



International Journal of Humanities & Social Science Studies (IJHSSS)

A Peer-Reviewed Bi-monthly Bi-lingual Research Journal

ISSN: 2349-6959 (Online), ISSN: 2349-6711 (Print)

ISJN: A4372-3142 (Online) ISJN: A4372-3143 (Print)

Volume-X, Issue-IV, July 2024, Page No.216-226

Published by Scholar Publications, Karimganj, Assam, India, 788711

Website: <http://www.ijhsss.com>

DOI: 10.29032/ijhsss.v10.i4.2024.216-226

Leadership Practices in Bangladesh Pharmaceutical Industry: Necessities and Challenges

Md Nurul Hasan

MPhil Researcher, Bangladesh University of Professionals, Bangladesh

Abstract:

Effective leadership helps the organization to manage and motivate the employees for their optimum performance and productivity. Leadership practices in Bangladesh pharmaceutical industry is now a day's time demanding area of inquiry which is typically associated with the study of organisational behaviour of the social psychology. This study explores the underlying assumptions of present trend of leadership practices within Bangladesh pharmaceutical industry, its necessity and finally, challenges encountered in this sector. This article also highlights the leadership practices in the context of global pharmaceutical industry. Both primary and secondary sources of data were used in this study. An analytical method are also done to evaluate the available literature on the leadership practices in pharmaceutical industry. However, knowledge of this study will promote the contemporary views of leadership styles to the future researchers, scholars or business experts.

Key words: Leadership practices, pharmaceutical industry, necessity, challenges and scholars.

Introduction: Bangladesh pharmaceutical industry is moving forward with great potential as 98% of the country's total demand for medicine is being met by various domestic institutions. In addition to meeting the domestic demand, the companies also export medicines to several countries of the world. Bangladesh ranks 71st out of 134 countries in the world in terms of global pharmaceutical exports. According to Bangladesh Investment Development Authority (BIDA), Bangladesh is exporting more than 100 countries around the world after fulfilling the demand of domestic market of the country. Apart from allopathic medicines, Bangladesh also produces homeopathic, unani, and ayurvedic medicines. Domestic companies like Square, Beximco, Incepta, ACI, Reneta, Oponin are mostly dominating the pharmaceutical market in Bangladesh (Monira, 2019 and Hossan, 2023).

According to the Department of Economics and Social Affairs (DESA), COVID-19 pandemic and Ukraine war have triggered a serious humanitarian crisis on increasing food

and commodity prices. It has also exacerbating inflationary pressures on the business sectors both in nationally and internationally. For that reason, leaders of the many organizations are to adapt with sudden changing environment. Likewise, the pharmaceutical companies are also facing challenges globally in spotting leaders who are able to supervise tremendous change taking place. In this organization, leaders are engaged with negotiating the changing environment of the present world, scientific advancements and other risk involvement issues. Thus, leaders of the pharmaceutical companies are required to manage their team members keeping them continuously engaged to motivate on task. As a result, leadership of this sector needs to comprehend the various leadership styles and effective skills in managing the changing situation of the organization. For that matters, some of the leadership styles are being frequently practiced in the pharmaceutical industry both in nationally and globally such as visionary leadership, bureaucratic leadership, strategic leadership, collaborative leadership, transformational leadership and situational leadership (Minhas, 2022).

