

Strategic Flexibility and Employee Creativity: A Moderating Role of Leader's Education

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Abstract: This study aims to explore the relationship between strategic flexibility and employee creativity in the context of Hail Health Cluster Saudi Arabia. This study has used two dimensions of strategic flexibility such as coordination flexibility and resource flexibility. Furthermore, this study also aims to investigate the role of a leader's education as a moderator. For the data analysis, this study has collected data from 184 participants consisting of nurses, medical staff, and non-medical staff over three months July to August 2024. Further, on the data SEM-PLS technique is used to test the validity and decision-making about the hypothesis. The finding suggests that both coordination flexibility and resource flexibility significantly relate to employee creativity in healthcare clusters. Moreover, the education of the leader plays a moderating role among the variables. These findings are based on the Hail health cluster and offer valuable insights not only for the healthcare sector but for production sectors as well.

Keywords: *Strategic flexibility, Employee creativity, Leader's education, SEM-PLS*

1. Introduction

In the current period of novelty and the competitive environment the organization the increasingly recognizing the importance of employee creativity which further drives innovation and sustainable growth (Awan et al., 2019). Employee creativity is not only important in the manufacturing sector but it is also very crucial in the health sector (Nasir et al., 2022). The health sector also facing technological advancement as well as patient expectations to tackle the ever-growing disease, therefore it requires a workforce that is flexible and adaptable (Socha-Dietrich, 2021). This strategic flexibility enhances the ability of an organization to adjust the resources and develop the ability to react back to the changes in the working environment. These strategic activities of flexibility are key factors in fostering the practice of creativity among workers (Andriopoulos, 2001).

In the context of Saudi Arabia's Vision 2030, this vision has the great objective of improving all production as well as the service sector and, most importantly the health sector (Chowdhury et al., 2021; Rahman & Al-Borie, 2021). The Hail Health cluster plays a significant role in fulfilling the objective of Vision 2030 with challenges of workforce shortages, incorporating new technologies, and increased demand for patients to use advanced methods for treatments (Rehman & Alnuzhah, 2022).

There are many studies (Jnaneswar & Ranjit, 2022; Naiwen et al., 2021; Naseem et al., 2020; Naseem et al., 2023; Nasir et al., 2022; Nguyen et al., 2023) on the employee creativity. However current research reveals several gaps in understanding the relationship between strategic flexibility, employee creativity, and leadership education. Existing studies have not fully explored how different types of strategic flexibility, such as coordination and resource flexibility (Brozovic, 2018; Ciacci et al., 2024), uniquely affect creativity, especially in multifarious sectors like healthcare. Furthermore, while leadership education is shown to play a moderating role in this relationship, there is limited research on which specific educational backgrounds or qualifications most effectively foster creativity in employees. This is particularly relevant in healthcare settings like the Hail Health Cluster, where the role of flexibility and leadership education in addressing unique challenges, such as workforce shortages and rapid technological change, remains underexplored.

Therefore, this study aims to explore the relationship between strategic flexibilities such as coordination flexibilities and resource flexibilities with employee creativity, to analyze the moderating role of a leader's education between strategic flexibilities and employee creativity in the context of the Hail health cluster. This study has great significance for the policymakers, health sectors, and administration of healthcare centers as well as researchers.

2. Literature Review

This section consists of a review of previous studies on the current topic. This section explains the literature on strategic flexibility with its elements such as coordination flexibility, and resource flexibility. Further, this study also explains the literature related to leader's education and employee's education.

Coordination Flexibility

Coordination flexibility is an important element in the development of an organization. Coordination flexibility in the skills of employees shows how much individuals with various skills can be reorganized in the value chain of an organization. Coordination flexibility allows organizations and enterprises to adjust to changes in the inner reformation of the workplace to meet the outer and inner expectations (Vem et al., 2022). Coordination flexibility involves being flexible in strategy, skills of the employee, and the behavior of the workforce. Hence, coordination flexibility indicates the ability of a company to use its existing resources. Coordination flexibility is the capacity to produce new resources combination by the use of the inner coordination process (Ejikeme & Onuoha, 2023).

