

Impact of Non-economic Factors on the Development of the Apparel Sector in Sri Lanka

Colombo Economic Journal (CEJ)
Volume 1 Issue 1, June 2023: 69-86
ISSN 2950-7480 (Print)
ISSN 2961-5437 (Online)
Copyright: © 2023 The Author(s)
Published by Department of Economics,
University of Colombo, Sri Lanka.
Website: <https://arts.cmb.ac.lk/econ/colombo-economic-journal-cej/>

S.R.S.D. K. Weerawansa¹, and T.U. Hewage²

¹Department of Economics, University of Colombo
shashi@econ.cmb.ac.lk

²Department of Mathematics, University of Colombo
thilan@maths.cmb.ac.lk

Received: 01 December 2022, **Revised:** 14 April 2023, **Accepted:** 27 April 2023.

Abstract

The Sri Lankan apparel industry has transformed itself into a high-end value chain manufacturer within a short period of time. This study explored the influence of non-economic factors on productivity, competitive and comparative advantages as the influencing factors on the development of the sector. A thematic assessment of nine leading apparel exporters was conducted. The findings reveal that the productivity, competitive and comparative advantages were effectively synergized by focusing on external (non-economic) factors, such as: physical and psychological wellbeing of employees, buyer loyalty, quality of ancillary and supporting services, industry attitude, social responses, ethical supply sourcing, and organizational culture. Further, the success story of the apparel industry began when the journey was turned around from the brink of disintegration and collapse owing to the ingenuity of a few industry leaders who showed courage, innovativeness, and developed strategy to fight back as a collective body. However, there has not been an adequate support from policy establishments. The study envisages that the findings will be helpful for future developments in the apparel industry as well as for designing appropriate policies supporting the industry.

Keywords: Non-economic factors, Productivity, Leadership, Organizational culture.

1. Introduction

Growth in the apparel sector having driven by supply protection under the quota system gradually faced global competition once the quotas were eliminated under the

World Trade Organization (WTO) rules¹. While the industry gained much needed productivity advantages, first, due to transfer of labour from informal sectors and later through the learning curve backward initiation, it managed to evolve into new horizons of productivity dynamics in the post quota periods where trade was almost entirely governed by the principles of international trade and the competitive advantages that the sector has managed to harness.

As the WTO rules brought in a new era of global trade, the Sri Lankan apparel sector underwent a phase of transformation within the period 1995-2005. This dramatic transformation was led by a new strategy of productivity enhancement where the industry reorganised its production structures while enhancing its position in the value chain. Empirical evidence reveals that foreign direct investments created opportunities for countries to acquire a knowledge of liberalisation policies, acceleration of privatisation programmes, advanced technology and a higher level of trade and exports (Alfaro & Chauvin, 2016). However, adoption of inconsistent policies by different political regimes, resumption of hostilities between the LTTE² and the government, resulted in a significant retardation of the productivity growth (Bandara & Karunaratne, 2010).

One of the strengths of the apparel industry is its ability to produce high-quality goods at competitive prices, combined with a flexible industry structure, which is capable of servicing world-famous brands. Sri Lankan apparel industry is also admired for its exemplary standards of social compliance. Low productivity in Sri Lanka has been one of the main concerns of policymakers (Bandara & Karunaratne, 2013). Therefore, it is important to analyze the present level and past trends of productivity by evaluating the factors of productivity in the apparel industry in Sri Lanka. Since non-economic factors have been overlooked in the literature, findings of this study may bridge the information gap.

Productivity is the only meaningful measure of industrial competitiveness (Khurana & Talbot, 1998), especially in the manufacturing sector, due to its vital link to the organizational profitability (Dresch et.al., 2018). Therefore, a study of productivity and its sources can provide vital inputs to a firm for improving its competitiveness

¹The World Trade Organization (WTO) is an intergovernmental organization that is concerned with the regulation of international trade between nations. The WTO officially commenced on 1 January 1995 under the Marrakesh Agreement, signed by 124 nations on 15 April 1994, replacing the General Agreement on Tariffs and Trade (GATT), which commenced in 1948. It is the largest international economic organization in the world.

² Tamil Tigers, byname of Liberation Tigers of Tamil Eelam (LTTE), guerrilla organization that sought to establish an independent Tamil state, Eelam, in the northern and eastern Sri Lanka. The LTTE was established in 1976 by Velupillai Prabhakaran as the successor to an organization he had formed earlier in the 1970s.

