managers ability to manage the change process linked with implementing new management practices (Harder, 2011). Diagnostic and implementation capability intrinsically share some similarities with concept of sensing and seizing opportunities of Teece (2007) and notion of exploration and exploitation of March (1996). However, diagnostic and implementation capabilities are considered as

dynamics particularly related to phronesis and management innovation. Ingredients of the firm's diagnostic capability consist of the backgrounds, attitudes and beliefs of managers, also the organizational resources for instance characteristics of workforce, access to knowledge bases and reward provisions (Helfat & Martin, 2015; Knudsen & Levinthal, 2007). Because of the associated abstraction and complexity, very few organizations use phronesis as a management strategy encompassing managerial diagnostic and implementation capability. It is not devised and implemented by selected leaders in the company, instead in the context of a phronetic leadership it is delegated in the entire company with different individuals assuming leadership roles as per the condition and situation (Nonaka & Toyama, 2007). For the effectiveness of diagnostic and implementation capability in carrying out management innovation, the role and support of senior management is critical. As once any opportunity or threat is detected, its nature and intensity along with proposed solution require to be communicated to the entire organization (Mihalache, 2012). This also demands some specific mechanisms to cultivate this type of leadership that will allow nurturing and transferring the individuals' existing phronetic capabilities to others in the organization, thus creating a distributed phronesis system (Halverson, 2004). This definitely enables an organization to show resilience in responding creatively and flexibly in any situation for pursuing its own good (Hamel & Valikangas, 2003). The diagnostic and implementation capability of senior managers offer more access to both internal as well as external sources of knowledge which makes organizations more sensitive to problems and opportunities and thus enabling to implement management innovation. Accordingly, following hypothesis is proposed:

- **H₂:** Senior managers' diagnostic and implementation capability is positively linked with the implementation of management innovation in an organization.

2.3 Management Innovation and Learning Dynamic Capability

The growing need of company's capability to use knowledge and information has made organizational learning an important source for company's activities and growth (Akgün et al., 2007). While earlier studies offer different approaches related to organizational learning (Alegre & Chiva, 2013; Rhee et al., 2010), this study assumes company's learning as its ability to renew the current operating and processing capacities through new knowledge and insights. It is a process comprised of three underlying activities, namely, exploration, transformation, and exploitation related to learning (Lane et al., 2006). This conception indicates learning capability as the dynamic capability which allows a company to develop, expand or alter its resources (Helfat et al., 2009).

The relationship between learning and innovation has been generally recognized and discussed in published literature and most studies have focused product innovation in this relationship (Akgün et al., 2007; Alegre & Chiva, 2008). However different kinds of innovation describe different characteristics as the variables which act as their predictors and outcomes cannot be the same. Management innovation unlike technical innovation does not rely on company's primary work activities, rather it mainly influences company's social system that involves all organizational components and the relationships existing

among them (Damanpour et al., 2009). Thus, it is imperative to explain the learning and innovation link through the analysis of diverse kinds of innovations. The changes made in the organization's social system intend to enhance company's learning capability. Implementing innovations with respect to company's practices and structures, for instance, introducing new practices to improve learning, exploiting knowledge or incorporating new ways to assign responsibilities, involving employees in decision making, and providing good working conditions can increase the development of company's learning capability (Nieves, 2016).

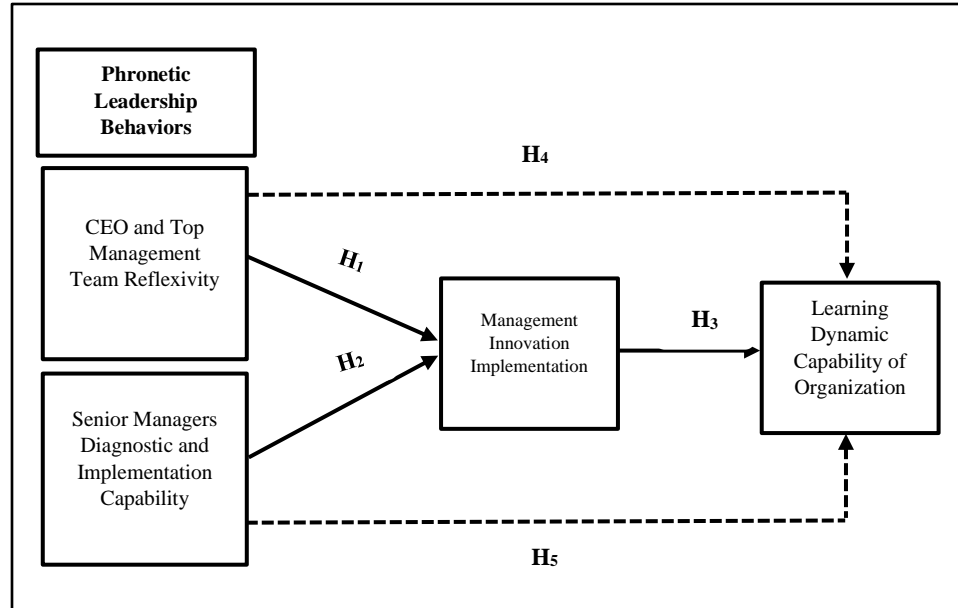
Innovation scholars believe that management activities forming dynamic capabilities are shaped by the deliberate and conscious efforts of individuals holding key managerial positions (Birkinshaw et al., 2008). Companies trying to develop dynamic capabilities have to consider new ways to perform management activities as it is an act of innovation and learning both. Senior and top executives are key individuals to introduce management innovation as they can sense the necessity for change, seize the probable solution, and harness the required motivation for transforming managerial practices to new conditions (Gebauer, 2011). Under caring leadership, teams are more inclined to maintain the coherence among members throughout the reflexivity process as they are cared and valued by the leaders (Liden et al., 2014). Team members are keen to exchange their tacit and explicit knowledge which facilitate the generation of new work practices and innovative processes (Wang et al., 2021). The organizations in this way learn to become more dynamically capable.

