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## SERVQUAL and Design Thinking for Continual Improvement in ESG Performance with SDG in Apparel Services

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### **Abstract**

*The purpose of this paper is to explore the SERVQUAL to identify the ways to achieve better ESG performance relevant to UNSDGs, for example, environmental aspect on SDG 13 – 15 and social aspect on SDG 5 gender equality and SDG10 remove inequality with 5 steps of design thinking to measure environmental and social impacts. This qualitative analysis employed a comparative content analysis approach to compare the ESG performance of three selected global apparel companies—H&M Hennes & Mauritz AB (HMB.ST), Industria de Diseño Textil SA (ITX.MC), and Wacoal Holdings Corp (3591.T)—using LSEG ESG scores from 2015 to 2024. The analysis follows the LSEG ESG scoring methodology, focusing on the ESG Combined Score, pillar-level performance, and controversy scores to develop higher-order analytical skills for sustainability education. In the future, it is recommended to have on-going analytical and critical thinking workshop on ESG reports for secondary, tertiary and community education for re-visiting the existing curriculum and learning workshop on critical and analytical thinking skills development outside the traditional classroom.*

**Keywords:** SDG, Design Thinking, ESG, Community Education.

### **Introduction- The Importance of Service Quality**

The importance of Service quality is not to be understated, as it is essential when it comes to attracting new customers (Azizah, 2012). Service quality also has an impact on organizations' general health, affecting things such as customer retention, reputation and financial performance (Gouws & Motala, 2019). The prevalence of services is also a testament to the importance service quality.

A service can be defined as any activity that encapsulates everything other than the physical end product. From that, one could conclude that most things purchasable are services. Supporting the previous statement, Evans and Lindsay (2016) stated that up to 80% of the U.S workforce consists of services. It is the “non- goods part of the transaction between the buyer and the seller” (Evans & Lindsay, 2016). This makes sense, as it is rare that only the physical end product is involved from a transaction. There is usually at least some degree of service, be it the cashier helping a customer package/bag an item, or a shipping service from an online purchase.

Overall, service quality should be a significant consideration due to it's the majority of what a customer would experience. Being what a customer mostly experiences, service quality contributes greatly to customer satisfaction, as stated by Timm (2005). This then in turn affects

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the points on reputation and customer retention as mentioned earlier.

### **Trends in the Service Industry**

Notable trends have developed in the service industry due to recent circumstances. The number of online-based services in place of their physical counter- parts have increased; they have seen rises in usage from 40% to 100% (De' et al., 2020). Food delivery/takeaway services such as Deliveroo are an example of such service. Due to lock-down conditions in the UK, supermarkets have started offering their products through Deliveroo, removing the necessity for close social-interaction for everyday groceries. Another example would be the rise of online E-learning in education.

The rise in online education demands the increased use of voice/video conferencing tools such as Zoom, and an increased dependence on E-learning platform like Moodle or Blackboard. The former of which is considered a “synchronous” mode of teaching and the latter being “asynchronous” (De' et al., 2020).

“Synchronous” in this context would imply the real-time nature of live video conferencing, provided by Zoom. Such increase in voice/video conferencing is also seen in the workplace, but this comes at a cost. The increase in bandwidth needed requires digital infrastructure that can handle the load (De' et al., 2020). This issue within the context of E-learning will be explored in the next section.

### **Applying SERVQUAL in Urban Tourism**

SERVQUAL (Parasuraman et al., 1988) is service quality analysis tool that can be applied from the perspectives of expectations of different layers of stakeholders and closing the loop for customer satisfaction. From here onwards, the term “Apparel Services (AS)” will refer to both synchronous and asynchronous E-learning applications that an organization chooses to use. The reduced set of 5 dimensions of SERVQUAL be listed as such:

- Tangibles
- Reliability
- Responsiveness
- Assurance
- Empathy

Using the 5 dimensions of SERVQUAL, the following application of the SERVQUAL questionnaire was adapted from the article by Gouws & Motala (2019) to fit context of urban tourism in response to the relationship mentioned by Puri & Singh (2018) – FUNCTIONAL QUALITY, TECHNICAL QUALITY AND IMAGE with highlights on

*Service Concept* – Kotler & Keller (2012) “service is an elusive act that acts as a crucial medium for a company offer to attain the customers, where it does not shift the tenure form the service providing party to the customer”.

*Quality Concept* – Solomon (2009) defines it as one of the things that the buyer looks for when they pursue an offer.

*Service Quality Concept* – The earliest recorded model of service quality measurement was developed by Gronroos (1984), where service quality is explained in terms of features connected with technical or outcome aspects and process or functional related aspects (Kang & James, 2004, Balasingham, et al., 2006, Laroche et al., 2004)

*Service in Tourism Industry* – According to Zhao & Di Benedetto (2013), some tourism scholars have recommended that the service quality role is very important when investigating the problem of tourist dissatisfaction and when trying to attract new tourists or secure revisit intentions.

To order to have more understanding on industries related to SDG and ESG, for example tourism on SDG#3 wellness / SDG#8 economic impacts and apparel industry on waste management and traceability for SDG#12 responsible production and consumption / SDG#13 climate change, this paper intends to move from **service/tourism** to **apparel**, aligning business practices with the UN's Sustainable Development Goals (SDGs) and ESG report disclosure reports, circularity, ethical supply chains to transform potential risks into strategic value of organizations.

### **Apparel Services & SDGs (2020–2030)**

Based on UN Sustainable Development Goals “SDG #5 : Achieve gender equality and empower all women and girls, SDG#10: Reduce inequality within and among countries, SDG# 13: Take urgent action to combat climate change and its impacts, SDG#14: Conserve and sustainably use the oceans, seas and marine resources, and SDG#15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss that innovative and transformative approaches are needed to enhance apparel industry practitioners, learners in secondary and tertiary education, and the community on green apparel services, emphasizing sustainability, resource efficiency, and environmental stewardship, and social aspects on SDG5 and 10.

Research in the apparel sector emphasizes a major transition from traditional liner supply chain management (SCM) to demand chain management (DCM) and the circular economy to meet the UN 2030 deadline. The selected goals driving better ESG performance with SDG frameworks include:

- SDG 12 (Responsible Production and Consumption): Focuses on transparency, traceability, and reducing textile wastes through 3Rs and upcycling green apparel services.
- SDG 8 (Decent Work and Economic Growth): Addresses fair labor practices, safe working environments, and supply chain accountability with women labour empowerment and removing inequality with improvements in occupational health and safety.
- SDG 13 (Climate Action): Encourages brands or startups in apparel industry to measure and reduce their carbon footprints.