(Joshi & Singh, 2010). As key parameters of the competitive sustenance and the growth of the sector, the discussion of non-economic factors for growth in the apparel sector is embarked upon in this research study.

The apparel sector is the only manufacturing export sector in Sri Lanka, with an earning capacity of over US\$ 5 billion per year. The common belief is that this sector has so far failed to achieve its true potential where Sri Lanka was expected to increase its export revenue of apparel to US\$ 8.5 billion by 2020 (EDB, 2015). Vietnam planned to reach its textile and apparel export income of US\$ 50 billion by 2020 (Akter, 2018), while Bangladesh intended to reach US\$ 50 billion by 2021.

Sri Lanka was one of the few countries, outside East Asia, to have embarked on a clear policy shift from an import-substitution-based industrialization to an export-oriented one. “Given the decisive policy shift in 1977, and the policy continuity during the ensuing years, Sri Lanka provided a test case for the impact of policies inducing a transition from inward to an outward orientation based on industrial growth and adjustment” (Atukorala & Rajapathirana, 2000, p. 543). “However, the policy shift lost momentum in the early 1980s, first because of an ‘unfortunate’ shift in policy priorities toward ‘politically appealing’ investment projects and, subsequently, due to escalation of the ethnic conflict” (Atukorala & Rajapathirana, 2000, p. 546).

About 70 per cent of industrial exports, which is around 46 per cent of the total export earnings, is covered by the Apparel sector in Sri Lanka while import of textile and textile articles only account for 12 per cent of total imports (CBSL, 2015). Advance technical and managerial skills together with the access to low-cost land and the skilled and literate workforce provide the industry with a comparative advantage in the region. Higher levels of English language proficiency among the managerial levels and moderate levels of language ability among the lower grades, are usually greatly appreciated by foreign investors.

Since the setting up of the WTO, the growth of the apparel sector has been mainly driven by the initiatives of the industry without adequate support from the policy establishments. One possible reason for this policy apathy could be attributed to inadequate objective research and knowledge on the crucial dynamics of the sector. Hence, this study is undertaken with an intention of identifying non-economic factors affecting the productivity of the apparel sector as one such vital area for future policymaking and development.

Apparel industry in Sri Lanka had to transform itself gradually from an essentially supply-push based structure to one that had to compete in a highly competitive globalized market. Evidently, Sri Lanka’s apparel industry had the benefit of the, then prevailing, quota system and state support, in certain instances being declared the key

manufacturing sector by the policymakers. The 200 Garment Factory Program³ (GFP) in the 1990s is an example of an outcome of such policies. However, the institutionalization of the WTO in 1995 followed by the transitional phase of 10 years until 2005 exposed the Sri Lankan garment industry to be self-reliant in all aspects as any other trade competing sector. The proposition considered in this research is to explore the contribution of non-economic factors to the survival of Sri Lankan apparel industry despite the adverse predictions and not having the economies of scale compared to its Asian counterparts.

The study focuses the characteristics and the determinants of the growth with specific focus on productivity as a principal explanatory variable that could shed light on the historical trends, including the reported resilience, displayed by the apparel industry.

The objectives of the study are to analyze the non-economic factors that have led to productivity growth in the apparel sector with evidence of emerging structural and organizational characteristics that could be identified with the period of distinct structural shifts and discuss the industry insights that could be used in formulating policies for the growth of the apparel industry to achieve the status as a principal value chain cluster in South Asia.

The rest of this paper is organized as follows: presenting the theoretical and empirical literature in Section 2, the conceptualization in Section 3, the methodology in Section 4, findings and discussion in Section 5, and Section 6 is the conclusion and recommendations.

2. Literature and theories

Sri Lankan Apparel industry has been subject to much discussion by many researchers and a lack of publications on various outstanding aspects of the industry particularly about the determinants of the composition of total factor productivity is a grave concern. Literature reveals that the productivity of the garment sector in Sri Lanka has been examined on the basis of partial productivity, for instance in terms of labor productivity and capital deepening. Total Factor Productivity (TFP) entails all the inputs which measure the ratio of aggregate output to all inputs. Increases in TFP usually result from technological innovations or improvements which are a part of non-economic factors not taken into account in general. According to Solow (1956), the importance of TFP in the long-term growth of an industry is well documented in theoretical and empirical studies done over the years.

