Academicians' Innovative Work Behaviour: Which Leadership Style Most Effective to Foster it?

Siti Rohana Daud, Nani Shuhada Sehat, Dr Muhammad Syukri Abdullah, Azira Rahim, Intan Liana Suhaime, Saida Farhanah Sarkam, Norlela Abas

Faculty of Business Management, Universiti Teknologi MARA, Melaka, KM18, Jalan Lendu, 78000 Alor Gajah, Melaka
Corresponding Author Email: nanis464@uitm.edu.my

Abstract
This article investigates the factors that influence academicians' innovative work behaviour (IWB) in higher education institutions. It is important to meet the education market that undergoing fast change, and demand for high-quality educational delivery is rising. Therefore, this article provides a preliminary assessment of the extent to which leadership style most influences academicians' IWB in higher education institutions. Social cognitive theory will serve as the conceptual framework for this investigation. The method employed in this article is a survey of the relevant literature from journals, conference papers, and theses, and this paper adopted a conceptual method. The variables in this analysis were given dimensions and measurements based on earlier research and recommendations. This study was predicted to show that transformational leadership is the most significant predictor of innovative work behavior. The finding of this research is consistent with research conducted by previous scholars, who concluded that in order to improve Malaysia's performance in Global Innovation Index (GII), administrators of Malaysia higher education institutions must encourage academicians to engage in IWB, given their expertise and forte. This paper also provides perspective on the leadership style understanding and its potential for fostering academicians IWB in Malaysia's higher education system.
Keyword: Academicians, Higher Education, Innovative Work Behavior, Leadership Style, Social Cognitive

Introduction
Organizations must focus on innovation to bring fresh perspectives and knowledge to bear on the rapidly changing internal and external environments considering the expanding global market. Organizations can promote long-term survival, attain a durable competitive edge, and have positive economic effects through innovation (Eidizadeh et al., 2017). Universities unquestionably have a vital role in encouraging innovation performance. It has been considered a crucial element of innovation to promote economic progress (Salem, 2014).

Globally, the higher education (HE) market is undergoing fast change, and demand for high-quality educational delivery is rising (Mathew, 2010). However, higher education is digitally far behind most other industries (Puckett et al., 2021). Rapid day-to-day digital transformation in higher education requires advanced vision, strategy, power distribution, staff, pedagogy, culture, and technological resources for online and blended operations. These outside influences are pressuring the industry to improve its effectiveness, efficiency, and inventiveness (Herbst and Conradie, 2011). Additionally, the influence of COVID-19 on everyone's professional and personal lives is extraordinary. Consequently, there have been quick changes in working circumstances that are posing a threat to the health of millions of workers. Particularly in education area, it has significantly altered how people learn and affected how academics, students, and educational institutions interact (Shahrill, et al., 2021). Innovation abilities, which include creativity, critical thinking, teamwork, and communication, were deemed to be an essential category in a compilation of several study papers on skills needed for the future (Eich, 2021). According to Smith (2009), innovation is crucial for educational institutions, thus it's critical to improve the way that lectures are delivered, the way that institutions can solve problems, and the calibre of their applied research.

The significance of innovation in fostering economic growth has been emphasized by the (Geotab Team, 2021). The cultivation of future innovators possesses the capacity to effect transformative change on a global scale, as it addresses intricate global challenges and enhances the expansion of employment opportunities, rates of employment, and earnings (Snyder, 2019). The inclusion of skills related to innovation in the education sector has historically not been regarded as a conventional component of the curriculum. In recent times, academics have increasingly acknowledged the necessity of incorporating abilities commonly known as "soft" or noncognitive skills into their teaching practices. Given the significance of noncognitive abilities in prospective professional trajectories, it is imperative that the cultivation of these talents be explicitly prioritized within the realm of education (Garcia, 2014).

Therefore, teaching students the abilities needed to think creatively is essential for increasing their employability and competitiveness (Bacigalupo et al., 2016). As a result of recent advancements, digitization and Internet use have become indispensable for higher education (Thanuskodi, 2011). Since internet access is increasing across the country, including in the education system, academicians must be creative to make use of the various available technologies. Even though academicians are essential knowledge workers who engage in knowledge-related activities such as teaching and research (Kim and Ju, 2008). Employee performance improves and firms become more innovative when people share their knowledge, abilities, and expertise with other team members. Academicians contribute significantly to the conception and development of new knowledge, theories, models, practises, systems, technologies, tools, and methodologies. These advancements are only possible through innovative work practises.

