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Change-Oriented Leadership and Frugal Innovations: A Moderated Mediation Model of Readiness to Change and Learning Goal Orientation

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A B S T R A C T

Purpose - Whether or not organizations can produce fugal innovations depends on the people involved in the innovation process. This paper aims to investigate whether leaders could influence their subordinates' change readiness by employing a leadership style called "change-oriented leadership" and what role is played by the learning goal orientation of individuals for frugal innovations.

Study Design/Methodology/Approach - The researchers of this study use the temporal separation method, and data was collected in two phases at one-month intervals with a sample of 313 permanent employees working in the pharmaceutical and textile sectors.

Findings - The researchers of this study found that change-oriented leaders significantly increase frugal innovations. This effect is mediated by employees' self-reported change readiness and moderated by their learning goal orientation. Our results demonstrate that leaders substantially influence the degree of change readiness for organizations to develop frugal innovations. Our study also highlights that if people have a learning goal orientation, their change readiness is not fixed but can be altered by their social environment, especially by organizational leaders.

Research Limitations- Developing economies are facing the challenges of higher costs which stress that how organizations can reduce it, the idea of frugal innovation is one of them. For that purpose, from the organizational point of view, there is a need for a learning environment which provides a platform for individual and team learning and critical thinking which may lead to better implementation of frugal innovation. Further, from the individual level perspective self-efficacy (creative, change, and occupational) may help the employees to take initiative for the achievement of organizational goals (i.e., frugal innovation).

Implications-This study has implications for current theories about frugal innovations, which view people's lack of change readiness as a significant impediment. Also, these implications have for current theories about change-oriented leadership, which we expand to the societally important realm of frugal innovations.

Originality/Novelty- Our findings guide organizations and policymakers who want to enable frugal innovations to ensure the competitiveness of their organizations and the growth of economies, especially in developing countries.

Keywords: Change-Oriented Leadership (COL), Individual's Readiness to Change (IRTC), Learning Goal Orientation (GOL), Frugal Innovations (FIs), Job Demand and Resource Theory (JD-R)

JEL Classification: J28, J30, M1

1 | INTRODUCTION

Innovations are imperative for social and economic development (Lei et al., 2020); it also increases the organizational competency to meet customer requirements and avail the market capitalization opportunities (Yang et al., 2018). The advent of technological advancement ushered in a slew of new difficulties for businesses of all kinds (Lin et al., 2020; Yousaf et al., 2021). Likewise, the advancement of technologies and digital innovation also nowadays drive economic and social development (Oliveira et al., 2020). In contrast, current globalized circumstances make it difficult for organizations, especially in developing countries, to sustain their position in the market (Murillo-Aviña et al., 2022). Moreover, customers in the rapidly changing environment now demand high-quality products/services with low prices; due to this, organizations from emerging economies are facing restrictions on materialistic resources to reduce the cost of products/services (Muneeb et al., 2019).

For that reason, in emerging economies, frugal innovations (FIs) are vital to fostering long-term growth and prosperity (Albert, 2019; Levänen et al., 2015). Further, the frugal notion is also studied and viewed as a novel technology paradigm that may enhance people's standard of living (Dima et al., 2022). FIs is a process through which organizations can increase their efficiency through the redesigning of processes, procedures, and systems of products/services (Dima et al., 2022); also, this modification and restructuring resulted in affordable products/services to the customers (Dima et al., 2022). FIs are also considered a mechanism that facilitates the business using its existing knowledge and resources to perform novel activities for products/services (Nassani et al., 2022). By employing the notion of FIs, firms can reduce the cost and operation time of their products/services through innovative ideas (Albert, 2019), which leads to higher profitability and control of prices.

In the context of a multifaceted, interlinked, and uncertain global environment, organizations must possess a workforce that demonstrates adaptability and a willingness to react swiftly to changing circumstances (Endrejat et al., 2021; Endrejat et al., 2017; Meyer et al., 2007). Consequently, a pivotal determinant for successful organizational change management is how employees react to organizational changes (Oreg et al., 2011; Uhl-Bien & Arena, 2018). Redesigning or restructuring processes, systems, and procedures are the main features of FIs (to reduce the cost and time), and organizations are facing difficulty in successfully implementing these modifications (Yousaf et al., 2022). In the modern world, there's considerable awareness of an individual's capacity to effectively tackle and adjust to changes that hold enormous value at the individual, team, and organizational levels (Beasley et al., 2021). Moreover, for the successful implementation of restructuring and redesigning strategies, behavioral, psychological, and physical support of organizational members is mandatory (Yousaf et al., 2022). The strategies of FIs in organizations can be implemented by using the existing techniques and technologies in different, clever, and novel ways; to simplify this process, the support of individuals is necessary (Melkas et al., 2019). Moreover, the application of new, developmental, and creative strategies is challenging for the organization because the involvement and readiness of employees is a mandatory and vital component of this process (Kollmann et al., 2009; Tabassam & Shehzad, 2023).

Several studies found that leadership has a positive influence on creating appropriate conditions for organizational innovations (Lei et al., 2021) for the attainment of competitive advantage (Chughtai & Khan, 2023; Le & Lei, 2019), also for the personal goal attainment of the individuals (Chughtai et al., 2023). The perspectives and knowledge of the top leadership play an important role in formulating strategic decisions (Iqbal et al., 2021). Moreover, it is argued that leadership may affect the individual's ability to manage strategic change (Chughtai et

al., 2023; Spreitzer, 1995), especially for the FIs, where existing processes, systems, and procedures are restructured and redesigned to produce low-cost products/services. Change-oriented leadership (COL) has been considered inspirational leadership, which facilitates the subordinates to accept the strategic change and shows their willingness to learn new things (Cao et al., 2022) through experiments for the solution of complex problems at the workplace (Jung et al., 2020). Moreover, COL keeps an eye on monitoring and encourages subordinates to adapt innovative ways according to workplace requirements (Mikkelsen & Olsen, 2018).