CEO and TMT reflexivity bring about significant learning dynamics which create awareness about the requirement for change and stimulate the extensive process of employing managerial practices (Mihalache & Mihalache, 2012). The prior experience and current skill set of organizational senior managers and their access to internal and external knowledge bases make companies more discerning to threats and opportunities, and thus more inclined to implementing the management innovations (Dasgupta & Gupta, 2009). Similarly, senior managers' inclination of involving diverse employees in decisions making, considering them eligible for various rewards, and including them part of knowledge sharing practices may lead to generate environment conducive to idea generation, risk taking and experimentation (Llopis & Foss, 2016). Also, research suggests that individual learning gives rise to collective learning. Certain leadership behaviors can strengthen or weaken the individuals' learning processes. Specifically, when team members have more autonomy and confidence, they can experience more effective interactions, assume reflective activities, and explore learning in the contexts of TMT reflexivity (Wang et al., 2021). Subsequent to the above discussion, following hypotheses are proposed:

- **H₃:** Management innovations implementation is likely to increase the learning dynamic capability of an organization.

- **H4:** Management innovations implementation is likely to mediate the relationship between CEO and TMT reflexivity and learning dynamic capability of an organization.
- **H5:** Management innovations implementation is likely to mediate the relationship between senior managers' diagnostic and implementation capability and learning dynamic capability of an organization.

Following the above reviewed literature and proposed hypotheses, a theoretical model for this study is developed and presented in Figure 1.



Note. Dotted lines show the mediation effects

Figure 1: Theoretical Framework

3. Methodology

3.1 Research Population and Sample

The research about studying the management innovation phenomenon with respect to its causes and outcomes have been conducted in the developed countries' context (Mol & Birkinshaw, 2009; Vaccaro et al., 2012), however it is suggested that the framework involving this phenomenon must be investigated in different national and industrial settings (Damanpour & Aravind, 2012). A few studies only recently have been found to be conducted in the South Asian and South-East Europe regions (Alofan, 2018; Bezdrob & Šunje, 2015). Thus, to contribute to both literature and practice in this field, present study is conducted in a South Asian developing country Pakistan.

Also, this study encompasses rational perspective which is based on the assumption that individuals in the organization introduce and adopt management innovations which enables their organization to function more effectively especially in dynamic business environment. Studies reveal that individuals working in teams use their reflexivity and emotions to offer innovative solutions to resolve problems that are specific to their context (Dasborough et al., 2020; Wang et al., 2021). Studies following the rational perspective have employed both case study and survey approaches (Damanpour, 2014), however organizational scholars have called for the use of more large-sample sizes quantitative methodologies involving micro level analysis in which the focus is more on assessing the individuals' actions on organization innovative outcomes (Volberda et al., 2014). Thus, by undertaking the quantitative-based survey methodology, this study has been conducted in the manufacturing sector of Pakistan.

Manufacturing sector of Punjab contributes nearly 58% to the total industrial productions of Pakistan. It is responsible to add around 60% value in the country's overall industrial sector (Hassan, 2018). Lahore, Gujranwala, and Faisalabad being part of the seven industrial clusters/zones of Punjab are embraced with the most diversified range of industries comprising of textile, electronics, auto parts, food, machinery and equipment (Hussain et al., 2012). The sampled population in present study is comprised of 400 manufacturing firms located in these three industrial zones of Punjab with each firm having at least 50 employees. Top and middle level managers choose to perform activities that actually affect companies' innovations (Crossan & Apydin, 2010). An initial email carrying the survey questionnaire, addressing CEO, a member of TMT, and a senior manager in each of these 400 firms, was sent for the purpose of data collection. Confidentiality was ensured to each respondent along with surety to share the summary of results. Consistent with the upper-echelons extant literature, respondents of survey were expected to be well aware of the changes related to management processes, practices, and structures. After one month, another email carrying the second copy of survey was sent, and finally calls for follow-up were made one month after the second mailing. CEO and top level managers as members of TMT, and senior managers as part of middle level managers group of 210 similar companies returned the filled questionnaires. This represented 52.5% response rate of the measurement sample. The companies were performing their business operations in industries ranging from textile 40.5%, electronics 15.2%, auto parts 12.7%, food 10.3%, machinery and equipment 9.2%, and others 12.1%.

3.2 Research Measures

Structured scale-based questionnaires were used for data collection as these are easy to respond and reduce the respondent variability. All four variables involving the study have been measured using 7-point Likert scale ranging from 1 = 'strongly disagree' to 7 = 'strongly agree'. To measure phronetic leadership behaviors, scale about 'CEO and top management team reflexivity' was taken from five items scale developed by Tjosvold, Tang, and West (2004), whereas scale related to 'senior managers diagnostic and

implementation capability’ was taken from 7 items scale developed by Harder (2011). To measure ‘management innovation implementation’ a 6-item scale developed by I. G. Vaccaro et al. (2012) was adopted. Finally, ‘learning dynamic capability of organization’ was measured through the 5-item scale developed by Pavlou and El Sawy (2011) which reflect the specificities of the manufacturing companies.

3.3 Common Method Bias Assessment

The occurrence of common method bias poses a critical methodological concern in several areas of empirical research which may arise due to the use of survey reported questionnaires (Antonakis et al., 2010). To assess the common method bias, certain procedural and statistical methods have been adopted to reduce and check this bias. As part of procedures, the respondents were assured about maintaining confidentiality and anonymity for reducing the difference of assessment, and Harman factor test as part of statistical methods was performed (Podsakoff et al., 2003). In this regard, “unmeasured latent factor method” was adopted for common variance extraction. While performing CFA, an extra unmeasured latent factor was added to the measurement model. It contained all indicators of other latent factors. The loadings of indicators were constrained to be equal on this common latent factor. Thus, unstandardized loadings on the common latent factor of all indicators were equal to 0.109. The square of unstandardized loading gave the common variance percentage as 0.0118 for all model indicators. Hence, the ‘Unmeasured latent factor method’ revealed that the total variance of just 1.18% can occur due to common method bias which does not affect the results as such.

