

Article

Organizational Innovativeness in the Circular Economy: The Interplay of Innovation Networks, Frugal Innovation, and Organizational Readiness

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Abstract: Due to technological advancements, all types of businesses confront new opportunities. In the contemporary era of technology, innovation performs a key role in successful commercial landscape operations. Therefore, this research was conducted to examine the effect of the innovation network (IN) on organizational innovativeness (OI). Moreover, the mediating effects of frugal innovation (FI) and the moderating role of organizational readiness (OR) have also been examined. Data collection through a cross-sectional method was conducted for this study from SMEs. Some 442 managers and owners provided correct responses, which were used for further analysis. SEM was used for testing the hypotheses of the current study. The results showed that the innovation network positively affects organizational innovativeness. Furthermore, the outcomes also validated that frugal innovation plays a mediating role between the innovation network and the organizational innovativeness link. The SMEs working in the circular economy are mainly dependent on their innovative activities/actions. In the current dynamic scenario, the survival of SMEs is linked to continuous organizational innovativeness in their products/services.

Keywords: organizational innovativeness; circular economy; innovation networks; frugal innovation; organizational readiness

1. Introduction

Researchers pay great attention to organizational innovativeness, and it has become an essential factor in the current dynamic environment. The latest technological applications pressure businesses to adopt advanced innovative processes and digital technologies [1]. Particular advancements in technology are possible due to innovation networks, and it helps the traditional business firm to adapt to modern practices in the circular knowledge-based economy [2]. The circular economy is emerging as the sustainable model for SMEs, which intend to redesign themselves, moving from less reliance on traditional manufacturing methods and having the potential to produce better results for society, the environment, and the economy through current regeneration paths or the newest technologies [3]. However, rapid technological vitality coupled with the development path makes the survival of organizations complex and challenging [4]. Still, under such difficult conditions, the transformational role of the innovation network cannot be ignored because of its innovative ideas, which affect the performance and the success of firms, SMEs, in particular [5]. The

circular sustainable models are helpful for the production, consumption, and manufacturing of products in SMEs or any field or economy [6]. Particularly, in the current study, we focus on the organizational innovativeness of SMEs in the circular economy that is not yet available in the existing literature.

Furthermore, SMEs perform a vital role in economic development and a pivotal role in the natural environment due to the use of intensive natural resources and the waste they produce [7]. The basic idea of the current research is that overall effective evolution in SMEs towards a sustainable circular model can generate considerable advantages for the environment, society, and economy on a broader level, and this shift of change could be accelerated and achieved by the implementation of innovative activities related to the circular economy [8]. Organizational innovativeness is the actual emerging challenge for SMEs. Even though the transformational model shows enormous opportunities for SMEs, it puts certain hurdles in the way of success; the foremost confronted are related to the successful adoption and implementation of advanced technologies [9]. Hence, a definitive research study is needed to explore the role of the innovation network for destined organizational innovativeness.

On the other hand, SMEs require an innovation network for their businesses to design innovative ideas and knowledge for new products, which leads to organizational innovativeness and the achievement of frugal innovation through leveraging their existing resources [10]. Innovation is the emerging dynamic competency of any firm that helps sustain competitive benefits by fulfilling the customer's needs [11]. In the contemporary era, business success is largely dependent upon the innovation competence of a firm to respond to rapidly emerging business changes in the dynamic environment [12]. Accordingly, researchers continuously try to find and to recognize mechanisms for enhancing the innovation ability of SMEs. However, the literature hardly provides any evidence of the achievement of organizational innovativeness through innovation networks, organizational readiness, and frugal innovation.

