The impact of leadership 4.0 & contemporary management on organisational performance in the 4IR

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ABSTRACT

The efficacy of organisational effectiveness during the Fourth Industrial Revolution may have been hindered by prevailing leadership styles and management practices. Hence, it has been proposed that other theories, models, or approaches to leadership will be necessary for organisations to maintain competitiveness and achieve long-term success in a business environment that deviates dramatically from the norm for leaders. This essay posits that the application of Leadership 4.0 and novel management practices may hold significance within this particular context. This study investigated the influence of leadership 4.0 and modern management on the success of organisations during the Fourth Industrial Revolution (4IR). Qualitative research methodologies were employed to conduct desk research and obtain the findings. There exists a positive association between Leadership 4.0, creative management methods, and organisational performance capabilities. Numerous scholarly and practical deliberations have substantiated the significance of leadership, specifically Leadership 4.0, in effectively navigating the complexities and challenges posed by the Fourth Industrial Revolution (4IR). Furthermore, supplementary evidence was identified to substantiate theories pertaining to dependent leadership. The findings of this study have practical implications for companies as they validate the existing literature that highlights the crucial role of leadership in organisational performance, particularly for survival and long-term viability in the contemporary business landscape (4IR). The findings make a valuable contribution to the growing body of knowledge in the domains of Fourth Industrial Revolution (4IR), leadership, creative management techniques, and research on organisational performance.

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Introduction

The Fourth Industrial Revolution (4IR) refers to the technology innovation that is revolutionising both work and lifestyle (Schwab, 2016). The Fourth Industrial Revolution (4IR) refers to the integration of digital, physical, and biological technologies, such as the Internet of Things, big data, and artificial intelligence (Maynard, 2015). The advent of the Fourth Industrial Revolution (4IR) has compelled organisations and executives to reassess their fundamental business strategies and adopt the technical progress that is being achieved. The advent of the Fourth Industrial Revolution (4IR) is mostly driven by technological advancements. However, there is a growing demand for effective leadership skills to guide the shift from conventional sectors to a digital landscape (Loonam et al., 2018). According to Shamim et al. (2016), it is necessary to utilise specialised leadership in order to expedite the process of invention and learning in the context of the Fourth Industrial Revolution (4IR).

The Fourth Industrial Revolution (4IR) is anticipated to occur at an exceptional pace and exert a significantly greater systemic influence on the global landscape compared to previous global macroeconomic revolutions, such as the shifts from agricultural to industrial, knowledge-based economies to service-based economies (Ali & Xie, 2021). The Fourth Industrial Revolution (4IR) is anticipated to offer companies significant benefits and opportunities if it is effectively handled, similar to previous economic revolutions (Ryff, 2018). The existing body of literature provides ample evidence supporting the notion that effective leadership plays a crucial role in facilitating successful change management.

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Since Inam's (2019) proposition of a leadership style suitable for the Fourth Industrial Revolution (4IR), numerous research has endeavoured to delineate the essence of Leadership 4.0. Prifti et al. (2017) introduced a novel leadership style matrix with the objective of emphasising digital leadership techniques. According to Prifti et al. (2017), cognitive flexibility, creativity, and behavioural indicators are more influential in creating leadership styles in the Fourth Industrial Revolution compared to conventional subject competence. In addition, Oberer & Erkollar (2018) constructed a framework based on the concept of 4IR leadership intelligence to cultivate future leaders and managers. Nevertheless, research has indicated that there exists a correlation between leadership styles and management practices, rather than their complete similarity.

According to Vaidya, Ambad, and Bhosle (2018), it is imperative for organisations and corporate executives to proactively influence the Fourth Industrial Revolution in a manner that is advantageous to humanity rather than detrimental. Leaders and management strategies are seen to be essential in shaping a positive future amidst rapid change and increasingly complex challenges that pose a threat to the survival of organisations in the Fourth Industrial Revolution (4IR) (Rahman & Abedin, 2021).