The process of innovation requires a change in strategies; therefore, it is argued that FIs need a change in different approaches, which leads to reduced cost and operation time and increases the efficiency and quality of the products. So that the objectives of FIs can be achieved in the form of higher firm profitability and cheaper products for the customers. Moreover, learning and innovations are interlinked and important during the production process of new or modified products (Harkema, 2003). Likewise, organizations need a workforce who can learn, especially from failure and experience. Learning goal orientation (LGO) is a person's behavior and desire to get better at what they do by actively exploring and participating in learning activities (VandeWalle, 1997; VandeWalle et al., 2001). In other words, LGO refers to a mindset that prioritizes improving one's skill set through deliberate practice, exposure to novel situations, and reflection on one's performance (VandeWalle et al., 2001). Several studies indicated that individuals with a higher level of LGO are more likely to demonstrate proactive and learning behaviors, and they feel confident in their abilities to tackle new situations through self-improvement (Chughtai & Buckley, 2011; Marijn Poortvliet et al., 2007; Osagie et al., 2018; Payne et al., 2007). The uncertainty of change during the innovation process generally produces frustration and anxiety, but the higher level of LGO in individuals discourages these situations (Gong et al., 2009). A higher level of LGO forces individuals to learn from these complex situations (Gong et al., 2009), leading to successful FIs strategies. Therefore, it is argued that a higher level of LGO cognitively motivates individuals, enabling them to demonstrate their readiness for the support of strategic change, which leads to FIs.

Numerous experts have posited that these leaders play a significant role in enhancing organizational efficiency by fostering adaptability and responsiveness to external circumstances (AlAnazi et al., 2022). Therefore, the present research extends the leadership and innovations literature and responds to different calls for future research, i.e., the role of leadership for the successful attainment of strategic objectives is imperative; therefore, the researchers of this study investigate the impact of COL on FIs by following the future research direction of Dima et al. (2022), where they suggested that a sustainable leadership is mandatory for implementation of FIs strategies. Moreover, Yousaf et al. (2022) stressed the importance of organizational readiness for the FIs; thus, the researchers of this study use this construct as a mediator between COL and FIs. This study contributes to the knowledge by explaining the impact of COL on FIs because the objective of innovations can be achieved with the change in strategies, and the implementation of strategies generally relies on leadership. Secondly, this study explains the intervening mechanism of individuals' readiness to change; without the support of the workforce/subordinates, the strategic change policies for innovations cannot be implemented successfully; for that purpose, the workforce needs positive leadership.

The objective of FIs can be obtained through the modification of products/services apply new or existing technologies through restructuring or redesigning, which creates an atmosphere of change for the individuals. For that purpose, there is a need for a highly self-confident and learning-oriented workforce; therefore, this study

examines the moderating role of LGO as a personal motivation source which not only increases the self-confidence of the individuals but also enables them to deal with the complexities of innovations especially of FIs positively. More specifically, this study aims to guide manufacturing sector organizations (i.e., pharmaceutical and textile), as this sector is a major contributor to the economy of Pakistan (Ikram et al., 2019; Shahzad et al., 2020). Due to worldwide inflation and under circumstances, i.e., the COVID-19 pandemic, globalization, and environmental factors the cost of the product of developing economies rises day by day as these countries import the raw material from developed countries to produce finished goods. Moreover, the textile and pharmaceutical sectors of Pakistan are the backbone of the Pakistani economy, but due to higher globalized inflation these two sectors are also suffering from low profitability and there is a need to minimize the cost, for that purpose the phenomenon of FI helps the management of these organizations. Likewise, changes in processes and procedures of production, especially in pharmaceutical and textile sector organizations, also create a situation of uncertainty for the employees. These circumstances stressed the need for leadership which not only decreases the level of fear of the workforce about change but also encourages them to deal with the challenges, for that purpose in this study the researchers use COL. These sectors involve the process conversion of raw materials into finished goods, which increases the importance of a learning-oriented workforce, and if the individuals cognitively participate in learning activities this may help the organizations for FI.

2 | LITERATURE REVIEW

2.1 | Theoretical Underpinning

Job demands and resources (JD-R) theory (Bakker & Demerouti, 2017) explains the relationships shown in Figure 1. According to the theory, job resources are functional for accomplishing tasks, and these resources foster the growth and development of individuals by initiating the motivational process (Xanthopoulou et al., 2007). The theoretical lens of the theory explains that work environments influence the performance and well-being of individuals (Bakker & Demerouti, 2017), and it has been observed that for higher well-being and better performance of the employees, the role of leadership is essential (Sternberg et al., 2004). Job demands are the elements of a job that necessitate sustained endeavor and, as a result, have associated psychological and physical consequences (Bakker & Demerouti, 2017; Demerouti et al., 2001). In contrast, job resources lead to different resources (motivational, organizational, and personal), which leads to motivation for individuals to fulfill their job demands (Tummers & Bakker, 2021).

Innovations in organizations require a change of strategies and modifications in the present process and procedures, which leads to an increase in new demands from employees (Smollan, 2017). Regular change in workplace situations, i.e., changes in systems and structures caused by reorganizations, makes it hard for individuals to keep up with new ways of thinking and working, which may increase cognitive demands (Øygarden et al., 2020). Moreover, it has been observed that the process of FIs requires organizational change, which has the potential to both amplify current demands and introduce new ones while also serving as a demand in its right (Øygarden et al., 2020; Smollan, 2017). Likewise, if employees express dissent towards a specific change initiative (needed for the successful execution of FIs), the organizational change can be perceived as a kind of coercion (Øygarden et al., 2020). Linking these theoretical lenses, it is argued that leadership (change-oriented leadership) is an inspirational source that motivates the individual to support change readiness. Similarly, through