4. Analysis and Results

Data analysis in current research was performed through structural equation modeling (SEM) for which AMOS v.22 has been used. SEM is thought out to be a powerful tool for the explanation of measurement errors. It is also used to find both direct as well as indirect paths of the model (Kline, 2015). One of the main concern that may exist in SEM is because of kurtosis as it depends on the analysis about covariance structures. Thus, it was ensured that critical ratio of all items related to kurtosis is lying within ± 2.5 range as reflected in Table 1 about kurtosis statistics. The theoretical model was tested by 2-step SEM method that evaluated both measurement and structural models separately (Hair et al., 2010).

Table 1: Kurtosis Statistics

Items	Kurtosis	CR of Kurtosis	Std. Reg. Wt.	Items	Kurtosis	CR of Kurtosis	Std. Reg. Wt.	Items	Kurtosis	CR of Kurtosis	Std. Reg. Wt.
<i>TMR1</i>	0.23	0.59	0.54	<i>SMD4</i>	0.14	0.43	0.63	<i>MI5</i>	0.64	0.60	0.70
<i>TMR2</i>	-0.22	-0.71	0.52	<i>SMD5</i>	-0.009	-0.02	0.74	<i>MI6</i>	-0.50	-1.39	0.84
<i>TMR3</i>	-0.42	-1.25	0.65	<i>SMD6</i>	-0.13	-0.40	0.76	<i>LDC1</i>	0.09	0.44	0.68
<i>TMR4</i>	0.83	2.45	0.72	<i>SMD7</i>	0.07	1.00	0.79	<i>LDC2</i>	0.24	0.65	0.77
<i>TMR5</i>	0.22	0.65	0.59	<i>MI1</i>	0.34	1.02	0.81	<i>LDC3</i>	-0.11	-1.21	0.83
<i>SMD1</i>	0.68	0.44	0.56	<i>MI2</i>	-0.38	-0.10	0.68	<i>LDC4</i>	-0.07	-1.05	0.79
<i>SMD2</i>	1.38	0.61	0.83	<i>MI3</i>	0.13	1.94	0.93	<i>LDC5</i>	0.21	0.32	0.54
<i>SMD3</i>	0.60	1.32	0.55	<i>MI4</i>	0.31	0.91	0.83				

Note. TMR = CEO&TMT reflexivity, SMD = senior managers diagnostic & implementation capability, MI = management innovation implementation, LDC = learning dynamic capability of organization

4.1 Confirmatory Factor Analysis (CFA) for the Measurement Model Assessment

4.1.1 Convergent Validity

Determining goodness-of-fit of hypothesized model based on sample data is the primary task performed in SEM. Table 2 shows the model fit indices of measurement model. The acceptable range of values about indices for model fit has been provided by various authors, for instance, Byrne (2016) suggested $CMIN/DF < 3$ and $HOELTER (0.01) > 200$, Kline (2015) advised $IFI > 0.95$, $CFI > 0.95$ and $TLI > 0.95$, Browne and Cudeck (1993) recommended $RMSEA < 0.05$, and Hooper, Coughlan, and Mullen (2008) suggested $SRMR < 0.09$. Table 2 shows all these indices statistics about model fit for current study meeting the required level of convergent validity. Moreover, the weights of standardized regression for all items are statistically significant that represents the condition of significant correlations. Thus, this reflect high convergence (Anderson & Gerbing, 1988; Naim & Lenka, 2017). Table 2 also shows Cronbach's Alpha value of all research scales as greater than 0.7 which indicates their internal consistency. Also, CR of all research scales is more than 0.7 that reflects the construct reliability.

Table 2: Statistics for Indices Model Fit, CR and Cronbach's Alpha for Reliability Assessment

Scales	CR	α	AVE	Model fit indices
CEO and Top Management Team Reflexivity	0.87	0.82	0.50	CMIN=587.53, DF=491 CMIN/DF =1.37, IFI = 0.969, TLI = 0.961, CFI = 0.971, RMSEA= .039, HOELTR (0.01) = 213, SRMR = .062
Senior Managers Diagnostic and Implementation Capability	0.86	0.80	0.49	
Management Innovation Implementation	0.91	0.84	0.52	
Learning Dynamic Capability of Organization	0.90	0.83	0.51	

Note. CR = construct reliability, α = Cronbach's Alpha, AVE = average variance extracted

4.1.2 Discriminant Validity

The criterion proposed by Fornell and Larcker (1981), was used to assess the discriminant validity of the construct used for present study. In this criterion, the square root of average variance extracted (AVE) corresponding to each variable in the construct should be greater than the correlations of that construct with all others (Gefen & Straub, 2005). For instance, in Table 3, the correlations between independent and mediating variables along with their corresponding AVE has been reported and it provided an evidence about the discriminant validity. Also, significant correlations have been found between 'CEO and top management team reflexivity', 'senior managers diagnostic and implementation capability', 'management innovation implementation' with former having a bit high relative importance than later. Recent research shows that team reflexivity at organizational

top level is first translated into the innovative behavior of employees which further leads to the implementation of various management innovation processes (Wang et al., 2021).