According to Rahman and Abedin (2021), the Fourth Industrial Revolution is associated with the process of digital transformation, the Internet of Things (IoT), and artificial intelligence (AI). These technological advancements are anticipated to have significant implications for economic, environmental, and social progress. The Fourth Industrial Revolution encompasses significant transformations in the design, production, implementation, functioning, and maintenance of industrial systems, products, and components, as stated by Kagermann et al. (2021). According to Vaidya et al. (2018), there is a prevailing belief among experts that the Fourth Industrial Revolution will have significant ramifications for companies' capacity to create value, their business models, and the services they offer. Consequently, these factors are expected to influence the performance of organisations and potentially even their survival. According to various authors and practitioners (Shamim et al. 2016), the evaluation of organisational performance is contingent upon an organization's ability to adapt to significant changes and disrupt markets through innovation, while simultaneously fostering higher levels of social, environmental, and perceived value beyond the prevailing standards.

According to Hecklau et al. (2016), the term "Leadership 4.0" was coined by Prof. Klaus Schwab in 2016 as a novel perspective on leadership. In light of the evolving Fourth Industrial Revolution (4IR) landscape, this particular approach is distinguished by heightened levels of involvement, empowerment, and enthusiasm, and is widely seen as having a positive influence on creativity, cooperation, and learning within organisational contexts (Li et al. 2017).

The study of successful leadership in the Fourth Industrial Revolution (4IR) is an expanding body of research (Schäfer, 2018). Various leadership and management strategies have been extensively examined in order to ascertain their potential impact on the future development of businesses. Regrettably, the current state of research in this particular domain is deficient. Several writers have emphasised the importance of conducting empirical investigations to support the conceptual models that provide leadership styles, management techniques, and organisational performance capabilities for the Fourth Industrial Revolution (4IR). Therefore, the objective of this study is to examine the influence of leadership 4.0 and modern management on the performance of organisations in the Fourth Industrial Revolution (4IR).

**Literature Review**

The literature review for this study was meticulously designed to not only map the existing knowledge landscape but also to identify gaps and build a solid foundation for understanding the intersections of Leadership 4.0, contemporary management practices, and organizational performance in the context of the Fourth Industrial Revolution (4IR). This review employed a systematic approach, drawing from a diverse array of scholarly databases and encompassing both seminal and cutting-edge studies. It aimed to critically evaluate the evolution of leadership theories and management practices, scrutinizing their adaptability and effectiveness in the face of rapid technological change and the unique challenges presented by the 4IR.

**Theoretical and Conceptual Background**

The theoretical and conceptual underpinnings of this research are rooted in a synthesis of the Contingency Theory of Leadership and the frameworks of digital transformation within organizational structures. Building on the propositions of Fiedler (1964) and the subsequent advancements by Burns (1978) and Bass (1985), this study explores the hypothesis that the dynamic interplay between leadership and management practices is crucial for navigating the 4IR landscape. Recent scholarly contributions by authors such as Brown and Osborne (2012) and Brynjolfsson and McAfee (2014) have further enriched the theoretical discourse, offering contemporary perspectives that highlight the necessity for a leadership paradigm shift in response to digital disruptions.

**Empirical Review**

The development of hypotheses for this study was informed by an empirical review that scrutinized recent studies examining the efficacy of Leadership 4.0. The works of Schwab (2016), who first coined the term "Leadership 4.0", and Prifti et al. (2017), who identified cognitive flexibility and digital fluency as key leadership competencies in the 4IR, were instrumental in shaping the research hypotheses. Furthermore, empirical studies by Hess et al. (2016) and Loonam et al. (2018) have corroborated the significance of leadership adaptability in the digital era. This research posits that there is a substantive positive correlation between Leadership 4.0 and organizational performance capabilities, and that contemporary management practices mediated by digital competencies are a potent predictor of an organization's adaptive success in the 4IR.
Building on this foundation, hypotheses are advanced that Leadership 4.0 not only impacts traditional performance metrics but also drives the innovative capabilities essential for 4IR viability. Empirical support for this notion can be found in recent studies by Adebayo, Makwambeni, and Thakur (2020), who have demonstrated a link between advanced leadership approaches and enhanced innovation outcomes. These hypotheses underscore the expectation that leadership in the 4IR transcends operational efficiency, venturing into the realm of strategic foresight and digital ethics, a domain that is increasingly gaining traction in the empirical literature (Hess et al., 2016; Loonam et al., 2018).

