




The relationship between innovation management and the leader's intellectual arousal in the pharmaceutical companies

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ABSTRACT

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The methodology for this study was quantitative research. A total of 319 employees who completed an online survey examining innovation management (IM) and the leader's intellectual arousal (LIA) were included in the sample. The results revealed that there is a positive, statistically significant relationship between innovation management and the leader's intellectual arousal. IM has a crucial role in fostering and encouraging LIA. The study offered a thorough insight into the leader's personal conduct as seen by followers. This study added new scientific understanding to a subject that had previously only been studied by subordinates, as well as new information to the notion of innovation management. The results show that enhancing innovation management is an effective strategy to raise a leader's intellectual arousal, which could ultimately increase both individual and organizational performance. The need for courage, justice, wisdom, and humanity in the leader as a necessary condition for knowledge management efficacy is the study's main point of emphasis.

Contribution/Originality: The present paper presents information regarding IM and LIA. Data gathered from a sample of Arab respondents show significant evidence of the external validity of value IM as a predictor of LIA. The current work is the first attempt to research the relationship between IM and LIA in a sample of pharmaceutical enterprises in an Arab setting.

1. INTRODUCTION

It is worth mentioning that there has been a growing scholarly and administrative focus on the subject of Innovation Management (IM) in recent years. Because innovation is now understood to be crucial to an organization's existence, it is essential for public organizations to innovate if they are to improve their services. (Eveleens, 2010). However, the research on the relationship between IM and LIA, which has not received much attention by researchers, may impede theoretical developments and provide a deeper understanding of the complexities of innovation success (Edvardsson, Meiren, Schäfer, & Witell, 2013; Podsakoff, MacKenzie, & Podsakoff, 2012).

The human element is the first pillar in any administrative or knowledge process, as well as the most valuable resource in the lives of organizations. Change is considered one of the fundamental axioms of all organizations, and this reflects the management's continuous need to bring about flexible and effective changes that are capable of facing internal or external challenges. The manifestation of these changes will primarily be observed in the conduct of individuals within the organization. Consequently, organizations are urgently seeking rational human resources

who possess a specific set of qualifications and attributes that enable them to effectively guide their organizations towards transformative growth. (Storey, Ulrich, & Wright, 2019; Vu, Plimmer, Berman, & Sabharwal, 2019).

Administrative leadership has become the great influence that determines the efficiency of organizations administratively and creatively. Because it has a major role in the administrative process, makes management more effective and creative, and acts as a driving tool to achieve its goals. By empathizing with others and listening to their ideas and suggestions, the leader plays an important role in motivating workers to find creative solutions (Goodwin, Whittington, Murray, & Nicols, 2011). In the context of competitive work, the comments and suggestions of employees that aim to improve organizational performance have become crucial. Despite the willingness of the members of the organization to present ideas about work, some consider it safe to remain silent and not present any ideas or suggestions regarding work, and this is a worrying situation. Because the voice of the worker represents the discretion to present information that aims to improve organizational performance (Detert & Burris, 2007). Previous studies approached different methods in studying the behaviors of employees' voices; some studies attributed hearing the employee's voice to individual differences in personality; others attributed the behaviors of employees' voices to the unsatisfactory state they face in some aspects of organizational performance; and a third track focused on studying aspects of organizational context that may affect employees willingness to talk (Benson & Brown, 2010; Detert & Burris, 2007; Greenwell, Brownlee, Jordan, & Popp, 2008; Park & Kim, 2016; Torrington, Hall, Taylor, & Atkinson, 2011).

