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Trends in Research on Ready-Made Garments (RMG) Sector in Bangladesh - A Broad-Based Review

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ABSTRACT

This study adheres to a broad-based review of different research studies carried out by various researchers in the ready-made garment (RMG) sector of Bangladesh. The study conducts extensive library work on the available secondary sources of relevant research studies of the garments sector. Many of the studies have highlighted the inherent problems of the garments sector relating to internal weakness like working condition, non-compliance, unfair employees' relation, low productivity, supply chain difficulties, unfair market competition and other global challenges. There is ample opportunity to develop our garments sector through providing employee's motivation, developed SCM practices, cost control devices, promotional measures like product development and diversification, through market research and increased CSR activities to facilitate the achievement of SDGS.

Keywords: *Working Condition, Motivation, Internal relation, HRM, Productivity, SDGS, CSQ activities etc.*

Introduction

The garments Industry contributes 11% of GDP and 80% of our foreign exchange earnings.¹ Global market share is 7.9%. Bangladesh ranks second in garments export having export of \$45 billion in 2022.²

Vietnam had the 3rd position with a market share of 6 per cent and exports worth \$31 billion in 2023, China had the 1st Position. China was the world's largest exporter of readymade garments (RMG) last year, with a 31.6-per cent market share and exports worth \$165 billion, while Bangladesh retained its second position, with exports worth \$38 billion—15.55 percent lower year on year (YoY), according to the World Trade Organization (WTO).³

With the adoption of Industry 4.0 technologies, we are going to follow automation, artificial intelligence & data analytics to increase our efficiency, through cost reduction and quality improvement.

We have to face shortage of gas creating drop in production. 30 % of capacity remains idle due to such shortage, and many of the plants remain closed. But exports rose by 2.86% to \$43.85% billion during July 2023 to May 2024.

We have over 4,000 factories. Our abundant and cost-effective labor force have created good international apparel brands. Rising gas prices, inflation, and natural gas shortages are the major barriers to production efficiency.

4 million of people are employed in the RMG sector, directly or indirectly. Creation of employment opportunities, reduction of poverty, and empowerment of rural women are the major contributions. Lack of safety in the working environment, use of harmful chemicals, high temperatures, physical violence, etc., are the major difficulties faced by the human resources engaged in the garments sector. Cotton i.e. the main raw materials are supplied from China, India, and USA. We need good partnerships with global suppliers. Share of women Workers was 53.65%, in 1980 but it declined to 54% in 2021 (March 12, 2023). Our markets are in USA, UK, Germany, Italy, France, Spain, Netherland, Canada & Belgium. 3723 RMG Companies in March, 2022. Employing more than 4 million workers, contributes 10.35% to GDP & 7% annual growth. ⁴

Objective of this Study

1. To review the various types of research studies done earlier as to highlight the inherent problems of the RMG sector
2. To explore the possible ways for developing our garments sector based on multi-dimensional analysis and insights provided by various researchers.

Need of The Study

The textile and ready-made garment sector is the economic lifeline of Bangladesh, yielding approximately 86% of our exports and around 18% of our consolidated GDP. We have absolute dependency on unskilled & semi-skilled workers demanding for better Wages & other facilities, as per the provisions mentioned in Industrial Laws 2006. There are around 4.5 million workers, 70 % are women, 40% workers are unskilled, 5% are highly skilled. Foreign experts are hired from neighboring countries like Singapore, Taiwan, Vietnam, Pakistan, Sri Lanka. This sector has 12% annual growth.

Garments sector has shown increasing trend since 1980. It is the main foreign exchange earners. Still agitation of workers due to non-compliance with industrial laws demand for settlement of minimum wages, benefits of better working condition, formation of trade union, welfare facilities, security measures, improved man management relation, participative decision making etc. are the ongoing needs of this flourishing sector.

Bangladesh is competing against other rapidly rising competitors offering the same variety of fundamental products. Bangladesh is effectively losing its competitive advantage against its competitors. This sector has evolved because to access to extremely low labor costs. In 2011, the average wage in Bangladesh was 46% and 51% lower than that of India and Indonesia, the third and fourth major garment exporters at that time, respectively. The wage rate in Bangladesh remained stagnant from 2001 to 2011. The recent 65% increase in the minimum wage in December 2013 undoubtedly closed down the gap with competitors. Conversely, utility expenses have also increased. Our productivity is lower than that of China and Vietnam. They used advanced technology, modern concept of production management, good quality management and better use of time. Major problems of this sector are uncertainty, challenging, fierce competition with other garments supplying countries. There are enough opportunities for Bangladesh to increase its export in US and EU through quality products. We need greater increase in productivity, capability and quality through confirming social and environmental compliance.