Hence, it is crucial to implement innovative work behaviours (IWB) in the education sector, as leadership plays a crucial role in promoting these behaviours within an organisation (Jung et al., 2003). According to Javed et al (2018), leadership is essential for encouraging and sustaining innovative behaviour among employees. Research has shown that leadership behaviors such as providing clear goals, offering support and resources, encouraging experimentation and risk-taking, and recognizing and rewarding innovative behavior can foster a culture of innovation and improve employee motivation and engagement. In addition to pursuing new technology, organisations' requirements, such as human workforce, have

been one of the developments that have been overlooked. It has been anticipated of leaders to motivate this diverse human workforce.

Therefore, theory of leadership that aims to explore the leadership styles, such as servant leadership, transformational leadership, and digital leadership in the forecast of IWB. Thus, this study will contribute to the research on leadership and innovation and give practitioners with ideas on how to apply an appropriate leadership style to encourage creative work behaviour among workers.

Literature Review

The associated variables that researchers will put forth were covered in this part, including innovative work behavior (IWB), leadership styles which are servant leadership, transformational leadership, and digital leadership.

Innovative work behavior (IWB)

Innovative work behavior (IWB) can be defined as an individual's behaviour aimed at the beginning and deliberate introduction (within a work role, group, or organisation) of novel and beneficial ideas, processes, products, or procedures (de Jong and Hartog, 2007). Scott and Bruce (1994) determined that IWB covers a collection of activities designed to recognise, generate, modify, adopt, and implement ideas. It develops answers to issues experienced inside the company (Widodo and Mawarto, 2020), and it is essentially utilising unconventional ways (Ma Prieto and Pérez-Santana, 2014). In reaction to the changing business environment, employees are urged to engage in IWB in their pursuit of innovation (Hong et al., 2016).

IWBs represent the worker's deliberate introduction or application of new ideas, processes, products, and procedures to his or her work department, job function, and/or organisation (Hansen and Pihl-Thingvad 2019). Consequently, these innovative behaviours include both knowledge and social influences, as employees must innovate through the creative integration of existing knowledge and simultaneously rally support for new ideas within the organisation (Stoffers et al., 2020).

Study by Lukes and Stephen (2017) found that IWB creates good impacts are shared by both the company and the personnel, such as improved working conditions, more job satisfaction, and enhanced well-being. It has been said that creative work behaviour is a part of IWB, which is a dynamic and diverse phenomenon. It consists of four interconnected attributes: acknowledging the problem, coming up with a notion, promoting it, and recognising it (Khan et al., 2012). In the realm of education, innovation facilitates the customization of the educational process (Brodhag, 2013), and researchers have reached a consensus regarding the beneficial effects of education on communities, families, and individual well-being. In other words, innovation in higher education institutions is considered to be the primary driver of economic and social development, and this can be accomplished through academic outcomes (Chen & Chen, 2008).

Leadership Styles that Initiate Innovative Work Behaviour
Servant Leadership

According to Eva et al (2019), servant leadership is characterised as an other-oriented style to leadership, exhibited via one-on-one, prioritising follower individual needs and interests, and outward redirection of followers' care for self to concern for others within the organization and the greater community. This sort of leadership ensures long-term success at

the individual, organizational, and social levels (Coetzer et al., 2017). Iqbal et al (2020) explained that this leadership style emphasises altruism, ethical behaviour, and service over self-interest. This showed that the concept of servant leadership places a focus on personal integrity and service to others, including those in the workforce, clients, and society.

To become a leader, one must first learn to serve others (Greenleaf, 2002). Instead of relying on charisma and idealised influence, which are two of the more conventional forms of influence, servant leaders look to service as a primary source of influence. The concept of servant leadership is a philosophy of leadership that emphasises the importance of ethical, positive, and sustainable dimensions (van Dierendonck, 2011). This philosophy of leadership was developed with the intention of serving others and advancing the common good (Greenleaf, 1997; Lee et al., 2020).

Transformational Leadership

Bass and Riggio (2010) defined Transformational leadership defined as a process that transforms individuals. It entails modifying the personal values and self-concepts of subordinates in an effort to boost organizational effectiveness and subordinates' performance (Bass and Riggio, 2010). Northouse (2014) explained that the theory assumes that followers must be recognised, valued, and trusted in order for the leader to earn their devotion, and that everyone has something to contribute. Leaders serve as an idealised role model, stimulate, and promote creative work behaviour, give inspiring motivation, and assist and mentor followers to accomplish the organization's common vision and objectives (Suifan et al., 2018).