Resource Flexibility

Resource flexibility is recognized as a key enabler of rejoining to fast-changing market conditions. Resource flexibility can also be a vital enabler of learning the changes in market conditions more efficiently, which could offer a valuable competitive advantage. (Makhloufi et al., 2021). Resource flexibility can help organizations learn about the underlying demand when the latter is not fully observable because of censoring (Chod et al., 2021). Resource flexibility may allow all organizations to make better-informed operational decisions in future times. Resource flexibility provides a real option to allocate flexible resources to the most profitable use. Resource flexibility can sometimes be used as an operative border to moderate profit validity (Sawhney, 2013).

Leader's Education

A leader's education is important for the development of an organization. Education not only shapes the knowledge of leaders but also increases their capability to make strong decisions and think critically (Bolden et al., 2023; Mohsin et al., 2024; Mohsin et al., 2021). Leader's education provides some informative tools which they need to understand some issues and lead effectively. Education promotes continuous learning and innovation in this rapidly changing atmosphere (Tan, 2021). Just formal education is not important for a good leader but practical experience and continuous learning are also important for a good leader. Formal education provides a basis for the principles of management and enables leaders to make strong decisions that align with the progress and effectiveness of an organization (Ruben et al., 2023).

Furthermore, an educated leader understands the importance of intelligence which has developed through learning and experience. Successful leaders always believe in continuous learning which helps the leader to make good decisions and ability to inspire. (Day et al., 2020). A leader's education is a continuous learning journey from experiences, failures successes, and ever ever-changing world around them. Additionally, educated leaders inspire confidence in their workforce, and foster a culture of learning in an organization which is important for long-term success. (Lasrado & Kassem, 2021).

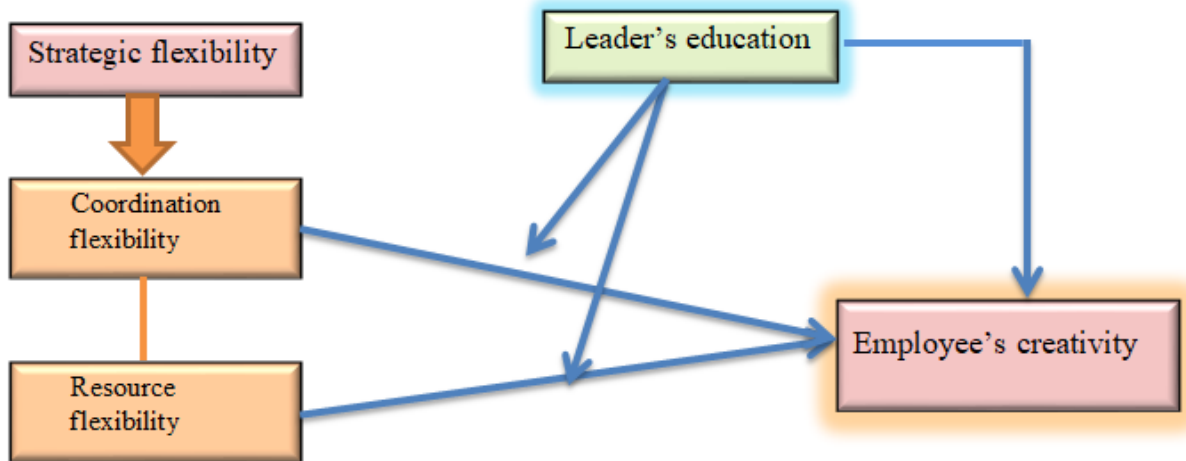
Employee's Creativity

Employee creativity plays an important role in enabling organizations to endure in a competitive business world. Employee creativity refers to the creation of ideas and solutions to problems faced by employees. (Żywiołek et al., 2022). All organizations need to recruit employees with creative behaviors to develop their business in a changing and indefinite work atmosphere. Employee creativity can be defined as constructing, hypothesizing, and emerging useful ideas processes, and measures by a group of people working together. (Arasli et al., 2020). Employee creativity is created as a sign of innovation because it associates idiosyncratic cognitive process that brings ideas creation. Employee creativity shows the ability of all employees to make new useful ideas that are of vital significance to obtain efficiency, origination, and discoveries (Khan & Mohiya, 2020).