Methodology

The study basically follows desk study based on an extensive review of various research studies done earlier, narrating their objectives of the study, major findings, conclusions, and

given policy implications. Various journals, periodicals, and publications of Ministry of Finance, Ministry of Planning, Bangladesh Bank, etc. are followed for collection of relevant studies. After thorough review, conclusions are made to develop specific suggestions for the development of the garments sector based on the strengths, weaknesses, opportunities, and challenges in the global market.

Major Observations

Azad⁵ had a study on “Satisfaction of Garments Workers towards Current Salary Structure in Bangladesh: An Analysis” He narrated the satisfaction of the garment workers for the present salary structure, based on both primary and secondary data collected using particular questionnaire for 80 sample units located at Savar, Mirpur, Rupganj, Joydebpur, Gazipur, Kachpur, Ashulia etc. Most workers are dissatisfied with the prevailing salary structure. He suggested for considering the workers demand regarding their opportunities for development and security measures.

⁶Ministry of planning asserts that the textile industry is the largest labor-intensive manufacturing sector of the country which employs about 5 million people. Textile and apparel sectors are fastest growing sector of Bangladesh Economy. Private textile and garments are the largest foreign exchange earning sector of Bangladesh. Textile and apparel together employ about 5 million, 80% are female. More than 80% of the total exports of the country comes from textile and garments sector in 2016-17. BD earned \$28.15 billion from ready-made garments sector. 100 % of the domestic yarn and fabric requirements are met by primary textile sector. About 85-90% of knit yarn and 35-40% of woven fabrics requirement for RMG exports are met by PTS.

Nawaz and Rahman⁷ had an important study on “Factors contributing to employee absenteeism in garment industries of Bangladesh, a study on some selected garments”. They found that employee absenteeism is one of the contributing factors for reduction in productivity. Major causes of absenteeism are health conditions, monotonous and boring job, unsound working condition, unpleasant behavior in workplace, inadequate transport facilities. Statistical results are that only the first three variables are important for prediction of absenteeism. Virtually working condition is the greatest contributor to unusual absenteeism.

Syed Kabir⁸ wrote an article on Future Growth of Garments Industries in BD. He found that growth rates were 17% during 1995-2000, 8% during 2000-2005, 14% during 2005-2010 and 10% during 2010-2013. Major reasons for decline in growth are that price of garments is declining. Though the quantity of garments is increasing, the quantity growth is not as good as expected due to ongoing remediation work. Many factories have been shut down due to major non-compliance of building safety.

Year	No of factory
2010-11	5150
2011-12	5400
2012-13	5876
2013-14	4222
2014-15	4296
2015-16	4328

Weakness of BD garments industry are low productivity, poor management, post- recession USA & EU market, huge wastage, rejection, excess production, high production cost,

absence of talented and skilled manpower in the area of industrial engineering, production management, quality management and industrial accounting, etc.

Ferdousi and Jasmine⁹ had a study on “Rights of the women workers in garments sector in BD: A study of law and reality”. The purpose of the study was to know the nature of the rights and privileges ensured in the existing law of BD. They used two types of questionnaires, one for the woman workers and other for the employers. They interviewed 100 women workers of six areas of two districts. They followed case study method, i.e., Focus Group Discussion (FGD) for data collection. Findings are that most of the workers are not aware of their rights and responsibilities. They are afraid of losing their jobs. They are reluctant to answer freely.

Chowdhury et al.,¹⁰ had a study on “Prospects and Problems of RMG Industry: A Study on BD”. They found that the advancement of the Garments Industry is regarded as a priority sector in the development policies of numerous countries, particularly in Bangladesh. The young entrepreneurs are involved in several segments of the small and medium-scale garment sector, producing goods such as shorts, trousers, shirts, sweaters, blouses, skirts, t-shirts, jackets, sportswear, and numerous more casual and fashionable products in response to evolving trends. This study aims to examine the opportunities, challenges, and potential solutions within the Readymade Garments Industry in Bangladesh. This paper's findings indicate that Bangladesh possesses the potential to generate substantial foreign currency by advancing its ready-made clothing industry. The research also proposes measures for alleviating the ongoing crisis in the apparel business.