The following table on SERVQUAL with selected SDGs for industry practitioners and educators

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to consider to align with the UN Partnerships for SDGs platform<sup>3</sup>:

Tangibles	<ul style="list-style-type: none"> <li>• The aesthetics of green apparel services applications on 3Rs and upcycling workshops on SDG4.7 to increase users and practitioners' experiences.</li> </ul>
Reliability	<ul style="list-style-type: none"> <li>• The connection quality of voice/video conferencing application enable legible visuals, and intelligible audio during 3Rs and upcycling green apparel services with site visits.</li> <li>• The connection quality of voice/video conferencing on SDG#9 innovations, ensuring you are connected to the class/lecture to upgrade apparel industry practitioners and learners</li> </ul>
Responsiveness	<ul style="list-style-type: none"> <li>• The green apparel services applications run on software, hardware and AI on SDG#9 innovations and SDG#12 responsible production and consumption with relevancy to users, apparel industry practitioners and learners</li> <li>• apparel industry practitioners and learners providers' responses on green services within a <i>reasonable time span</i>.</li> </ul>
Assurance	<ul style="list-style-type: none"> <li>• Apparel industry practitioners and learners are familiar enough with the 3Rs and upcycling green apparel service design on SDG#4.7 and SDG#5 and 10 and offer hybrid mode and immersive experiences on time.</li> <li>• Apparel industry practitioners and learners are familiar enough with the software to deliver 3Rs and upcycling workshop design with SDGs explanation and services at a similar quality learning.</li> </ul>
Empathy	<ul style="list-style-type: none"> <li>• Apparel industry practitioners and learners are able to give 3Rs and upcycling green apparel services with SDG#4.7/5/10/12/13 to 15 with <i>equal attention and support</i>.</li> <li>• Apparel industry practitioners and learners are able to adapt their 3Rs and upcycling green apparel services with sustainable lifestyle on apparel choices.</li> </ul>

<sup>3</sup> SDG Actions Platform: <https://sdgs.un.org/partnerships>

## **Methodology**

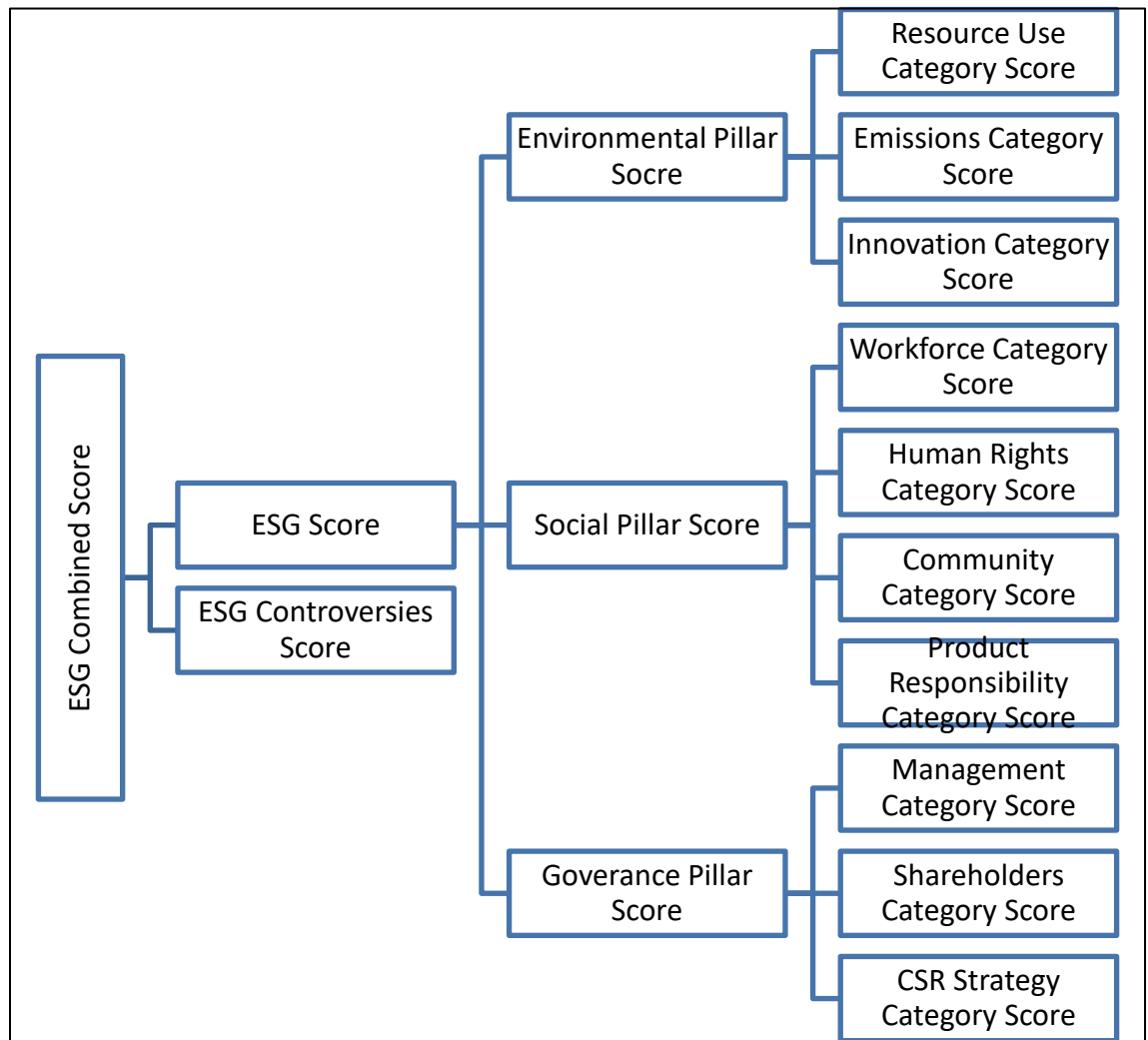
This study adopts a longitudinal comparative analysis to examine the ESG performance of selected global apparel companies over the period 2015–2024. Instead of relying solely on qualitative content analysis, the research utilises secondary quantitative data from LSEG ESG scores, enabling a systematic comparison of trends across firms and over time. Three global apparel companies, H&M, Inditex, and Wacoal, were purposively selected to represent different ESG trends within the apparel industry, including market leaders, volatile performers, and improving firms.

The analysis focuses on the ESG Combined Score, individual pillar scores (Environmental, Social, and Governance), and ESG Controversies Score, allowing for a multi-dimensional evaluation of sustainability performance. A trend-based and cross-case analytical approach is employed to identify patterns, divergences, and areas of strength and weakness across the three firms. This method enables the study to move beyond descriptive reporting and provide comparative insights into how ESG performance evolves over time and how different dimensions interact to influence overall outcomes.