Organizational innovativeness is a challenge for SMEs, but the emergence of frugal innovation offers specific opportunities that depend upon the innovation network of these potential SMEs [13]. The innovation network plays a critical role in the business processes of SMEs for the enhancement of frugal innovation, technical expertise, and organizational innovativeness [14]. Organizational innovativeness is an attractive growing idea in the circular economy, and it depends upon several factors, such as explorative networks, organizational readiness, frugal innovation, etc., which have not yet been explored [15,16]. Previous studies conducted research into the prerequisites which can accelerate organizational innovativeness, but they barely enlightened on the role of organizational innovativeness and its leading determinants in SMEs. The current study fills this research gap by adding numerous critical factors in improving and in enhancing organizational innovativeness within SMEs in the circular economic context. This research model is unique and narrative. We put three different constructs: the innovation network (independent variable), organizational readiness as the moderator on the link between innovation network and organizational innovativeness, and frugal innovation as a mediator between their links. Due to the emergence of the dynamic environment, SMEs need innovation networks to utilize resources. Therefore, the current study focused on the innovation network of SMEs and their effects on organizational innovativeness. The innovation network has significant importance in businesses for affluent operation. However, the innovation network is not the only element that drives organizational innovativeness, it is also needed for ideas and information generation; however, frugal innovation is also an essential factor in enhancing organizational innovativeness [17].

Moreover, our study aims not only to elucidate the effects of the innovation network on organizational innovativeness but also highlight outcomes of frugal innovation and organizational innovativeness through the help of the innovation network. The current study empirically examines their effects and outcomes on improved organizational in-

novativeness. Therefore, our study aims to accelerate and to improve the organizational innovativeness of SMEs.

Recently, economic instability and environmental unrest seriously influenced the business strategies and the innovation processes of the circular economy [11]. In the circular economies particularly, resources compelled the business landscape to reorganize its strategies relating to innovation, among which the frugal innovation notion emerged, and it attained great attention from practitioners and scholars [18]. Frugal innovation presents the ideas that help in the usage of existing resources implemented by businesses, and the ultimate results come in the shape of low costs that fulfil customers' basic needs and demands with fewer price offerings [19]. Frugal innovation becomes the best option for SMEs in the circular economy, where customers are low-cost products [20]. Thus, exploring the outcomes of frugal innovation has grown to be a dominant need of businesses such as SMEs in the circular economy. This study considers this research gap, and it suggests that the innovation network is the critical predictor of frugal innovation and organizational innovativeness as an outcome. Previous studies acknowledged that frugal innovation plays a vital role in developing organizational innovativeness. Frugal innovation supports firms to take advantage of existing resources to be used in the innovation of products and services [20]. This study shows the mediating mechanism of frugal innovation, i.e., important for the organizational innovativeness of SMEs. It also shows that organizational readiness enables SMEs to adapt and to implement the latest technological changes for improved innovation activities inside an organization [21]. This study examines organizational readiness as a moderator in the association between innovation networks and organizational innovativeness.

This study intends to describe an organizational innovativeness model for SMEs in the circular economic context. The current study investigates the direct effect of innovation networks on organizational innovativeness. This research also explores the mediating role of frugal innovation and the moderating role of organizational readiness between the innovation network and innovativeness. To achieve the purpose of the current study, the research paper is divided into the following sub-sections. Section 2 comprises the literature review, and Section 3 consists of the methodology. Section 4 shows the findings of the hypotheses and the last section includes a discussion.

2. Literature Review

2.1. Innovation Network and Organizational Innovativeness

Innovation networks know how to achieve corresponding resources and knowledge for novel ideas that facilitate innovative product design, increase demand for their products, and enhance organizational innovativeness [16]. Innovation networks facilitate the firm in expanding different relations among suppliers, partners, and competitors', which assist in efficiently entering the emerging market. The firm adopts new strategies to achieve the latest technologies that help develop new products and boost organizational innovativeness [22]. Innovation networks and advanced knowledge and information can accomplish organizational innovativeness through the innovative production of various products from inside the company by less effectual knowledge sharing [23]. An innovation network helps share the latest knowledge and ideas among consumers, manufacturers, partners, and suppliers, which permits a shift in innovation strategies from inside to outside the company [24]. These innovative ideas help to develop a new product, attract customers, satisfy their demands, and improve organizational innovativeness [25]. Therefore, an innovation network can be positively linked with organizational innovativeness. An innovation network helps the firm to create new products and to improve existing products by combining the new and the existing resources from within and outside the firm, leading to higher organizational innovativeness [26]. Innovation networks emphasize knowledge activities within and outside the firm as they know that novel, innovative information and ideas come from suppliers, partners, and customers [23]. Organizational innovativeness is a difficult task, and it takes effort and knowledge to design the latest novel product from dif-