Conceptual framework

In this research employee creativity is the dependent variable that depends on strategic flexibility which includes coordination flexibility and resource flexibility. Further to strengthen a strong and smooth relationship between dependent and independent variables leaders' education was used as a moderator. The following diagram shows the framework of this study.

Figure 1: Conceptual Framework



Source: Developed by author

Coordination flexibility and Employee's creativity

Employee creativity can be promoted with the help of coordination flexibility when the coordination flexibility facilitates adaptive collaboration within the organization and workforce (Ni et al., 2020). In the working environment team members can share their ideas, adjust their work methods and explore new approaches to solve problems, all of this is possible if the coordination is flexible. This working adaptability sparks innovation when all the individuals are permitted to break away from inflexible configuration and open interchange of ideas (Souto, 2020). Moreover, diverse perspectives can be managed with the help of coordination flexibility and it can lead to creative results and solutions (Moirano et al., 2020).

Moreover, Employee creativity enhances the healthcare sector through coordination flexibility. In the health sector, some professionals face difficulty that requires innovative solutions (Al-Alwan et al., 2022). When the working force adopts the ability of coordination, they can adapt to changing patients' wants, and integrate new innovative solutions into treatment plans. Coordination flexibility inspires the healthcare worker team to think innovatively. Furthermore, a positive link between coordination flexibility and employee creativity offers a working environment for creative thinking to succeed (Ni et al., 2020).

Resource flexibility impacts employee creativity by giving the workforce the capability to familiarize themselves with fluctuating demands in the working environment. When all the workers are allowed to use instruments and technology, and then they explore innovative solutions and think out of the ordinary (Acquah & Xing, 2021). Resource flexibility encourages experiments and allows the workers to solve problems from various methods and improve new ways of solutions. Resource flexibility improves the workplace increases employee creativity and allows workers to use their skills and knowledge in a creative way to increase the progress of an organization (Davidescu et al., 2020).

Similarly, Resource flexibility plays an important role in the development of employee creativity in the healthcare sector. Sometimes healthcare experts tackle some problems, like quickly changing conditions, technological improvements, and patients' wants. (Lalit et al., 2024). When all the employees are free to use the resources properly, like access to different medical instruments, and team collaboration, they can adopt their approaches in a better way to patient care. Resource flexibility allows the workforce to discover new treatments, and search some better ways to deliver care. Healthcare organizations improve a culture of

employee creativity that finally provides a way to develop patient care consequences and more effective health services. (Acquah & Xing, 2021; Organization, 2021). Based on the above discussion following hypothesis can be developed as

H1a: There is a positive relationship between Coordination flexibility with Employee creativity

H1b: There is a positive relationship between resource flexibility with employees' creativity

Leaders Education and Employee's Creativity

Leader's education is important in the development of employee creativity because leader's education provides leaders with experience and some extraordinary skills which are important to improving the workplace place that increases the way of innovations (Nguyen et al., 2023). The working force feels more confident with educated leaders because a well-educated leader with experience provides their team members with significant resources, liberty to use the tools and provide innovative ideas, and some support. The education of leaders improves employee creativity because employees feel free to use the resources and ideas under the guidance of a leader (Joo et al., 2023). Educated leaders can adopt critical thinking and some innovative techniques that they have learned from their education and their education leads workers in creative activities. Moreover, the education of leaders can encourage a culture of teamwork and continuous learning; and provide new perspectives that improve the creativity of the workers (Ali et al., 2020; Sarfraz et al., 2022, 2023).

Furthermore, employee creativity can be enhanced by the leaders' education by improving the working atmosphere increasing innovative ideas and flexibility (Żywiołek et al., 2022). Educated leaders often retain an understanding of healthcare tendencies, patients' wants, and difficulties of scientific processes, allowing the workforce to make some decision that increases creative results. Educated leaders are experts in identifying the significance of team collaboration; enabling healthcare experts to have diverse outlooks and new ideas (Bass et al., 2020). Educated leaders empower workers to tackle new approaches to patient care and problem-solving, by fostering a culture of continuous learning and support for creative ideas, ultimately guiding to improved outcomes and a more professional and developed healthcare atmosphere (Davis & Musolino, 2024; Tan, 2021). Based on the above discussion following hypothesis can be developed as

H2: There is a positive relationship between a leader's education and with Employee's creativity