By continuously questioning and pushing followers' beliefs and ways of thinking, these leaders stimulate followers' intellectual thought, which eventually motivates followers to participate in idea production and execution. Such leaders are able to express the company vision in terms of individual objectives, hence improving followers' inspiration and motivation (Bednall et al., 2018). Therefore, it is assumed that transformational leaders will be able to inspire individual employees by relating their future to the future of the organisation and to encourage them to engage in IWB by fostering a strong sense of shared vision and belonging with the organisation. Leaders also stimulates an employee's values and self-concepts, thereby assisting the employees in achieving higher levels of needs and aspirations and elevating their performance expectations through IWB (Afsar et al., 2014).

Transformational leadership was highlighted by Sinaga et al (2020) as one of the most critical characteristics that impact creative thinking and innovativeness. According to the findings of several studies conducted in this area, transformational leadership is associated with an increase in subordinate commitment, an improvement in performance, and an encouragement of more creative problem solutions (Mittal and Dhar, 2015; Yukl, 2012). It places an emphasis on the intrinsic motivation of followers, ethical behaviour, the development of leadership among team members, and the establishment of shared vision and goals. In the realm of higher education, transformational leadership may be utilised to motivate faculty members to participate in educational programmes with the goal of enhancing abilities that can later offer outstanding performance (Pounder, 2009).

Digital Leadership

Digital leadership defined as the combination of digital culture and digital competences, occurs when an organisation successfully integrates both of these aspects (Mihardjo and Sasmoko, 2019). The goal of digital leadership is to create a customer-centric, digitally

enabled, cutting-edge business model by (1) changing the role, skills, and leadership style of the digital leader, (2) creating a digital organisation, including governance, vision, values, structure, culture, and decision-making processes, and (3) modifying people management, virtual teams, knowledge, communication, and collaboration on an individual level (Eberl and Drews, 2021).

However, according to Sow and Aborbie (2018), digital leaders are those leaders who manage the processes of digital transformation in a consistent manner and adapt diverse leadership methods (transformational, transactional, etc.) by delivering competitive advantages with a strategic point of view. Managers who practice digital leadership taking the appropriate actions to ensure that the firm and its business ecosystem are successfully digitalized. Digital leadership entails adopting new perspectives on workplace practises, business models, IT departments, corporate platforms, and employee attitudes and skill sets (El Sawy et al., 2016). Digital leadership is the practise of managing the online actions of the workers, such as uploading product descriptions and managing customer directing marketing initiatives, answering customer questions, and making decisions on the company's online activities (Meier et al., 2017).

Underpinning Theories

There is theory has been applied to the factors that initiate of innovative work behaviour based on the study. Thus, this study is to utilise this theory to evaluate the suggested theoretical framework.

Social Cognitive Theory

Social Cognitive Theory Bandura (1986) evolved from the Social Learning Theory Bandura (1977) of developmental psychology which emphasised people's learning by imitating or observing others through modelling influences. Later, the theory incorporated cognition in order to further explain human behaviour through mental abilities such as information processing in response to these modelling influences. In addition, it addresses how individuals are motivated and can motivate others, how they perform, how they acquire new skills, and how they regulate themselves (Koutroubas and Galanakis, 2022). According to this theory, leaders' actions, and the social environment they establish within an organisation have a significant impact on employees' innovative work behaviour. Leaders can cultivate a culture of innovation and encourage employees to engage in IWBs by demonstrating innovative behaviour, providing reinforcement and support, and facilitating vicarious learning experiences. Therefore, Social Cognitive Theory can and has been utilised to explain how workplace environments includes leaders motivate and influence employees' innovative work behaviour.
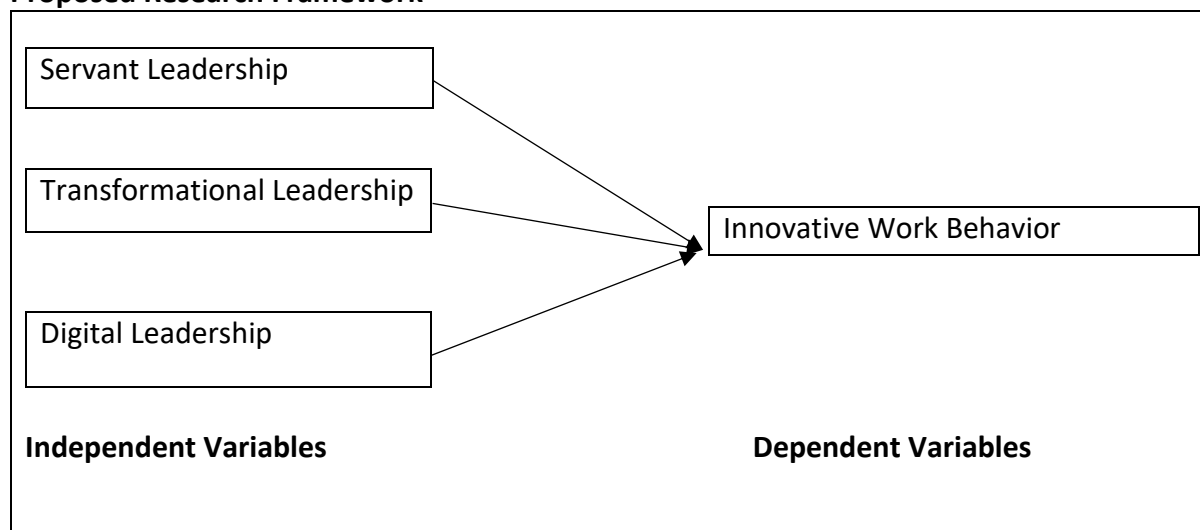
Proposed Research Framework