An Overview of Bangladesh Pharmaceutical Industry: Bangladesh pharmaceutical industry has begun its journey in 1950 with some multinational corporations (MNC) and local firms. As a least developed country, Bangladesh got patent exemption in the pharmaceutical industry under the British Patents and Designs Act, 1911 just after independence in 1971. Therefore, the production of generic medicine in the country began to increase. However, the rapid growth of this sector began in the 1980s. In 1981, total 166 licensed pharmaceutical factories were functioning in Bangladesh. But, the country's pharmaceutical production was then dominated by 8 multinational companies such as Glaxo, Pfizer, Hoechst and they used to fulfill the medicine of 75% of the country's demand. At that time, 25 medium-sized domestic pharmaceutical companies produced 15% and 133 companies produced the remaining 10%. All these companies used to make medicines locally from imported raw materials worth BDT 60 crore annually. Despite having 166 local pharmaceutical companies, medicines worth BDT 30 crore were imported from abroad every year in the country (Hossan, 2023). According to BIDA, Bangladesh pharmaceutical industry has grown from about USD 25 million in 1982 to about USD 3 billion as of 2020. It is assumed that domestic pharmaceutical market is expected to exceed USD 6 billion by 2025 due to increasing purchasing power of the country. Currently there are 271 Allopathic, 205 Ayurvedic, 271 Unani, 32 Herbal and 79 Homeopathic drug producing pharmaceutical companies in Bangladesh which contribute to the country's GDP around 1.83 percent (Hossan, M. A., 2023 and BIDA, 2023).

Bangladesh pharmaceutical industry is supervised and monitored by several government and regulatory bodies. Directorate General of Drug Administration (DGDA) is the drug regulatory authority of the country under the Ministry of Health and Family Welfare of Government of the People's Republic of Bangladesh. Bangladesh Association of Pharmaceutical Companies (BAPI) is the main body of representing the pharmaceutical companies of Bangladesh since its inception in 1972. However, Bangladesh pharmaceutical industry has experienced significant growth and development over the years after 1980s. For

instance, robust growth, generic medicines, domestic market, export potential, regulatory environment, research and development and industry associations are the major areas of growth and development. Overall, the Bangladesh pharmaceutical industry has made significant progress in terms of affordability, quality and innovation. The industry plays a vital role in meeting the healthcare needs of the population. Meanwhile, Bangladesh pharmaceutical industry has emerged as a key player in the global pharmaceutical market. A lot of changes took place over the past 34 years for pharmaceutical industry. To cope up with these changing situations and compliance from various regulatory authorities, the leadership expectation bar has been considerably and consistently raised throughout this period within Bangladesh pharmaceutical industry (Khan, 2023).

Objectives: The study aims to observe the nature of the leadership practices in Bangladesh pharmaceutical industry. Therefore, the main objectives are:

1. To highlights the nature of the leadership practices in Bangladesh pharmaceutical industry
2. To put forward the necessities and challenges encountered in Bangladesh pharmaceutical industry in relation to leadership practices.

Methodology: Interview with different stakeholders of the pharmaceutical industry and focus group discussion (FGD) are considered as the primary sources of data to compile the article. Research journals, newspapers, magazines, yearly report of the pharmaceutical company, unpublished research theses and books are examples of secondary sources that are used in the present study. Besides, analytical methods have been applied to interpret the data.

Discussions and Findings: According to Oxford Dictionary, leadership defines action of leading a group of people or an organization. On the other hand, a leader is he who guides, inspires and influence others to achieve shared objectives or visions. Besides, a leader should have traits such as honesty, empathy, resilience and decisiveness. Moreover, effective leaders possess good communication skills, problem solving ability, adaptability and also have the ability to confront crisis management if situation demands (Nikhil, 2022). Therefore, decision makers of Bangladesh pharmaceutical industry starting from medical promotion officer (MPO) to top level management need to execute these leadership skills in different forms. For example, transformational leadership, visionary leadership or servant leadership styles are being practiced by the leadership of different pharmaceutical company basing on their organizational culture or settings (George, et. al., 2016).

Since we are moving out at the time of technological advancement, therefore, many human skills have been replaced by the machines or robots. But till the date leadership cannot be replaced by the robots or machines even if humanity comes with some flaws and imperfections. Because, leadership is highly related to individuals empathy, awareness and wisdom (Hougaard et. al.,2024). Thus, understanding the knowledge of leadership practices is essential for any fast growing organization or industry to drive success and create positive work environments (Arthur, 2023). Unlike other organizations in and around the world,

leaderships or executives of Bangladesh pharmaceutical industry are also required to have appropriate leadership practices through various levels of the management (Islam, 2018).