Moderating role of leader's education

Leaders' education moderates the link between coordination flexibility and employee creativity because a leader's education provides knowledge important for managing flexible coordination between team members (Muhammad et al., 2019, Zhang et al., 2023). Educated leaders are better prepared to know about how to manage flexibility and structure while aligning the goals of an organization an educated leader allows workers to coordinate tasks in better and innovative ways. Educated leader adapts some better and more innovative ways like open communication, and collaborative problem-solving to improve employee creativity (Lenhoff et al., 2022). Educated leaders can lead coordination flexibility which shows that the workforce has the liberty to show new ideas while managing current collaboration, therefore promoting an atmosphere where employee creativity increases (Ahmed Iqbal et al., 2021).

Additionally, educated leaders improve the ability to accomplish complexities and energetic atmosphere in the healthcare sector. Leaders' education provides knowledge and understanding to improve coordination flexibility among the workforce of the healthcare sector, allowing experts to adjust the needs of patients and medical improvements (McKimm & McLean, 2020). Coordination flexibility is important for improving employee creativity problem solving and advancement in patient care. Leaders with good education lead their workforce in a joint effort, allowing them to show new ideas while maintaining excellent care. Educated leaders establish a working and supportive atmosphere by leveraging their education where flexibility in coordination higher employee creativity in the healthcare sector, improving good patient consequences and new healthcare observes (Barr & Nathenson, 2022; Osunlaja et al., 2024).

Educated leaders positively influence the link between resource flexibility and employee creativity. Leaders' education provides the working environment and knowledge to manage the allocation of resources and the solution of some problems faced by an organization (Riva et al., 2021). The good way of the allocation of resources improves the innovation and employee creativity. Education of leaders provides the knowledge about how to flexible the resources, and use of some equipment, and technology which is important for

employees to explore new creative solutions. Educated leaders distribute some resources to their team according to the requirements of their team members (He et al., 2020). This resource flexibility encourages the employee creativity to think out of the box which leads the progress and development of an organization. Leaders' education confirms that the flexibility in the resources is used properly to increase the worker's creativity, improving productivity and problem-solving within the organization (Liu et al., 2020; Yasin et al., 2022).

Moreover, educated leaders know the significance of providing healthcare experts with flexible resources which are important for improving innovative solutions for patient care (Duffy, 2022). Educated leaders know the allocation of resources properly inspires the workers to think inventively and find new treatment tactics (Akgunduz et al., 2018). The approach of leaders' education establishes a working atmosphere where the working force feels free to innovate, guiding to improve patient health consequences and more effective healthcare observes (Abed et al., 2022). Based on the above discussion following hypothesis can be developed as

H3a: There is leader's education positively moderates the relationship of Coordination flexibility with Employee's creativity

H3b: Does a leader's education positively moderate the relationship of resource flexibility with Employee creativity

3. Methodology

This study is cross-sectional and it is developed on the Hail health cluster in Saudi Arabia. The data is collected from the medical staff, non-medical and nurses working in this health cluster. The data is collected with the help of Google Forms and online applications. The well-structured questionnaire was developed on this basis. The data aimed to be collected was quantitative. After developing the questionnaire, this questionnaire was verified by the experts and removed some recommended mistakes by experts. Before the data collection, consent was taken from relevant departments with emails and phone numbers of workers and participants randomly selected from different hospitals and healthcare centers. The questionnaire was sent one by one to 300 participants. Two or three-time reminders were also sent by the researcher to participants to fill out the questionnaire on time. This study received 254 data of fill questionnaire. Further among these questionnaires, only 184 questionnaires could be used for further analysis. So, the overall response rate was 84.6 and after the screening, the response rate was 61.3 which is enough for the analysis of SEM-PLS (Purwaningsih et al., 2024; Venkatesh et al., 2024). After collecting data in an Excel sheet, it was checked manually and applied measurement model and structural model by using the Smart PLS tool. The demographic characteristics are the following

Table 1: Demographic characteristics of participants

Demographic variable	Category	Percentage (%)
Gender	Male	40%
	Female	60%
Age group	Under 25	15%
	25- 34	30%
	35-44	25%
	45-54	20%
	55-above	10%
Position	Nurses	45%
	Medical staff	35%
	Non-medical staff	20%
Years of experience	Less than year	10%
	1-5 years	25%
	6-7 years	20%
	6-10 years	15%