Figure 1: Conceptual framework

This study develops a research framework because it can serve as the premise for the study's purpose. The conceptual framework of this study includes three independent variables (servant leadership, transformational leadership, and digital leadership) and innovative work behaviour as dependent variable. Independent variables and dependent variables have a direct relationship within the model. The conceptual framework for this study will be based on the Social Cognitive Theory.

In Figure 4.1, an illustration of the conceptual framework depicts the independent and dependent variables of the current study. The independent variable consists of servant leadership, transformational leadership, and digital leadership, while innovative work behaviour as dependent variable. In addition, the arrows indicate that the current study aims to assess the extent to which the antecedent factors influence innovative work behaviour. Numerous studies have examined innovative work behaviour as a dependent variable, but there is still much work to be done in various facets of this concept.

Discussion

Servant Leadership and Innovative Work Behavior

Servant leadership focuses on the requirements of followers, which motivates them to strive and succeed, thereby stimulating their creativity (Yang et al., 2017). According to Parris and Peachey (2013), when a servant leader is in command, followers are motivated to achieve their goals by having their attention maintained and their desire to innovate increased. This study showed positive relationship between servant leadership style and IWB.

Several empirical sources demonstrate that servant leadership is effective in influencing IWB among employees (Mubarik et al., 2021; Rasheed et al., 2016). Additionally, study by Prasetyono et al (2022) also found that one of the factors that affect innovative work behaviour is servant leadership. These findings strengthened by Cai et al (2018), effective servant leadership influences the IWB of employees. Faraz et al (2019), also found that servant leaders believe in forming a close relationship with subordinates by prioritising them, assisting them, and always being honest with them; consequently, followers become grateful and feel obligated to reciprocate.

Transformational Leadership and Innovative Work Behavior

Numerous studies' results showed that transformational leadership had a positive impact on employees' IWB. According to Garg et al (2023), managers can boost IWB by adopting a transformational leadership style. This research also provides empirical evidence that transformational leaders can inspire their teams to exhibit more creative behaviour. Employees that experience transformational leadership feel obligated to their bosses, and as a result, they exhibit helpful and innovative behaviours that enhance organizational success (Afsar et al., 2019).

The personalised care and support provided by transformational leaders to their followers' wants and requirements may have a greater impact on the followers' participation in creative endeavours. These leaders stimulate followers' intellectual thinking by persistently challenging followers' presumptions and ways of thinking, which ultimately motivates followers to participate in the creative process. Such leaders can connect the organisational vision to personal objectives, inspiring followers and boosting productivity (Bednall et al., 2018). It is therefore expected that transformational leaders will be able to motivate individual workers by connecting their future to the future of the organisation and to encourage them to engage in IWBs by forging a strong sense of shared vision and belonging with the organisations. According to Zuraik and Kelly (2018), transformational leaders can improve organisational innovation.