More research is needed on whether IM is related to LIA in pharmaceutical companies, what might explain the potential relationship, and the extent to which the relationship depends on context. Accordingly, the primary objective of this paper is to address the paucity of studies on the role of LIA as a leader in managing innovation among pharmaceutical company employees through two primary contributions. First, this paper provides theoretical refinement and empirical evidence for the relationship between IM and LIA among workers in pharmaceutical companies. Second, this paper contributes to understanding the conditions in which employees in intellectually aroused pharmaceutical companies have a high level of innovation by exploring the advantages of a leader that are closely related to business-related innovation management. On a more general level, insights into how the IM leader relates to work-related subordinate innovation management can provide the basis for more detailed theorizing about IM outcomes.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

2.1. Innovation Management

Four stages of IM theories were observed: The hypothesis of innovation diffusion Rogers (2003), proposes that early inventors, who influenced the bulk of early adopters, were the first to accept technologies. The majority of people will adopt an idea if it has proven to be a genuine success; otherwise, it will be forgotten. Innovate despite failure. IM theory is frequently described as a theory that fits a person's fundamental needs (Zahra & Newey, 2009). In terms of innovation management, portfolio innovation is currently common. It consists of at least five different types of portfolios, including those that coordinate product and process innovation, radical and incremental innovation, benefits of implicit and explicit innovation, benefits of organizational and technological innovation, and benefits of cultural innovation. Integration of autonomous internal creativity with collaborative external innovation (Xu & Chen, 2001). Towards the end of the 20th century, the theory of portfolio innovation served as a catalyst for the advancement of innovation theory into the theories of integrated innovation and systemic innovation (Tidd, 2001). Whereas integrated innovation emphasizes the creative fusion of contemporary innovative components, which to some extent exemplifies a methodical approach to thinking. Bean and Radford (2001) pointed out that innovation should be seen as work and that it must occur in every aspect. In this context, Tucker (2008) put out five criteria for innovative management, one of which was that all departments, including R&D, must be involved in innovation; the idea that innovation should constantly, methodically, and systematically look for new opportunities;

and the idea that everyone in the organization must participate in innovation. All of these ideas represent a thorough and organized manner of thinking. The fourth phase of the development of system theory-based innovation theories focuses on organizations and institutions (its notion in the broadest sense) involved in the production of technological innovation (Coriat & Weinstein, 2002).

The primary activity in IM is decision-making, which necessitates information processing on the part of the managers involved in the innovation process (McNally & Schmidt, 2011). The innovation process, which is the focus of IM, is generally acknowledged to involve the following stages: Finding, inventing, and generating ideas, opportunities, and creative solutions comes first. Then, different ideas, opportunities, and solutions are developed or exploited. Finally, one or more potential ideas, opportunities, or solutions are evaluated and chosen (Kijkuit & Van Den Ende, 2007). It may be claimed that the first and second steps, in particular, call for a high level of imagination and originality (Martin & Wilson, 2016).

The definition of IM can be found in the literature. IM is a complete institutional function that supports the ongoing discovery and adoption of innovative goods, services, and business models (Kaschny, Nolden, & Schreuder, 2015). IM has a widely accepted definition, in the opinion of Vahs and Brem (2015). Planning, making decisions, coordinating, and regulating are all part of IM when it comes to developing and putting fresh ideas into viable services. IM is characterized as an intentional and active method of monitoring a company. Additionally, the execution of innovative activities (Fontana & Musa, 2017), Chaston, Badger, and Sadler-Smith (2001) define it as "the capacity to successfully gather and use new information" (p. 147). Gumusluoğlu and Ilsev (2009) state that "both personal and corporate innovation depend on creativity." (p. 461). According to the authors, IM refers to a system of rules and procedures that leaders use to optimize resource allocation and direct workers to see trends, make choices, and advance both existing and upcoming strategic and technical management processes.

The culture of innovation in IM addresses delicate issues including establishing a foundation for trust, encouraging creativity and drive, and developing a team (Niewöhner, Asmar, Röltgen, Kühn, & Dumitrescu, 2020). According to Tidd (2001), the four following factors have an impact on IM: type of innovation, stage of innovation, scope of innovation, and organization type. While Vahs and Brem (2015) divide IM into "understanding innovation," "innovation planning," "innovation development," and "innovation implementation," IM according to Kaschny et al. (2015) includes "both "innovation structures" and "innovation strategy," the "innovation culture," both "innovation processes", and "innovation tools." According to Vahs and Brem (2015), innovation planning includes innovation strategy, while Kaschny et al. (2015) say that the process of innovation includes generating innovations. By supporting initiatives that lower production or operating costs, innovations aim to build competitive advantages.