ferent sources [27]. An innovation network is aware of potential opportunities and values, and it knows which elements and different knowledge combine/exchange for innovative product designing, increasing the capability of the firm's organizational innovativeness [25]. An innovation network implies new idea creation and novel product designing, and it can accomplish high organizational innovativeness through new applied knowledge in an organized manner [22]. An innovation network helps to launch innovative products rapidly by giving the latest solutions for organizational innovativeness [28]. Therefore, we argued that an innovation network would play a critical variable which allows a firm to accomplish organizational innovativeness through novel product designing strategies.

H1. *Innovation network predicts organizational innovativeness.*

2.2. Frugal Innovation as Mediator

An innovation network is the primary source of innovative knowledge and information from exterior stakeholders. Firms obtain the latest information concerning competitors, customers, and the market, which facilitates them in formulating innovative techniques for products and processes [29]. Alternatively, frugal innovation is the mechanism that facilitates business firms in using their existing knowledge and resources for the novelty activities that lead toward organizational innovativeness [30]. Firms incorporate information about outside stakeholders, competitors, and suppliers using innovation networks to establish activities related to organizational innovativeness [31]. Previous research documented that innovation networks facilitate firms for the latest actions, which consecutively boost organizational innovativeness. This study recognized the mediating role of frugal innovation between innovation networks and organizational innovativeness. The innovation network gives a foundation for achieving essential information and the ideas required for innovation-related activities in an organization [29]. With the frugal innovation mechanism, firms can use accessible information and knowledge acknowledged from external parties to encourage innovation activities to enhance organizational innovativeness [32]. Frugal innovation helps firms to restructure their operations and to act as a mechanism for cost reduction, this reduction of cost is done through the innovative ideas of the innovation network [19]. The innovation network allows the achievement of the multiplicity of ideas and information from different external parties [24]. The innovation network enhances frugal innovation to increase organizational innovativeness [33]. An innovation network plays a critical role in attaining frugal innovation because it provides opportunities for firms to use their existing resources to achieve organizational innovativeness, which comes with the continuous efforts involved in innovation-related activities [17]. Frugal innovation is how the firm is capable of designing innovative products and services through advanced knowledge and existing firm resources and capabilities [18]. Previous studies indicate that firms attained organizational innovativeness with a flexible innovation network infrastructure that facilitated the rapid formulation of their innovative activities using existing resources and capabilities [34]. An innovation network gives various innovation strategies to firms that help them to fulfil customers' potential demand at a reasonable price through a frugal innovation mechanism that helps in the utilization of accessible resources for the purpose of innovation, which plays a critical role in the attainment of organizational innovativeness [33].

H2. *Frugal innovation mediates between innovation network and organizational innovativeness link.*

2.3. Organizational Readiness as Moderator

Firms are facing difficulty as a result of rapidly growing changes in the environment. Organizational readiness is a firm's ability to organize and use accessible resources to adopt the latest innovative change, which helps them perform in a vague environment and grow to be innovative [35]. The level that organizational members are behaviorally, psychologically and physically ready to accept and implement the rapidly growing changes.