3 In 1992, the BOI offered an attractive incentive package to promote the establishment of new apparel factories and entice existing apparel producers to move to the rural areas of Sri Lanka under the government's '200 Garment Factory Programme'

Broadly speaking, productivity can be defined as the amount of output produced per unit of input. The three commonly used primary measures of productivity are: Labor Productivity - the amount of output produced per unit of labor input; Capital Productivity - the amount of output produced per unit of capital input; and TFP also known as multi-factor productivity (MFP) - the amount of output produced per unit of a mix of inputs. In general, TFP is defined mostly as the portion of output not explained by the number of inputs used in production.

Isaksson (2007) indicates education, health, infrastructure, imports, institutions, openness, competition, financial development, geographical predicaments, and absorptive capacity (including capital intensity) to be the most important non-economic factors influencing the TFP. Low productivity in the manufacturing sector of the South Asian region is often attributed to labor unrest, poor working attitudes, and inefficient organizational culture/management in the literature. They are considered as non-economic factors influencing labor productivity. Ineffective use of resources, poor information flow and non-productive activities prevalent in the Sri Lankan manufacturing industry have been identified as the key factors which are hindering the productivity (Vilasini et al., 2014). Thereby it is imperative to analyze the contribution of each variable towards productivity.

Isaksson (2007) stated that in the long run output growth depends entirely on knowledge creation or technological progress. The nexus between TFP and knowledge is particularly weakened by a few factors; the institutional quality, the amount of openness and flexibility. The belief of modern growth models is that endogenous knowledge creation allows for continuous growth. Joseph Schumpeter (1942) has expressed similar views of 'creative destruction', applying it to the Swedish textile and wearing apparel sector and has found results that support the notion.

Small economies such as Sri Lanka do not produce state-of the-art technology themselves but mostly acquire from elsewhere. Technology is mainly transferred through trade in goods or hiring specialized expatriates who transfer knowledge while working alongside the local workforce. This was evident in primary interviews which reveal that top companies often hire specialized expatriates or enter into strategic partnerships in product development mainly to acquire such knowledge. Technology is 'appropriate' only for countries with similar capital-labor ratios (capital intensities) as per Basu and Weil (1996). TFP does not solely mean technological improvement but also improvement in quality of inputs such as Human Resource Development (HRD) and Human Resource Management (HRM).

A well-educated and healthier population is in a better position to acquire and absorb knowledge. Hence, apart from institutional or organizational settings, human capital

and R&D are imperative to enhance country's absorptive capacity. Henceforth, according to this view, Benhabib and Spiegel (1994) state that the level of human capital impacts a country's capacity to develop its own technological innovations, which in turn is an element of TFP growth. Human capital, in the form of education, has an important effect on TFP for its role as a determinant of an economy's capacity to carry out technological innovation (Romer, 1990) for developing countries, in particular, to adopt (and adapt and implement) foreign technology. A well-educated and well-trained population helps to acquire relevant knowledge. While higher education is important for technological innovation basic education is important for learning-capacity and utilizing information as revealed in the literature. Further, Black and Lynch (1996) demonstrate the significance of educational quality for productivity in manufacturing and non-manufacturing sectors, based on 1,600 manufacturing and 1,300 non-manufacturing plants in the US.

The major content theorists A H Maslow, C P Alderfer, F Herzberg and D McGregor seek to determine the individual's choice of goals and hence why certain things are more important to some people than others. Most influential of all the proponents of Maslow's approach is of the view that individuals are motivated by five levels of need: physiological, safety and security, social, esteem or ego and self-actualization which is arranged in a hierarchical order. According to Maslow (1942), the first levels (physiological and safety) had to be satisfied before the next level of social need and that would motivate employees to work hard and increase productivity.

The second theory of motivation is the two-factor theory developed by Frederick Herzberg (Herzberg, 1966). Motivators or intrinsic factors such as drive for achievement and advancement, being treated in a caring and considerate manner and receiving positive recognition are inherent in the job itself. The hygiene factors relate to the conditions of work rather than the work itself and improvement of hygiene factors prevent dissatisfaction, but do not increase satisfaction in the long run. The factors responsible for creating satisfaction (motivating factors) mainly sense of achievement on completing work, recognition, responsibility assumed, varied work, prospects for promotion etc. encourage better quality work thus increase in the strengths of motivating factors would significantly improve effort and performance which subsequently lead to higher productivity.