### **Methodology – LSEG ESG Score Calculation**

The LSEG ESG scoring methodology is a transparent, data-driven process that converts over 870 raw data points into comparable scores across 10 categories, which are grouped into three pillars: Environmental (E), Social (S), and Governance (G). The overall ESG Combined Score integrates pillar performance with controversy adjustments. For a detailed breakdown of the score structure, refer to *Figure 1*.

Figure 1: The LSEG ESG Score Structure<sup>4</sup>



The category scores are rolled up into three pillar scores – environmental, social and corporate governance. Note that not all ESG categories are equally important for every industry. Therefore, ESG pillar score is a relative sum of the category weights, which vary per industry for the environmental and social categories. For governance, the weights remain the same across all industries. The pillar weights are normalised to percentages ranging between 0 and 100. To summarize, the ESG score can be seen as a weighted average of pillar scores or category scores as below:

<sup>4</sup> LSEG (October 2024), Environmental, Social and Governance scores from LSEG. LSEG Data & Analytics.

$$\begin{aligned}
 \text{ESG Score} &= \sum (\text{Pillar Score} \times \text{Pillar Weight}) \\
 &= \sum (\text{Category Score} \times \text{Category Weight})
 \end{aligned}$$

This is a grand weighted average of all 10 category scores, reflecting both performance and materiality.

On top of that, LSEG ESG scoring methodology also capture the controversies in the ESG controversies score. This score penalizes companies for negative ESG-related events reported in the media. It is calculated based on 23 ESG controversy topics. During the year, if a scandal occurs, the company involved is penalised and this affects their overall ESGC score and grading. As large companies tend to attract more media attention, the controversies are adjusted by company size. Companies with no controversies receive a score of 100, and the more controversies, the lower score.

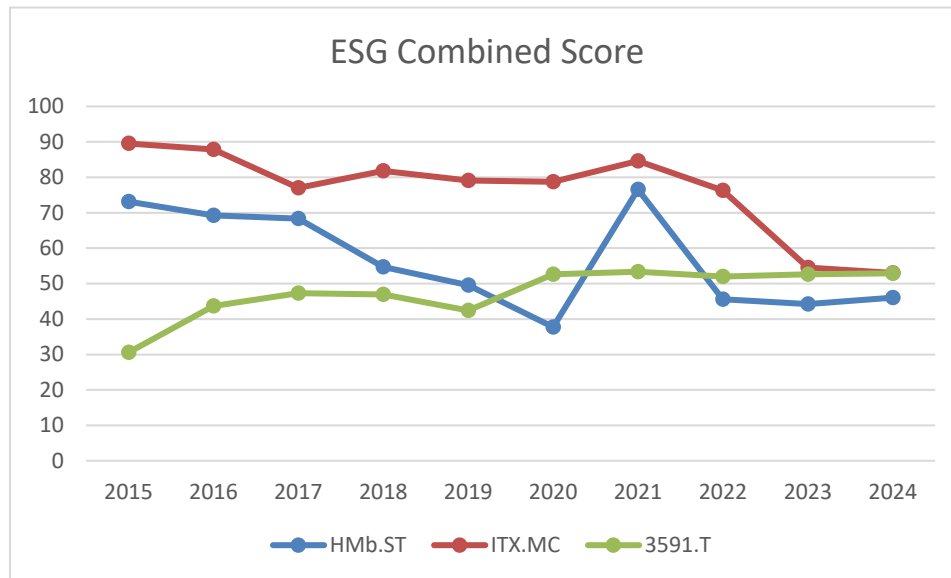
Finally, the ESG combined (ESGC) score integrates a company's underlying ESG performance with its real-world conduct as reflected by controversies. The main objective of this score is to discount the ESG performance score based on negative media stories. If a company has NO controversies: ESGC Score = ESG Score; If a company HAS controversies and Controversies Score  $\geq$  ESG Score: ESGC Score = ESG Score; If a company HAS controversies and Controversies Score  $<$  ESG Score: ESGC Score = (ESG Score + Controversies Score) / 2.

## Comparing ESG Performance: H&M vs. Inditex vs. Wacoal

### Overall ESG Combined Score Performance

The ESG Combined Scores reveal distinct performance trends among the three companies from 2015 to 2024 (see Figure 2). Inditex began the period as the clear industry leader, achieving the highest score of 89.54 in 2015; however, its performance has steadily declined to 53.02 in 2024, suggesting increasing challenges in sustaining its ESG leadership position over time. In contrast, Wacoal demonstrates a clear “Improver” trend, with its ESG score rising consistently from 30.57 in 2015 to 52.90 in 2024, reflecting steady enhancements in its sustainability practices. Meanwhile, H&M exhibits a more volatile pattern, reaching a peak of 76.56 in 2021 before declining significantly to 46.05 in 2024, indicating a higher sensitivity to ESG controversies and potential governance-related issues that have affected its overall performance.

Figure 2: ESG Combined Score of H&amp;M, Inditex, and Wacoal (2015–2024)



When decomposing the ESG Combined Scores into ESG Score and ESG Controversies Score, additional insights into the underlying performance are observed (see Figures 3 and 4). Inditex continues to maintain a relatively high ESG Score, reflecting strong performance across environmental, social, and governance dimensions; however, this strength is increasingly offset by declining Controversies Scores in recent years, indicating a rising impact of negative ESG-related incidents or stakeholder concerns. In comparison, H&M exhibits a more volatile ESG Score pattern, accompanied by notable declines in its Controversies Score, particularly after 2021, suggesting heightened exposure to reputational risks and governance-related challenges. Meanwhile, Wacoal records the lowest ESG Score among the three companies, implying comparatively weaker performance in ESG initiatives; nevertheless, its Controversies Score remains consistently high, reaching 100 in most years. This stability suggests that Wacoal has experienced minimal negative ESG incidents, thereby maintaining a relatively strong reputation despite its lower overall ESG performance.

Figure 3: ESG Score of H&M, Inditex, and Wacoal (2015–2024)