Leadership Practices in Bangladesh Pharmaceutical Industry: The pharmaceutical industry faces challenges finding their leaders who are responsible for massive change taking place. Leaders in this sector are assigned to dominance over ever-changing environment and uncertainty. Pharmaceutical executives need to credibly motivate their teams to carry out the tasks. Therefore, they need to comprehend many different leadership styles and their effective impacts on the areas of change within pharmaceutical industry. Seven types of leadership style can be effective for the pharmaceutical executive of Bangladesh pharmaceutical industry in terms of development of their team members and organizations such as visionary, bureaucratic, strategic, participative, transformational, situational and laissez-faire leadership Style (Minhas, 2022 & Anugwu, 2023).

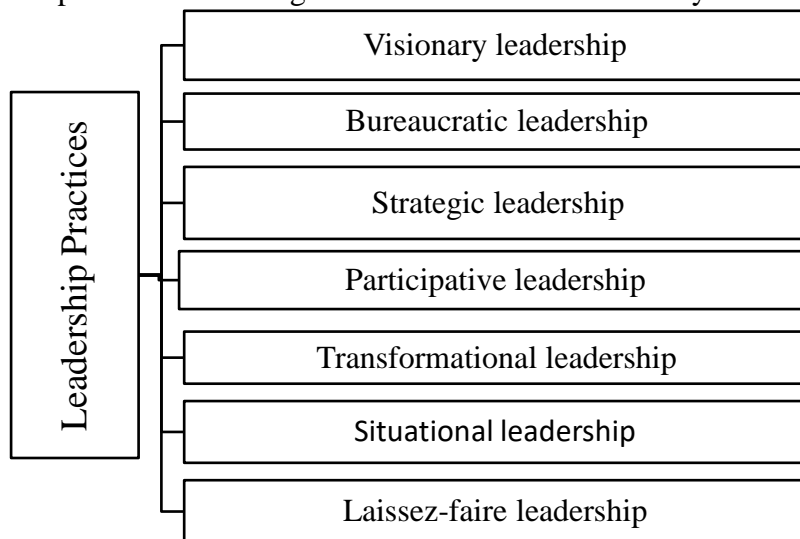
Visionary leaders are often associated with significant innovation, transformation and change within their organizations or industries. Visionary leaders are essential for pharmaceutical companies. They are not only responsive to the changes of today but are actively shaping the future plan. Visionary leadership can assist the executives of Bangladesh pharmaceutical industry for their future assignments or portfolios and can keep themselves prepare to confront any new changes. Bureaucratic leadership entails with strict adherence to rules, regulations and established procedures within an organization. Bureaucratic leaders ensure that employees follow procedures precisely. This leadership style is often found in large and complex organizations where consistency, quality control and compliance with laws and standards are paramount. This leadership can help the industry to comply with all relevant legal and regulatory requirements. Strategic leadership involves making decisions that anticipate future challenges and opportunities to achieve long-term objectives. Strategic leaders are forward-thinking, innovative and deal with complex environments. Leaderships of Bangladesh pharmaceutical Industry adopt this strategy to manage threats and accept changes to legal regulations and guidelines imposed by the government and the concern authority. Participative leadership emphasizes teamwork and shared goals within the organizational boundaries. It is based on collective efforts to find out the most effective solutions. This type of leadership values collaboration, encourage open communication, and establish trust and mutual respect among team members, departments and beyond (Minhas, 2022 & Anugwu, 2023).