Masud et al.,¹¹ authored an article on “The Overall Practices of CSR in Garment Sectors of Bangladesh: A study of Some Compliance Situation as well as Some Failure in Garment Industry of Bangladesh and Possible way out”. They found that at present, the country generates about \$5 billion through exporting garment products. 4 million workers are employed of which 90% are women. The ready-made garment (RMG) sector has bright prospect in employment generation and foreign exchange earnings. But corporate social responsibility (CSR) practices in this area are not up to the mark. Working conditions and safety of workers are questionable. To increase the social compliances, we need better human resources management (HRM), government monitoring, social control and pressure of different stakeholders in our society.

Barman¹² had a study on “Employment Relation Issues and Worker’s Satisfaction: The Readymade Garments Industry of Bangladesh Perspective”. He found that in the garments sector of BD the increase in workers satisfaction can enhance the garments productivity and help the achievement of Sustainable Development Goals (SDGs). The employment relation practices of Australia can be an idle model for our garments sector.

Nipu¹³ wrote an article on “Conceptual Framework of SCM: Constraints and Remedies”. He narrates that SCM is the good integration of both internal and external operating activities to develop cost and price efficiency through providing customer satisfaction in USA Kanban System and MRP are used as a major tool of SCM. Purchase decision follow quality, price rate, lead time, shipment facility, delivery etc. Prudent purchasing, logistic network are integrated to develop target efficiency through good use of supply chain practices.

Mannan et al.,¹⁴ in a study on “External Pressure on Readymade Garments (RMG) Industry for Disclosing Corporate Social and Environmental Reporting in Bangladesh” found that

there is a significant positive relationship between external factors and the level of corporate social and environmental reporting (CSER) practices. Four variables explained 62.7% of corporate social and environmental reporting of RMG industry. There is need for more consistency in reporting practices to satisfy the expectations of our stakeholders.

Datta¹⁵ (2008) in a study on “Impact of Backward-Linkage Industry on Productivity of Export-Oriented RMG Industry in Bangladesh.” found that there is enough scope to develop our garments sector through developing the backward linkage industries.

Bhowmik & Das¹⁶ assert that the company collects the raw materials (fibers, dye etc.) from the nature and disposes the industrial wastages directly to the environment. Our garments sector can arrange the alternative sources of energy. Solar energy and biomass energy etc. can be the best alternatives energy.

According to the Bangladesh Garment Manufacturers and Exporters Association¹⁷ (BGMEA), in Bangladesh ready-made garment (RMG) exports reached \$29.825 billion in the first eight months of 2022, reflecting a 38.39% increase compared to the corresponding period in the previous year. Problems of garment sector are increasing competition with Sri Lanka, Vietnam and India. Political turmoil led to the closure of many of the garment units. USA had 21.50% of the exports followed by EU, like Spain, Germany, Italy, France, Belgium and Netherland is the 2nd largest importer followed by UK and Canada. Bangladesh's shares of garment exports in the global market are projected to increase by 10 percent by 2025. There is also scope of good benefit due to change in global sourcing pattern as many countries are trying to diversify their supply chains. Sri Lankan financial services CAL forecasts that there is good opportunity for Bangladesh garment exports in 2024 and that might reach to \$56 billion by 2026. China has the top position having 50% of global textile and apparel exports. China has thousand years of history in textile and garments products.^{18 & 19}

USA	20.64%
Germany	15.71%
UK	11.63%
Spain	6.19%
France	5.96%

Source: World Bank

We need investments in Technology and Innovation, Automation, Sustainable Production Practices and Value-Added Products to have good edge in global market.²⁰

Chowdhury, A. H. M. Y. (2019)²¹ mentioned that the Readymade Garments Industry (RMG) is the biggest sector in Bangladesh that generates the highest amount of foreign exchange. Following the Rana Plaza, Tazrin Fashion fire disaster, and Holey Artisan Bakery tragedies, global buyers have increased the regulatory requirements for this industry (Rayhan, 2016).