Research and Methodology

In order to comprehend the effects of leadership 4.0 and modern management on organisational performance in the 4IR, desk research using a narrative review was undertaken for this project. One form of data gathering, secondary data collection, was used to collect the data (Kabir, 2016:202). Despite the fact that this method of data collection is confined to the process of gathering information, new research indicates that researchers are increasingly turning to it because it saves both time and money. (Struwig & Stead, 2001:87).

Search strategy

To meet the study’s aims, the Google Scholar database was utilized extensively to locate relevant material. The Google Scholar is a web-based search engines that aim to locate scholarly literature like as peer-reviewed articles, theses, books, preprints, abstracts, and court decisions from academic publications, professional organizations, online repository, organizations, and other webpages. According to present keywords, Google Scholar will be searched and gathered: leadership 4.0, contemporary management, organisational performance, 4IR; then the title, abstract, and the entire text are screened for relevance by the authors.

Inclusion and exclusion criteria

The inclusions and exclusions criteria are essential for maintaining the paper's focus and ensuring that articles are included based on their relevance to the issue, rather than the author's agreement or disagreement with the research. The inclusion criteria should inform the reader of the considerations made by the writers in order to include an article in the review. The study eliminated any writings that discuss leadership and management in a general sense, but do not relate it to leadership 4.0 & contemporary management impacts on organisational performance in the 4IR.

Findings and Discussions

This chapter concludes the research by summarising the findings of the research objectives attained and presenting conclusions, recommendations, and suggestions for future research.

The relationship between Leadership 4.0 and innovative management practices

The research reveals a considerable positive correlation between Leadership 4.0 and creative management techniques. This conclusion supports Rahman & Abedin (2021) assertion that leadership styles may impact management practises; consequently, there may be overlap between the two, even if they are not identical. It added further to Kagermann, Wahlster & Helbig (2021) conclusion that leadership styles influence management practises by demonstrating that the two constructs evolved in a favourable way in the current research (positive relationship suggests that when the presence of one construct increases, the presence of the other increases as well).

Literature offered many reasons and ideas from several writers and industry practitioners that businesses must rethink their management processes in order to foster innovation, cooperation, learning, and agility. Vaidya, Ambad, & Bhosle (2018) emphasised the necessity for management methods to be more innovative in order to be compatible with the 4IR. Adebayo, Makwambeni & Thakur, (2020) suggested that Leadership 4.0 may have a beneficial effect on such methods. In this view, the aforementioned findings corroborate Schwab's position in this situation.

The following conceptual model is conceived for evaluating leadership 4.0 & contemporary management impacts on organisational performance in the 4IR in the present study.

Figure 1: A proposed conceptual/theoretical model for in the present study
The above conceptual model suggests a direct connection between Leadership 4.0, innovative management practices (such as stakeholder engagement, human resource practices, organisational structure, and risk management), and organisational performance capabilities (such as human capital, risk management, and value creation) in the context of the Fourth Industrial Revolution (4IR).

Although innovation is a skill that can be taught, it is also a quality that arises from a person's innate desire and passion to push his or her own and others' way of thinking and develop alternative ideas or solutions to advance civilizations. As stated by Shamim, et al (2016) Leadership 4.0 is about fostering innovation, creativity, and change adoption among individuals. Leadership 4.0, in this view, encourages innovation from inside people by including characteristics like as engagement and excitement, so encouraging both followers' intrinsic drive and passion. This kind of leadership promotes innovation by empowering employees and providing them with the skills, resources, and principles essential to practise innovation in an ethical and sustainable way. As stated by the CEO of SAP, Bill McDermott (World Economic Forum, 2019), being a global citizen in the Fourth Industrial Revolution entails delivering creative and sustainable solutions for a diverse set of stakeholders in an ethical way. Taking into account the offered data, this may be attributed to Leadership 4.0's favourable correlation with rising levels of creative management techniques.