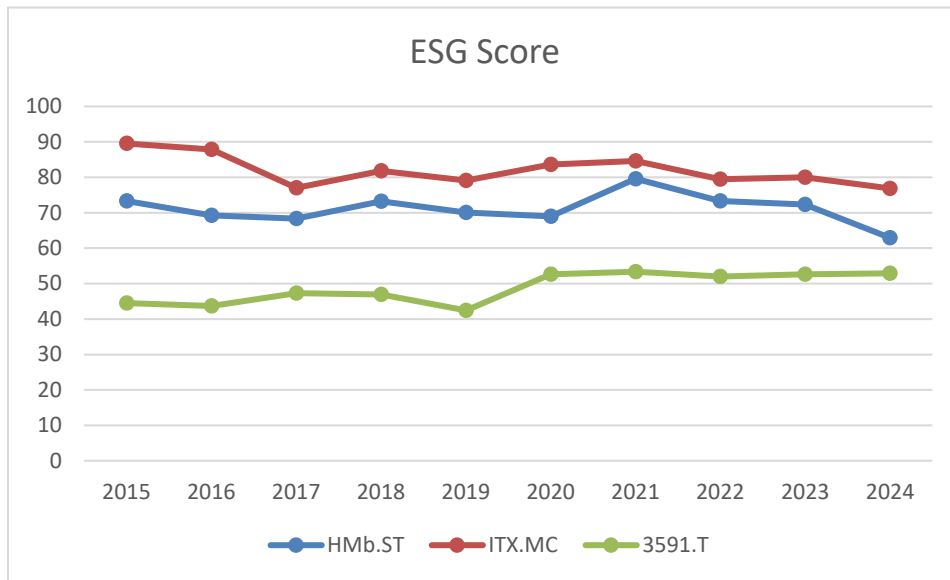
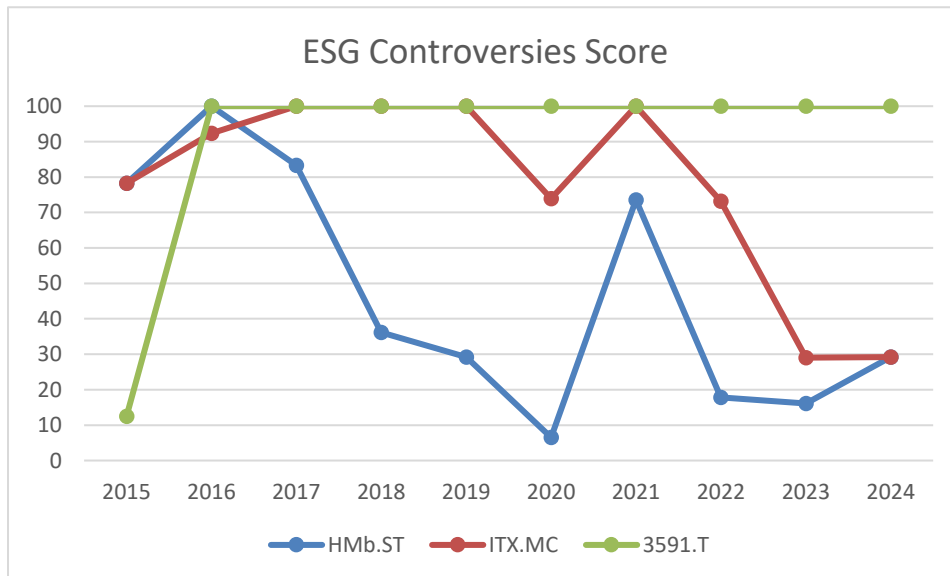


Figure 4: ESG Controversies Score of H&M, Inditex, and Wacoal (2015–2024)



## **Pillar-Level Performance**

A disaggregated analysis of the Environmental (E), Social (S), and Governance (G) pillars provides a comprehensive understanding of the drivers behind the overall ESG performance of H&M, Inditex, and Wacoal. By combining both descriptive trends and interpretive insights, this analysis highlights not only how each company performs across ESG dimensions but also why these performance patterns emerge and what implications they carry for sustainability management.

### **Environmental (E) Pillar: Leadership vs. Improvement**

The Environmental pillar, which is particularly critical for the resource-intensive apparel sector, reveals a clear distinction between industry leadership and progressive improvement (see Figures 5–8). Inditex consistently demonstrates strong environmental performance, maintaining scores above 95 throughout the assessment period and excelling in both resource use and emissions management. This reflects the successful integration of sustainability practices into its core operations. However, despite this strength, its declining ESG combined score suggests that environmental excellence alone is insufficient to sustain overall ESG leadership, particularly when governance and controversy-related factors are taken into account. H&M also performs strongly in the Environmental pillar, with scores around 90, although a gradual decline in recent years indicates increasing challenges in maintaining consistency under heightened stakeholder scrutiny. In contrast, Wacoal lags behind in absolute performance, with scores generally ranging between 36 and 45, but demonstrates a clear upward trend, particularly in emissions management. This indicates a steady and structured commitment to improving environmental practices over time.

Figure 5: Environmental Pillar Score (2015–2024)

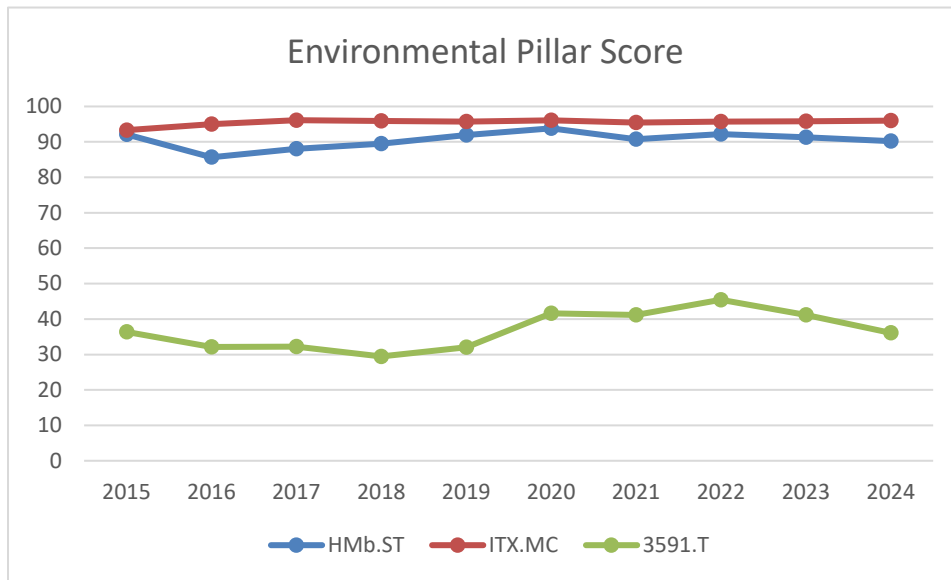
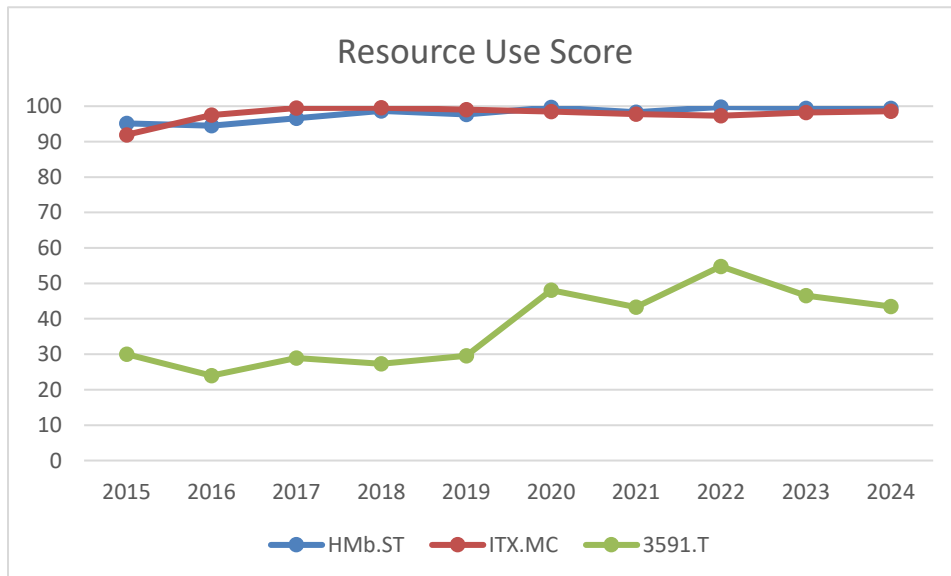