	More than 10	30%
Education level	Medical diploma	20%
	Bachelor's degree	50%
	Master's degree	20%
	Doctorate (MD, MBBS, etc.)	10%
Leadership role	Yes	10%
	No	25%
Leadership training	Yes	40%
	No	60%
Department	Nursing	40%
	Medical (emergency, surgery, etc.)	30%
	Administration	20%
	Support services (IT, HR etc.)	10%

The participant demographics reveal several notable trends. Most participants are female, comprising 60% of the sample, while males make up 40%, reflecting a common trend in healthcare where women often occupy a larger proportion of roles, particularly in nursing. In terms of age, the largest group is between 25 and 34 years old (30%), followed by those aged 35 to 44 (25%) and 45 to 54 (20%). A smaller percentage is under 25 (15%) or over 55 (10%), indicating that the workforce predominantly consists of mid-career professionals, which may impact their approaches to flexibility and creativity in the workplace.

Position-wise, nurses represent the largest segment at 45%, followed by medical staff at 35% and non-medical staff at 20%. This aligns with the typical composition of healthcare organizations, where nurses form the majority while non-medical staff play a vital role in overall operations. Regarding years of experience, 30% of participants have more than 10 years in their field, followed by those with 1 to 5 years (25%) and 6 to 10 years (20%). A smaller group has less than 1 year (10%) or between 6 and 7 years (15%). There are 10 percent of participants have leadership roles as well as 40 percent have leadership training.

Measurement of variable

This study has used strategic flexibility with dimensions such as resource flexibility and coordination flexibility as independent variables. The measurement for this study used items form (Yang et al., 2020). The leader's education is an important moderator between strategic flexibility and employee creativity. The measurement items for the leader's education are developed from the study by Yu et al., (2022). The employee's creativity is adapted from a study by Akgunduz et al., (2018). All the items of these variables were measured at five Likert scales 1-5.

4. Results

This study has developed an SEM-PLS equation and applied a measurement model and structural model with the help of the Smart PLS tool. The measurement model estimates the factor load of variable, correlation, and Composite reliability (CR), Cronbach's Alpha (CA), and Average variance extracted (AVE)(Cheung et al., 2024; Fithri et al., 2024; Hussain et al., 2022), Whereas the structural model estimates the hypothesis testing and does the decision-making on the base of values.

Measurement model

The finding of the measurement scale is used based on the value of the outer loading of all variables used in the research. The result of the current analysis shows the indicators have range from 0.71 to 0.84. The table of factor loading indicates that all the indicators have more than 0.5 value of outer loading which explains that the entire variable is significant (Karimah et al., 2024).

Table 2: Factor loading

Variables	Items code	Factor loading
Coordination flexibility	CF1	0.78
	CF2	0.82
	CF3	0.71
	CF4	0.80
Resource flexibility	RF1	0.78
	RF2	0.83
	RF3	0.79
	RF4	0.77
Employee's creativity	EC1	0.81
	EC2	0.84
	EC3	0.79
	EC4	0.82
Leader's education	LE1	0.72
	LE2	0.76
	LE3	0.82
	LE4	0.74
	LE5	0.77
	LE6	0.78

Table 3 shows that all the constructs used in the study have strong internal consistency and reliability, as indicated by their Composite Reliability (CR) and Cronbach's Alpha (CA) values. For Coordination Flexibility, the CR value of 0.85 and the CA value of 0.80 demonstrate that the items measuring this construct are highly reliable. This table explains that all the values of variables are accepted and these values show strong consistency as well as reliability.

Table 3: Composite reliability (CR), Cronbach's Alpha (CA), and Average variance extracted (AVE)

Variable	CR	CA	AVE
Coordination flexibility	0.85	0.80	0.61
Resource flexibility	0.87	0.83	0.57
Employee's creativity	0.80	0.79	0.53
Leader's education	0.86	0.85	0.64

Table 4 presents the discriminant validity of the constructs in the study, evaluated using the Fornell-Larcker criterion. Overall, all exhibit good discriminant validity as their AVE square root (0.77) exceeds its correlations with the other constructs.