Digital Leadership and Innovative Work behavior

The findings from Erhan et al. (2022) demonstrated a favourable and significant relationship between employee perceptions of digital leadership and all aspects of IWB. Additionally, employees had favourable perceptions of leaders with strong digital skills, and they tended to adopt creative behaviours when these leaders were present. According to Benitez et al. (2022), digital leadership enhances an organization's performance in terms of innovation through digitalizing the organization's platform. They concluded that digital leadership capability is favourably connected to platform digitization capabilities, which in turn has a beneficial connection with innovation performance. This outcome shows company leaders that they need to have digital leadership competence to be able to digitize the platform to innovate and surpass direct competition. Furthermore, the study results by Borah, et al. (2022) reveal that digital leadership positively moderates the relationship between social media usage on sustainable SME performance.

Digital leadership enhances and promotes digital teaching and learning, according to research (Richardson et al., 2012), and practitioners in the field of higher education are increasingly interested in it (Antonopoulou et al., 2020; Yusof et al., 2019). It is essential that employees, especially academics, be encouraged to continue to be innovative in imparting knowledge and information as technology advances.

Conclusion

The results of this study indicate that all three leadership styles have a positive impact on the IWB of academicians. Transformational leadership is found to be the most significant predictor of innovative work behaviour, followed by servant leadership and digital leadership (Chen et al., 2020). The findings of this research have implications for the development of leadership in academic institutions. It suggests that leaders should adopt a transformational, servant, and digital leadership approach to enhance the IWB of academicians.

Teaching and conducting research are no longer the sole responsibilities of the higher education institutions. As the pillars of a knowledge-based economy, institutions must adapt to the new education system to satisfy the rising demand for science, technology, and innovation (Salem, 2014). Therefore, it is essential for institutions to identify factors that influence innovative work behaviour among employees, particularly academicians, who are expected to make the most significant contributions to teaching, research, and projects. In addition, to ensure that graduates are adaptable and relevant to changes and consistent labour market demands, particularly regarding IWB (Ibus, 2021), higher education institutions must focus on adapting the existing curriculum to be more innovative (Shukran, et al, 2011) and involving all levels of management, from the academicians themselves to the highest management in the education sector, in order to implement IWB in the workplace (Omar, et al., 2019). This is since innovation has been demonstrated to be a crucial factor for competitive excellence in any inclusive university organisation (Ab Hamid et al., 2015). All organisations must therefore concentrate on initiatives that encourage IWB.

Therefore, in order to secure the active participation of academicians for those aims, the topic of leadership continues to be a subject of debate and disagreement among philosophers and academics. To date, a substantial body of literature comprising books and articles has been written pertaining to this specific issue, with the aim of investigating the characteristics and origins of leadership within the academic domain (Awan and Mahmood, 2010). Alonderiene and Majauskaite (2016) also suggest that leadership can be defined as a process of exerting influence over individuals to achieve a predetermined objective or uncover new insights. This article serves as a comprehensive resource for conducting empirical research on the identification of effective leadership styles that foster innovative behavior among academicians, with broader implications for the education sector as a whole.

In conclusion, we believed that these emerging technologies offer both great promise and challenges for transforming academicians' innovative work behaviour in higher education institutions. We must pursue a comprehension of these technological opportunities and eliminate the obstacles that prevent academics from exploring the possibilities on their interactive whiteboards. Depending on the role of the relevant leaders, additional research could be conducted to address our question regarding the manifestations of technology use on IWB beyond what we already know. The future results can be utilised to enhance Malaysia's performance in GII, productivity, and economic growth contribution.

Acknowledgement

References

Ab Hamid, M. R., Abdullah, M., Mustafa, Z., & Ahmad, H. (2015). Conceptual framework of innovation excellence model for higher education institutions. *Procedia-Social and Behavioral Sciences*, 174, 2846-2848.

Avolio, B. J., & Bass, B. M. (2001). *Developing potential across a full range of leadership TM: Cases on transactional and transformational leadership*. Psychology Press.

Awan, M. R., & Mahmood, K. (2010). Relationship among leadership style, organizational culture and employee commitment in university libraries. *Library Management*, 31(4/5), 253–266.

Afsar, B., Masood, M., and Umrani, W. A. (2019). The role of job crafting and knowledge sharing on the effect of transformational leadership on innovative work behavior. *Personnel Review*, 48 (5), 1186-1208.

Afsar, B., Badir, F. Y., Bin Saeed, B. (2014) Transformational leadership and innovative work behavior. *Industrial Management & Data Systems.* 114(8): 1270–1300.