Figure 6: Resource Use Score (2015–2024)



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Figure 7: Emissions Score (2015–2024)

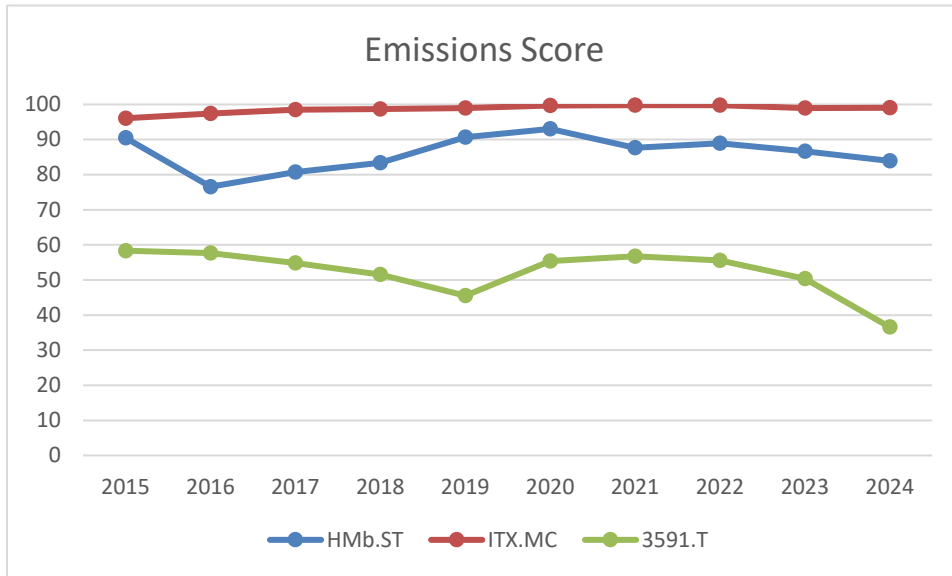
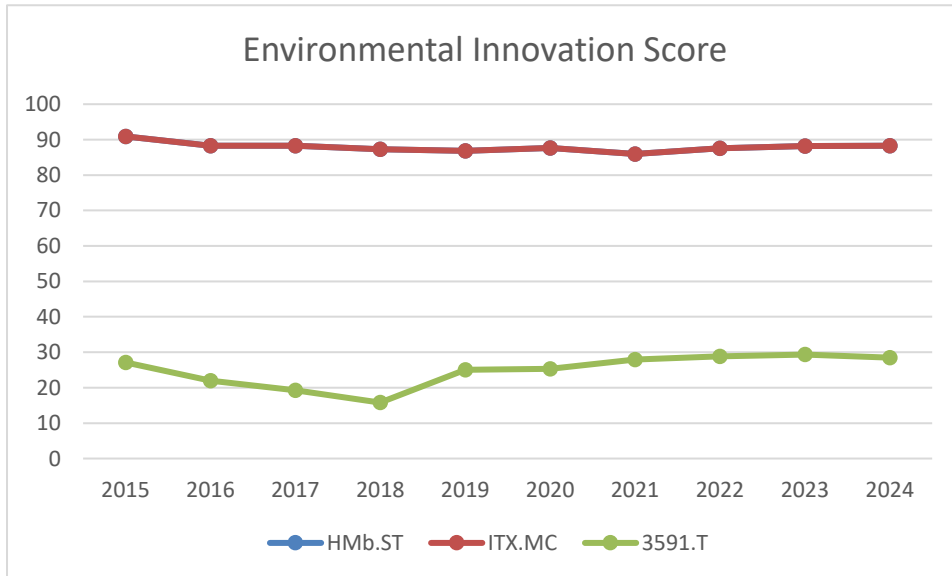


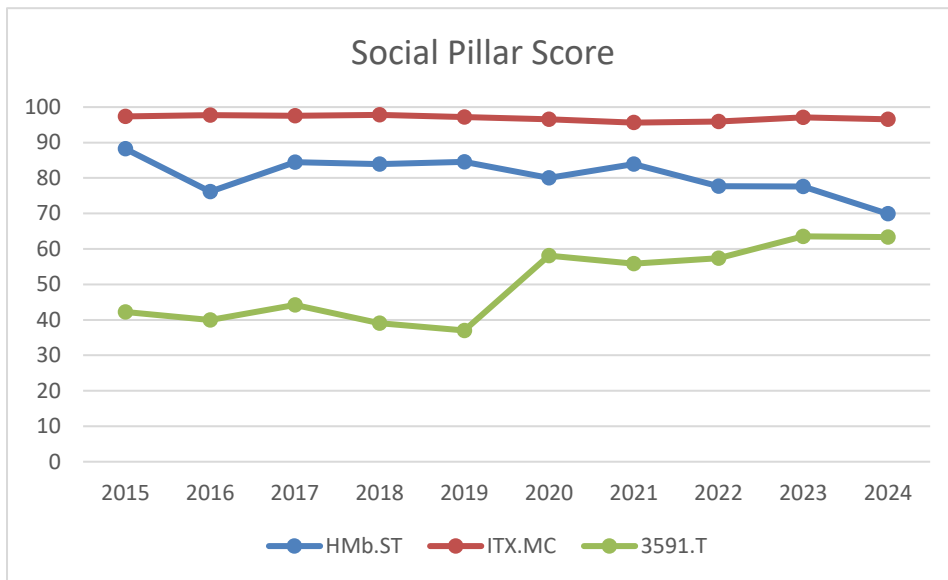
Figure 8: Environmental Innovation Score (2015–2024)



### Social (S) Pillar: Stability vs. Volatility

The Social pillar highlights differences in how firms manage stakeholder relationships, including workforce conditions, human rights, community engagement, and product responsibility (see Figures 9–13). Inditex again emerges as a leader, maintaining consistently high scores above 95, which reflects a well-established and robust framework for social responsibility. In comparison, H&M shows a more volatile performance pattern, with noticeable declines in community engagement and product responsibility after 2021. This suggests a higher sensitivity to ESG controversies and reputational risks, which are increasingly significant in the global apparel industry. Meanwhile, Wacoal demonstrates moderate but steady improvement in its social performance, particularly in community engagement. Although its scores remain below those of Inditex, the consistent upward trajectory reflects strengthening stakeholder relationships and growing attention to social impact.