The supply chain finance (SCF) approach involves multiple businesses in a supply chain, including external service providers, working together to generate value by collaboratively managing the flow of financial resources at an inter-organizational level through planning, directing and controlling, as claimed by Hofmann (2005) (Tseng et al., 2019).²²

Supply Chain Finance (SCF) has the potential to greatly improve the financial transactions inside the Ready-Made Garment (RMG) industry in Bangladesh. By incorporating Financial Supply Chain Management (FSCM) principles and utilizing technology, stakeholders can experience enhanced transaction transparency and improved efficiency in settlements (Hanif et al., 2022).²³

Supply chain management (SCM) involves the coordination of material, information, and financial flows, where financial flows are considered a key component. Financial flows encompass the movement of money, capital invested in physical goods (such as inventory), and financial data (such as invoices) as described by experts (Blount, 2008; Martin & Hofmann, 2019a).²⁴

Liu et al. (2015) stated that SCF affects a company's ability to implement SD in supply chain networks by utilizing creative financing methods and establishing connections between supply chain participants (Vafa Arani & Torabi, 2018).²⁵

More & Basu (2013)²⁶ conducted a case study that highlighted that SCF encountered a variety of complicated issues due to competitive pressure. Hence, it is crucial to thoroughly examine and comprehend the obstacles in order to formulate effective strategies for supply chain finance (SCF) with the aim of mitigating the risks associated with declining competitiveness.

The ineffectiveness of supply chain finance (SCF) has been attributed to a lack of understanding and coordination among the parties involved, as demonstrated by studies conducted by More and Basu (2013) and Arani and Torabi (2018) (Tseng et al., 2019).²⁷

The majority of previous research that discussed SCF solely focused on the economic aspect, in which SCF mostly addresses immediate financial needs related to accounts payable and receivable, with a specific focus on solutions offered by banking institutions (Tseng et al., 2019).²⁸

Gomm (2010)²⁹ argued that SCF does not encompass the involvement of a financial institution, but instead, it is primarily concerned with the management of working capital, inventory, and financing of fixed assets. Therefore, the SCF perspective has a focus on the short term and does not provide solutions to the multiple difficulties faced by enterprises (Caniato et al., 2016). Therefore, it is imperative for SCF to prioritize all the relevant factors in order to attain smooth production, which will lead to financial benefits for the industry, and for this, it is crucial to thoroughly examine the individual components involved.

Foreign trade financing in Bangladesh's banking system is comprised of import and export finance, which means supply chain financing [SCF]. Banks promote export finance by offering a wide range of solutions to help clients manage their international payments and associated risks, as well as providing the necessary operating capital. Exporters and trade finance service providers are encountering more challenging issues due to the expansion of export financing operations. This growth has led to the launch of new products and a rise in complexity. Due to their underdeveloped national financial markets and limited access to global financial markets, developing nations face significant challenges in cross-border trade transactions. This is particularly evident in the lack of export finance, which can become a barrier to global trade and impede sustainable development (GDI, 2015).³⁰

Ibrahim and Hamid ³¹wrote an article on supply chain management practices and supply chain performance effectiveness. They studied 150 manufacturing corporations in Sudan through using structured questionnaire. They found that practices of supply chain management have impact the supply chain performance. For testing the hypothesis, they used five independent variables like integration, information sharing customers management suppliers' management and responsiveness. For judging the supply chain performance dependent variable was taken as the effectiveness. Nag and Ferdausy' ³² tried to judge the relation between supply chain management and supply chain performance. They used Strategic supplier partnership, Customer relation, information sharing approach, quality information and Postman concept etc. They interviewed 213 executives of different organizations. Findings are that-there was a positive correlation between supply chain management practices and its performance.

Suhong Li et al., ³³ wrote on the impact of supply chain management practices on competitive advantage and organizational performance. The object of the study is to show the relation among supply chain management practices competitive advantage and organizational performance specific model is used to test the hypothesis. Data were collected from 196 organizations. They found that competitive advantage bears a direct positive impact on organizational performance.

Akhter B. et al., ³⁴ prepared an article on "Social drivers of sustainable supply chain management: A review essay." The objects were to find out the social drivers of effective supply chain management. They found that social factors are highly significant in global market.