Antonopoulou, H., Halkiopoulos, C., Barlou, O., and Beligiannis, G.N. (2020). Leadership types and digital leadership in higher education: behavioural data analysis from university of Patras in Greece. *International Journal of Learning, Teaching and Educational Research*, 19 (4), 110-129.

Bacigalupo, M., Kempylis, P., Punie, Yves, Van den Brande, G. (2016). EntreComp: The entrepreneurship competence framework. *JCR Science for Policy Report*. European Commission.

Bandura, A. (1986). *Fearful expectations and avoidant actions as coeffects of perceived self-inefficacy*.

Bass, B. M., & Riggio, R. E. (2010). The transformational model of leadership. Leading organizations: Perspectives for a new era, 2(1), 76-86.

Bednall, T.C., Rafferty, A.E., Shipton, H., Sanders, K. and Jackson, C.J. (2018). Innovative behaviour: how much transformational leadership do you need? *British Journal of Management*, 29 (4), 796-816.

Benitez, J., Arenas, A., Castillo, A., Esteves, J. (2022). Impact of digital leadership capability on innovation performance: The role of platform digitization capability. *Information & Management*, 59 (2).

Borah, P. S., Iqbal, S., Akhtar, S. (2022). Linking social media usage and SME's sustainable performance: The role of digital leadership and innovation capabilities. *Technology in Society*, 68.

Brodhag, C. (2013). Research universities, technology transfer, and job creation: What infrastructure, for what training? *Studies in Higher Education*, 38, (3), 388–404.

Cai, W., Lysova, E. I., Khapova, S. N., & Bossink, B. A. (2018). Servant leadership and innovative work behavior in Chinese high-tech firms: A moderated mediation model of meaningful work and job autonomy. *Frontiers in psychology*, 9, 1767.

Chen, HF., & Chen, YC. (2008). The impact of work redesign and psychological empowerment on organizational commitment in a changing environment: an example from Taiwan's state-owned enterprises. *Public Personnel Management*, 37(3), 279-302.

Chen, L., Wadei, K. A., Bai, S., & Liu, J. (2020). Participative leadership and employee creativity: a sequential mediation model of psychological safety and creative process engagement. *Leadership & Organization Development Journal*, *41*(6), 741-759.

Coetzer, M.F., Bussin, M. and Geldenhuys, M. (2017). The functions of a servant leader. *Administrative Sciences*, 7 No.1, pp. 1-32.

De Jong, J. P., & Den Hartog, D. N. (2007). How leaders influence employees' innovative behaviour. *European Journal of Innovation Management*, 10(1), 41-64.

Eberl, J.K. & Drews. P. (2021). Digital leadership–mountain or molehill? a literature review. *International Conference on Wirtschaftsinformatik*, Cham, Springer, 223-237.

Eich, D. J. (2021). Innovation skills for the future: Insights from research reports. Downloaded from https://www.innovationtraining.org/innovation-skills-for-thefuture/ on 6th June 2023.

Eidizadeh, R., Salehzadeh, R., & Chitsaz Esfahani, A. (2017). Analysing the role of business intelligence, knowledge sharing and organisational innovation on gaining competitive advantage. *Journal of Workplace Learning*, 29(4), 250-267.

El Sawy, O., Kræmmergaard, P., Amsinck, H., Vinther. A., (2016). How LEGO built the foundations and enterprise capabilities for digital leadership. *MIS Q Exec*, 15 (2), 141-166.

Erhan, T., Uzunbacak, H.H., Aydin, E. (2022). From conventional to digital leadership: exploring digitalization of leadership and innovative work behavior. *Management Research Review*. 45(11), 1524-1543.

Eva, N., Robin, M., Sendjaya, S., van Dierendonck, D. and Liden, R.C. (2019). Servant leadership: a systematic review and call for future research. *The Leadership Quarterly*, 30 (1), 111-132.

Faraz, N. A., Mughal, M. F., Ahmed, F., Raza, A., & Iqbal, M. K. (2019). The impact of servant leadership on employees' innovative work behaviour-mediating role of psychological empowerment. *International Journal of Management Science and Business Administration*, *5*(3), 10-21.

Garcia, E. (2014). The need to address noncognitive skills in the education policy agenda. *EPI Briefing Paper #386*. Economic Policy Institute, Washington, DC.

Garg, V., Attree, A. K., Kumar, V. (2023). The Mediating Role of Psychological Empowerment on the Transformational Leadership-Innovative Work Behaviour relationship: A Study of Indian Banking Sector. *South Asian Journal of Human Resources Management*, 10(1), 130–151.