Given all of the above determinants, it would be of no use if organizations do not have a flexible organizational structure. As cited by Isaksson (2007), Fagerberg acknowledges that a flexible production structure (in other words, the ability to undertake structural change) is an important element in productivity growth because it allows an economy to quickly redistribute its resources to take optimal advantage of changing patterns of technological progress, and that structural change provides an

important impetus to growth. This structural change has been occurring in the Apparel sector, i.e. from labor intensive to capital and technology.

Hence, an effective innovation system is important for productivity growth. Chen and Dahlman (2004) define it as “a network of institutions (for example, universities, public and private research centers as well as a policy think-tanks), rules and procedures that influence the way by which a country acquires, creates, disseminates, and uses knowledge”. The main role of an innovation system is to foster R&D that, in turn, leads to new products, processes, and knowledge. Studying a sample of 136 large Taiwanese firms for the period 1994-2000, Wang and Tsai (2004) found that R&D investment was a significant determinant of productivity growth. Investment in R&D has been found to be positively correlated to the productivity growth as shown in the studies done by Hall and Mairesse (1995) on 197 French firms between 1980 and 1987 and Dilling-Hansen et al. (1999) on 226 Danish manufacturing firms in 1993 and 1995. Nevertheless, somewhat contradictory results are identified by Bartelsmann et. al. (1996), in the case of the Netherlands, in terms of the importance of new technology for productivity growth. An important factor behind labor productivity growth was instead shown to be capital deepening. Comin (2004) questions the impact of R&D on TFP growth. The world’s leading country in R&D, the US, finds that less than 3-5 tenths of one percentage point of TFP growth can be attributed to R&D, a result very much contrary to the view that R&D is the main source of long-term growth.

Ahn (2001), it is not innovation input (in other words, R&D investment) per se that counts for productivity, but the actual use of innovation output - in other words, use of advanced technology. However, there is an interesting inference by Geroski (1991) which shows that innovations have a far greater impact on the productivity growth of the end user of the particular innovation than on the innovator itself. A study done with 2,800 micro, small and medium privately-owned firms in Sri Lanka in 2008, by de Mel, et al. (2009) shows that owner ability (more educated individuals, higher logical ability), conditioning on firm size and other firm characteristics, have a significant and substantial impact on firm innovation and higher profitability. This was measured using both education and business training to assess the relationship between education, skills, and innovation.

Gullstrand (2005) indicates that a higher degree of competition from domestic or foreign producers is related to a growth in the industry especially by focusing on non-economic factors related to human capital. Gorodnichenko, et al. (2008) identify robust evidence of a positive relationship between foreign competition and innovation using enterprise-level data. Dutz & O’Connell (2013) hypothesize that foreign competitors not only pressurize local firms to innovate to maintain competitiveness but also to introduce new ideas, products and business practices

centered around non-economic factors which may spill over to local firms via market interactions. Barro (2001) emphasizes that labor quality is an important factor of productivity growth.

3. Conceptualization

Variables in the Qualitative Analysis



Figure 1: Conceptual framework: Micro Approach

As given in Figure 1, Cost of Production refers to all of the payments or expenditures necessary to obtain the factors of production of land, labor, capital and management required to produce a commodity (Guthrie & Wallace, 1969) while Strategy is a plan of action design to achieve a long-term or the overall aim. Product and Market diversification –Market diversification means extending one’s business offering to new market segments not previously targeted. Product diversification means adding new products or services to expand the business offering within existing markets. Organizational culture - organizational culture includes an organization’s expectations, experiences, philosophy, as well as the values that guide member

behavior, and is expressed in the member self-image, inner workings, interactions with the outside world and future expectations. Culture also includes the organization's vision, values, norms, systems, symbols, language, assumptions, beliefs, and habits. Simply stated, organizational culture is "the way things are done around here" (Deal & Kennedy, 1983). Ethical compliance - A policy of ethical compliance helps to create a workplace culture where all employees are treated with respect. The employees are given equal access to advancement opportunities, and the workplace becomes a positive and nurturing environment, which will create strong working relationships between the staff and the management. Apart from the organizational factors it is important to investigate the societal factors such as the role of government and the role of apparel-related bodies.

The role of the state is to ensure socio political and economic stability in the country, maintain law and order, avoid inconsistencies in development policies, develop the social and physical infrastructure especially education, simplify complex regulations, remove other disincentives and offer incentives for the business firms to operate competitively with the rest of the world by adopting social market economic strategies.