Transformational leaders work to inspire and motivate their team members to achieve best outcomes by transforming their beliefs, values and capabilities. Transformational leaders focus to elevate the interests of their followers. Executives of Bangladesh pharmaceutical industry can enhance their employees' motivation, morale and working efficiency with their full potential following this style. Situational leadership is a flexible and adaptive leadership style that is based on the situation and can develop the level of their followers' adjustment. Situational leaders can be more critical in pharmaceutical industry due to their inherent ability for the facing unpredictable challenges. Laissez-faire leadership is relatively hands-off technique or skill. Leaders take one step back and get involved when

necessary. The core concept of this style is that employees have autonomy and flexibility to make decisions, solve problems and manage their own work. Laissez –faire leadership is only effective in the pharmaceutical industry if employees are highly skilled in their respective field of work (Minhas, 2022 & Anugwu, 2023).

Leadership practices in Bangladesh pharmaceutical industry are shaped by the unique challenges and opportunities present in the industry (FGD, Interview). Leaders of this sector can encourage open communication and teamwork to ensure alignment towards common goals. So, recognizing the value of different leadership styles can help all pharmaceutical organizations to lead not only effectively but also to be ready for any eventuality or uncertainty. Since Bangladesh Pharmaceutical Industry emphasizes strict adherence to regulatory requirements of the Bangladesh Drug Administration (DGDA) and international regulatory agencies therefore, leadership in this sector has to focus on to the adherence of the company’s rules and regulations. Besides, leaderships in Pharmaceutical Industry engage themselves to the welfare of society such as healthcare access, education, environmental sustainability, and community development to make a positive impact beyond their commercial objectives (Waghmode, 2022).

Figure-1: Leadership Practices in Bangladesh Pharmaceutical Industry



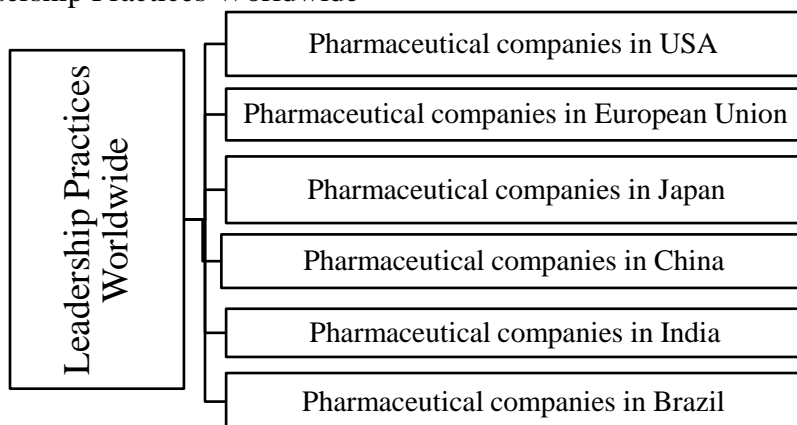
Sources: Researcher himself, 2024 based on Minhas, 2022 & Anugwu, 2023.

Leadership Practices in the Global Pharmaceutical Companies: Leadership styles in the pharmaceutical companies can vary basing on cultural, regulatory and market differences in different countries (Takahashi & Watanabe,2021; Johnson & Smith, 2022, Patel & Kumar, 2022; Martinez & Renard,2023, Zhang & Liu and Silva & Costa, 2024). However, some overarching principles remain consistent in this situation. Leadership practices in pharmaceutical companies across the globe are common. For example, USA is already known for it’s innovative pharmaceutical industries. Leadership in US pharmaceutical industry often emphasizes entrepreneurship, innovation and focused on Research and

Development (R&D). Companies navigate complex regulatory frameworks overseen by the Food and Drug Administration (FDA) and prioritize market-driven strategies. Besides, European pharmaceutical companies often focus on collaboration with academic institutions and government agencies for R&D. Leadership here emphasizes adherence to strict regulatory standards set by the European Medicines Agency (EMA) and a commitment to ethical marketing practices. On the other hand, pharmaceutical leadership often involves a strong emphasis on long-term planning, relationship-building and consensus decision-making in Japan. Companies prioritize quality and safety which are adhered to the regulations set by the Pharmaceuticals and Medical Devices Agency (PMDA).