the lens of JD-R theory (Bakker & Demerouti, 2017), it is argued that leadership is a procedure of effectiveness, specifically the deliberate impact produced by guiding, organizing, and facilitating individuals (Tummers & Bakker, 2021). Change-oriented leadership (COL) behaviors encompass several important behaviors that involve actively observing and analyzing the organizational environment, thinking about novel options for the organization, articulating the rationale for change, suggesting innovative and creative solutions, and experimenting with alternative approaches to achieve objectives (Øygarden et al., 2020). Additionally, change-oriented leaders adopt a long-term perspective when addressing problems and opportunities and engage in negotiation efforts to secure support from other stakeholders on behalf of their department (Øygarden et al., 2020). The learning goals of individuals foster their participation in self-regulated or meta-cognitive actions, including the cultivation of motivation to acquire knowledge and the development of intrinsic motivation to enhance skills (Hirst et al., 2009; Klein et al., 2006). These processes encompass metacognitive tasks such as planning, monitoring, and self-regulation (Bouffard et al., 1995; Ford et al., 1998). Personal resources are an individual's perceptions of the extent to which command they have throughout their circumstances (Bakker & Demerouti, 2017). Based on the lens of JD-R theory (Bakker & Demerouti, 2017), the researchers of this study contend that LGO works as a personal cognitive source through which individuals attain novel skills and competencies that enhance their motivation level so that they can perform better or tackle job-related challenges and convert them into opportunities for their growth and development. According to Jones et al. (2017), individuals with an LGO believe their abilities can be developed and improved. As a result, these employees exhibit a mindset of growth, which motivates them to further develop their skills and knowledge through self-regulated learning (Joo et al., 2019). They actively seek opportunities to acquire new competencies and derive satisfaction from engaging in challenging assignments with the aim of personal improvement (Joo et al., 2019; Matsuo, 2019). In a workplace, organizations can achieve the objective of FIs by providing psychological resources in the form of COL, on the other hand, personal sources, i.e., LGO also enable the employees to manage and support the change of strategies for FIs.

2.2 | Hypothesis Development

2.1 Change-Oriented Leadership and Frugal Innovations

Leaders who interact with individuals during the change execution stage are in a unique situation to observe and share individuals' contributions, achievements, and innovations to the organization (Naseer et al., 2023; Potosky & Azan, 2023). The change-oriented leadership (COL) behavior was first recognized as distinctive in the 1990s due to the growing sociocultural, economic, and organizational changes to improve interventions and adaptation to changes (Ekvall & Arvonen, 1991). COL portrays the leader as a change agent with an innovative mindset, adopting novel approaches to tackle matters, recognizing potential, being prepared to experiment and take risks, and being forward-thinking (Yukl, 2012). Moreover, the COL approach relates to novel concepts, strategies, and innovative ways of performing tasks, such as establishing swift decisions, fostering contact with employees, and implementing successful methods (Ekvall & Arvonen, 1991); also, these leaders create awareness among employees about the obligatory changes which necessary for the accomplishment of organizational objectives (Ekvall & Arvonen, 1991). COL functions as an indicator that encourages the development of an explicit strategy and overall success, predominantly because this type of leadership is vital for allocating organizational facilities (Schoemaker et al., 2013).

Innovation efficiency is recognized as one of the essential strategies for organizations to develop a strategic boost in the modern era (Le & Lei, 2019; Su et al., 2021). Few researchers have discussed the notion of frugal innovations (FIs) before, but it has grown famous and pivotal in the past few years (Le, 2021). FIs generally mean new ideas that lower the overall cost of purchase or utilization by a substantial scale while achieving or surpassing quality requirements (Zeschky et al., 2011). In other words, FIs are viewed as an approach of innovation that saves resources by generating new ideas and strategies by employing them; organizations can produce goods with low prices and higher user values (Brem et al., 2020; Pisoni et al., 2018; Zeschky et al., 2011). According to Pisoni (2018), FIs have a historical background of its foundation which categorizes it into different sections, i.e., product-oriented (2012-2013), market-oriented (2014-2015), and criteria-oriented (2016-17). Moreover, some scholars classify FIs, i.e., as a handsome cost reduction, optimization of organizational performance, and attention to central functionalities (Weyrauch & Herstatt, 2017). Likewise, several scholars considered FIs as an ability of the organization to produce innovative commodities and services produced under budgetary limitations and entail low-income users whose key influencing element in the buying choice is pricing (Agnihotri, 2015; Hossain, 2018). Based on this notion, the researchers of this study argue that innovations require an environment of encouragement; for that purpose, leadership is needed to support the change initiatives. Because only the development of innovative plans does not necessarily result in favorable outcomes, particularly if other employees do not comprehend the ideas or there is a lack of motivation they need for implementing them (Perry-Smith & Mannucci, 2017). In most developing economies, organizations face the problem of shortage of capital and due to which the size of firm remains small or medium, but these organizations hold the potential of growth and innovation (Hossain et al., 2016). The notion of FIs motivates these organizations to produce low-cost and quality products to meet the market of developed nations (Tukamuhabwa et al., 2017). Moreover, FIs are motivated by organizations with an appeal to resolve regional challenges (Douglas, 2013), and proposed by scholars that there are numerous success factors for FIs and leadership is one of them (Hossain, 2018). Based on this discussion, it is argued that COL promotes innovative ideas and encourages subordinates, which may result in FIs; thus, the researchers of this study hypothesize that:

H1: *Change-Oriented Leadership has a positive influence on Frugal Innovations.*

2.2 Individual's Readiness to Change as Mediator between Change-Oriented Leadership and Frugal Innovations

Organizations are undergoing continuous restructuring activities due to digitization, the use of emerging technologies, dealing with volatile circumstances, and numerous other factors (Gil et al., 2005). Nurturing employees' innovation and soliciting novel ideas to enhance the existing organizational environment is paramount for organizations (Chaubey & Sahoo, 2022; Chaubey et al., 2022). However, just developing innovative ideas does not inherently ensure advantageous results, particularly if employees within the organization fail to comprehend these ideas or lack the drive to put them into practice (Perry-Smith & Mannucci, 2017). Each changes a different approach, with some perceiving it as an avenue for feelings of joy, advantages, or positive aspects, while others perceive it as a cause of trouble, anxiety, and negatives (Bouckenooghe et al., 2009). Innovations require changes, and most earlier researchers stressed that the readiness of individuals is imperative for the success of organizational change (Holt et al., 2007; Olafsen et al., 2021). Readiness pertains to the degree to which an

organization and individuals exhibit the aptitude and capability to effectively adopt certain innovations (Scaccia et al., 2015).

To fully achieve the possible benefits associated with innovative ideas, organizations must rely on their employees to actively engage in the process of garnering support for innovative ideas. For that purpose, there is a need for leadership that shapes the responses and perceptions of employees about the change. COL is considered a form of leadership that can evaluate external circumstances, design advantageous changes, foster innovative thinking, and undertake calculated risks to facilitate innovative processes (Lam et al., 2018; Øygarden et al., 2020). Likewise, as a people-oriented leader, COL encourages and cares for subordinates, develops trustworthy and courteous interactions, expresses gratitude and optimism for them, appreciates their efforts, and encourages them to develop professional abilities (Yukl, 2012). Moreover, Yukl (2002) described COL as a style of leadership that "enhances strategic decisions; adapting to change in the setting; increasing flexibility and innovation; making major changes in processes, products or services; and gaining commitment to the changes" (p. 65). In other words, due in large part to the fact that this leadership style (i.e., COL) is vital for managing organizational resources, these leaders perform as an element that encourages the creation of a clear strategic direction and overall performance (Schoemaker et al., 2013).