The role of apparel-related bodies and the leaders of various firms is to collaborate with the state and the people of the country to undertake the creation of a conducive environment for business to operate successfully as mentioned above, while undertaking, the improvement of productivity and global competitiveness of their individual firms to enlarge profit margins, mostly for the purpose of expanding investment, employment opportunities and export earnings in a more efficient manner.

4. Methodology

Several determinants were identified for qualitative analysis based on empirical evidence in the literature review. These competitive factors were especially important in the context of the post-MFA period where rivalry among apparel producing countries was intense. Hence, industrialists were interviewed to get their hands-on experience about different aspects of the organizational settings and workings namely, (1) cost of production, (2) strategies, (3) product and market diversification, (4) organizational culture, (5) ethical compliance, (6) role of government, and (7) role of apparel-related bodies. These factors are also considered as the most vital factors for the export performance of the garment industry in the prevailing literature (Ahmed 2009; Serra, et al., 2012).

Relevant officials of nine apparel manufacturing companies and industry associations were interviewed based on a discussion guide that was sent to them before the interview so that they would be fully equipped and aware of the information required.

The main reason for the sample size of nine (9) was to limit the study to the industry leaders who usually are the trend setters in the sector.

The study used the qualitative method of thematic analysis to analyze the data obtained from the interviews. It is about identifying, analyzing, and reporting themes within data (Braun and Clarke, 2006). Questions relating to the discussion guide were prepared on the basis of these themes. The participants provided their responses based on these themes that correspond with the literature and theory. However, some of the responses contrasted with themes that vary with literature and theory. Therefore, thematic analysis is of use for illustrating the similarities as well as differences across data and to provide novel insights (Braun & Clarke, 2006).

Table: 1 Operationalization of Variables

Concept	Variable	Identifiers
TFP – Organizational Factors	Cost of Production	Cost related labour, process, utilities, capital, and material Sourcing
	Strategies	Considered as strategies, innovation & design, sustainability & ethical practices, and customer centricity
	Product & Market diversification	Market diversification means extending one's business offering to new market segments not previously targeted while product diversification is adding new products or services to expand the business offering within existing markets.
	Organizational Culture	Organizational Culture is organization's expectations, including its vision, values, norms, systems, symbols, language, assumptions, beliefs, and habits
TFP- Societal Factors	Ethical compliance	Ethical supply sourcing
	Role of government	Type of government support experienced and expected
	Role of apparel-related bodies	Level of satisfaction with relevant regulatory bodies

Source: Developed by the researcher based on the literature

Organizational and social factors such as cost of production and strategies stated in the conceptual framework in Figure 1 have been operationalized in Table 1.

5. Findings and discussion

Apparel industry has moved up on the value chain to create the largest manufacturing and exporting business in Sri Lanka with a substantial product complexity. In this process a number of economic as well as non-economic parameters have reflected its progression.

The transformation from “sweatshop” state to what it is now against many odds and predictions gives an idea of the kind of authentic leadership qualities the industry leaders have displayed. Clearly the individual and the collective leaderships based on strategic thinking of the entrepreneurs have made a difference between perishing or prevailing. It can be suggested that this human quality could be harnessed to create a further dimension of advantage especially by introducing new entrepreneurial blood into the industry. It can further be highlighted that the market is so vast that new entrepreneurial inroads will further enhance the country’s national competitive advantage to achieve new vistas of success.

Whilst identifying the importance of individual factors in optimizing performance, the apparel manufacturing companies were seen adopting a combination of these factors depending on the nature of the competition. In particular, it was learnt that labor and machinery are not influential in isolation in enhancing productivity when it is not complemented by adequate technical know-how and communication among the participants in the supply chain.

The study depicts human resource development as a key factor in maintaining the status-quo, minimally speaking, and it is a key strategy in the expansion of the industry. It recognizes the employees, not as ‘tailoring girls’ but as a vital contributor to the economy. Therefore, it is easing the pressure of employees with flexible working days (from 6 to 5 days), medical facilities, personal hygiene workshops, beauty culture workshops, outward bound training, team building exercises, and day-care facilities for working mothers.

The study reveals factors such as buyer loyalty, quality of ancillary and supporting services, worker attitudes, learning by doing, industry attitude and social responses, ethical supply sourcing, good relationships which are commonly referred to as non-economic factors, have a significant bearing on productivity leading to an enhanced competitive advantage.