The present study focuses on the aspects of IM that were mentioned in Al-Hyari and Al-Nsour (2020). First, strategic innovation refers to the complete process through which a business redesigns its operations and procedures in order to offer clients higher-quality services. Second, it is defined as "the processes related to the utilization of what is new and useful, with regard to products of various kinds and production methods." Third, administrative innovation is the process that results in a novel concept, procedure, or service that the organization's staff can accept and implement or that decision-makers can impose on them in order to change the environment, the operations, or the outcomes of the organization (Al-Hyari & Al-Nsour, 2020).

In light of prior management literature, a clear connection between IM, entrepreneurial growth, and the big data area emerges (Lee, Kao, & Yang, 2014; Pauleen & Wang, 2017), Research on the qualities of leaders, which are exemplified by their moral behaviour behaviours of employees and enhanced organizational performance, is helpful in understanding the best management practices (Bright, Winn, & Kanov, 2014). While it is beneficial and helpful for company leaders to consult others, independent thought may be necessary for innovation. Leaders must, however, assess the recommendations of others by doing their own independent thinking (Bischak & Woiceshyn, 2016). Followers are more likely to have faith in a leader's capacity to manage performance when that leader is

dedicated to exhibiting virtue (Lawton & Páez, 2015). LIA expertise could assist small business owners in allocating resources (Hackett & Wang, 2012). The use of LIA theory by leaders may also be a sign of their dedication to using principles to direct organizational operations (Wang & Hackett, 2016).

2.2. The Leader's Intellectual Arousal

Intellectual arousal is one of the dimensions of transformational leadership, in which the leader is interested in stimulating the creative thinking of his subordinates, generating ideas for them in an innovative way, and teaching them how to think about a variety of things in a new and innovative way (Barbuto, 2006; Ji & Mira, 2013). Transformation leaders encourage the internal work climate to learn while providing the necessary needs for it, and this presents a challenge to leaders to find new ways to do their work. Intellectual stimulation increases the ability of subordinates to understand, solve problems, and engage in creative practices while influencing their values and beliefs about these problems (Yasin, Nawab, Bhatti, & Nazir, 2014).

A number of researchers have defined intellectual arousal. Bass (1998) referred to intellectual arousal as arousing subordinates with new ways to deal with problems, recognizing the creative abilities of subordinates, and teaching subordinates to think in creative ways before they do their work, with an emphasis on rationality, and this was confirmed by Krishnan (1998). The goal is to motivate staff members by increasing their awareness of the obstacles to delivering performance that exceeds expectations. Avolio, Waldman, and Yammarino (1991) defined intellectual arousal as the leader's empathy with others, listening to their ideas and suggestions, and sharing their feelings. Champoux (2000) looked at intellectual arousal from a different perspective, defining it as the leader's ability to search for new ideas and encourage problem solving by building a high awareness of problems and solving them in a creative way. From an organizational perspective, Northouse (2001) defined it as a new and innovative approach to leadership that represents a new and innovative approach to dealing with organizational issues. Fugate (2012) defined it as the leader's ability to help subordinates reconsider the way they do things (critical thinking, rethinking, and mental stimulation).

By encouraging original thought and invention, intellectual arousal encourages subordinates to become more creative people on the theory that stimulation will increase intelligence (Bass & Avolio, 1994; Givens, 2008). Intellectual arousal affects innovation, goal setting, and organizational performance (Hancott, 2005; Sadeghi & Pihie, 2012). Intellectual excitement is based on convincing subordinates of the importance of abandoning traditional ways of thinking, developing modern methods of facing problems, and adopting creative methods, innovative solutions, and new methods (Fugate, 2012).