Frugal innovations (FIs) facilitate the restructuring of organizations' procedures and serve as an instrument for cost savings, and this decrease in costs is achieved with the execution of novel approaches (Albert, 2019). Moreover, FIs encompass the concepts that facilitate organizations' utilization of pre-existing resources, resulting in cost-effective solutions that effectively meet customers' fundamental desires and needs through reduced pricing strategies (Albert, 2019). Applying FIs enables organizations to leverage their current expertise and capabilities to engage in novel initiatives (Nassani et al., 2022). COL can inspire and encourage their followers to actively pursue inventive and novel strategies to effectively tackle various challenges inside the organization (AlAnazi et al., 2022), which may occur during the implementation of the FIs mechanism.

Effective enactment of changes in organizations requires individuals to adopt novel procedures and maintain a constructive approach toward change (Hetty van Emmerik et al., 2009). A supportive work environment from the leaders helps the employees for the enhancement of well-being and self-confidence in the form of their willingness/readiness to deal with organizational challenges (Hetty van Emmerik et al., 2009), especially during the process of FIs implementation strategies. When individuals are physically and psychologically ready to deal with organizational changes it may help the organizations for the implementation of innovational strategies, i.e., FIs. The physical and psychological resources of individuals lead to a higher level of motivation to deal with job demands (Tummers & Bakker, 2021), by following these theoretical lens of JD-R theory, it is argued that leadership, i.e., COL work as a source of motivation for the employees, which may increase their level of confidence (Bakker & Demerouti, 2017) in the form of IRTC to deal with the challenging organizational demands, i.e., FIs. Interpersonal and social relations of employees at the workplace with their supervisors/leaders also become the source of motivation and encouragement for the enhancement of self-confidence to deal with challenges (Bakker et al., 2003). By following this concept, the researchers of this study propose that COL enhance the readiness level of their subordinates, through which they become able for execution, implementation and the accomplishment of FIs strategies, as leaders of this nature play a crucial role in driving change endeavors

and cultivating suitable environments that promote innovation (AlAnazi et al., 2022; Bergsten et al., 2021; Fan et al., 2020). Based on the above discussion of literature, it is hypothesized that.

H2: *Individual's Readiness to Change mediates the relationship between Change-Oriented Leadership and fiscal innovations.*

2.3 Learning Goal Orientation as Moderator

To attain sustained success, organizations need to implement employee development initiatives aimed at enhancing the abilities as well as expertise of their workforce (Mumford, 2000; Rasool et al., 2019). Learning goal orientation (LGO) is often recognized as a stable personal trait that pertains to an individual's attitude to pursue learning objectives in environments involving achievement (Dweck, 1986; Payne et al., 2007). Individuals with LGO exhibit an intense desire for personal development through acquiring new abilities, mastery of novel situations, and enhancement of their overall capability (VandeWalle, 1997; VandeWalle et al., 2001). Previous research indicates that the presence of an LGO might serve as an important motivational factor, resulting in enhanced learning outcomes, mastery of knowledge, as well as fostering creativity and innovation (Amabile & Gryskiewicz, 1987; Hirst et al., 2011; Hirst et al., 2009). Similarly, innovations require organizational change, which creates challenging situations for the employees, and individuals with higher LGO are willing to accept challenges by developing their skills, abilities, and knowledge through learning at the workplace (Cerasoli & Ford, 2014) without comparing themselves with others (Nguyen et al., 2023). Also, a higher level of LGO becomes beneficial for the employees through the acquisition of new skills and knowledge to cope with challenges, uncertainty, and obstacles (Gong et al., 2009; Janssen & Van Yperen, 2004) which creates a new environment (Alessandri et al., 2020) for the achievement of FIs through organizational change.

It has been found in earlier studies that LGO is associated with numerous outcomes, i.e., an increase in innovative behaviors (Nguyen et al., 2023), creativity, and engagement (Rozkwitalska et al., 2022; To et al., 2015) self-efficacy and performance (Lu et al., 2022) psychological empowerment (Matsuo, 2021), and psychological capital (Sánchez-Cardona et al., 2021). Few earlier studies used LGO as a moderator with different predictor and criterion variables, and their findings reveal that a higher level of learning motivation of individuals in the form of LGO enables them to deal with negative supervisor behaviors (e.g., abusive supervisor) and produce positive outcomes, i.e., knowledge sharing (Islam et al., 2021) and with the support of positive supervisor behaviors (e.g., transformational leadership) these individuals demonstrates OCB and higher productivity (Zacher & Jimmieson, 2013).

Research has indicated that persons who possess a higher level of LGO demonstrate a proactive approach towards enhancing their competencies, and these individuals actively seek out new techniques to effectively tackle challenges and exhibit a tendency to engage in "solution-oriented self-instruction" when faced with challenging tasks (Dweck et al., 1995; VandeWalle, 1997; VandeWalle et al., 2001; Vandewalle et al., 2019). On the contrary, individuals exhibiting low LGO tend to see negative feedback as a potential threat (Templer et al., 2020). Likewise, most recent studies indicate that leader behavior effectively impacts the organizational outcomes of a change endeavor by encouraging employees' behaviors to accomplish the change (Potosky & Azan, 2023). COL works as a motivational and supportive leader who provides employees with awareness about the needs and objectives of organizational change, which is especially required for FIs. Moreover, the LGO of employees also

serves as a motivational factor that drives them to actively pursue and value negative feedback, with the ultimate objective of enhancing their performance and skills (Janssen & Prins, 2007). It is a common phenomenon that individuals respond differently to challenging situations, some may view these circumstances as challenges and others may deliberate that task as trouble (Chow & Gong, 2019). The support of leadership also enhances the confidence level of individuals to face challenging circumstances through motivation and encouragement, and if individuals are of higher learning oriented then they may show more willingness to face these challenging situations (Gong et al., 2009), especially during the implementation of FIs policies and strategies. So, the researchers of this study argue that a higher level of LGO enables individuals to provide support for the implementation of change in the form of their readiness, and support of COL boosts this motivation for FIs as well. Based on the arguments mentioned earlier, the researchers of this study hypothesized that:

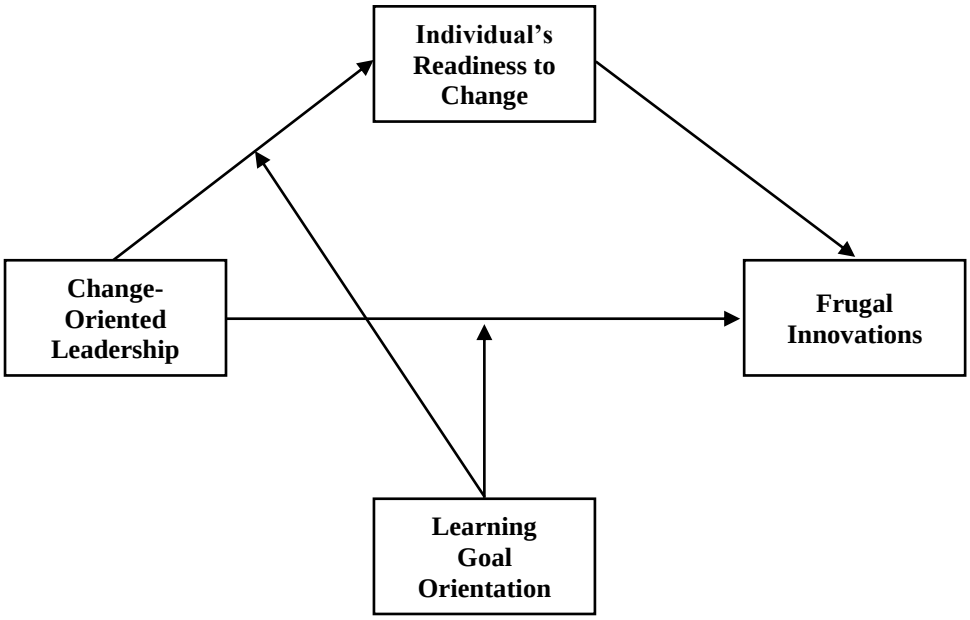
H3a: *Learning Goal Orientation moderates the relationship between Change-Oriented Leadership and Frugal Innovations in such a sense that high/low Learning Goal Orientation of the individuals will strengthen/weaken this positive relationship.*

H3b: *Learning Goal Orientation moderates the relationship between Change-Oriented Leadership and an Individual's Readiness to Change in such a sense that high/low Learning Goal Orientation of the individuals will strengthen/weaken this positive relationship.*

H4: *Learning Goal Orientation moderates the indirect effect of Change-Oriented Leadership on Frugal Innovations via an Individual's Readiness to Change in such a sense that high/low Learning Goal Orientation of the individuals will strengthen/weaken this positive relationship.*

Figure 1

Proposed Research Model



3 | METHODOLOGY & DESIGN

3.1 | Participants and Procedures

This study's sample comprised permanent employees working in pharmaceutical and textile organizations from the major cities of Pakistan (Islamabad, Karachi, and Faisalabad). The reason for the selection of these organizations is that the contribution of these organizations to the economy of Pakistan is imperative. Moreover, Pakistan is a developing country facing the problem of inflation, and organizations are under pressure to produce quality products at cheaper prices for the public. Using personal contacts, the researcher distributed the survey questionnaires through HR departments of both sector organizations (pharmaceutical and textile) using a simple random sampling technique in two different time lags with a tentative lag of one month. The time-lag method was adopted to minimize the respondents' common method bias and to collect the respondents' honest opinions about the study variables; this method was used by following the suggestions of Podsakoff et al. (2003). Further, in the first phase, data was collected for the predictor (change-oriented leadership) and moderator (learning goal-oriented), and in the second phase, data was collected for the mediator (individual's readiness to change) and criterion variable (frugal innovations) by following the suggestions of Podsakoff et al. (2003) where they suggested that if the data is required from the same respondents for all study variable, then to minimize the CMB and for true results it would be better if authors collection data predictor and criterion variables in different lags. Employees from different departments related to frugal innovations voluntarily participated in the data collection survey. Six hundred questionnaires were distributed in the first phase of the data collection process, and at the end of this phase, 425 completed questionnaires were received; in the second phase, survey questionnaires were distributed to those participants who participated in the first phase, and finally, 313 completed questionnaires were received, so the response rate was 52.17%.

3.2 | Measurement Tools

All measurement scales of this study were adopted from the reputed published studies, and their reliability was authenticated by using them in different earlier studies. Participants were asked to give their opinions about the statements in the survey forms using a five-point Likert scale ranging from strongly disagree-1 to strongly agree-5. All instruments were in English as English is used and understood in public and private organizations as a mode of written communication (Naseer et al., 2016; Naseer et al., 2016; Naseer et al., 2020); also, English is taught as a language in Pakistan from undergraduate level to higher levels of education (Naseer et al., 2016; Naseer et al., 2016; Naseer et al., 2020).

3.3 | Change-Oriented Leadership

A six-item scale was adopted, developed by Yukl (1999), to measure individuals' perceptions about their leadership. A sample item of the scale was "*My leader/supervisor/manager proposes new and creative ideas for improving products, services and processes*".

3.4 | Individuals' Change Readiness

A five-item scale was adopted, developed by Vakola (2014), to assess the readiness level of employees for organizational change. A sample item of the scale was "When changes occur in my company, I believe that I am ready to cope with them".

3.5 | Learning Goal Orientations

A six-item scale was adopted and developed by Vandewalle (1997) to measure individuals' perceptions of learning. A sample item of the scale was "*I often look for opportunities to develop new skills and knowledge*".

3.6 | Frugal Innovations

A nine-item scale was adopted, developed by Lei et al. (2021), to measure individuals' perceptions of frugal innovation. Sample items of the scale were "In my organization, *I regularly search for new solutions that offer ease of use of products/services*" and "*In my organization, I significantly reduce the final price of the products/services*".

4 | RESULTS and ANALYSIS

4.1 | Participants Details

Below Table-1 shows the demographic details of the participants who voluntarily participated in this study.