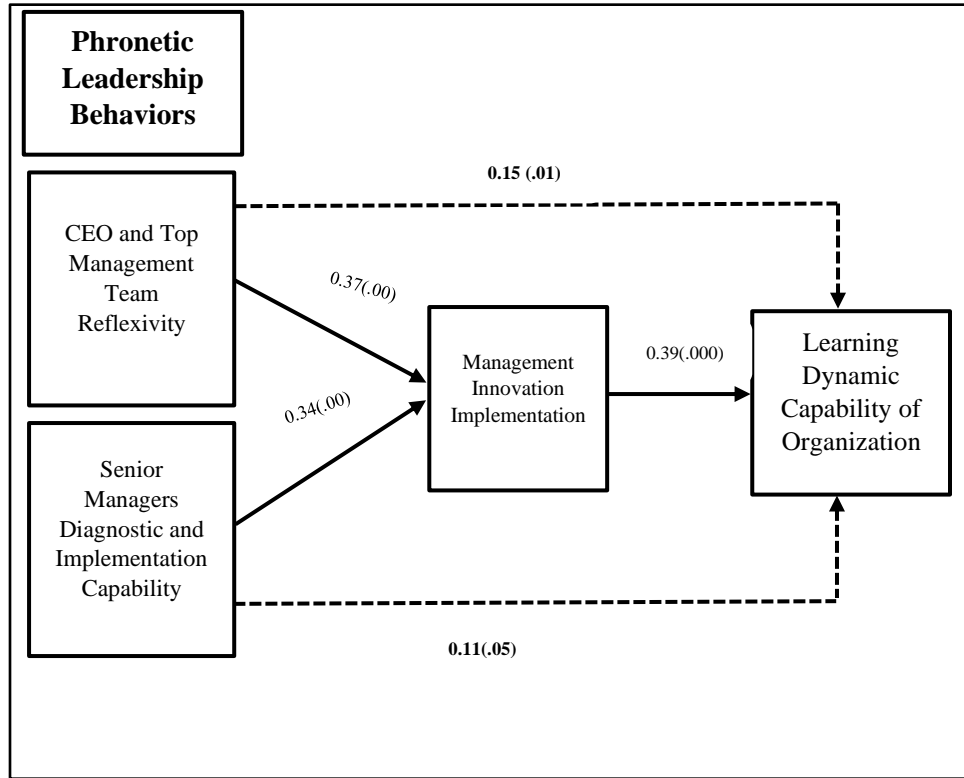
Table 3: Discriminant Validity Assessment using Fornell and Larcker Criterion

	(1)	(2)	(3)	Square root of AVE
CEO and Top Management Team Reflexivity (1)	1			0.73
Senior Managers Diagnostic and Implementation Capability (2)	0.23**	1		0.71
Management Innovation Implementation (3)	0.37**	0.34**	1	0.75

Note. ** $p < 0.05$, AVE = average variance extracted

4.2 Hypotheses Testing through Model Assessment

After conducting CFA, establishing scales validity and reliability, a complete structural model involving all variables in the study was obtained. The conceptual framework of this study involving significant regression coefficients has been presented below in Figure 2. This helped to assess associations among variables which further enabled to test the hypothesized relationships. Both ‘CEO and top management team reflexivity’ and ‘senior managers’ diagnostic and implementation capability’ are significantly contributing to ‘management innovation’ implementation. ‘Management innovation’ implementation is significantly enhancing ‘learning dynamic capability’ of organization. The indirect effects of these two independent variables as part of phronetic leadership behaviors on ‘learning dynamic capability’ of organization is positively and significantly mediated by management innovation implementation.



Note. Dotted lines show the mediation effects

Figure 2: Conceptual Framework with Significant Regression Coefficients

Table 4: SEM Analysis

Paths	<i>B</i>	<i>p</i> -value	Hypotheses testing
TMR → MI	0.37	.001	Hypothesis 1 supported
SMD → MI	0.34	.003	Hypothesis 2 supported
MI → LDC	0.39	.000	Hypothesis 3 supported

Note. $R^2 = 0.33$

The value of $R^2 = 0.33$ implied that 33% variation in management innovation implementation was explained by phronetic leadership behaviors. The regression coefficients in Table 4 revealed that both phronetic behaviors of organizational key individuals significantly enhanced implementation of management innovation, and which further led to enhance learning dynamic capability of organization. These results offered

support to hypotheses 1, 2, and 3. CEO and top management team reflexivity was having the highest effect on implementation of management innovation, followed by senior managers diagnostic and implementation capability.

To assess the mediation of management innovation implementation between phronetic leadership behaviors and learning dynamic capability of organization, bootstrapping with 2000 bootstrap samples along with 90% bias corrected confidence level as suggested by Hayes (2009) was used. Accordingly, the total, direct and indirect effects reported in Table 5 have been presented below.

Table 5: Total, Direct and Indirect Effects Based Upon Bootstrapping Through AMOS

Path	Total effect (β)	Direct effect (β)	Indirect effect (β)	Hypotheses testing
TMR \rightarrow MI \rightarrow LDC	0.37**	0.22**	0.15**	H ₄ supported
SDC \rightarrow MI \rightarrow LDC	0.34**	0.20**	0.11*	H ₅ supported

Note. ** $p < 0.01$, * $p < 0.05$, TMR = CEO&TMT reflexivity, SMD = senior managers diagnostic & implementation capability, MI = management innovation implementation, LDC = learning dynamic capability of organization

Indirect effects of CEO and top management team reflexivity and senior managers diagnostic and implementation capability on learning dynamic capability of organization through management innovation implementation were found significant at $p < .05$. Besides indirect paths, the direct paths also remained significant after the addition of mediator in the model, hence management innovation implementation partially mediated the relationship of phronetic leadership behaviors and learning dynamic capability of organization (Preacher & Hayes, 2008; Zhao, Lynch Jr, & Chen, 2010). Thus hypotheses 4 and 5 got support by these results.