Table 4: Discriminant validity

Variable	CF	RF	EC	LE
Coordination flexibility (CF)	0.75			
Resource flexibility (RF)	0.65	0.73		
Employee's creativity (EC)	0.50	0.52	0.80	
Leader's education (LE)	0.60	0.55	0.65	0.77

Structural model

In the SEM-PLS analysis for the hypothesis testing structural model is used. This explains the beta value, p-value, t- t-value, and decision about acceptance and rejection of the hypothesis. Table 5: indicates the results of the hypothesis developed by the study. The finding indicates that the entire hypotheses are accepted. The relationship between Coordination Flexibility (CF) and Employee Creativity (EC) shows a Beta coefficient of 0.45, indicating a moderate positive effect. The T-value of 3.20 signifies statistical significance, with a P-value of 0.012, which is below the conventional threshold of 0.05. This relationship is accepted, suggesting that enhancing coordination flexibility can boost employee creativity. The interaction between Leader's Education and Resource Flexibility has a Beta coefficient of 0.71, suggesting a strong effect on employee creativity.

Furthermore, all proposed relationships in the table are accepted, demonstrating significant effects of both coordination flexibility and leader’s education, both individually and in interaction with resource flexibility, on employee creativity. These findings underscore the importance of fostering an environment that enhances coordination and educational opportunities for leaders to boost creativity within the workforce.

Table 5: Results of hypothesis testing

Relationship	Beta	T-values	P- values	Decision
CF -> EC	0.45	3.20	0.012	Accepted
CF -> RF	0.51	4.10	0.001	Accepted
LE -> EC	0.38	2.80	0.005	Accepted
LE*CF -> EC	0.41	2.50	0.002	Accepted
LE*RF -> EC	0.71	2.20	0.028	Accepted

Figure 2: LE moderates the relationship between CF and EC

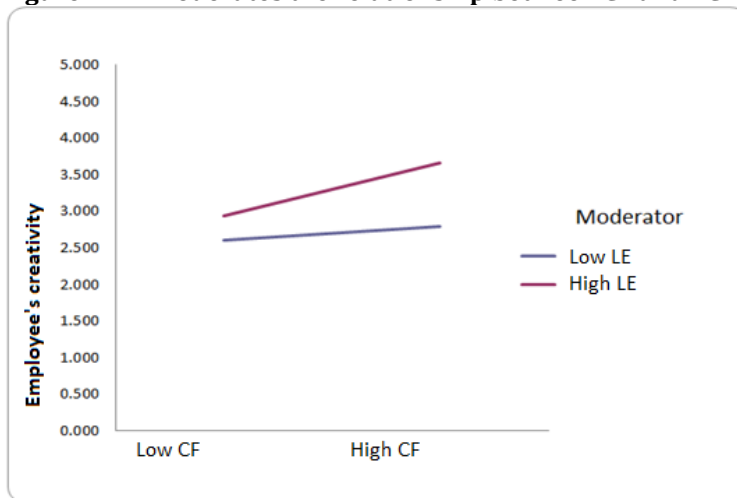
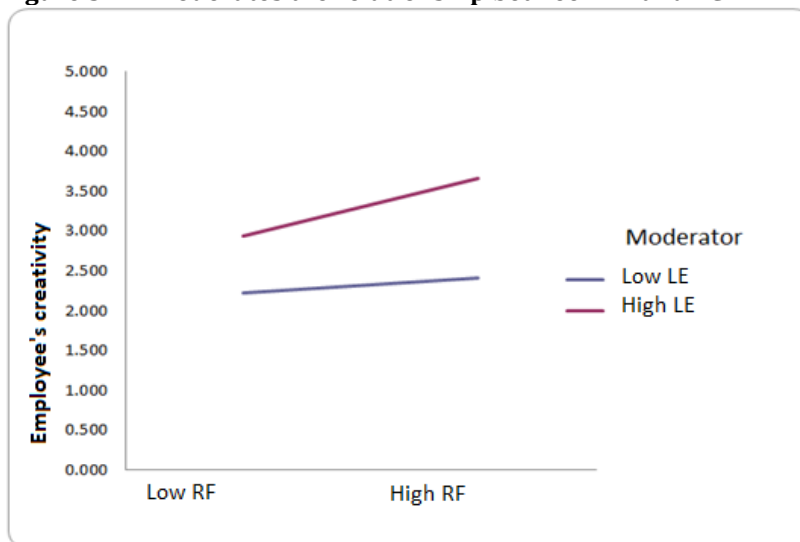