Table 1

Participants' Details

Demographics		Frequency	Percent
Gender	Male	183	58.50%
	Female	130	41.50%
Age	18-25 Years	45	14.40%
	26-35 Years	195	62.30%
	36-45 Years	64	20.40%
	46-55 Years	8	2.60%
	More than 56 Years	1	0.30%
Education	Undergraduate	106	33.80%
	Graduate	122	39.00%
	Post-Graduate	80	25.60%
	Doctorate	5	1.60%
Sector	Pharmaceutical	151	48.20%
	Textile	162	51.80%
Experience	1-5 Years	108	34.50%
	6-10 Years	122	39.00%
	11-15 Years	65	20.80%
	16-20 Years	11	3.50%
	More than 20 Years	7	2.20%

4.2 | Validity

Before the start of further analysis, the researchers of this study test the validity of the constructs using different statistical techniques as suggested by scholars. For that purpose, the researchers of this study perform the Heterotrait-Monotrait (HTMT) ratio of correlations and the Fornell-larker (1981) criterion method; the values shown in Table 2 at the diagonal are higher than those shown in the same column and row, and the HTMT values are less than .85 which also meet the threshold limit as suggested by Henseler et al. (2015) and Hair et al. (2019).

Table 2

Validity

	Variables	HTMT			Fornell-Larker Criterion			
1	COL				**.753**			
2	LGO	.242			.154	**.830**		
3	IRTC	.189	.678		.123	.773	**.842**	
4	FIs	.314	.543	.476	239	.406	.416	**.797**

Note: COL; change-oriented leadership, LGO; learning goal orientation, IRTC; individuals' readiness to change, FIs; frugal innovation,

4.2 | Descriptive Statistics, Reliability, and Correlations

Table 3 shows the descriptive statistics (mean and standard deviation) and reliability statistics (alpha); all Cronbach alpha values are above .700, which follows the suggestions of Hair et al. (2019). Table 3 further shows the correlation values between the study variables, showing that all variables positively and significantly (p<.01** and p<.05*) correlated. Table 3 also shows the values of composite reliability (CR) and average variance extracted (AVE), which meet the minimum threshold limit of .700 and .500, respectively, as recommended by Hair et al. (2019).

Table 3

Descriptive Statistics, Reliability, and Correlations

	Variables	Mean	SD	Alpha	CR	AVE	1	2	3	4
1	COL	3.64	.8269	.785	.902	.567		.265**	.144*	.211**
2	LGO	3.77	.6237	.925	.896	.636			.400**	.476**
3	RTC	3.51	.7741	.824	.895	.598				.468**
4	FIs	3.66	.8046	.898	.949	.688				

*Note: COL; change-oriented leadership, LGO; learning goal orientation, IRTC; individuals' readiness to change, FIs; frugal innovation, CR; composite reliability, AVE; average variance extracted, **p<.01, *p<.05*

4.4 | Model Measurement

To test the proposed hypotheses of this study, the researchers of this study follow the bootstrapping method with a 5000 sample size as suggested by Hayes (2018), and use Smart-PLS version 4 for the statistical analyses. Results about the direct effects are illustrated in Table 4, where COL positively and significantly affects the FIs [b=.100**, SE=.034, t-value=2.931, p<.01, LL/UL-CIs=.033/.168], COL also positively and significantly influence the IRTC [b=.135*, SE=.059, t-value=2.303, p<.05, LL/UL-CIs=.027/.253] and IRTC also positively affect FIs [b=.382***, SE=.042, t-value=8.251, p<.001, LL/UL-CIs=.395/.558]. These results show the positive and significant direct effects of predictor and mediating variables on criterion variables, thus supporting this

study's first hypothesis. In the second phase, the mediation analysis was performed, and the results support the acceptance of the second hypothesis [b=.106*, SE=.046, t-value=2.302, p<.05, LL/UL-CIs=.022/.203], showing partial IRTC mediation between COL and FIs as now zero found between lower- and upper-class intervals.

Furthermore, our moderation analysis and the results in Table 4 show that the interaction of COL and LGO positively and significantly influences the IRTC [b=.324**, SE=.104, t-value=3.112, p<.01, LL/UL-CIs=.096/.503] and FIs [b=.141***, SE=.043, t-value=3.315, p-value=.001, LL/UL-CIs=.061/.230], these results provide support for the acceptance of H3a and H3b of this study. Table 4 further shows the results of conditional indirect effects of LGO at three levels (above than mean, at the mean, and below than mean) and significant positive conditional indirect effect found only above the mean [b=.189**, SE=.074, t-value=2.541, p<.01, LL/UL-CIs=.057/.350], further the researchers of this study performed the moderated mediation analysis and found significant results [b=.221**, SE=.053, t-value=2.945, p<.01, LL/UL-CIs=.069/.363]; thus, these results also support the H4 of this study.

Table 4

Direct, Indirect, Moderation, and Conditional Indirect Effects

Relationships	Coeff	SE	t-value	p-value	LL/UL-CI
Direct Effects					
COL → FIs	.100**	.034	2.931	.003	.033/.168
COL → IRTC	.135*	.059	2.303	.021	.027/.253
IRTC → FIs	.382***	.042	8.251	.000	.395/.558
Mediation Effects					
Indirect Effects (COL → IRTC → FIs)	.106*	.046	2.302	.021	.022/.203
Moderation Effects					
Relationships	**Coeff**	**SE**	**t-value**	**p-value**	**LL/UL-CI**
Interaction (COL x LGO) → IRTC	.324**	.104	3.112	.002	.096/.503
Interaction (COL x LGO) → FIs	.141***	.043	3.315	.001	.061/.230
Conditional Indirect Effects					
Relationships	**Coeff**	**SE**	**t-value**	**p-value**	**LL/UL-CI**
COL → IRTC → FIs conditional on LGO at +1 SD	.189*	.074	2.541	.011	.057/.350
COL → IRTC → FIs conditional on LGO at Mean	.051	043	1.203	.229	-.029/.142
COL → IRTC → FIs conditional on LGO at -1 SD	-.086	.053	1.640	.101	-.189/.017
Moderated Mediation Effects					
Relationships	**Coeff**	**SE**	**t-value**	**p-value**	**LL/UL-CI**
Interaction COL x LGO → IRTC → FIs	.221**	.075	2.945	.003	.069/.363

*Note: COL; change-oriented leadership, LGO; learning goal orientation, IRTC; individuals' readiness to change, FIs; frugal innovation, UL/LL-CI; upper and lower-level class intervals, ***p<.001, **p<.01, *p<.05*

The researchers of this study further plotted the interaction terms using Smart-PLS version 4 through the slope test technique for the robustness of our moderation results shown in Figures 3 and 4. According to the moderation slopes, when there was a higher support of COL and individuals were at a higher LGO level, it led to higher IRTC and FIs.