Organizational readiness plays a critical role in developing future innovation strategies prepared by innovation networks, and it enables firms to use existing resources to implement the latest changes regarding innovation activities that direct toward organizational innovativeness [36]. Practical findings enlighten the critical role of the innovation network in the organizational readiness of a firm [26]. The innovation network comprises a binding effect established in the implementation of innovation activities which enhance organizational innovativeness [5]. We used organizational readiness as a moderating variable between innovation network and organizational innovativeness link because innovation networks are the fundamental element for the achievement of innovation in a firm [33]. The role of readiness is the firms' ability to adapt to necessary changes timely, and the combined effect of an innovation network and organizational readiness can achieve the destined innovativeness of firms. Hence, this study focuses on moderating the role of readiness instead of intervening. Organizational readiness accelerates the interplay between innovative networks and organizational innovativeness. Innovation activities are initiated by adopting the latest emerging advancements and implementing innovative ideas given by their innovation network [21]. This mechanism will be faster and more convenient when firms can adapt, i.e., organizational readiness. This study documented that moderating role of organizational readiness couldn't be ignored because it strengthens the relationship between innovation network and organizational innovativeness.

Innovation network provides new ideas and knowledge to firms to create innovative products. The readiness ability of a firm facilitates the utilization of available resources for the implementation of the latest innovation activities, which give highly competitive benefits and boost organizational innovativeness [37,38]. Organizational readiness helps the strong innovation network to achieve innovative ideas and knowledge from stakeholders that help for the successful implementation of activities concerning innovation, which consecutively increase organizational innovativeness [8,39,40]. Organizational readiness is the critical motivating power to change and improve innovation network traditional methods for the achievement of ideas and knowledge relating to innovation activities which direct toward organizational innovativeness [41,42]. On the other hand, it is argued that the relationship between innovation network and organizational innovativeness can be strengthened for firms through a higher level of the organizational readiness. In a speedily shifting environment, organizational readiness and innovation network are essential for the victorious enhancement of organizational innovativeness. It acts as a supportive factor that boosts organizational innovativeness in business [40].

H3. *Organizational readiness moderates between the innovation network and the organizational innovativeness link.*

2.4. Theoretical Framework

Figure 1 is presented below, which shows the theoretical framework of this study.

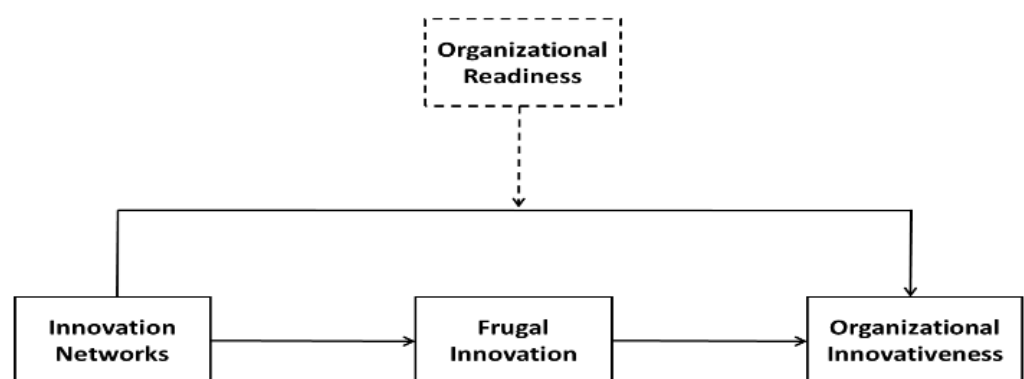


Figure 1. Theoretical Framework of this research.

3. Methodology

3.1. Research Design

This study is quantitative research. For the collection of data, a cross sectional method was used. This is empirical research done by employing questionnaires and interviews in the SME sector of Pakistan. The solid central point of the current study is that based upon a few representative samples, their outcomes should be used for the whole population.