Leadership in Chinese pharmaceutical companies is rapidly evolving with a continuous focus on innovation, internationalization and compliance with global standards. Companies often face challenges related to intellectual property rights and regulatory reforms by the National Medical Products Administration (NMPA). On the contrary, Indian pharmaceutical companies are known for their strength in generic drug manufacturing. Leadership here often emphasizes cost-effectiveness, operational efficiency and agility in navigating complex global markets. These are adhered to regulations set by the Central Drugs Standard Control Organization (CDSCO). However, pharmaceutical leadership in Brazil prioritizes access to healthcare and affordability. Companies focus on developing drugs for tropical diseases and ensuring compliance with regulations set by the National Health Surveillance Agency (ANVISA). Despite regional differences, effective leadership in pharmaceutical companies worldwide typically involves driving innovation, ensuring regulatory compliance, prioritizing health and safety and finally, foster a culture of ethics and corporate responsibility. The Figure-2 shows the leadership practices in the pharmaceutical companies worldwide:

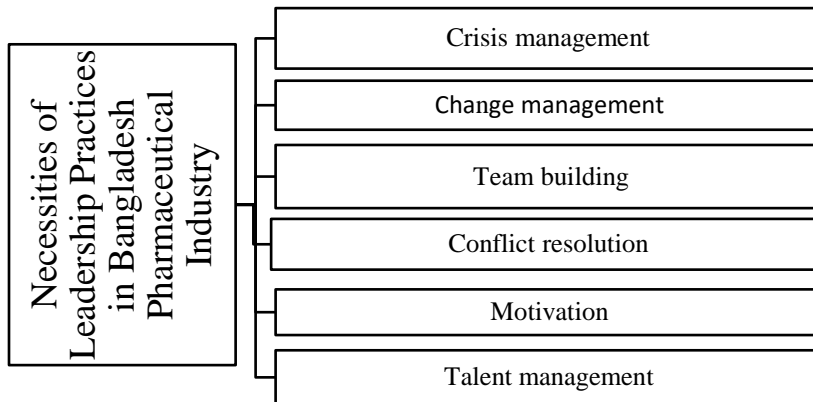
Figure-2: Leadership Practices Worldwide



Sources: Researcher himself, 2024 based on Takahashi & Watanabe,2021; Johnson & Smith, 2022, Patel & Kumar, 2022; Martinez & Renard,2023, Zhang & Liu and Silva & Costa, 2024.

Necessities of Leadership Practice in Bangladesh Pharmaceutical Industry: Leadership practice is crucial in the pharmaceutical industry of Bangladesh (FGD). The leadership style adopted by team leaders or executives in the pharmaceutical industry can have a significant impact on various aspects of the business. Some of the instrumental factors for leadership practices in Bangladesh pharmaceutical industry are crisis management, change management, team building, conflict resolution, motivation and talent management. As a consequence, implementation of appropriate leadership style at right times becomes critical during crisis moment. In the pharmaceutical industry, leaders need to make tough decisions in response to regulatory changes, product recalls, or other emergencies. A leadership style that promotes transparency, accountability and the ability to make timely and well-informed decisions can help to navigate such situations effectively. On the other hand, the pharmaceutical industry undergoes continuous change due to evolving regulations, technological advancements and market dynamics. Leadership styles that embrace change, encourage innovation and foster a learning mindset are essential in effectively managing and navigating these changes. Leaders need to guide their teams through transitions, inspire adaptability and encourage continuous improvement. In addition, the pharmaceutical industry often requires cross-functional collaboration and teamwork. Leadership styles that prioritize team building and collaboration facilitate effective teamwork. Leaders who promote a cooperative and inclusive culture encourage employees to work together, leveraging their diverse skills and expertise to achieve common objectives. Besides, conflict can arise in any workplace even in the pharmaceutical industry. Effective leadership styles help to manage and resolve conflicts constructively. Leaders who possess strong conflict resolution skills, collaboration or problem-solving approach can address conflicts, maintain team harmony and promote a positive work environment. In this way, leadership styles influence employee motivation and productivity. Leaders who exhibit a transformational leadership style can inspire employees through a shared vision, intellectual stimulation and individualized support. This fosters a sense of purpose and commitment among employees which may positively impact overall organizational performance. However, leadership styles are crucial in talent management within the pharmaceutical industry. Effective leaders identify and nurture high-potential employees, provide mentoring and growth opportunities. It also creates a pipeline for future leadership positions. Leadership styles that focus on developing and retaining talent may contribute to the long-term success and sustainability of pharmaceutical companies (Nguyen & Thompson, 2021; Brown & Smith, 2022; Kumar & Lee, 2022; Fernandez & Choi, 2023; Martinez, 2023 and Watson, 2024).