The respondents divulged the effects of a continuous transformation of the range of products, their production processes and their quality reflecting the dynamic product complexity as a character that provided its sustenance to levels it has elevated itself and the potential for higher export earnings and profitability at national and firm levels.

Authentic leadership qualities and forecasting abilities of founders and top management contribute to higher productivity. The study reveals the success of the apparel industry was turned around from the brink of disintegration and collapse owing to the ingenuity of a few industry leaders who showed courage, innovativeness, and strategy to fight back as a collective body. This displays a genuine class of entrepreneurship that Sri Lanka badly needs. Non-economic factors contributing to sustainable competitive advantage in a challenging global environment are also identified in Thematic Networks.

Smaller enterprises could be clustered around larger enterprises through appropriate backward linkages. Medium scale enterprises can focus on specialized and customized segments with enhanced capacities to shift between different orders at relative ease. They could be encouraged to work together to achieve economies of scale in production by creating a “pseudo value chain” process or something similar. Different sized factories could be within the same group of companies too. Key informant interviews revealed that promoting Middle Range Garment Factories will help the growth of the industry much faster.

The Sri Lankan apparel sector has been awarded the Global Effie Award, which is the equivalent of Oscars, in the movie industry, in the advertising world, in 2009, for its brand “Garments without Guilt” for public relations and marketing effectiveness. This was an epic opportunity to build the image of “Sri Lanka Apparel” to establish an ethical positioning. Apparel related bodies should continuously maintain the ethical credibility by effective communication mechanisms.

Further, conducive labor laws as a driver for Productivity Development and sustainable HRM practices that can enhance participation of women in the labor force and encouraging and facilitating manufacturing input material, including fabric manufacturing can also be recommended as enhancers of competitive advantage in the global market (Barney, 1991).

6. Conclusion and recommendations

Apart from economic factors there is a gamut of non-economic factors contributing to this transformation. The impact of non-economic factors on gaining a competitive advantage is explained by the answers given by the managers and employers, especially for the questions under the topics such as ‘strategies’, ‘product & market diversification’, and ‘organizational culture’.

The industry appears to suffer from logistical gaps such as labor shortages, a national identity as a global supplier of apparel in international marketing, investment locations with adequate physical access, lack of administrative support from the state, the functional authorities, and the political establishment to create efficient delivery of regulatory and procedural approvals, especially a lack of an attitude, to resolve the

inordinate delays in granting various permits. The responses proved further that large companies possess organizational competencies namely multi skilled workers, technological know-how, superior quality raw material, a worker friendly organizational culture, service levels, compliance standards and effective communication which were widely recognized by the respondents as enablers of productivity through which the operational performance is enhanced.

Currently Sri Lanka has a few designer schools providing training and degrees. The need is to realign these curricula and degrees to create designer strength and complex operations that meet the needs of the industry. As such, a way forward would be that the industry and apparel designer schools work jointly to develop the supply of top-quality designers while the industry creates a demand for such manpower. The country can no longer drive growth simply through labor augmentation. Hence, innovation and R&D will have to play a crucial role in driving it. It has to be said that this area of intervention could not be handled by the industry alone as the issues are macro dimensional. Thus, government intervention with industry participation in an innovative way is much needed. The government should improve on the programs that have been launched to support the export sectors to make them capable of expanding their exports to the EU and other markets. The areas that have to be improved on are granting of loans for technology upgrading and innovation, targeted support for market development including digital marketing, skill training and labor attraction schemes, support for quality and standards improvement, and fast-tracking approvals and certifications to enable the sector to stand on its own and be a market leader. One way to achieve these goals is to establish an entity, ideally as a state industry partnership, that undertakes specific tasks such as innovative technological developments that the apparel sector should be equipped with, within the medium and the long-term. Therefore, future studies related to higher education initiatives catering to R&D and innovation in the apparel sector together with studies analysing the effectiveness of the policy structures would be helpful in improving the productivity of the sector.

Stakeholders in the system consist not only of manufacturers and buyers, but also of the suppliers, small and medium businesses, regulatory agencies, packaging and shipping, designers and trendsetters, professional bodies representing the industry, and the policymakers. Transformation of the apparel industry in Bangladesh under the theme 'safety first' in terms of workplace safety and worker rights, increasing the annual revenue from US\$19 billion to US\$ 34 billion within six to seven years is a unique example of systems leadership in action collaborating between Governments, employers, workers, buyers, and donor agencies. It can be said that a diverse array of non-economic factors has influenced the progression of the apparel industry, with their impact even surpassing that of economic factors.