Figure 9: Social Pillar Score (2015–2024)



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Figure 10: Workforce Score (2015–2024)

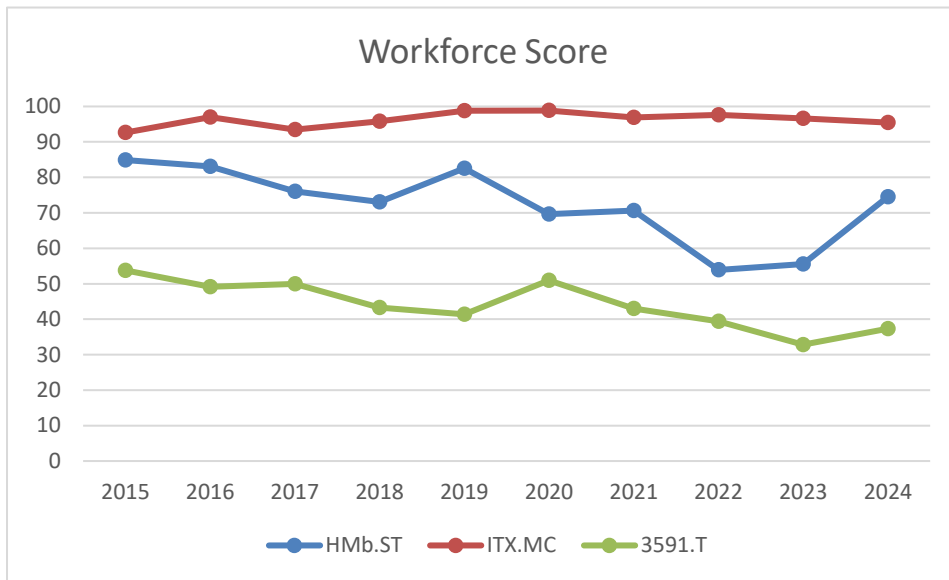


Figure 11: Human Rights Score (2015–2024)

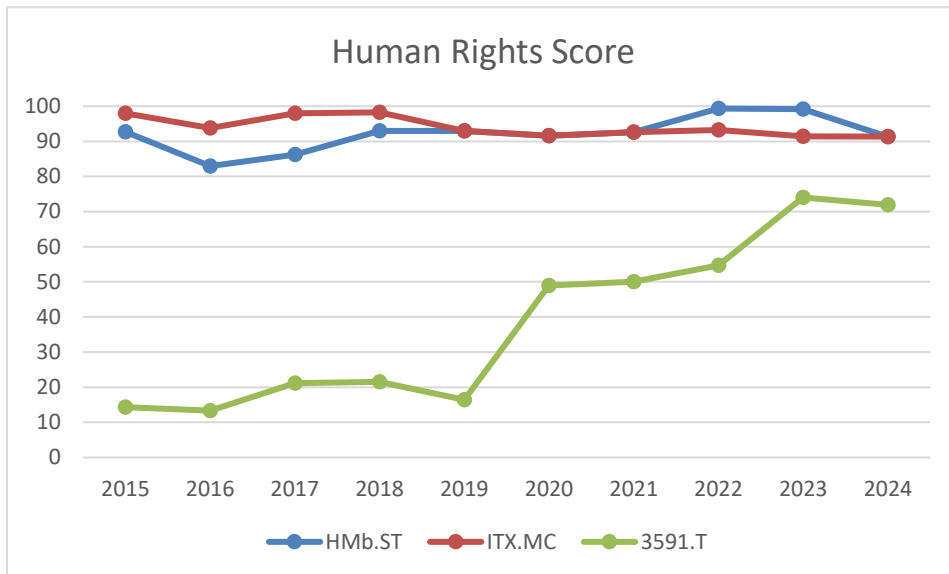


Figure 12: Community Score (2015–2024)

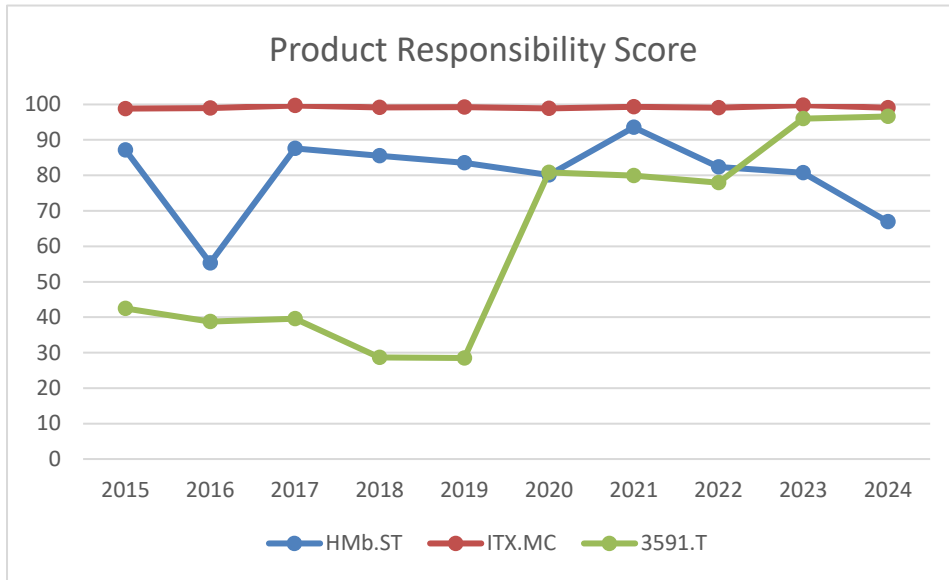
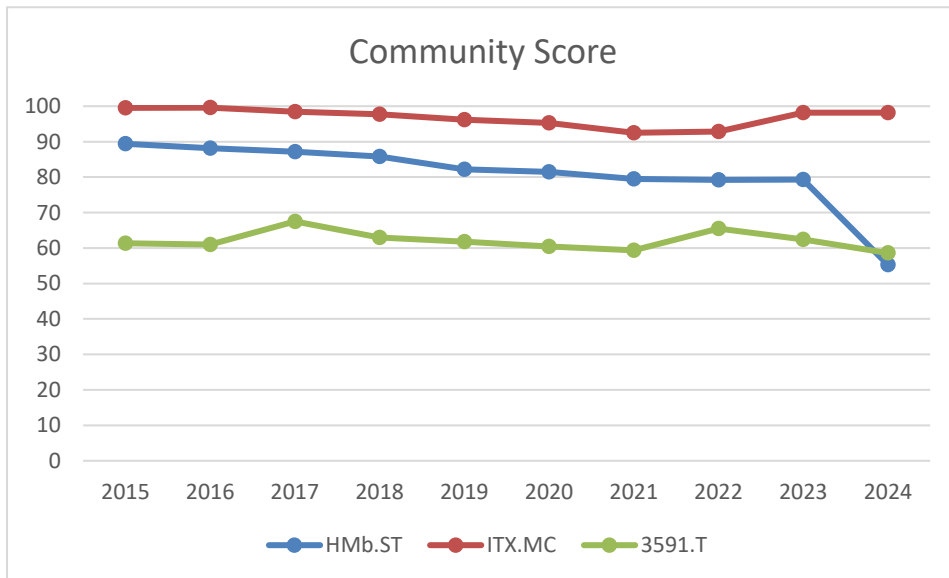