Junga, Chow, and Wu (2003) and Khan, Rehman, and Fatima (2009) emphasized the positive relationship between leadership intellectual arousal and organizational innovation in the telecommunications sector. The study of Yasin et al. (2014) found that there is a link between creativity and organizational performance that is both positive and significant and that a leader's intellectual arousal is a tool for generating creativity. Karimi and Morshedi's (2015) study found that idealism predicts management creativity more accurately than intellectual arousal. From the standpoint of examining an employee's innovative behavior, Sarros, Cooper, and Santora (2008) and Poppendick (2009) studies highlighted the beneficial connection between a leader's intellectual arousal and their team members' inventive activity. The study of Yasin et al. (2014) found a positive, significant relationship between innovations and organizational performance, and intellectual arousal increases the positive moral relationship between innovations and performance. These findings support the use of intellectual arousal as a tool for developing innovation and high performance. Despite a paucity of hard data addressing the effects and results of IM on LIA, we suggest that IM can enhance LIA among employees in pharmaceutical companies. We recommend the following to test this association in light of the conceptual definition and literature that support IM as a potent performance indicator:

“There is a positive relationship with statistical significance between IM (strategic innovation, technical innovation, management innovation) and the leader’s intellectual arousal.”

3. METHODS AND PROCEDURES

3.1. Methodology

In order to cope with the paper variables, the current search is based on a descriptive and analytical method as well as a survey paper. A questionnaire was created as one of the assessment tools used to gather data in order to test the study's premise.

3.2. Research Model

The study model is based on the existence of a significant positive relationship between IM (strategic innovation, technical innovation, and management innovation) and the leader’s intellectual arousal, as shown in Figure 1.

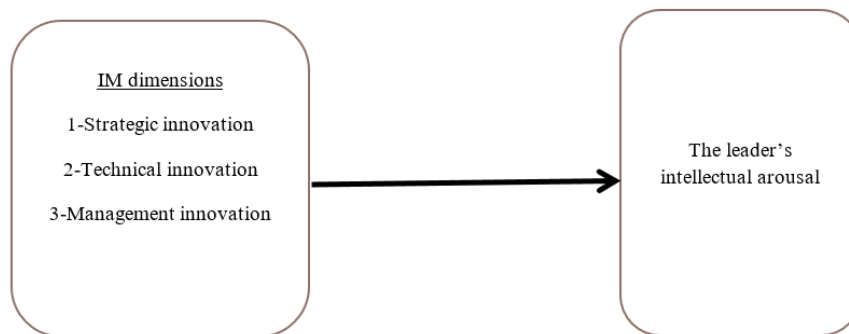


Figure 1. Research model.

3.3. Participants

An employee sample from pharmaceutical enterprises connected to Egypt's state business sector was used to gather data. Due to issues with data collection in Egypt, a convenience sample was utilized (Gould-Williams, Mostafa, & Bottomley, 2015). But as a result, the study's findings will be less indicative than those based on a random sample. The employees were approached directly rather than through their employers in order to reduce the possibility of social desirability bias, and they were assured that their responses would be kept confidential. For the purpose of face-to-face data collection during working hours, the research assistant approached the participants and gave those printed copies and an electronic link to the questionnaire.

According to the statistical tables created for that purpose, the sample size was determined, and it appears that it is 378 people given the size of the town in 19166 (2022 Calendar year AD) (Sekaran & Bougie, 2016). A total of 319 of the 378 questionnaires that were issued and used for data collection between April 4 and May 21, 2022, were returned, yielding an 84.9% response rate.

3.4. Data Collection Instrument

To verify the validity of the study hypothesis, the researcher designed a questionnaire as follows: These five paragraphs, which are an excerpt from the Mark, Lim, Lee, and Tam (2012) scale and measure the leader's intellectual arousal, include statements like "I am more interested in generating new ideas than trying to get approval from others". And the paragraphs that measure IM, as these paragraphs have been excerpted from the scale developed by Al-Hyari and Al-Nsour (2020), The first dimension measures strategic innovation and contains 6 items (e.g., company management is committed to supporting innovation). It measures the second dimension (5 items), technical innovation (e.g., the company’s management links technical developments to the company’s

strategy), and the third dimension (5 items), administrative innovation (e.g., the company’s management is keen on linking incentives and rewards with the ability to innovate). All survey questions were scored using a 5-point Likert-type scale, with 1 being the strongest disagreement and 5 being the strongest agreement. The second component contains demographic information (gender, age groups, job type, and length of employment with the organization). Table 1 shows the validity and validity values of the study variables.