Figure 3: LE moderates the relationship between RF and EC



Discussion

This research has established the link between strategic flexibility and employee creativity. A leader’s education is a moderating variable that moderates the link between strategic flexibility (coordination and

resource flexibility) and employee creativity. Based on previous literature, hypotheses are developed and analyzed on Smart PLS.

Hypothesis H1 has been accepted, H1a shows a positive relationship between coordination flexibility and employee creativity and H1b shows a positive link between resource flexibility and employee creativity. According to (Jia et al., 2022) Hypothesis H1a coordination flexibility influences the employee's creativity because when the team members coordinate tasks flexibly the employees feel free to show their ability to work professionally and feel empowered to think out of the box and innovate solutions to problems. Coordination flexibility inspires more open communication skills and collaboration. Coordination flexibility fosters a culture of employee creativity where all the workers use their abilities and bring out new innovative ideas and solutions to some problems (Gahan et al., 2021).

Moreover, hypothesis H1b highlights that the ability of an organization to allocate resources properly increases the employee's creativity. When the resources are flexible it allows the employees to use the resources in a better way and employees are more likely to explore new ideas without feeling embarrassed by limitation. These working environments allow resource flexibility which encourages the entire workforce to have the means of experiment without strict resource limitations (Al-Ghazali & Afsar, 2021).

After the data analysis this study also accepted hypothesis H2, this hypothesis shows the relationship between a leader's education and an employee's creativity. Educated leaders with their experience and knowledge provide a working atmosphere where all workers feel free and use their abilities which increases the progress of an organization. Educated leaders appreciate the benefit of coordination flexibility, further establishing a culture of creativity within the organization (Jia et al., 2022; Kezar, 2023).

Hypothesis H3a is also accepted, H3a shows that is leader's education positively moderates the relationship of Coordination flexibility with the Employee's creativity. This moderating effect defines that educated leaders are more proficient in recognizing the coordination flexibility in promoting employee creativity (Pahi et al., 2024). Leader's knowledge allows them to balance the coordination process in a way that increases the employee's creativity in an organization (Pahi et al., 2024).

Furthermore, H3b is also related to the moderating effect of a leader's education positively moderating the relationship of resource flexibility with employee creativity. Leaders' education has deep knowledge about how to flexible resources that can be tactically distributed to nurture inspired ideas (Bolden et al., 2023).

5. Theoretical implications

This study has the theoretical foundation for further studies. This study explains that strategic flexibility along with coordination flexibility and resource flexibility as important aspects of employee creativity. Employee creativity is a dependent variable in this framework and resource flexibility and coordination flexibility with the moderating role of leaders 'education give novelty in these relations. This study offers the important concept of a leader's education which is important for the utilization of limited resources and making a maximum profit.

Practical Implications

This study has empirical as well as practical importance and implications. This study highlighted the strategic flexibility in the context of the Hail health cluster. This sector is very important for providing the best health services to the patient. This study explains that flexibility in the medical area in terms of coordination and resources can make the workers more creative, after adopting this strategic flexibility healthcare professionals respond more swiftly and efficiently. Further, this study more focuses on the leader's education. The leaders with up-to-date education can handle the different medical as well as administrative situations very well. Therefore, an educated leader plays an important role to enhance the capabilities and creativity of the employees.

Limitations and suggestions for future research

This study is very significant not only for the one sector but the other sector as well. However, this study has some limitations which can be removed with future research. Such as, this study selected strategic flexibility as an independent variable which is different for various sectors. So, this study only focused on the healthcare sector. Future studies should take the same framework for the manufacturing sector as well. This study used cross-sectional data from a specific area Hail. This area has its qualities, so there is a need to check the results of this study in other cities or provinces. Further, this study has not explained the probable challenges that can be faced in strategic flexibility for employee creativity. Therefore, future studies can explore this framework in different contexts to make it more practical,

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