Salim and Tusar ³⁵ had a study on Sustainable supply chain management practices and challenges of agri-business in Bangladesh. They found that competitiveness in supply chain management practices influences production efficiency, quality products at a reasonable cost, favoring the sale of items at a competitive cost as per the expectation of customers. Hossain and Uddin³⁶ in their article on "Cash incentive in the RMG sector of Bangladesh: Impact & Implication" found that there is a positive correlation between cash incentives and export earnings from this sector. Such incentive should continue to retain the competitive edge of the sector in global market.

William J. Stevenson ³⁷ opines that SCM refers to facilities, functions & activities relating to Procurement, Production and distribution to the customers. Basic components are strategy formulation, procurement, supply management, demand and logistics management. Major steps involved are optimizing the level of outsourcing, procurement, production and customer relationship management along with problem like and management of risk, location & immediate response.

Conclusion

From the extensive review of multi-dimensional Research studies done earlier. by local and outside researchers, it could be concluded that there is enough scope to develop our garments sector Controlling Cost of production, supply Chain activities, employees' motivation, providing more cash incentives for export earnings.

Product development and diversification, market research, use of latest production technology, developing CSR activities, infra structural facilities etc. Promotional measures are also needed to compete in global market through ensuring TQM, Balanced Score Card,

Artificial intelligence, MIS activities, AIS activities and developing the available human resources, Industrial relation must be developed through providing motivational measures as to enhance employees' productivity and facilitate the achievement of our desired goals.

References

1. Bangladesh Garment Industry's Contribution to GDP 2024 | LinkedIn. (n.d.). Retrieved 21 October 2024, from <https://www.linkedin.com/pulse/bangladesh-garment-industrys-contribution-gdp-2024-poshgarments-abkqc/>
2. Bangladesh's global market share in clothing exports rises to 7.9%. (2023, August 1). The Business Standard. <https://www.tbsnews.net/economy/bangladeshs-global-market-share-clothing-exports-rises-79-675394>
3. (www.fibre2fashion.com, n.d.)
4. <https://www.bgmea.com.bd/page/AboutGarmentsIndustry>
5. Md. Abul Kalam Azad. (n.d.). Satisfaction of Garments Workers towards Current Salary Structure in Bangladesh: An Analysis | Dhaka University Journal of Business Studies. University of Dhaka, Vol. 35 No. 2 (2014). Retrieved 5 October 2024, from <https://journal.library.du.ac.bd/index.php/DUBS/article/view/2181>
6. BGMEA. (2020). BGMEA | About Garment Industry of Bangladesh. <https://www.bgmea.com.bd/page/AboutGarmentsIndustry>
7. Nawaz, A.S.M.S & Rahman, Factors Contributing to Employee Absenteeism in Garments Industries of Bangladesh: A Study of Some Selected Garments. May-June 2013, Vol- XI 1, No-3, Cost & Management
8. Kabir, S. F. (2018). Future growth of Garments industry in Bangladesh. THE COST AND MANAGEMENT, 46(01).
9. Ferdousi, M.S & Yasmin, S Right of the Women Workers in Garments Sector in Bangladesh: A Study of Law and Reality
10. Chowdhury, M.M. et al, Prospects and Problems of RMG Industry: A Study on BD". Research Journal of Finance and Accounting. Vol-5, No-7. 2014.
11. Masud, A., Alam, M., & Hossain, M. (2014). The Overall Practices of CSR in Garment Sectors of Bangladesh A study of Some Compliance Situation as well as Some Failure in Garment Industry of Bangladesh and Possible way out. 10, 36–56.
12. Barman, M. D, Employment Relation Issues and Workers Satisfaction: The Readymade Garments Industry of Bangladesh Perspective". School of Business, Bangladesh Open University Journal of Business Studies, Vol-6, No-2, July-Dec 2020, P 115-120
13. Nipu,(2022), Conceptual Framework of SCM: Constraints and Remedies. Journal of Law and Human Rights, Institute for Development of Human Rights and Legal Education, (IDHRLE), Vol-2, No.2, Page, 82-88
14. Mannan, A., Islam, S., & Rubel, M. R. B. (n.d.). External Pressure on Readymade Garments (RMG) Industry for Disclosing Corporate Social and Environmental Reporting in Bangladesh.
15. Datta, U. (n.d.). The impact of Backward-Linkage industry on Productivity of export - oriented RMG industry in Bangladesh. Retrieved 5 October 2024, from https://www.academia.edu/23317868/The_impact_of_Backward_Linkage_industry_on_Productivity_of_export_oriented_RMG_industry_in_Bangladesh
16. Bhowmik, S., & Das, P. (2020). Renewable Energy Supply Options for Textile Business in Bangladesh. 53–60
17. BGMEA. (2020). BGMEA| About Garment Industry of Bangladesh. <https://www.bgmea.com.bd/page/AboutGarmentsIndustry>
18. <https://businesspostbd.com/economy/rmg/bgmea-eyes-10-global-apparel-export-surge-by-2025>