Geotab Team. (2021). How STEM education drives business education. https://www.geotab.com/blog/stem-education

Greenleaf, R.K. (1997). *Servant leadership: a journey into the nature of legitimate power and greatness*. Paulist Press, New York, NY.

Greenleaf, R.K. (2002). *Servant Leadership: A Journey into the Nature of Legitimate Power and Greatness*, Paulist Press, NJ.

Hansen, J.A. and Pihl-Thingvad, S. (2019). Managing employee innovative behaviour through transformational and transactional leadership styles. *Public Management Review*, 21(6), 918-944.

Herbst, T., & Conradie, P. (2011). Leadership effectiveness in higher education: Managerial self-perceptions versus perceptions of others. *Journal of Industrial Psychology*, 37(1), 1–14.

Hong, Y., Liao, H., Raub, S., and Han, J. H. (2016). What it takes to get proactive: An integrative multilevel model of the antecedents of personal initiative. *Journal of applied psychology*, 101(5), 687-701.

Ibus, S. (2021). The role of self-efficacy in mediating the effect of selfleadership and knowledge sharing towards innovative work behaviour in private higher education institutions. *Doctoral dissertation*, Universiti Tun Hussein Malaysia.

Iqbal, A., Latif, K.F. and Ahmad, M.S. (2020). Servant leadership and employee innovative behaviour: exploring psychological pathways. *Leadership and Organization Development Journal*. 41(6), 813-827.

Javed, M. A., Younis, M. S., Latif, S., Qadir, J., & Baig, A. (2018). Community detection in networks: A multidisciplinary review. *Journal of Network and Computer Applications*, 108, 87-111.

Jung, D. I., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The Leadership Quarterly*, 14(4-5), 525-544.

Khan, M. J., Aslam, N., Riaz, M. N. (2012). Leadership styles as predictors of innovative work behavior. *Pakistan Journal of Social & Clinical Psychology*, 9(2).

Kim, S., & Ju, B. (2008). An analysis of faculty perceptions: Attitudes toward knowledge sharing and collaboration in an academic institution. *Library & Information Science Research*, 30 (4), 282-290.

Koutroubas, V. & Galanakis, M. (2022). Bandura's social learning theory and its importance in the organizational psychology context. *Psychology Research*, 12(6), 315-322.

Lee, A., Lyubovnikova, J., Tian, A.W. and Knight, C. (2020). Servant leadership: a meta-analytic examination of incremental contribution, moderation, and mediation. *Journal of Occupational and Organizational Psychology,* 93 (1), 1-44.

Lukes, Martin, Ute Stephan. (2017). Measuring employee innovation: A review of existing scales and the development of the innovative behavior and innovation support inventories across cultures. *International Journal of Entrepreneurial Behavior & Research*, 23, 36–58.

Ma Prieto, Isabel, Ma Pilar Pérez-Santana. (2014). Managing innovative work behavior: The role of human resource practices. *Personnel Review*, 43,184–208.

Mathew, V. (2010). Service delivery through knowledge management in higher education. *Journal of Knowledge Management Practice*, 11(3), 1–14.

Meier, C., Sachs, S., Stutz, C., McSorley, V. (2017). Establishing a digital leadership barometer for small and medium enterprises (SME), Management Challenges in a Network Economy. *Proceedings of the MakeLearn and TIIM International Conference*.

Mihardjo, L. W. W., & Sasmoko, S. (2019). Digital transformation: digital leadership role in developing business model innovation mediated by co-creation strategy for telecommunication incumbent firms. In Strategy and behaviors in the digital economy. *IntechOpen.*

Mittal, S., and Dhar, R. L. (2016). Effect of green transformational leadership on green creativity: a study of tourist hotels. *Tour. Manag*.

Mubarik, M. S., Naghavi, N., Mubarik, M., Kusi-Sarpong, S., Khan, S. A., Zaman, S. I., & Kazmi, S. H. A. (2021). Resilience and cleaner production in industry 4.0: Role of supply chain mapping and visibility. Journal of Cleaner Production, 292, 126058.Northouse, P. G. (2014). *Introduction to leadership: Concepts and practice*. Sage.

Omar, I. M., Ali, N., Md Sawari, S. S. (2019). The effect of self-leadership strategies on innovative work behaviors among school teachers. *Jurnal Pembangunan Sosial*, 22, 65-76.