3.2. Data Collection

SMEs are the backbone of any country, and they boost the economy of various developing countries. Information regarding SMEs in Pakistan was collected from SMEDA. Data collection was done by sending questionnaires to participants, such as owners, managers, and employees of selected SMEs through email and in hard form with the help of research associates. After two months of efforts, we received 544 responses out of a total of 715 in which just 442 responses were filled and are further useable for analysis. It makes the return rate 62.07%, and 270 were not fulfilled so they were discarded. Before the distribution of questionnaires to participants, it was checked by three experts in IT and academia to measure the purpose, content, and scope of each variable. A questionnaire was divided into two sections. In section one, information regarding all demographic variables such as age, education, and experience is mentioned, and Section 2 comprises each variable. Questionnaire is attached in Appendix A.

3.3. Measurement Instrument

For the measurement of each variable, such as innovation network (independent variable), frugal innovation (mediating construct), organizational readiness (moderating variable), and organizational innovativeness (dependent variable) five-point Likert scales were used, ranging from 1 (not at all) to the 5 (great).

3.4. Innovation Network

The innovation network is measured through a five-item scale adapted from [43].

3.5. Frugal Innovation

For the measurement of frugal innovation, we used an eight-item scale adapted from [44] and used by [45].

3.6. Organizational Readiness

Six item scales were used to measure organizational readiness, and they were adapted from [46].

3.7. Organizational Innovativeness

Organizational innovativeness is measured through a four-item scale adapted from [47].

3.8. Control Variables

The respondents' education, experience, and age are controlled to understand the association's effectiveness in frugal innovation, organizational innovativeness, organizational readiness, and the innovation network.

4. Analysis and Results

We conducted confirmatory factor analysis (CFA) to examine the difference between innovation network's study variables, frugal innovation, organizational readiness, and organizational innovativeness. Our hypothesized model was established to examine the best model. Our four-factor model was fit to data, and three alternative models were rejected. The fit keys, $\chi^2 = 1065.42$, CFI = 0.92, GFI = 0.93, and RMSEA = 0.046, showed the overall model fitness. According to Anderson and Gerbing, model fitness was verified.

4.1. Reliability and Validity

SPSS 18.0 and structural equation modelling were conducted in this study. Table 1 shows the convergent validity results, average extracted, and Cronbach's alpha. Table 1 shows that all values were confirmed, and CR and AVE were higher than the cutoff points, i.e., CR was greater than 0.70, AVE were greater than 0.50, and CR was greater than the average variance extracted. Cronbach's alpha was greater than 0.60.

Table 1. Shows Composite Reliability, FL and Average Variance Extracted.

	Items	FL	Cronbach's Alpha	CR	AVE
Innovation Network	05	0.76–0.86	0.82	0.93	0.72
Frugal Innovation	08	0.76–0.87	0.84	0.92	0.74
Organizational Readiness	06	0.74–0.87	0.86	0.94	0.73
Organizational Innovativeness	04	0.72–0.83	0.83	0.90	0.75

4.2. Descriptive Statistics

Table 2 shows the results of correlation, means, and standard deviation. The VIF scores were less than the cutoff values of 10.0, which verified that there was no matter of multi-collinearity.

Table 2. Results of Mean, SD and Correlations.

Variable	Mean	SD	Alpha	1	2	3	4	5	6	7	8
1 Business Age	3.05	1.05	0.86	1.00							
2 Business Size	1.27	0.32	0.84	0.116 **	1.00						
3 Respondent Experience	1.87	0.42	0.81	0.215 **	0.86 *	1.00					
4 Respondent Education	1.62	0.46	0.87	−0.03	0.07	1.00	1.00				
5 Innovation Network	3.74	0.48	0.80	−0.02	−0.18	0.01	−0.10	1.00			
6 Frugal Innovation	3.43	0.36	0.84	0.04	−0.05	0.093 *	−0.02	0.164 **	1.00		
7 Organizational Readiness	3.62	0.85	0.85	−0.09	−0.15	−0.04	0.085 *	0.247 **	0.347 **	1.00	
8 Organizational Innovativeness	1.23	0.63	0.82	0.03	−0.12	−0.05	−0.12	0.320 **	0.269 **	0.365 **	1.00

Note: * = 0.005, ** = 0.001.