19. Textile News, Apparel News, RMG News, Fashion Trends | Textile Today. (2016, July 31). Textile News, Apparel News, RMG News, Fashion Trends. <https://www.textiletoday.com.bd/category/textile-world>
20. Staff Correspondent. (n.d.). Bangladesh's global RMG export share to reach 10% by 2025. Retrieved 4 October 2024, from <https://businesspostbd.com/economy/rmg/bgmea-eyes-10-global-apparel-export-surge-by-2025>
21. Chowdhury, A. H. M. Y. (2019). Implementation of Supply Chain Management in Bangladesh Readymade Garments Industry: The Challenges.
22. Hofmann, E., 2005. Supply chain finance: some conceptual insights. *Beitrage Zu Beschaffung Und Logistik* 203–214.
23. Hanif et al., 2022. Financial Supply Chain & its Implementation in the Banking Sectors of Bangladesh. *Journal of economics, management and trade*, 69-84.
24. Martin, J., & Hofmann, E. (2019). Towards a framework for supply chain finance for the supply side. *Journal of Purchasing and Supply Management*, 25(2), 157–171. <https://doi.org/10.1016/j.pursup.2018.08.004>
25. Liu, Y., Liang, L., 2015. Evaluating and developing resource-based operations strategy for competitive advantage: an exploratory study of Finnish high-tech manufacturing industries. *Int. J. Prod. Res.* 53 (4), 1019–1037.
26. More, D., Basu, P., 2013. Challenges of supply chain finance: a detailed study and a hierarchical model based on the experiences of an Indian firm. *Bus. Process Manag. J.* 19 (4), 624–647.
27. Arani, H.V., Torabi, S.A., 2018. Integrated material-financial supply chain master planning under mixed uncertainty. *Inf. Sci.* 423, 96–114.
28. Tseng M.-L., Lim M. K., Wu K.-J., 2019. Improving the benefits and costs on sustainable supply chain finance under uncertainty. *International Journal of Production Economics*, 218, 308–321
29. Gomm, M. (2010). Supply Chain Finance: Applying Finance Theory to Supply Chain Management to Enhance Finance in Supply Chains. *International Journal of Logistics-Research and Applications - INT J LOGIST-RES APPL*, 13, 133–142. <https://doi.org/10.1080/13675560903555167>
30. Gender Development Index (GDI), (2015), UNDP.
31. Ibrahim, SB. and Hamid AA. (2014) Supply chain management practices and supply chain performance effectiveness. *International journal of Science and Research (IJSR)* ISSN-2319-7064.
32. Nag, T and Ferdausy, (2021) Supply chain management practices and supply chain performance in the manufacturing industries of Bangladesh: An Empirical study *Logistics and supply chain review* 2 (1) 2021, ISSN-2692-5559.
33. Suhong Li et al, (2006) The impact of Supply Chain Management Practices on Competitive Advantage and Organizational Performance. *OMEGA, The International Journal of Management*, 34, pp-107-124
34. Akhter, B et al (2020) Social drives of sustainable supply chain management: A review essay, vol-48, no-4, July- Aug 2020.
35. Salim Z.R and Tusar ASM (2018), Sustainable Supply Chain Management Practices and Challenges of Agri. Business in Bangladesh. *IBUT Review, A Multidisciplinary Academic Journal*, vol-1, no-3
36. Hossain, R & Uddin MB Cash incentive in the RMG sector of Bangladesh: Impact & Implication *Prime University Journal*, Vol 2. No 1, June 2008. P-49-50
37. Stevenson, W.J. *Operations Management* Mcgraw Itin International edition, 12th ed. 2019-20