Figure 13: Product Responsibility Score (2015–2024)



**Governance (G) Pillar: A Common Challenge Area**

The Governance pillar remains a common challenge area for all three companies, reinforcing its role as a critical determinant of overall ESG performance (see Figures 14–17). Inditex maintains the highest governance scores among the three firms in 2015 but has experienced a decline afterwards, indicating potential gaps in sustaining strategic alignment and stakeholder confidence. H&M exhibits significant volatility in governance performance, especially in management and shareholder-related indicators, suggesting inconsistencies in corporate oversight and risk management practices. Wacoal, while showing moderate governance performance, also experiences declines in management and shareholder scores, highlighting ongoing challenges in strengthening its governance structure.

Figure 14: Governance Pillar Score (2015–2024)

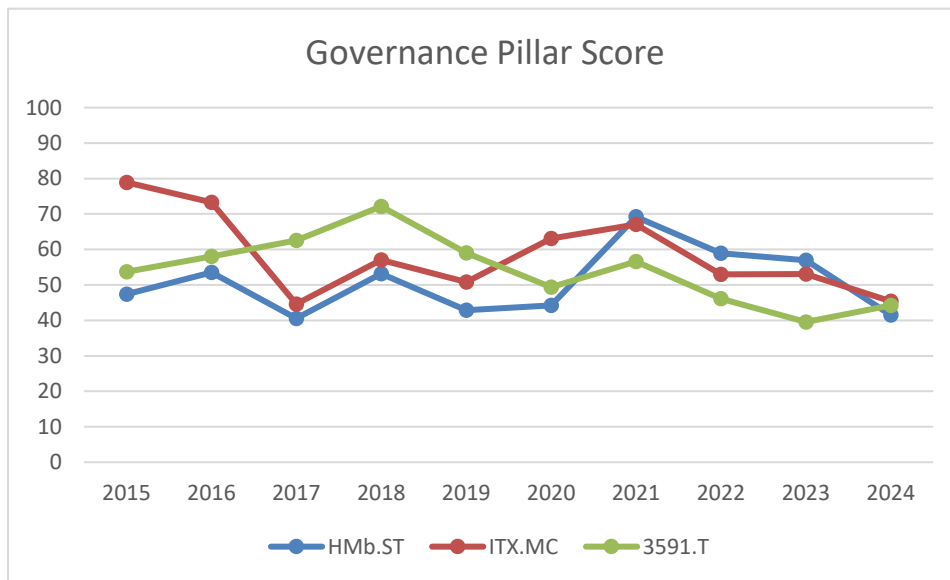


Figure 15: Management Score (2015–2024)

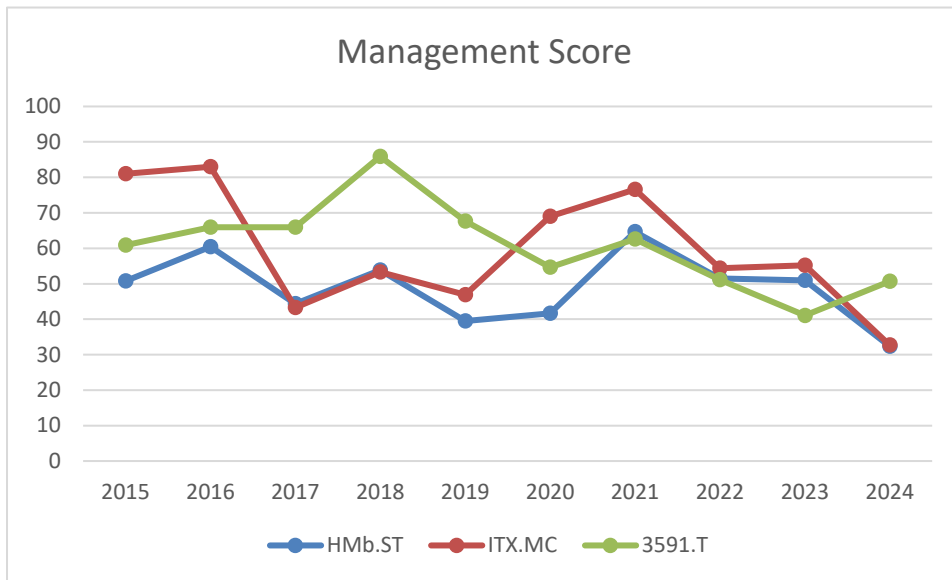
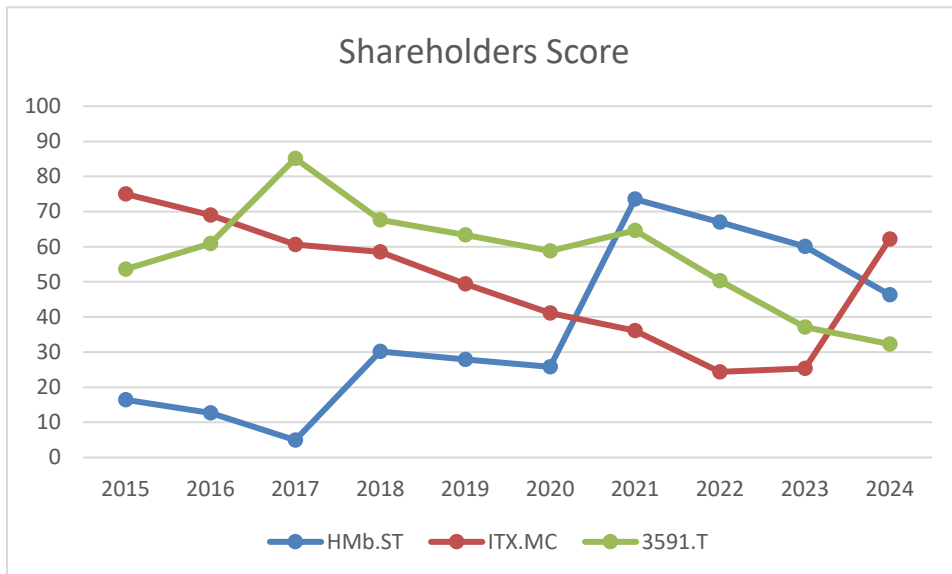
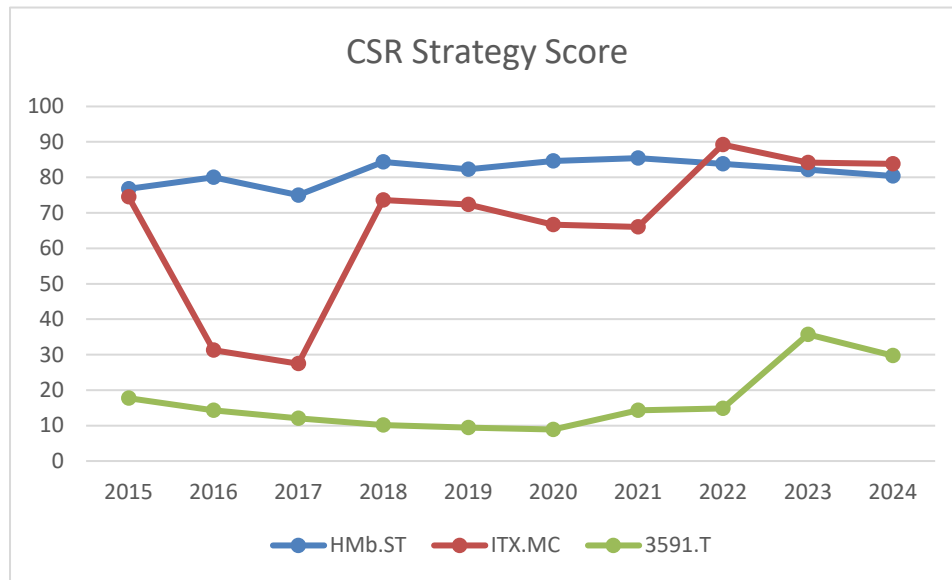