Table 1. The reliability and validity coefficients.

Data	Variables	Reliability	Validity
1	Strategic innovation	0.90	0.95
2	Technical innovation	0.86	0.93
3	Management innovation	0.89	0.94
4	The leader’s intellectual arousal	0.91	0.95

4. RESULTS

4.1. Standard Deviations and Means for the Study Variables

Table 2 presents the arithmetic mean of the variables in the study, scaled to five points, along with their standard deviations, as follows:

Table 2. Data for the study's variables' means and standard deviations.

Data	variables	Mean	Standard deviation
1	Independent variables (IM dimensions) strategic innovation	3.06	0.666
2	Technical innovation	3.13	0.609
3	Management innovation	3.09	0.717
4	Dependent variables The leader’s intellectual arousal	3.20	0.590

Source: Statistical treatment of study data. N = (319).

The arithmetic mean of technical innovation scored higher than the average, according to the hypothetical mean of Likert’s five-point scale (3) (3.13), and below strategic innovation (3.06). The degree of awareness among employees of the dimensions was above average.

4.2. Bilinear Correlation between Study Variables

Table 3 shows Bilinear correlation between study variables:

Table 3. Bilinear correlation between study variables.

Variables	Independent variables			Dependent variable
	Strategic innovation	Technical innovation	Management innovation	The leader’s intellectual arousal
Strategic innovation	1			
Technical innovation	0.76**	1		
Management innovation	0.64**	0.74**	1	
The leader’s intellectual arousal	0.63**	0.72**	0.70**	1

Note: N = (319 items) P < 0.01 **.

The above table demonstrates that there is a positive correlation between the study's variables. This suggests that the structural equation model can be used to test these correlations.

4.3. The Statistical Analysis of the Study Hypothesis Results

The study put its research hypothesis to the test using a structural equation (Hair, W., Babin, & Anderson, 2009).

4.3.1. The Measurement Model Analysis's Findings

Table 4, based on the findings of confirmatory factor analysis, offers the quality of fit indicators for the overall measurement model.

Table 4. Indicators of consistency quality of the study's overall measurement model.

Model	X ² /df	P	IFI	NFI	TLI	CFI	RFI	RMSEA
Basic	3.00	0.000	0.96	0.95	0.95	0.97	0.92	0.12
The average	2.60	0.000	0.99	0.98	0.98	0.99	0.98	0.06

Note: (n = 319).

After making the adjustments recommended by the adjustment indicators, the findings shown in Table 4 demonstrate that the basic measurement model's indicators of compliance quality are acceptable. The overall research measurement model has been adjusted as a result of these changes, and it is observed that the model has significantly improved as a result of the changes. Because the (X²/df/degrees of freedom) drop was divided by 2.60, the quality and compatibility of the overall measurement model of the study are in line with generally accepted standards. It falls below the given cutoff of 5, which is 5. As the quality of conformance index (CFI = 0.99) is better than 0.90, the value of other indicators of congruence quality has grown. Additionally, the square root of the mean square error has dropped in value to the Root Mean Square error of approximation (RMSEA = 0.06). The index of the normal fit increased to 0.98 from 0.90 (Hu & Bentler, 1999).

4.3.2. The Findings of the Statistical Analysis of the Study's Structural Model

The quality of fit of the structural model is evaluated based on the results shown in Table 5.

Table 5. The outcomes of the study's structural model's statistical analysis.

Model	X ² /df	P	IFI	NFI	TLI	CFI	RFI	RMSEA
Rate the indicators of compliance quality	2.24	0.001	0.99	0.99	0.95	0.99	0.94	0.05

From the data in Table 6, it is clear that the model meets the criteria for quality of congruence (Hair et al., 2009). This is because the division result (chi-square/degrees of freedom) went down, reaching 2.24, which is much less than 5. For the value of other indicators of quality of match, the value of the comparative proportionality index equals 0.99, which is higher than 0.90. Furthermore, the value of the square root of the mean squares of error is 0.05, which is less than 0.08. The results indicate that the value of the Tucker Lewis Index (TLI) equals 0.95, which is higher than the minimum acceptance of the model. This value is also higher than 0.90, which confirms the quality of conformity of the structural model of the study.