Figure-3: Necessities of Leadership Practices in Bangladesh Pharmaceutical Industry

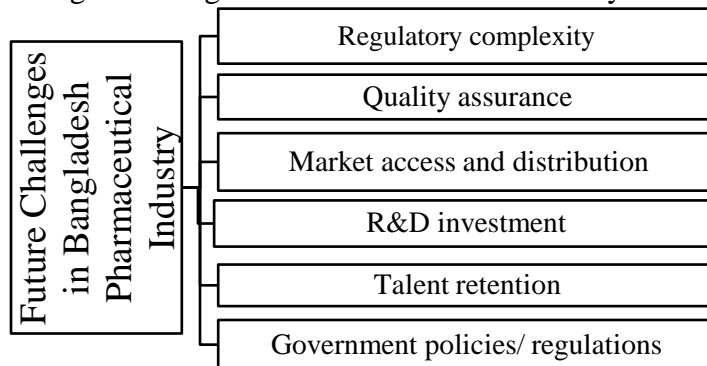


Sources: Researcher himself, 2024 based on Nguyen & Thompson, 2021; Brown & Smith, 2022; Kumar & Lee, 2022; Fernandez & Choi, 2023; Martinez, 2023 and Watson, 2024.

In summary, application of appropriate leadership styles is an imperative for the Bangladesh pharmaceutical industry. Because it provides right direction of industry, motivates its employees, helps to make right decisions, manages sudden change, and build external relationships. Therefore, effective leadership styles may contribute to the success, and sustainability of Bangladesh Pharmaceutical Industry employing high potential employees as well (Rahman & Chowdhury, 2023).

Future Challenges for Leadership Practices in Bangladesh Pharmaceutical Industry:

Leaderships of Bangladesh pharmaceutical industry may face various future challenges (FGD). Some of the leadership challenges specific to Bangladesh's pharmaceutical companies are regulatory complexity, quality assurance, market access and distribution, R&D investment, talent retention and government policies/ regulations. The pharmaceutical industry is highly regulated and leaders of this industry face challenges in navigating complex and frequently changing regulatory frameworks. Adhering to international standards while complying with local regulations requires a keen understanding of the legal landscape. Besides, ensuring the quality of pharmaceutical products is critical. Leaders must implement robust quality control measures, invest in technology and infrastructure and adhere to international quality standards to maintain the reputation of the industry. For that reasons, accessing markets and establishing efficient distribution networks, both domestically and internationally, can be challenging. Leaders need to address logistical issues and explore strategic partnerships to enhance market reach. Investing in R&D is crucial for innovation and long-term sustainability. Leaders may face challenges in allocating resources for R&D while managing the cost-effectiveness of drug production. Another challenge in the pharmaceutical industry of Bangladesh is an attracting and retaining skilled professionals. Leaders need to focus on talent development, offer competitive compensation and create a conducive work environment to retain key personnel. Lastly, government policies and regulations can impact the profitability of pharmaceutical companies. Leaders must engage with policymakers to provide input on regulations ensuring access to affordable medicines (Rahman, et. al., 2022 & Rashid, 2023).