Acknowledgements

We wish to thank two anonymous referees and the editorial board for constructive criticism on the earlier drafts. Our special gratitude goes to the management staff of the apparel sector organizations, especially the firms that actively supported our research with data, surveys, and industry insights.

References

- Ahmed, N., (2009). Sustaining Ready-Made Garment Exports from Bangladesh. *Journal of Contemporary Asia*, 39(4): 597–618.
- Ahn, S. (2001), "Firm Dynamics and Productivity Growth: A Review of Micro Evidence from OECD Countries", *OECD Economics Department Working Papers*, No. 297, OECD Publishing, Paris, <https://doi.org/10.1787/054842728775>.
- Akter, A., (2018). Vietnamese textile and apparel industry moving towards US. <http://sunjintextile.com/business/vietnamese-textile-and-apparel-industry-moving-towards-us50-billion-by-2020-43.html>.
- Alfaro, L., & Chauvin, J., (2016). Foreign Direct Investment, Finance and Economic Development. *Encyclopedia of International Economics and Global Trade*, 1, 231–258.
- Athukorala, P., & Rajapathirana, S., (2000). *Liberalization and Industrial Transformation-Sri Lanka in international perspective*. New Delhi: Oxford University Press.
- Bandara, M.W.Y., & Karunaratne, N. D., (2010). An Empirical Analysis of Sri Lanka's Manufacturing Productivity Slow-Down. *Journal of Asian Economics*, 21(4), 391–403.
- Bandara, M.W.Y., & Karunaratne, N. D., (2013). Globalization, Policy Reforms and Productivity Growth in Developing Countries: Evidence from Sri Lanka. *Global Business Review*, 14(3): 429–451.
- Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management Science*, 17(1): 99-120.
- Barro, R. J. (2001). Human Capital and Growth. *The American Economic Review*, 91(2): 12-17.
- Bartelsman, E., Leeuwen, G. V., & Nieuwenhuijsen, H., (1996). Advanced manufacturing technology and firm performance in the Netherlands, *Netherlands Official Statistics*.

- Basu, S. & Weil, D., (1996). Appropriate Technology and Growth. *The Quarterly Journal of Economics*, 113(4): 1025–1054.
- Benhabib, J. & Spiegel, M. M., (1994). The Role of Human Capital in Economic Development Evidence from Aggregate Cross-Country Data. *Journal of Monetary Economics*, 34(2): 143–173.
- Black, S. & Lynch, L., (1996). Human-Capital Investments and Productivity. *American Economic Review*, 86(2): 263–267.
- Braun, V., & Clarke, V., (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2): 77–101.
- CBSL. *Annual Report - Central Bank of Sri Lanka (2015)*. Central Bank of Sri Lanka, Colombo, Sri Lanka.
- Chen, D. H., & Dahlman, C. J., (2004). *Knowledge and Development: A Cross-Section Approach*, The World Bank, New York, USA.
- Comin, D., (2004). R&D: A Small Contribution to Productivity Growth. *NBER*, 9(4): 391–421.
- Deal, T. E., & Kennedy, A. A., (1983). Corporate Cultures: The Rites and Rituals of Corporate Life. *Business Horizons*, 26(2): 82–85.
- De Mel, S., McKenzie, D., & Woodruff, C. (2009). *Innovative Firms or Innovative Owners? Determinants of Innovation in Micro, Small, and Medium Enterprises*. Bonn, Germany: Institute for the Study of Labor.
- Dilling-Hansen, M., Eriksson, T., Madsen, E.S., & Smith, V. (1999). Productivity, Competition, Financial Pressure and Corporate Governance — Some Empirical Evidence. In: Biffignandi, S. (eds) Micro- and Macrodatabases of Firms. *Contributions to Statistics. Physica-Verlag HD*, 279–296.
- Dresch, A., Collatto, D. C., & Lacerda, D. P. (2018). Theoretical understanding between competitiveness and productivity: firm level. *Ingeniería y competitividad*, 20(2): 69-86.
- Dutz, M. A., & O'Connell, S. D. (2013). Productivity, Innovation and Growth in Sri Lanka: An Empirical Investigation. *Policy Research Working Papers*, 1(1).
- EDB, (2015). *Sri Lanka Targets US \$8.5 Billion in Apparel Exports Earnings by 2020*.
- Geroski, P., (1991). [Innovation and the Sectoral](#). *Economic Journal*, 101(409): 1438-1451.