Parris, D. L., and Peachey, J. W. (2013). A systematic literature review of servant leadership theory in organizational contexts. *Journal of business ethics*, 113(3), 377-393.

Pounder, J. S. (2009). Transformational classroom leadership: A basis for academic staff development. *Journal of Management Development,* 28(4), 317-325.

Prasetyono, H., Vhalery, R., Ramdayana, I. P., Salmin, S., Anggraini, W. P. (2022). Meningkatkan innovative work behaviour guru di sekolah Penggerak melalui work engagement dan servant leadership. *Research and Development Journal of Education*, 8(2), 791-800.

Puckett J., Pagano E., Ahlawat P., Zwemer N., Hilal P., Trainito A., Frost A., (2022). Higher ed must go all in on digital. *BCG Global*.

Rasheed, A., Lodhi, R. N., & Habiba, U. (2016). An empirical study of the impact of servant leadership on employee innovative work behavior with the mediating effect of work engagement: Evidence from banking sector of Pakistan. *Global Management Journal for Academic & Corporate Studies*, *6*(2), 177.

Richardson, J.W., Bathon, J., Flora, K.L. and Lewis, W.D. (2012). NETS-A scholarship: a review of published literature. *Journal of Research on Technology in Education*, 45 (2), 131-151.

Salem, M. I. (2014). The role of universities in building a knowledge-based economy in Saudi Arabia. *International Business & Economics Research Journal (IBER)*, 13(5), 1047-1056.

Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, 37(3), 580-607.

Shahrill, M., Petra, M.I., Naing, L., Yacob, J., Santos, J.H. and Aziz, A.B.A. (2021). New norms and opportunities from the COVID-19 pandemic crisis in a higher education setting: perspectives from Universiti Brunei Darussalam. *International Journal of Educational Management*, 35(3), 700-712.

Shukran, M. K., Sultana, M. R., & Rahman, F. (2011). Moving towards the knowledge-based economy: A comparative study between Malaysia and South Korea. *2011 International Conference on Research and Innovation in Information Systems*, 1-6.

Sinaga, A.T.I., Lumbanraja, P., Sadalia, I., Amlysh, Silalahi, S. (2020). Transformational leadership, psychological empowerment, and innovative work behavior of frontline employees in the public sectors: empirical evidence from North Sumatera, Indonesia. *Jurnal of International Conference Proceeding*, 3(4).

Smith, D. (2009). *Exploring Innovation (2nd ed.)*. London: McGraw-Hill Higher Education.

Sow, M., and Aborbie, S. (2018). Impact of leadership on digital transformation. *Business and Economic Research*, 8(3), 139-148.

Stoffers, J.M.M., Van der Heijden, B.I.J.M., Jacobs, E.A.G.M. (2020). Employability and innovative work behavior in small and medium-sized enterprises. *The International Journal of Human Resource Management*, 31(11), 1439-1466., doi: 10.1080/09585192.2017.1407953.

Suifan, T. S., Abdallah, A. B., & Al Janini, M. (2018). The impact of transformational leadership on employees' creativity: The mediating role of perceived organizational support. *Management Research Review*, 41(1), 113-132.

Snyder, B. (2019). How innovation drives economic growth. Insights. S*tanford Graduate School of Business.*

Thanuskodi, S. (2011). Internet use among the faculty members and the students in the professional colleges at Tirunelveli Region: an analytical study. *Educational Research*, 2(13), 1868-1875.

Van Dierendonck, D. (2011). Servant leadership: a review and synthesis. *Journal of Management,* 37 (4), 1228-1261.

Widodo, W., and Mawarto, M. (2020). Investigating the role of innovative behavior in mediating the effect of transformational leadership and talent management on performance. *Management Science Letters*, 2175-2182.

Yang, M., Evans, S., Vladimirova, D., & Rana, P. (2017). Value uncaptured perspective for sustainable business model innovation. *Journal of Cleaner Production*, *140*, 1794-1804.

Yukl, G. (2012). Effective leadership behavior: What we know and what questions need more attention. Academy of Management perspectives, 26(4), 66-85.

Yusof, M.R., Mohd Faiz, M.Y. and Ibrahim, M.Y. (2019). Digital leadership among school leaders in Malaysia. *International Journal of Innovative Technology and Exploring Engineering,* 8(9), 1481-1485.

Zuraik, A. and Kelly, L. (2018). The role of CEO transformational leadership and innovation climate in exploration and exploitation. *European Journal of Innovation Management*, 22(1), 84-104.