Figure-4: Future Challenges in Bangladesh Pharmaceutical Industry

Sources: Researcher himself, 2024 based on Rahman, et. al., 2022 & Rashid, 2023.

Conclusion: In conclusion, leadership in Bangladesh pharmaceutical industry faces a myriad of challenges and opportunities. As the industry continues to evolve, leaders need to adopt a proactive and adaptable approach to ensure sustained growth and competitiveness. Navigating complex regulatory landscapes, retaining skills manpower and managing global competition are key challenges that demand strategic vision and effective decision-making. Leaders or decision makers of Bangladesh pharmaceutical industry must prioritize quality assurance, invest in R&D and build resilient supply chains to meet international standards. Besides, their ability to ethical leadership practices is crucial for maintaining credibility in the international collaborations. Thus, pharmaceutical companies will be able to stay ahead in the global market (Rashid, 2023 & Zighan, 2023).

Management in all level of Bangladesh pharmaceutical industry should make continuous collaboration with government bodies for adhering their rules and regulations to ensure compliance. Effective leadership will play a pivotal role in shaping the future of this sector. Leadership in this industry requires a holistic and forward-thinking approach. Appropriate leadership approach will take into account not only business strategies but also ethical considerations and social responsibility. Finally, acknowledging and practicing different styles of leadership in different situations, leaders can position their companies as certain sustainable development sector in the apex of the success (Chakma, 2024).

References:

- 1) Abasilim, U.D., Gbervbie, D.E. & Osibanjo, O.A. (2019). Leadership styles and employees' commitment: empirical evidence from Nigeria. *Sage Open*, 9 (3).
- 2) Al-Jedaiah M.N.S. (2021). The effect of strategic leadership in crisis management effectiveness: an exploratory study on Al-hikma pharmaceuticals company Jordan. *Tikrit Journal of Administration and Economics Sciences*, 17(53), 2.
- 3) Amanchukwu, R.N., Stanley, G.J. & Ololube, N.P. (2015). A review of leadership theories, principles and styles and their relevance to educational management. *Management*, 5(1), 6–14.

- 4) Arthur, B. (2023). Leadership styles. *Journal of Entrepreneurship, Management and Innovation*, 11(8), 181.
- 5) Bangladesh Bureau of Statistics (BBS) Report, 2018.
- 6) Chakma, J.(2024). Pharma sector shows signs of recovery, *The Daily Star*.
- 7) George, P. A., Mark, M., Lynette, R. M., Kathryn K. N., P., Usha S. & Hershey, S. B. (2016). The role of servant leadership and transformational leadership in academic pharmacy, 25; 80(7), 113. <https://doi: 10.5688/ajpe807113>
- 8) Hossan, S. (2023). Pharmaceutical industry of Bangladesh: Prospects and future challenges. *Business Inspection*. <https://doi:10.6084/m9.figshare.23932113>
- 9) Hougaard, R., Carter, J. & Stenbridge, R. (2024). The best leaders cant' be replaced by AI. *Harvard Business Review*.
- 10) Islam, S., Rahman, A. & Al-Mahmud, A. K. (2018). Bangladesh Pharmaceutical Industry: Perspective and the Prospects. *Bangladesh Journal of Medical Science*, 17(4), 519. <https://doi:10.3329/bjms.v17i4.38306>
- 11) Jalil, A., Ullah, M. S., Islam M. T. & Tareq, M. (2017). Analysis of skill levels in the pharmaceutical sector of Bangladesh. National Skills Development Council Secretariat (NSDCS); Dhaka, Bangladesh.
- 12) Johnson, A. B. & Smith, C. D. (2022). Innovation and leadership in the US pharmaceutical industry. *American Journal of Pharmaceutical Economics*, 15(3), 245-260.
- 13) Khan, S. A. & Rahman, M. H. (2023). Navigating regulatory challenges: leadership adaptations in the Bangladesh pharmaceutical sector. *Journal of Pharmaceutical Policy and Practice*, 16(2), 101-112. <https://doi.org/10.1186/s40545-023-00458-z>
- 14) Leslie, J. B., & Palmisano, K. (2020). Leadership challenge. *The Pharmaceutical Center for Creative Leadership*.
- 15) Man, A., Soc, S., Clara, C., Okolocha, C., Chika, C. & Anugwu, C. (2023). Leadership styles and employee productivity in pharmaceutical companies in Nigeria. *Advance Journal of Management and Social Sciences*, 07(1).
- 16) Martinez, E. F. & Renard, L. M. (2023). Collaborative R&D in European pharmaceutical companies. *European Pharmaceutical Review*, 29(1), 75-89.
- 17) Minhas, M. (2022). Valuable Leadership Styles for Pharmaceutical Executives. *Xtalks*.
- 18) Monira, M. (2019). A handful of companies dominate pharma market. *The Financial Express*.
- 19) Nikhil, P. (2022). What is leadership? Definition, meaning and importance. *EMERITUS*.
- 20) Patel, S.K. and Kumar, R. (2022). Operational excellence in India's generic pharmaceutical sector. *Journal of Indian Pharmaceutical Innovation*, 12(3),134-148.
- 21) Popescu, C. R. G. (2022). Positive and constructive contributions for sustainable development goals. *IGI Global (1st Ed.)*, 11, 181-199.