- Gorodnichenko, Y., Svejnar, J., & Terrell, K. (2008). Globalization and innovation in emerging markets. *American Economic Journal*, 2(2), 194-226.
- Gullstrand, J. (2005). *Industry Dynamics in the Swedish Textile and Wearing Apparel Sector*, Review of Industrial Organization, 26(3), 349-370.
- Guthrie, J. A., & Wallace, R. F., (1969). *Economics* (Vol. 23, The Irwin series in economics), Homewood, Australia: Homewood.
- Hall, B. H., & Mairesse, J., (1995). Exploring the Relationship between R&D and Productivity in French Manufacturing Firms. *Journal of Econometrics*, 65(1): 263–293.
- Herzberg, F., (1966). *Work and the Nature of Man*, World Publishing, New York.
- Isaksson, A., (2007). *The importance of human capital for the trade growth link*, Statistics and Information Networks Branch of UNIDO.
- Joshi, R.N., & S.P. Singh., (2010). Estimation of Total Factor Productivity in the Indian Garment Industry. *Journal of Fashion Marketing and Management: An International Journal*, 14(1), 145–160.
- Khurana, A., & Talbot, B., (1998). The Internationalization Process Model Through the Lens of The Global Color Picture Tube Industry, *Journal of Operations Management Proceedings*, 16 (2-3): 215-239
- Maslow, A. H., (1942). The Dynamics of Psychological Security-Insecurity. *Journal of Personality*, 10331–344. <https://doi.org/10.1111/j.1467-6494.1942.tb01911.x>
- Romer, P. M., (1990). Endogenous Technological Change. *Journal of Political Economy*, 98(5):71–102.
- Schumpeter, J. A., (1947). The Creative Response in Economic History. *The Journal of Economic History*, 7(2), 149–159.
- Serra, F., Pointon, J. & Abdou, H., (2012). Factors influencing the propensity to export: A study of UK and Portuguese textile firms. *International Business Review*, 21(2): 210-224.
- Solow, R. M., (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, 70(1): 65–94.
- The Apparel Story, 2017 (May – August), Bangladesh Garment Manufacturers & Exporters Association.
- Vilasini, N., Neitzert, T., & Rotimi, J., (2014). Developing and Evaluating a Framework for Process Improvement in an Alliance Project: A New Zealand Case Study. *Construction Management and Economics*, 32(6): 625–640.

Wang, J. C., & Tsai, K. H. (2004). Productivity growth and R&D expenditure in Taiwan's manufacturing firms. In *Growth and productivity in East Asia* (pp. 277-296). University of Chicago Press.

Appendix

Details of the Thematic Networks

The researchers have quoted the oral responses of the respondents where necessary to explain the themes that appeared during the process of data analysis. The outcomes are presented under such themes as the global organizing and basic theme where the researchers have briefly explained the meaning of each theme.

Table A1: Profile Details of Key Industrialists

Res.No	Designation	Company	Years of experience
R1	Chairman	A	25 years
R2	Director	B	22 years
R3	Director	C	25 years
R4	HR Manager	D	7 years
	Finance Manager	D	15 years
	Planning Manager	D	15 years
	Production Manager	D	15 years
R5	Group General Manager	E	35 years
R6	Managing Director	F	30 years
	General Manager	F	20 years
	Vice-Chairman	G	
R7	General Manager – Marketing	H	30 years
R8	Group HR Manager	I	25 years
R9	Manufacturing Director	J	23 years

Source: Developed by authors

Table A1 provides a profile detail of the research respondents. As evident above, a sample size of nine organizations was chosen for the study from the top Apparel companies where some of them are cluster companies who have been operating for over twenty years employing a minimum of 3,000 workers. Each respondent has work experience of over 15 years in the Apparel sector though not necessarily in the same organization. However, six of them have over twenty-five years of Apparel sector experience. Most of them have started their career at a lower position and subsequently had come up the ladder to the topmost positions in their respective organizations. Hence, they have wide-ranging experience in every aspect of their organization as well as an in-depth knowledge of the industry. At least two individuals in strategic and tactical management level were interviewed but taken as one individual in the overall profile, using a discussion guide.