4.3. Hypothesis Testing

In order to accept or reject the hypothesis, we have used structural equation modelling analysis. Table 3 shows that innovation networks positively associate with organizational innovativeness ($\beta = 0.32$ **, $p < 0.00$). Hence, H1 was accepted.

Table 3. (Innovation Network Impact on Organizational Innovativeness).

Model	Hypothesis Description	β	F	T	Sig	Remarks
Model No. 1	Innovation Network → Organizational Innovativeness	0.32	16.065	0.148	0.000	Accepted

Table 4 shows the indirect effect of frugal innovation between the innovation network and organizational innovativeness. Results proved that frugal innovation acts as a mediator (Beta = 0.16, Lower = 0.1230 to Upper = 0.2860. Thus, H2 was proved, and it is proven that the IN and OI link is mediated through FI.

Table 4. Indirect Effect of Frugal Innovation between Innovation Network and OI.

Model Detail	Data	Boot	Bias	SE	Lower	Upper	Sig
INFI → OI	0.164	0.14	0.002	0.42	0.1230	0.2860	0.0000

Table 5 shows the moderation results of organizational readiness (OR) on the direct link of IN and OI. The result indicates the OR is a vigorous positive moderator, and it has a significant role in the relationship between IN and OI, i.e., ($\beta = 0.28^{**}$, $p < 0.01$).

Table 5. Hierarchal Regression results for moderating the effect of Organizational Readiness.

Organizational Innovativeness						
Detail	Beta	T Value	Beta	T Value	Beta	T Value
Step 1						
Business age	0.07	0.23	0.01	1.34	0.01	0.22
Business size	0.05	0.24	0.14	0.87	0.12	0.77
Respondent education	0.12	0.26	0.12	0.13	1.02	1.32
Respondent experience	0.14	0.22	0.13	0.92	0.04	0.13
Step 2						
IN			0.32 *	7.94	0.37 *	3.42
OR			0.22 *	5.46	0.32 *	4.48
Step 3						
IN * OR					0.28 **	2.26
F		6.18 **		17.46 *		18.43 *
R2		0.04		0.25		0.26
R2				0.24		0.02

Notes: * $p < 0.0001$, ** $p < 0.05$ (two tailed); and results of VIF were below the threshold level.

5. Discussion

The main purpose of the current research was to bring to light how the innovation network adds to the development of organizational innovativeness through frugal innovation. To accomplish the goal of this study, we interlinked the innovation network with frugal innovation and organizational innovativeness. Further, the direct linkage, the mediating role of frugal innovation, and organizational readiness' moderating role have also been examined on the innovation network and the organizational innovativeness link.

In this study, we make three hypotheses. Concerning H1, we suggest that an innovation network has a direct association with organizational innovativeness. The results show that the innovation network knows how to achieve corresponding resources and knowledge for novel ideas that facilitate innovative product designing, increasing demand for their products and enhancing organizational innovativeness [16]. Innovation networks facilitate the firm in expanding different relations among suppliers, partners, and competitors', which assist in easy entrance into the emerging market. The firm adopts new strategies to achieve the latest technologies that help develop new products and boost organizational innovativeness [22]. Innovation networks, along with advanced knowledge and information, can accomplish organizational innovativeness through innovative production of various products from inside the company by less effectual knowledge sharing [23]. The H1 result is consistent with prior studies, and it presents the positive impact of innovation networks on organizational innovativeness.