Figure 2

Moderation (COL x LGO → IRTC)

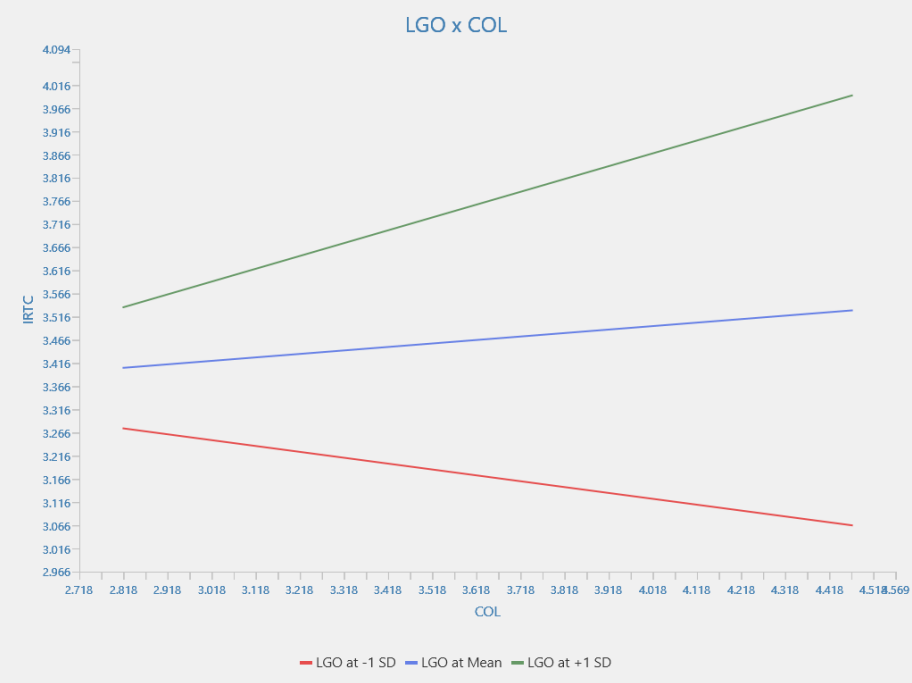
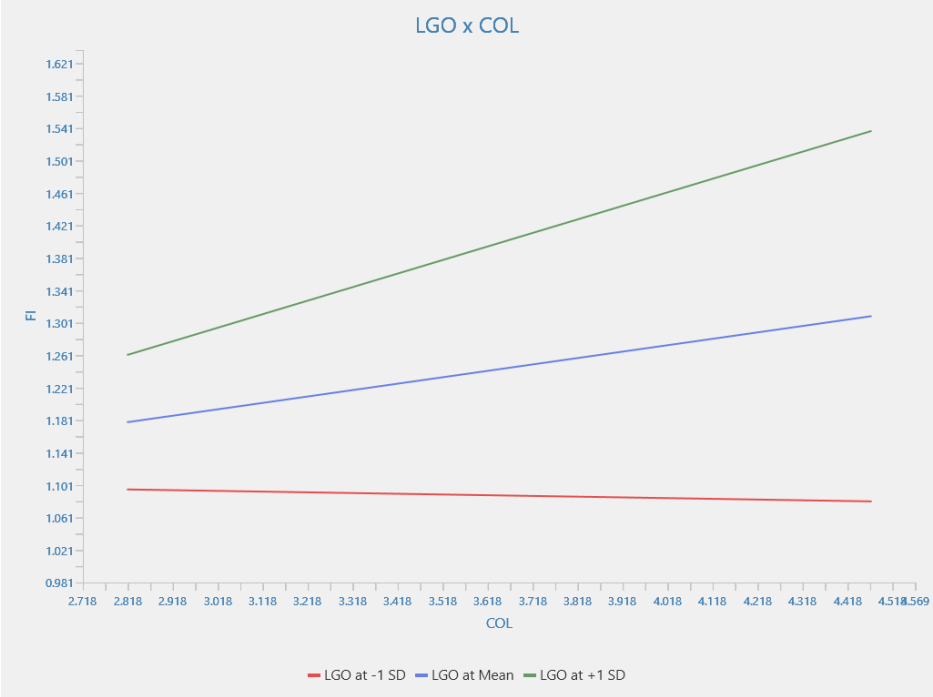


Figure 3

Moderation (COL x LGO → FIs)



5 | DISCUSSION

Based on JD-R theory, the researchers of this study hypothesized the model to explain the direct impact of change-oriented leadership (COL) and the indirect impact of individuals' readiness to change (IRTC) on frugal innovations (FIs). Furthermore, this study investigates the learning goal orientation (LGO) as a moderator. The present study's proposed research model can help manufacturing sector organizations consider the influence of leadership (i.e., COL) and IRTC towards FIs.

For H1 of this study, the empirical results confirmed that COL positively impacted the FIs; these results are in line with earlier studies (Lei et al., 2021), which explain that leadership holds the capability of positive impact on creativity and innovations (Iqbal et al., 2022) and specifically, COL served as a predictor of innovations (AlAnazi et al., 2022; Fan et al., 2020). Also, leadership tremendously impacts the growth of revolutionary and incremental innovation by adequately communicating and conveying explicit perspectives (Marvel & Patel, 2017). Likewise, the COL increases employees' motivation and dedication to the organization through encouragement and engagement (Mikkelsen & Olsen, 2018; Øygarden et al., 2020). The mechanism of FIs is to produce the products/services by saving resources to reduce cost, and change leadership plays a vital role by giving awareness of changes in processes and procedures to cut down costs.