4.3.3. The Results of the Statistical Analysis of the Study Hypotheses

Table 6 shows the values of the statistical analysis of the study hypotheses in the structural model.

Table 6. Path coefficients' values.

Path	Path coefficients	Standard error	T-value	Sig.
Strategic innovation → The leader's intellectual arousal	0.20	0.064	2.45	**
Technical innovation → The leader's intellectual arousal	0.14	0.048	1.99	*
Management innovation → The leader's intellectual arousal	0.52	0.061	7.09	***

Note: (N = 319) * P < 0.05 ** P < 0.001 ***P < 0.001.

Table 6's results show that this hypothesis is partially true. The table shows the values of the pathway parameter and the level of significance between strategic innovation and the leader's intellectual arousal (B = 0.20,

$T = 2.45$). It also shows the values of the pathway parameter and how important it is between technical innovation and the intellectual arousal of the leader ($B = 0.14$, $T = 1.99$), and the values of the pathway coefficient and how important they are between management innovation and the intellectual arousal of the leader ($B = 0.52$, $T = 7.09$).

5. DISCUSSION

In this work, a model was developed to evaluate the connection between IM and LIA, and it was discovered that IM dimensions have a favorable impact on LIA.

According to the present research, strategic innovation, technological innovation, and management innovation all have an impact on a leader's level of intellectual arousal. This suggests a strong correlation between employees' awareness of the leadership's boldness and their awareness of strategic innovation in pharmaceutical organizations. Researchers discovered that management innovation, strategic innovation, and technical innovation were all necessary for the relationship between IM and LIA to exist. As a result, the correlation was stronger for people who believed their boss had a high level of management innovation. Employees believe that managing innovation persuades them to be content with the leader's intellectual stimulation at work. Given the theoretical justification and outcomes of earlier empirical investigations that examined the link between IM dimensions and other regulatory factors, these findings are not unexpected (Bruno, 2016; Thun & Kevin Kelloway, 2011; Wang, 2011). According to the findings of this article, innovation management is not necessary to foster a work climate where leaders are highly intellectually excitable. In other words, it's critical to develop sound strategic innovation at work.

The finding of this publication support the findings of earlier research by Duchon and Plowman (2005) that performance in a work unit will be better in an office setting with a positive IM climate. Additionally, unit or workplace leaders with higher IMs are more effective than those with lower IMs. The paper's findings thus suggest that leaders have a duty to uphold the spirit of work in the workplace by encouraging their subordinates to be open about their inner lives, assisting them in finding purpose in their work, and supporting workplace togetherness. The findings also show that executives in organizations consistently regard their people and have a positive perception of them, building a safe communication style for each employee, constantly setting an example for them in how to act and communicate, and being focused on their best performance.

The leaders' enjoyment of rationality, which ensures complete compatibility between people and their work environments and offers opportunities for workers to develop and sustain managerial innovation in the workplace, is the basis of this paper's discussion of how to improve management innovation in businesses. Employees who display courage at work are better able to comprehend themselves and others before engaging in their task. This conclusion is in line with earlier research showing the beneficial impact of IM on LIA, such as Niewöhner et al. (2020).

6. CONTRIBUTIONS

Information about IM and LIA is provided in the current publication. First, this work represents the first attempt to investigate the connection between IM and LIM in a sample of pharmaceutical companies operating in the Arab setting. Second, data gathered from a sample of Arab respondents provides persuasive proof of the utility of IM's external validity as a LIA predictor. Third, moral leaders in pharmaceutical firms can be considered a significant asset for their staff members to increase their quality and feel more secure in their work environment. In other words, IM serves as a crucial tool that supports LIA and hence encourages people to innovate highly. Fourth, the findings presented in the current paper contributed to the expanding body of research on the impact of IM on subordinates and will aid future studies on the applicability of the IM theory and the stability of the tool employed in this publication. Fifth, the findings of this article also offered additional recommendations for efficient quality procedures in publicly traded pharmaceutical firms, as well as for leadership recruitment and development initiatives that raise staff members' understanding of IM. Sixth, this paper's subordinate-focused approach also

helped readers gain a better grasp of leadership through their perceptions. Seventh, this study sheds more light on the dynamics and connections between what employees value in their leaders and their behavior, which is based on personal sacrifices and investments, and it focuses on how employees perceive the moral values, behaviors, and attitudes of their leaders. A review of these connections adds to the sparse body of research on subordinate-centered leadership. It deepens our understanding of how subordinate views affect leadership processes, actions, and dynamics (Parry & Jackson, 2011).