Regarding H2, the findings validated that the innovation network predicted organizational innovativeness through frugal innovation. The innovation network gives important knowledge related to innovation via association with different stakeholders, which turns out to be a foundation for frugal innovation and a basis of organizational innovativeness. The outcomes revealed that firms obtain the latest information concerning competitors, customers, and the market, which facilitates them in formulating innovative techniques for products and processes [29]. Alternatively, frugal innovation is the mechanism that facilitates the business firms in using their existing knowledge and resources for novelty activities that lead toward organizational innovativeness [30]. Firms incorporate information about outside stakeholders, competitors, and suppliers using innovation networks to establish activities related to organizational innovativeness [31]. Previous research documented that innovation networks facilitate firms for the latest actions, which consecutively boosts organizational innovativeness. This study recognized the mediating role of frugal inno-

vation between innovation networks and organizational innovativeness. The innovation network gives the foundation for achieving essential information and ideas required for innovation-related activities in an organization [29]. With the frugal innovation mechanism, firms can use accessible information and knowledge acknowledged from external parties to encourage innovation activities to enhance organizational innovativeness [32]. The H2 is confirmed.

Finally, in H3, we used organizational readiness as a moderating variable between the innovation network and the organizational innovativeness link because innovation networks are the basic element for achieving innovation in a firm [33]. It is the factor that accelerates and improves the organizational innovativeness of the firm. If the firm is ready, it quickly increases innovation activities by adopting the latest emerging advancements and implementing innovative ideas given by its innovation network [21]. Organizational readiness facilitates firms in achieving the latest changes and opportunities related to innovation that exists in the circular economy. Practical findings enlighten the critical role of the innovation network in the organizational readiness of a firm [26]. We empirically tested the innovation network and the organizational innovativeness relationship in H1, and the results were positive. Then, we used organizational readiness as a moderator in their association to strengthen their links in H3. It also gives perfect positive outcomes. The outcomes showed that firms are facing difficulty as a result of rapidly growing changes in the environment. Organizational readiness is a firm's ability to organize and to use existing accessible resources to adopt the latest innovative change, which helps them perform in a vague environment and grow to be innovative [35,48]—it is the level at which organizational members are behaviorally, psychologically, and physically ready to accept and to implement the rapidly growing changes. Organizational readiness plays a critical role in developing future innovation strategies prepared by innovation networks, and it enables firms to use existing resources to implement the latest changes regarding innovation activities that direct toward organizational innovativeness [36]. Innovativeness in quality enhancement is an essential factor for a firm's success, and it majorly depends on the firm's innovative network and adaptiveness [49].

The results of H3 show the effect of the innovation network on organizational innovativeness moderated by organizational readiness. Overall, this study contributes to the body of knowledge about how firms acquire organizational innovativeness through the roles of frugal innovation, organizational readiness, and the innovation network.

5.1. Theoretical Contribution

This study adds to literary theory in the following ways. Firstly, the current study gives a critical understanding of SMEs about the mechanism of the innovation network. In this study, we used innovation networks as key determinants of frugal innovation and organizational innovativeness in SMEs' context operating in the circular economies of Pakistan. Merely a few researchers have empirically tested these associations in the SMEs context.

Secondly, this research contributes through giving an organizational innovativeness model in the context of SMEs. The organizational innovativeness model presents how these incorporated constructs, e.g., innovation network, frugal innovation, and organizational readiness, determine organizational innovativeness. This study broadens the knowledge of previous literature by examining how the innovation network facilitates SMEs for the attainment of essential information and knowledge related to innovation activities by using available resources that assist in the enhancement of organizational innovativeness.

Thirdly, the empirical results show the mediating role of innovation networks in developing frugal innovation. Frugal innovation is a significant means for the firm that supports the use of accessible resources for innovation-related activities that lead toward organizational innovativeness.

Finally, we also empirically examine the moderating role of organizational readiness in the linkage between innovation networks and organizational innovativeness. Organiza-

tional readiness is the firm's ability to maintain and to initiate better innovative change and ideas given by the innovation network, which leads to organizational innovativeness.