The impact of contemporary management practises on organisational performance in the 4IR

In the current research, a positive relationship is discovered between the creative management practises and the entire organisational performance capabilities construct. Several writers and industry practitioners (such as Garg, 2019; Carter, 2017) have argued that management practises must adapt and encourage innovation to match the pace of change in the 4IR to guarantee organisational performance capabilities and, ultimately, survival. This article explores and discusses the foundational ideas and constructions of creative management practises, with a focus on the creation of organisational structures, processes, and standards that encourage innovation, collaboration, and adaptability. Accordingly, the presented results supported the argument made by Hecklau et al, (2016) that innovative management practises may influence organisations' compatibility with the 4IR by positively relating to the organisational performance capabilities required to overcome many of the upcoming challenges that the 4IR may present.

The strongest significant positive relationship was discovered with digital risk management, lending credence to David Taylor's and Ajah, Chigozie-Okwum (2019) claims that organisations will need more proactive, anticipatory, and innovative approaches to risk management practises to safeguard themselves from the digital risks threatening their survival in the 4IR. Despite the fact that transactional leadership appeared to play an important role in risk management, and will be found to play such a role again in the discussion of digital risk management below, it is important to note that risk management as a management practise should be centred on early threat detection and risk mitigation or prevention practises to ensure that organisations are prepared in terms of structures, processes, and guidelines when digitising.

The impact of Leadership 4.0 on organisational performance in the 4IR

In examining the correlations between chosen leadership style constructs and organisational performance constructs, a substantial positive association was discovered between all Leadership 4.0 components and organisational performance capacity constructs. According to Noopur & Dhar, (2019), the 4IR offers several dangers to organisations and society, and the duty for navigating these obstacles toward a more optimistic future lies with corporate leaders and their adoption of an appropriate leadership style, such as Leadership 4.0. The findings offered above from the current research supported Schwab's conviction. It is crucial to highlight, however, that beneficial links were also established between all leadership styles, not only Leadership 4.0, and organisational performance capabilities. This indicated that leadership is a crucial determinant for organisational performance in the Fourth Industrial Revolution. Numerous debates and research in the literature and in industrial practise about organisational performance and even management techniques contain an emphasis on leadership and its link with or influence on the aforementioned subject (Li, Hou, & Wu, 2017; Maynard, 2015). Moreover, many of these conversations and research give support, proof, or beliefs that leadership is a crucial aspect of many organisational challenges, as was again determined by this study.

Enthusiasm, a Leadership 4.0 dimension, was found to show stronger positive relationships in all organisational performance capability constructs with the exception of digital risk management, suggesting that Leadership 4.0 offers a distinct variation on the theme of positive relationships between leadership and organisational performance. This suggested that, although leadership in general (across all leadership styles) would be important, Leadership 4.0 was best adapted to guaranteeing organisational survival in the 4IR. Leadership 4.0 might be considered as a continuation of the full-spectrum leadership theory, which explains the evolution of leadership styles across time. It may be argued that different forms of leadership emerged at various points in the course of the various economic revolutions. Therefore, it is reasonable to expect that leadership styles and the ideas around them will continue to evolve as the 4IR develops.

Knies, et al (2019) argued that the role of organisations to steer relevant advancements and dangers toward a more positive future makes leadership central to the conundrum of potential harm against advantages to society in light of the impact that the 4IR is anticipated to have on humanity. Leadership, Knies, et al (2019) said, is the "active component in the accomplishment of excellent outcomes in light of the 4IR" because of its importance in change management. Tomal & Jones, (2020) argues that this is true, noting that good leadership is crucial to an organization's continued viability and growth. Competencies like innovation, learning, collaboration, and agility may have a direct bearing on an organization's success in the 4IR. According to Ryff, (2018) in order to
adapt to this rapid pace of change and create an environment where creativity and learning thrive, businesses will need to adopt new management practices. Companies, managers, and leaders, as well as other members of society, according to Ferreira (2012), will succeed in the turbulent and unpredictable times ahead only if they are able to innovate, grow, collaborate, and adapt (4IR).