5. Discussion and Conclusion

Though innovation is the frequently addressed topic in the outlets produced by both academics and practitioners, but majority of these research outlets has addressed innovation in terms of either technology advancement or new product development (Volberda et al., 2013). That said, the growing demand to carry out research is not only limited to new technologies and new product development, but also to look for changes about the nature of management within the organization, which is management innovation (Damanpour & Aravind, 2012). In fact, the contemporary management scholars over the last two decades have started investigating the organizational and individual factors that could influence the implementation of management innovation and its impact on specific organizational performance outcomes (Volberda et al., 2014).

By drawing on organizational level analysis, this study focuses to determine the impact of top management's phronetic leadership behaviors on management innovation implementation and its learning related performance outcomes. This study offers new insights about the relative impact of two phronetic leadership behaviors such as CEO and

top management team reflexivity and senior managers diagnostic and implementation capability on management innovation. To the best of authors' knowledge, these two leadership behaviors have not been studied with respect to assessing their impact on management innovation implementation in the organization before. Moreover, the implementation of management innovation due to these leadership behaviors further enable companies to develop their learning dynamic capability. The current study found that phronetic leaders due to their knowledge, skill, and practical wisdom (Ralph, 2015) are important actors of internal change within organizations as they influence the implementation process of management practices, processes, and structures which are new to their organizations. The findings of this study reaffirms the role of human agency in the adoption of management innovation in the manufacturing context of Pakistan, as this relates to the actions and initiatives of organization's key individuals (Birkinshaw et al., 2008), the one who can initiate and pursue changes about new management practices, processes and structures.

The findings of current study provide evidence about the organization's top management reflection as one of its phronetic leadership behaviors which backs all those efforts required for the implementation of management innovation. Organization's top leadership reflexivity enable them to make judgement for performing action. Their transformational potential and persuasiveness inspire group success that develop respectful relationships based on trust and common goods which enable organization to initiate changes related to management processes, practices, or structures (Kinsella, 2012). They recognize organization individuals independently and create greater tendency to experiment by altering organizational functions, task and procedures. They may also encourage organizational individuals to reconsider their existing skills about task specialization and structures, and rethink new ways and skills to get the things done in the organization. Bearing in mind this prominent role of phronetic leaders, the present study contributes to previous studies linking top management teams reflexivity as one of the phronetic leadership behaviors to performance (Lyubovnikova, Legood, Turner, & Mamakouka, 2017), creativity (Wang, Guan, et al., 2021), and product innovation (Lee & Sukoco, 2011). By going beyond to these prior findings, this study provide evidence that CEO and top management team reflexivity as part of phronetic leadership behaviors is helpful to pursuing implementation of management innovation in organizations.

The findings also reveal about senior managers diagnostic and implementation capability as another phronetic leadership behavior that reflect about the ability of individuals to develop perception of perceived problems or chances to enhance performance and accordingly develop solutions (Mihalache, Jansen, Van den Bosch, & Volberda, 2014). Doing this way simultaneously solve problems and exploit opportunities by introducing novel ways of doing things, establishing appropriate means of effective communication, and devising special methods of achieving distinctiveness, as all these help to accomplish implementing management innovation (Kim, Kim, & Foss, 2016). An important logic in

the innovation related literature is that the successful adoption of new method, structure, and process depends on how organization key individuals search and identify new information and knowledge (Li et al., 2013). In fact, a team of senior managers that efficiently searches and acquires new information and knowledge find more choices and ideas which are essential for firm's innovation and learning growth.

Results also show a significant positive association of management innovation with learning dynamic capability of organization. The association between these two concepts has been explored less as only few studies were found which both theoretically and empirically analyzed this relationship (Gebauer, 2011; Nieves, 2016). This research empirically examines that in the manufacturing industry, innovations adopted in management processes and practices facilitate the development of new understanding essential to change companies' existing capabilities. The published literature reveals a reciprocal relationship that may exist between management innovation and learning dynamic capability (Khosravi et al., 2019; Volberda et al., 2013). However, more research is required to study the potential two way effect between these two variables. Unlike already published research, this study focused upon determining the impact of management innovation on company's learning dynamic capability. Thus, this study is providing the much needed empirical evidence about significant positive link between these two theoretically important constructs especially with learning dynamic capability as the outcome variable.

Findings also provide support to both the mediating hypotheses. When the companies are operating in rapidly changing environment and innovation in management practices and processes becomes inevitable, then how organization's top leadership reflect and act becomes critical. Literature shows that the top management team reflexivity ensure organizational readiness to new insights required for the discovery and adoption of innovative managerial practices (Mihalache et al., 2014). Companies having employees equipped with practical wisdom are more capable of anticipating the requirement for change and thus responding to it through the renewal of their resource base. These findings are in line with the theoretical claims of Augier and Teece (2009) who argued that companies require both highly insightful leaders and skillful team of managers who foresee changes and initiate new processes and structures to develop companies' learning dynamic capabilities. Moreover, the environments offer both challenges and opportunities for organizations. Firms rely on the environment to upgrade their resource base. The challenges of turbulent environment are always accompanied with potential opportunities. Environmental uncertainty compels managers to process information to frame and reframe problematic areas, introduce and implement procedural and structural transformations to find solutions and grab opportunities. The studies suggest that management activities constituting company's learning dynamic capability are shaped by the deliberate and conscious actions of managers.

5.1 Implications for Theory

Present research has implications for both theory and practice with regards to the literature of phronetic leadership behaviors, management innovation and learning dynamic capability of organization. It offers a good theoretical description of all these concepts and their interrelationships with each other in the context of Pakistan's manufacturing sector. This research uses four unique concepts from literature in a distinct framework encapsulating CEO and TMT reflexivity, senior managers diagnostic and implementation capability, management innovation implementation, and learning dynamic capability of organization.