5.2. Practical Implications

This research study gives some significant implications for policy making, SMEs management, and administration in practice in the circular economy of Pakistan. The current study proposed that SMEs must pay attention to establishing an innovation network that helps them enhance organizational innovativeness within the firm by emphasizing the mobilization of available resources. By doing this, organizational innovativeness can be accomplished when the firm innovation network has well-built frugal innovation strategies to use existing resources.

Secondly, this study focused on the mediating role of frugal innovation because an innovation network is not enough to accomplish organizational innovativeness; frugal innovation is also important for the achievement of organizational innovativeness. Managers of SMEs must bring frugal innovation through innovation network strategies to achieve organizational innovativeness through available resources.

Finally, this research suggests that organizational readiness is the powerful determinant that accelerates the performance of the innovation network and improves organizational innovativeness. Without organizational readiness, it does not look easy to obtain the benefits of an innovation network to improve organizational innovativeness.

5.3. Limitations and Future Research Directions

This study has several limitations that could be addressed in future research. A current study has been carried out on SMEs operating in the circular economy of Pakistan; therefore, future studies could generalize the results of this study to other economies. We obtained data only from the SMEs about the study constructs; however, future research may be conducted on other industries. We investigated the critical impact of innovation networks on frugal innovation and organizational innovativeness through quantitative techniques; therefore, qualitative analysis may be used for further insights into the study constructs. This study used a cross sectional method for hypothesized model testing; although, a longitudinal research design maybe applied to recognize the effect of the innovation network on the organizational innovativeness of the frugal innovation. In the current study, we used organizational readiness as a moderator in the association between the innovation network and organizational innovativeness; therefore, it could be used as a mediator in this relationship in future studies.

6. Conclusions

Organizational innovativeness is essential for the success of any organization. An innovation network facilitates the firm in expanding different relations among suppliers, partners, and competitors, which assists in quickly entering the emerging market; the firm adopts new strategies to achieve the latest technologies, which helps in the development of new products, and it boosts organizational innovativeness. This research empirically tests the innovation network's role in achieving organizational innovativeness of SMEs in Pakistan. The outcomes reveal that innovative networks give innovative ideas and strategies for achieving and growing organizational innovativeness. Moreover, frugal innovation's mediating and the moderating role of organizational readiness are also investigated in the linkage between the innovation network and organizational innovativeness.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data will be provided on request.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Variable	Items	Construct
Innovation network	IN1	Our company is responsible for market changes.
	IN2	Our company can make novel products faster than competitors.
	IN3	Our company's innovation network can frequently launch and introduce the latest products to emerging markets.
	IN4	Our company's innovation network has the ability to fulfil the demands of the customer.
	IN5	Our company's innovation network can support and introduce innovative business opportunities.
Frugal innovation	FI1	Our company frequently Paying attention to functionality.
	FI2	Our company always seeks out new solutions
	FI3	Our company enhances the durability of existing products and services.
	FI4	Our company offers suitable products at a reasonable price.
	FI5	Our company finds out new ways for reduction of cost in manufacturing processes.
	FI6	Our company adopts the latest strategies for the innovative product and services prices.
	FI7	Our company seeks out efficient solutions to meet customers' needs at a reasonable price.
	FI8	Our company increases and improves partnership with other firms.
Organizational readiness	OR1	Some members of the company resist every kind of change.
	OR2	Particular members appreciate changes as they improve and increase outcomes.
	OR3	Some firm members slowly adopt changes.
	OR4	Some firms can modify procedures and policies to fulfil new conditions.
	OR5	Necessary changes should be implemented by management through a clear plan.
	OR6	Most staff members are ready to use new ideas.
Organizational innovativeness	OI1	The level at which the firm is responsible for the change in the market.
	OI2	The ability of the firm to design innovative products and services.
	OI3	The level of knowledge activities which encourage innovation in firm products.
	OI4	The level of firm resources allocated for designing innovation strategies that are directed toward innovativeness.

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