Additionally, this report offers management and operational improvements for executives and pharmaceutical firms. It is advantageous for leaders and pharmaceutical companies to benefit from leadership selection and training programs to enhance IM levels because the results show that IM is useful in developing LIA. Second, this essay exhorts managers to treat staff with respect on a daily basis. In this aspect, team leaders need to assume accountability and cultivate positive working relationships. Third, organizations can also lessen threats to the maturity of the connection between team leaders and employees by evaluating whether applicants can do so (Schermuly & Meyer, 2016). Fourth, because IM will help employees combine their logic with their spirituality and may thus help them favorably see LIA in their work, we propose using IM as an individual development intervention for employees. Fifth, the findings of the article showed a favorable association between employees' perceptions of some values and IM and LIA, which will be of tremendous help to executives of firms that struggle to manage innovation. Sixth, these findings give organizational leaders further insight into the significance of realizing and putting into practice IM's core principles as well as encouraging spirituality in the workplace.

7. CONCLUSION AND RECOMMENDATIONS

The study revealed a correlation between Innovation Management (IM) and Leaders' Intellectual Arousal (LIA). The research provided a comprehensive understanding of the leader's personal behaviour as perceived by their followers. This study contributed novel scientific insights to a field that had hitherto been primarily investigated by individuals in lower hierarchical positions while also expanding the existing knowledge base on the topic of innovation management. The results of our study indicate that there may be a need to improve participants' knowledge management skills in order to facilitate their recognition of innovation management. This study examines the importance of courage, justice, wisdom, and humanity as essential qualities for leaders in order to enhance the effectiveness of knowledge management. Knowledge management training programmes have the potential to enhance individuals' levels of courage, fairness, and prudence. The implementation of IM in organizations can have an impact on the practical reality of the workplace where leaders cultivate their leadership and share values, particularly those of justice that put the interests of others before their own, and demonstrate care for their staff through an interest in justice, trust, and appreciation. In order to produce positive workplace results that can affect how IM is seen, organizational leaders must manage innovation with a purpose, integrate company goals with personal aspirations, and foster subordinate learning, development, and engagement. Finally, further study of the processes, organizational, and interpersonal effects of managing innovation in the workplace is necessary because the field is still in its infancy.

8. LIMITATIONS AND FUTURE RESEARCH PROSPECTS

This study has a lot of limitations, and we suggest the following as areas for future investigation: First of all, although there are many different kinds of leadership, such as soft leadership and virtuous leadership, the current study only looked at LIA. Future research may examine whether the impact on IM varies with different leadership philosophies. Second, because the study sample is from the pharmaceutical industry, caution must be taken when extrapolating the findings to other industries. To improve the generalizability of the findings, we advise using the research model in more industries. Third, since the goal of this work is to shed light on the connection between IM and LIA, I advise future research to perform experiments to test the model. Fourth, only one source of data was

gathered simultaneously; future studies should place more emphasis on gathering data concurrently from leaders and employees. Fifth, the research for pharmaceutical businesses that are part of the public business sector, whose executives were logically expected to use IM, is another factor that influences generalizing the findings of this paper. Pharmaceutical firms in the public and private sectors may see and use information management (IM) differently, which could have an impact. The commercial sector plays a significant role in determining how employees view IM. The conclusions of this work may therefore be more broadly generalized if further research is conducted among private pharmaceutical firms in the private sector.

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Transparency: The author states that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Competing Interests: The author declares that there are no conflicts of interests regarding the publication of this paper.

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