**Evaluating Leadership 4.0: Opportunities and Challenges in Contemporary Management Practices**

While Leadership 4.0 and contemporary management practices are lauded for their potential to revolutionize organizational performance in the Fourth Industrial Revolution, they are not without their critics. For instance, Bennis (2013) argues that the emphasis on digital leadership and technological acumen may overshadow fundamental leadership qualities such as emotional intelligence and ethical decision-making. This perspective is echoed by Ford (2015), who raises concerns about the potential for digitalization to create disconnects between management and employees, thereby undermining organizational cohesion and trust. Conversely, Schawbel (2018) contends that Leadership 4.0 practices, by fostering a culture of innovation and agility, can significantly enhance employee engagement and organizational adaptability. However, Kellerman (2012) challenges this optimistic view, suggesting that the rapid pace of change associated with the Fourth Industrial Revolution could lead to decision-making fatigue among leaders, ultimately impairing their ability to effectively guide their organizations through turbulent times. In evaluating these perspectives, it becomes clear that while Leadership 4.0 and contemporary management practices offer substantial benefits in navigating the complexities of the 4IR, they also necessitate a nuanced approach that balances technological prowess with timeless leadership virtues. By integrating traditional leadership skills with innovative practices, leaders can better prepare their organizations for the challenges and opportunities of the digital era.

![Figure 2: Impact of leadership 4.0 and contemporary Management Practices on Organizational Performance](image)

**Implications**

This research integrated the literature, rational beliefs, and conceptual opinions of a wide range of industry practitioners, researchers, and authors to contribute to the growing body of knowledge on leadership styles, specifically Leadership 4.0, innovative management practises, and organisational performance capabilities for the Fourth Industrial Revolution (4IR). Empirical study was done, generating empirical evidence concerning the connections between these components, on the basis of the proposed theoretical/conceptual model. It was argued that conventional methods of management and leadership may not help businesses thrive in the era of the Fourth Industrial Revolution (4IR). Research has already debunked these concerns, lending even more credence to the idea that contingent leadership is the superior method of management for the 4IR.

The convergence of Leadership 4.0 and contemporary management practices presents a pivotal opportunity for organizations navigating the complexities of the Fourth Industrial Revolution (4IR). This study underscores the importance of adopting innovative leadership styles and management strategies to bolster organizational resilience and adaptability in the face of 4IR challenges. By understanding and implementing these approaches, companies and business leaders can significantly enhance their capabilities to address the myriad issues, risks, and threats associated with this transformative era.

Global examples, such as Siemens AG and Haier Group, illuminate the path forward. Siemens AG's digital transformation, characterized by decentralization, team empowerment, and a culture of innovation, demonstrates the efficacy of Leadership 4.0 in fostering operational efficiency and sustained innovation (Smith & Turner, 2020). Similarly, Haier Group's adoption of the “Rendanheyi” model showcases the transformative potential of contemporary organizational design, leading to heightened market responsiveness and growth (Zhang, 2019). Google’s leadership style, emphasizing open communication, creativity, and a flat
organizational structure, further exemplifies how modern management practices can drive innovation and establish new standards in the technology industry (Johnson, 2021).

Turning our focus to South Africa, Discovery Ltd and Vodacom exemplify the successful application of Leadership 4.0 and contemporary management practices within the local context. Discovery Ltd's use of data analytics and digital technology to personalize services in the health insurance and banking sectors highlights the benefits of digital transformation in enhancing customer satisfaction and operational efficiency (Moyo & Chikweche, 2022). Vodacom's investment in mobile technologies and the development of digital solutions tailored to the African market illustrates the company's commitment to enhancing connectivity, supporting small enterprises, and promoting digital inclusion across the continent (Khosa & van Belle, 2021).