- 22) Rahman, M. K. & Chowdhury, T. H. (2023). Leadership styles and their impact on the sustainability of the pharmaceutical industry in Bangladesh. *Bangladesh Journal of Pharmaceutical Management*, 15(3), 112-130.
- 23) Rahman, M., Abd Wahab, S. & Abdul, L. A. (2022). Organizational sustainability: Issues, challenges and the future of Bangladesh pharmaceutical industry. *Journal of Future sustainability*, 2, 157-166. <https://doi:10.5267/j.jfs.2022.11.001>.
- 24) Rashid, H. (2023). Problem and Prospect of Pharmaceuticals Industry of Bangladesh amid LDC Graduation. *South Asian Journal of Social Studies and Economics*, 20,173-188. <https://doi: 10.9734/SAJSSE/2023/v20i4751>.
- 25) Silva, A. C. & Costa, M. B. (2024). Healthcare access and pharmaceutical innovation in Brazil. *Brazilian Journal of Pharmaceutical Studies*, 9(1), 88-102.
- 26) Takahashi, Y. & Watanabe, S. (2021). Leadership and quality management in Japanese pharmaceutical sector. *Journal of Pharma Innovations in Japan*, 4(2), 112-127.
- 27) Waghmode, M., Gunjal, A. & Patil, N. (2022). Social management of pharma products for sustainable development. <https://doi: 10.4018/978-1-6684-7499-0>.
- 28) Zhang, H. & Liu, W. (2023). Innovation and compliance in the Chinese pharmaceutical industry: A new era. *China Pharmaceutical Review*, 17(4), 200-215.
- 29) Zighan, S., Dwaikat, N, Alkalha, Z.& Abualqumboz, M. (2023). Knowledge management for supply chain resilience in pharmaceutical industry: Evidence from the middle east region. *The International Journal of Logistics Management*, <https://doi:10.1108/IJLM-05-2022-0215>.

Websites:

- 1) Ministry of Health and Family Welfare. *Pharmaceutical Industry Overview: Production Statistics and Economic Contribution*. Dhaka: Ministry of Health and Family Welfare, Government of Bangladesh.
- 2) Bangladesh Association of Pharmaceutical Industry (BAPI). *Overview of Pharmaceutical Industry in Bangladesh*.
- 3) Bangladesh Investment Development Authority (BIDA). *Pharmaceutical Industry Growth Report 2023*.