Empirical studies regarding assessing the impact of various kinds of phronetic leadership behaviors on management innovation and its outcomes are scant with respect to business and corporate world (Abdulmuhsin & Tarhini, 2020). This research empirically contributes by developing and testing the framework involving management innovation with respect to its antecedents and consequences in the current context. Previous studies have discussed the direct effect of CEO and TMT reflexivity on innovative behaviors (Wang, et al., 2021), but how teams' reflexivity as part of specific leadership behaviors accounts for the implementation and adoption of innovative practices and processes that further leads to enhance companies learning dynamic capabilities are scant. Thus present study contributes to the extant literature by adequately addressing this gap.

The key premise of rational perspective informs about the importance of individuals' actions to promote the organizational and management innovation in terms of its effectiveness (Birkinshaw et al., 2008). One of such actions identified in this research is the senior managers' diagnostic and implementation capability. As individuals when face problems that hinder companies learning and development, they intensify their search efforts in the internal as well as external environments to find new and innovative ways and approaches which are implemented to ensure the resolutions of these problems. Thus, identifying and evaluating the effect of senior managers' diagnostic and implementation capability as part of another phronetic leadership behavior represents one more important contribution of this research to the relevant literature.

Finally, following the rational perspective I. G. Vaccaro et al. (2012) have proposed that various leadership behaviors can significantly encourage innovative thinking. Distinction between two popular leadership behaviors: transformational and transactional was drawn to understand and realize their effect on the pursuit of management innovation implementation. This study further deepens our knowledge about the role of human agency by studying the role of phronetic leadership behaviors that influence the search for the implementation of management innovation in this part of the world.

5.2 Implications for Practice

With regards to practical implications the study reveals that company's top leadership reflexivity and its senior managers diagnostic and implementation capability can be seen

as important precursors of management innovation and dynamic learning of organizations. Both leaders and managers at the top positions in companies has to use reflexivity for their self-awareness, clearer communication and greater coordination (Lyubovnikova et al., 2017). Top management of companies when reflect together as teams they gain insights about the coordination of their actions to bring about change (Luciano, Nahrgang, & Shropshire, 2020). The processes of change are accomplished through the introduction and adoption of new management practices and structures.

Similarly, the diagnostic and implementation capability guides company's senior management to see both the perceived problem and opportunity as a way to improve performance, and this can be done through developing management solutions by using new processes, practices, and structures (Mihalache, 2012). These capabilities are driven by individual and organizational level resources and share some similarities with sensing and seizing capabilities of Pisano and Teece (2007). Thus, practicing managers have to recognize the diagnostic and implementation capabilities as specifically associated with management innovation that further become the dynamic learning capabilities of organization (Goh, 2003). In such organization employees constantly develop new insights, attempt new approaches, gain feedback and adopt new behaviors as outcome of experimentation.

5.3 Limitations and Directions for Future Research

The present study also carries some limitations. First, this study is performed in manufacturing sector of a developing country and the generalizability of results other than this sector will require to be more consciously interpreted. Nevertheless, carrying out similar research in nonmanufacturing sector such as service sector may validate the research findings.

Second, this research involves management innovation - an important theoretical construct and is suggested more exploration employing distinct research approaches and in diverse settings. Thus using only a quantitative strategy may restrict our knowledge about the underlying construct to a certain extent. However, investigating the management innovation construct employing a qualitative approach for same set of drivers and outcome as used in this study may serve a greater purpose to establish the theoretical validity of the construct in terms of its contribution to the extant literature.

Third, current research uses specific leadership behaviors such as CEO and TMT reflexivity and senior managers' diagnostic and implementation capability as the enablers of management innovation implementation. Future studies may use authoritative and benevolent as part of other leadership behaviors to predict management innovation adoption. Also, this research uses learning dynamic capability as outcome of management innovation. Possible future studies may include product innovation and some other performance related as outcomes of management innovation.

Finally, this research has followed the rational perspective, it is suggested to employ some other theory / theories like resource based and dynamic capability perspectives to explore

further the same phenomenon theoretically and empirically in other than manufacturing contexts.

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REFERENCES

- Abdulmuhsin, A. A., & Tarhini, A. (2020). Impact of wise leadership, workplace friendships on open innovation in family firms: a developing country perspective. *Journal of Family Business Management, 12*(1), 1-23.
- Akgün, A. E., Keskin, H., Byrne, J. C., & Aren, S. (2007). Emotional and learning capability and their impact on product innovativeness and firm performance. *Technovation, 27*(9), 501-513.
- Alegre, J., & Chiva, R. (2008). Assessing the impact of organizational learning capability on product innovation performance: An empirical test. *Technovation, 28*(6), 315-326.
- Alegre, J., & Chiva, R. (2013). Linking entrepreneurial orientation and firm performance: The role of organizational learning capability and innovation performance. *Journal of Small Business Management, 51*(4), 491-507.
- Alofan, F. H. (2018). *Management innovations, organisational culture, and national culture: the case of adaptation of Total Quality Management (TQM) in Saudi Arabia*. Doctoral dissertation, University of Newcastle.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423.
- Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2010). On making causal claims: A review and recommendations. *The Leadership Quarterly, 21*(6), 1086-1120.
- Augier, M., & Teece, D. J. (2009). Dynamic capabilities and the role of managers in business strategy and economic performance. *Organization Science, 20*(2), 410-421.
- Baer, M., & Frese, M. (2003). Innovation is not enough: Climates for initiative and psychological safety, process innovations, and firm performance. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 24*(1), 45-68.
- Bezdrob, M., & Šunje, A. (2015). Management Innovation–Designing And Testing A Theoretical Model. *South East European Journal of Economics and Business, 9*(1), 16-29.
- Birkinshaw, J., Hamel, G., & Mol, M. J. (2008). Management innovation. *Academy of Management Review, 33*(4), 825-845.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Sage Focus Editions, 154*, 136-136.