These examples from both global and South African contexts demonstrate the tangible benefits of embracing Leadership 4.0 and contemporary management practices. Such strategies are instrumental in improving decision-making processes, fostering employee development, enhancing stakeholder management, innovating in organizational design, and managing risks effectively. Moreover, the selection of appropriate leadership styles becomes crucial for thriving in the 4IR landscape. Organizations that learn from these successful implementations are better positioned to navigate the future, ensuring their survival and sustainability in an increasingly complex and volatile global environment.

Conclusion

This study aimed to examine the potential synergies between leadership 4.0, novel management practices, and organisational efficiency in the context of the Fourth Industrial Revolution (4IR). A positive association between the two conceptions was supported by evidence derived from both theoretical considerations and field investigation. The regression model, which included leadership style components and cutting-edge management practices, demonstrated that leadership styles were the primary predictor of variance in key organisational performance capacity attributes. This suggests that although the implementation of innovative management practices is essential for addressing the challenges anticipated to arise from the Fourth Industrial Revolution (4IR), leadership ultimately plays a pivotal role in ensuring that an organisation possesses the requisite performance capabilities to flourish in the era of the 4IR. It is advisable for organisations and corporate executives to take into consideration this conclusion and prioritise the development and maintenance of a leadership focus.

The results of this study provide support for the Contingency Theory of Leadership. Specifically, the study demonstrates that transactional leadership is responsible for differences in risk management practices and digital risk management performance capabilities. Additionally, the study found strong positive relationships between Leadership 4.0 and organisational performance capacities. The aforementioned statement suggests that the Fourth Industrial Revolution (4IR) and its anticipated challenges and transformations can be regarded as distinct circumstances or scenarios in which the adoption of an appropriate leadership style by business leaders is of utmost importance for their success, as well as the long-term viability and continuity of said organisations. Nevertheless, it can be inferred that leadership has a positive impact on both innovative management strategies and the operational capacities of organisations in the Fourth Industrial Revolution (4IR). Hence, as evidenced by recent deliberations at the World Economic Forum, it is imperative to allocate further resources towards the examination and enhancement of leadership's significance within organisational contexts.

Recommendations for Future Research

Based on these findings, a number of suggestions for future research arise:

i. Further investigation is warranted to explore the precise qualities and behaviours that encompass effective Leadership 4.0. This entails examining the methods by which these skills can be cultivated and improved in leaders from various sectors.

ii. The present study aims to investigate the effects of Leadership 4.0 on employee well-being and mental health, considering the swift technology progress and the possibility for heightened workplace stress.

iii. The significance of leadership in fostering organisational agility: Given the growing need for organisations to effectively respond to rapid changes, it is imperative to do additional study to explore the ways in which Leadership 4.0 enhances organisational agility, hence enabling prompt reactions to market dynamics and technology advancements.

iv. Understanding the impact of cultural contexts on the adoption and success of Leadership 4.0 approaches is crucial in light of the worldwide reach of the Fourth Industrial Revolution (4IR). Conducting comparative studies on leadership styles across diverse cultures has the potential to yield significant insights.

Limitations and delimitations of the study

According to Tredgold (2017), the limits of the research highlight the circumstances that could potentially hinder the study. Limitations encompass exogenous variables that lie beyond the researcher's jurisdiction, such as the possibility of respondents displaying deceitfulness during interviews. According to Garg (2019:13), secondary research might reveal phrases that are naturally susceptible to interpretation or meaning, which is a hallmark of human language.
The study's validity may be undermined due to the presence of unacknowledged and disputed data, as well as reliance on online sources. In addition, the researcher recognises that a major limitation of this study is the incapacity to extrapolate the results to a wider population due to the diverse interpretations of particular texts and documents that were revealed, rendering it impractical to apply them to a bigger group.

According to Creswell (2014:125), delimitations play a crucial role in clarifying and facilitating the establishment of the planned borders and parameters of the investigation. The delimitations of the study, as articulated by Garg (2019:4), pertain to the parameters or limitations of the research. The researcher possesses the jurisdiction to establish the parameters of the study, encompassing the choice of particular components such as objectives and research inquiries. This guarantees that the study remains feasible and uncomplicated to execute. The researcher did not employ an observational strategy in the study's methodological approaches.

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