In H2 of this study, the researchers of this study use IRTC as a mediating mechanism between COL and FIs, and empirical results provide a partial mediation which is also in line with the previous studies (Aboobaker & Zakkariya, 2021; Somadi & Salendu, 2022). Innovations are pivotal in organizational objective success, and individual innovation is paramount (DiLiello & Houghton, 2006). Likewise, change in processes and procedures also helps organizations to boost innovations (Chughtai et al., 2023). In general, the support of organizational members in implementing change policies which leads to innovation is very important (Aboobaker et al., 2022). FIs consist of the mechanism of new procedures, processes, or modifications in the old ones to reduce the cost of the products/services (Tabassam & Shehzad, 2023). For that purpose, employees need support for modifying or implementing new policies and procedures; this readiness for acceptance can be enhanced with the support of positive leadership. The findings of this study also explain that COL uses positive characteristics of their leadership, i.e., the flow of awareness about the importance of change and innovation, motivation, and encouragement to the subordinates for the acceptance of new or modified policies, which results in higher self-confidence to face the uncertainty which may occur due to the change in policies, procedures, and processes.

Finally, for H3a and H3b, the empirical results provide support for the moderating role of LGO, which becomes the imperative factor that improves the level of IRTC and accelerates the FIs. Moreover, empirical results also support that LGO moderated COL's indirect impact on FIs via IRTC. These interesting findings are also consistent with the earlier studies (Islam et al., 2021; Zacher & Jimmieson, 2013), which highlight that a higher level of LGO in employees leads to different positive outcomes, i.e., motivation, innovation, self-efficacy (Lu et al., 2022; Nguyen et al., 2023) and readiness to face the uncertain or new situations. The researchers of this study specifically found that a higher level of LGO in employees enhances their confidence to deal with the uncertain circumstances that organizations usually face during the innovation process (Hirst et al., 2009; Nguyen et al., 2023). Likewise, uncertainty levels were found high during the implementation of FIs strategies because the main objectives of these innovations are to reduce the cost of the products/services by modifying the existing processes and procedures or to introduce new ones that reduce the expenses of production so that organizations

can be able to offer them on an economical price to the consumers. In contrast, higher support of COL also helps the employees boost their readiness level and participation in FIs activities. The motivational factor of LGO also encourages individuals to learn new things through acquiring knowledge (Payne et al., 2007), which becomes fruitful for them for enhancement of readiness and to produce positive outcomes, i.e., FIs.

5.1 | Implications

The present study adds to the JD-R theory in the following means. First, the researchers of this study examine the impact of COL on FIs with context to manufacturing sector organizations; as COL was used in this study as a critical determinant of FIs because general innovations and FIs require changes in policies, procedures, and processes. Several factors influence the successful execution and implementation of change policies, and leadership is one of them. COL is a form of leadership that not only knows the value of change for innovations but also gives their subordinates awareness about change and convinces them to support change. Second, IRTC was used as a mediating mechanism because execution and implementation of change policies to achieve innovations or FIs become possible when the organizational members provide unconditional support. In contrast, earlier research evidenced that most of the change plans or innovative activities fail due to a lack of support from employees (Hay et al., 2021; Kotter, 2007). This study broadens the knowledge about IRTC as a mediator with a perspective on FIs with COL. Third, the moderating role of LGO was examined in this study between COL and IRTC, and FIs relationship. Our moderation of LGO is different due to the perspective of FIs, as these innovations depend on the use of existing resources in such a way that the cost of products/services is reduced through modification. LGO in this study works as a motivational factor that especially benefits the organizations for FIs.

This study has some general implications for managers, administrators, and policymakers on how to implement the strategies for FIs. This study highlights the importance of COL for implementing FIs, as these innovations have become the requirement of every industry due to higher rates of regional and international inflation rates, which increase the cost of production. By employing the COL, organizations provide encouraging, motivational, and well-aware leadership to the employees who foster the FIs and by giving awareness to the employees about the importance of FIs. Second, the mediation mechanism of IRTC of this study enlightens that unconditional support and confidence level of employees is also imperative for the implementation of change policies for FIs; for that purpose, organizations must arrange training sessions or workshops before execution of modified or new policies so that the success rate of FIs becomes higher. Finally, the findings of this study highlight the importance of LGO, that employees with higher levels of learning or knowledge-seeking motivations are much more confident than others at lower levels of LGO. To encourage higher LGO, organizations must provide and support the environment of learning and support learning activities in the organizations, especially learning from failure, which opens different doors to critical thinking that leads to higher FIs. Being a developing economy, the findings of this study also become helpful for the organizations of both public and private sector manufacturing organizations by giving awareness to their mangers/officers/leaders about the importance of FIs which are now necessary for survival. Pakistani organizations are facing the issue of higher costs due to rapid and higher changes in the exchange rate which affect the cost of production because the majority of raw materials purchased by these organizations are from developed countries and the cost of this material is paid in foreign currency. By implementing the strategy of FIs Pakistani firms can reduce the cost of production by utilizing the existing organizational resources, but the strategies of FIs can be implemented with the support of a talented and

learning-oriented workforce and change-oriented leaders/managers which change the mindset of their subordinates positively so that they can show their readiness for the support of such policies and strategies. Pakistan has a lot of talent in every field, just there is a need for proper guidance through leadership for the polish of their workforce skills, which can be attained by providing an environment of learning at the workplace.

5.2 | Limitations and Future Directions

The present study encompasses some limitations that might affect the understanding of the results. First, the data for this study was collected from two manufacturing sector organizations (i.e., pharmaceutical and textile) for the generalizability of the present model; it would be better if future researchers collect data from other industries, i.e., automobile, cement, chemical, and electronics. Further, the critical impact of IRTC was investigated between the link of COL and FIs, and it would be interesting if future researchers use different other factors, i.e., knowledge sharing, change self-efficacy, and creative self-efficacy for higher FIs with the support of COL. In the present study, the impact of leadership style (i.e., change-oriented) was tested; while earlier studies use transformational leadership as an antecedent of FIs, it would be interesting if future researchers use other leadership styles, i.e., humble leadership, adaptive leadership that might help the organizations to foster FIs as innovational activities create uncertain situations and this leadership with their positive traits may hold the ability to deal them. Finally, we use LGO as a moderator to boost the IRTC and FIs; future researcher tests other constructs as moderators, i.e., psychosocial safety climate, flexible working environment, learning organizations culture, and high-performance work practices.

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