- Bunderson, J. S., & Boumgarden, P. (2010). Structure and learning in self-managed teams: Why “bureaucratic” teams can be better learners. *Organization Science*, 21(3), 609-624.
- Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*: Routledge.
- Chen, S., Zhang, G., Zhang, A., & Xu, J. (2016). Collectivism-oriented human resource management and innovation performance: An examination of team reflexivity and team psychological safety. *Journal of Management & Organization*, 22(4), 535-548.
- Cooren, F., Kuhn, T., Cornelissen, J. P., & Clark, T. (2011). Communication, organizing and organization: An overview and introduction to the special issue. *Organization Studies*, 32(9), 1149-1170.
- Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of Management Studies*, 47(6), 1154-1191.
- Damanpour, F. (2014). Footnotes to research on management innovation. *Organization Studies*, 35(9), 1265-1285.
- Damanpour, F., & Aravind, D. (2012). Managerial innovation: Conceptions, processes and antecedents. *Management and Organization Review*, 8(2), 423-454.
- Damanpour, F., Walker, R. M., & Avellaneda, C. N. (2009). Combinative effects of innovation types and organizational performance: A longitudinal study of service organizations. *Journal of Management Studies*, 46(4), 650-675.
- Dasborough, M. T., Hannah, S. T., & Zhu, W. (2020). The generation and function of moral emotions in teams: An integrative review. *Journal of Applied Psychology*, 105(5), 433.
- Dasgupta, M., & Gupta, R. K. (2009). Innovation in organizations: A review of the role of organizational learning and knowledge management. *Global Business Review*, 10(2), 203-224.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Gebauer, H. (2011). Exploring the contribution of management innovation to the evolution of dynamic capabilities. *Industrial Marketing Management*, 40(8), 1238-1250.
- Gefen, D., & Straub, D. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information systems*, 16(1), 91-109.
- Goh, S. C. (2003). Improving organizational learning capability: lessons from two case studies. *The Learning Organization*, 10(4), 216-227.
- Hair, J., Anderson, R., Babin, B., & Black, W. (2010). *Multivariate data analysis: A global perspective* (Vol. 7). Pearson Upper Saddle River, New Jersey: Pearson Education Inc.

- Halverson, R. (2004). Accessing, documenting, and communicating practical wisdom: The phronesis of school leadership practice. *American Journal of Education*, 111(1), 90-121.
- Hambrick, D. C. (2007). Upper echelons theory: An update: Academy of Management Briarcliff Manor, NY 10510.
- Hamel, G. (2008). The future of management. *Human Resource Management International Digest*, 16(6), 1-8
- Hamel, G., & Valikangas, L. (2003). To be resilient, an organization must dramatically reduce the time it takes to go from 'that can't be true'to 'we must face the world as it is. *Harvard Business Review*, 81, 52-63.
- Harder, M. (2011). Internal Antecedents of Management Innovation: The Effect Of Diagnostic Capability And Implementation Capability. *Internal Antecedents of Management Innovation*, 75-114, PhD Series 7.2011 [Publisher: Copenhagen Business School].
- Hassan, S. (2018). *The effect of organizational resources and capabilities on organizational performance of large scale manufacturing sector in Pakistan*. Universiti Utara Malaysia.
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76(4), 408-420.
- Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., & Winter, S. G. (2009). *Dynamic capabilities: Understanding strategic change in organizations*: John Wiley & Sons.
- Helfat, C. E., & Martin, J. A. (2015). Dynamic managerial capabilities: Review and assessment of managerial impact on strategic change. *Journal of Management*, 41(5), 1281-1312.
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53-60.
- Hussain, S. T., Khan, U., Malik, K. Z., & Faheem, A. (2012). Constraints faced by industry in Punjab, Pakistan. *Lahore J. Econ*, 17, 135-189.
- Hutchinson, J., Whittle, J., & Rouncefield, M. (2014). Model-driven engineering practices in industry: Social, organizational and managerial factors that lead to success or failure. *Science of Computer Programming*, 89, 144-161.
- Khosravi, P., Newton, C., & Rezvani, A. (2019). Management innovation: A systematic review and meta-analysis of past decades of research. *European Management Journal*, 37(6), 694-707.
- Kim, B., Kim, E., & Foss, N. J. (2016). Balancing absorptive capacity and inbound open innovation for sustained innovative performance: An attention-based view. *European Management Journal*, 34(1), 80-90.

- Kinsella, E. A. (2012). Practitioner Reflection and Judgement as Phronesis: A Continuum of Reflection and Considerations for Phronetic Judgement *Phronesis as professional knowledge* (pp. 35-52): Brill Sense.
- Kline, R. B. (2015). *Principles and practice of structural equation modeling*: Guilford publications.
- Knudsen, T., & Levinthal, D. A. (2007). Two faces of search: Alternative generation and alternative evaluation. *Organization Science*, 18(1), 39-54.
- Lane, P. J., Koka, B. R., & Pathak, S. (2006). The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Academy of Management Review*, 31(4), 833-863.
- Lee, L. T. S., & Sukoco, B. M. (2011). Reflexivity, stress, and unlearning in the new product development team: the moderating effect of procedural justice. *R&D Management*, 41(4), 410-423.
- Li, Q., Maggitti, P. G., Smith, K. G., Tesluk, P. E., & Katila, R. (2013). Top management attention to innovation: The role of search selection and intensity in new product introductions. *Academy of Management Journal*, 56(3), 893-916.
- Liden, R. C., Wayne, S. J., Liao, C., & Meuser, J. D. (2014). Servant leadership and serving culture: Influence on individual and unit performance. *Academy of Management Journal*, 57(5), 1434-1452.
- Ling, Y., Simsek, Z., Lubatkin, M. H., & Veiga, J. F. (2008). Transformational leadership's role in promoting corporate entrepreneurship: Examining the CEO-TMT interface. *Academy of Management Journal*, 51(3), 557-576.
- Llopis, O., & Foss, N. J. (2016). Understanding the climate–knowledge sharing relation: The moderating roles of intrinsic motivation and job autonomy. *European Management Journal*, 34(2), 135-144.
- Luciano, M. M., Nahrgang, J. D., & Shropshire, C. (2020). Strategic leadership systems: Viewing top management teams and boards of directors from a multiteam systems perspective. *Academy of Management Review*, 45(3), 675-701.
- Lyubovnikova, J., Legood, A., Turner, N., & Mamakouka, A. (2017). How authentic leadership influences team performance: The mediating role of team reflexivity. *Journal of Business Ethics*, 141(1), 59-70.
- March, J. G. (1996). Continuity and change in theories of organizational action. *Administrative Science Quarterly*, 41(2), 278-287.
- Mihalache, O. (2012). *Stimulating firm innovativeness: Probing the interrelations between managerial and organizational determinants* (No. EPS-2012-260-S&E).
- Mihalache, O. R., & Mihalache, M. (2012). TMT processes as antecedents of management innovation: The moderating role of absorptive capacity. In *Academy of Management Proceedings* (Vol. 2012, No. 1, p. 17093). Briarcliff Manor, NY 10510.

- Mihalache, O. R., Jansen, J. J., Van den Bosch, F. A., & Volberda, H. W. (2014). Top management team shared leadership and organizational ambidexterity: A moderated mediation framework. *Strategic Entrepreneurship Journal*, 8(2), 128-148.
- Mol, M. J., & Birkinshaw, J. (2009). The sources of management innovation: When firms introduce new management practices. *Journal of Business Research*, 62(12), 1269-1280.
- Naim, M. F., & Lenka, U. (2017). Linking knowledge sharing, competency development, and affective commitment: Evidence from Indian Gen Y employees. *Journal of Knowledge Management*, 21(4), 885-906.
- Nieves, J. (2016). Outcomes of management innovation: an empirical analysis in the services industry. *European Management Review*, 13(2), 125-136.
- Nonaka, I., & Toyama, R. (2007). Strategic management as distributed practical wisdom (phronesis). *Industrial and Corporate Change*, 16(3), 371-394.
- Ou, A. Y., Tsui, A. S., Kinicki, A. J., Waldman, D. A., Xiao, Z., & Song, L. J. (2014). Humble chief executive officers' connections to top management team integration and middle managers' responses. *Administrative Science Quarterly*, 59(1), 34-72.
- Pavlou, P. A., & El Sawy, O. A. (2011). Understanding the elusive black box of dynamic capabilities. *Decision Sciences*, 42(1), 239-273.
- Pisano, G. P., & Teece, D. J. (2007). How to capture value from innovation: Shaping intellectual property and industry architecture. *California Management Review*, 50(1), 278-296.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891.
- Ralph, N. (2015). Critical reflection as a catalyst for sustainable leadership development: Leading Wellbeing Res. Festiv.
- Rhee, J., Park, T., & Lee, D. H. (2010). Drivers of innovativeness and performance for innovative SMEs in South Korea: Mediation of learning orientation. *Technovation*, 30(1), 65-75.
- Schippers, M. C., West, M. A., & Dawson, J. F. (2015). Team reflexivity and innovation: The moderating role of team context. *Journal of Management*, 41(3), 769-788.
- Schoemaker, P. J., Heaton, S., & Teece, D. (2018). Innovation, dynamic capabilities, and leadership. *California Management Review*, 61(1), 15-42.

- Schumpeter, J. A. (1983). *The theory of economic development*. New Brunswick. *NJ Transactions Books Reprint*.
- Spillane, J. P., Halverson, R., & Diamond, J. B. (2001). Investigating school leadership practice: A distributed perspective. *Educational researcher, 30*(3), 23-28.
- Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal, 28*(13), 1319-1350.
- Tjosvold, D., Tang, M. M., & West, M. (2004). Reflexivity for team innovation in China: The contribution of goal interdependence. *Group & Organization Management, 29*(5), 540-559.
- Vaccaro, I. (2010). *Management innovation: Studies on the role of internal change agents* (No. EPS-2010-212-STR). Publisher: Erasmus University Rotterdam, Erasmus Research Institute of Management
- Vaccaro, I. G., Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2012). Management innovation and leadership: The moderating role of organizational size. *Journal of Management Studies, 49*(1), 28-51.
- Vandekerckhove, T., & Giovagnoli, J. (2015). Distributed Leadership: Potential & Implementation through self-managed teams.
- Volberda, H. W., Van Den Bosch, F. A., & Heij, C. V. (2013). Management innovation: Management as fertile ground for innovation. *European Management Review, 10*(1), 1-15.
- Volberda, H. W., Van Den Bosch, F. A., & Mihalache, O. R. (2014). Advancing management innovation: Synthesizing processes, levels of analysis, and change agents. *Organization Studies, 35*(9), 1245-1264.
- Wang, Z., Cui, T., & Cai, S. (2021). How and when team reflexivity influences employee innovative behavior. *Journal of Managerial Psychology, 37*(1), 61-75.
- Wang, Z., Cui, T., Cai, S., & Ren, S. (2021). Team reflexivity, individual intellectual capital and employee innovative behavior: a multilevel moderated mediation. *Journal of Intellectual Capital*, [ahead-of-print].
- Wang, Z., Guan, C., Cui, T., Cai, S., & Liu, D. (2021). Servant leadership, team reflexivity, coworker support climate, and employee creativity: A multilevel perspective. *Journal of Leadership & Organizational Studies, 28*(4), 465-478.
- Wang, Z., Ren, S., Chadee, D., Liu, M., & Cai, S. (2021). Team reflexivity and employee innovative behavior: the mediating role of knowledge sharing and moderating role of leadership. *Journal of Knowledge Management, 25*(6), 1619-1639.
- Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of consumer research, 37*(2), 197-206.
- Zinke, R. C. (1989). Rhetoric, Morality, and Practical Wisdom in Public Administration. *Dialogue, 12*(1), 61-86.