Figure 16: Shareholders Score (2015–2024)



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Figure 17: CSR Strategy Score (2015–2024)



Overall, the combined analysis of the three ESG pillars reveals several key insights. First, strong performance in environmental and social dimensions does not guarantee overall ESG success, as governance plays a central role in ensuring consistency, credibility, and long-term sustainability. Second, companies follow distinct ESG trends, with Inditex reflecting a leadership position facing emerging challenges, H&M demonstrating volatility influenced by external risks, and Wacoal illustrating a steady “improver” pathway. Third, ESG performance should be understood as a dynamic and interrelated system, where weaknesses in one pillar can significantly undermine strengths in others.

### **Discussion: Integrating SERVQUAL and Design Thinking into ESG Analysis**

The integration of SERVQUAL and Design Thinking provides a structured and practical framework for interpreting ESG performance within the apparel industry. While ESG scores offer evaluation of organisational performance, SERVQUAL introduces a service-oriented perspective by focusing on key dimensions such as tangibles, reliability, responsiveness, assurance, and empathy. These dimensions can be extended beyond traditional service contexts to assess how organisations deliver sustainability-related value to stakeholders, including employees, customers, and the wider community.

Design Thinking complements this approach by offering a systematic process for problem identification and solution development. It enables learners and practitioners to move beyond passive evaluation and engage actively in addressing ESG challenges. In the context of apparel services, this approach encourages stakeholders to identify gaps in areas such as supply chain transparency, labour practices, and environmental impact, and to develop innovative solutions

such as circular economy models, traceability systems, and sustainable product design.

The combination of SERVQUAL and Design Thinking transforms ESG analysis from a descriptive exercise into a dynamic and solution-oriented process. It enables the linkage between ESG performance indicators and service quality expectations, thereby bridging the gap between organisational performance and stakeholder experience. This is particularly relevant in the apparel industry, where sustainability is closely tied to consumer perception and brand reputation.

From an educational perspective, this integrated approach supports the development of higher-order thinking skills, including critical analysis, systems thinking, and creative problem-solving. Learners are encouraged not only to interpret ESG data but also to evaluate the interrelationships between environmental, social, and governance factors and propose actionable improvements. Such an approach aligns with the objectives of sustainable development education by fostering analytical capabilities and promoting responsible decision-making.

## Conclusion

This study identifies three distinct ESG trajectories within the apparel industry, each reflecting different strategic approaches and challenges. Inditex represents a case of a former industry leader facing decline, where strong environmental and social performance is offset by governance-related challenges. H&M illustrates a volatile trajectory, characterised by fluctuations in performance and sensitivity to ESG controversies. In contrast, Wacoal exemplifies a consistent improver, demonstrating steady progress across ESG dimensions despite starting from a lower baseline.

The findings underscore the dynamic and multidimensional nature of ESG performance, highlighting that strong outcomes in one pillar cannot compensate for weaknesses in others. In particular, governance emerges as a critical determinant of overall ESG success, shaping how organisations manage risks, respond to stakeholder expectations, and sustain long-term performance. Furthermore, the study demonstrates that ESG report analysis serves as an effective educational tool for developing higher-order thinking skills, enabling learners to connect theoretical concepts with real-world business practices.

By integrating ESG analysis with SERVQUAL and Design Thinking, educators can enhance the development of critical, analytical, and innovative capabilities among learners. This approach aligns with the objectives of UNSDGs, promoting education for sustainable development and preparing individuals to contribute meaningfully to a rapidly evolving global economy.

## References

- Azizah, H. (2012). *Effect of service quality, image and satisfaction on customer loyalty* (Thesis). Faculty of Economics, State University of Semarang.
- Balasingham, A., Appiah-Adu, K., & Fyall, A. (2006). Service quality models and consumer evaluations: A multi-dimensional synthesis. *Journal of Travel & Tourism Marketing*, 20(2), 45–61.
- De', R., Pandey, N., & Pal, A. (2020). Impact of digital surge during COVID-19 pandemic: A viewpoint on research and practice. *International Journal of Information Management*, 55,

- Evans, J. R., & Lindsay, W. M. (2016). *Managing for quality and performance excellence* (10th ed.). Cengage Learning.
- Gouws, E., & Motala, T. (2019). Quality of service delivered by alcoholic beverage suppliers to customers in the South African hospitality industry. *African Journal of Hospitality, Tourism and Leisure, 8*(3), 1–16.
- Grönroos, C. (1984). A service quality model and its marketing implications. *European Journal of Marketing, 18*(4), 36–44.
- Kang, G. D., & James, J. D. (2004). Service quality dimensions: An examination of Grönroos's service quality model. *Managing Service Quality, 14*(4), 266–277.
- Kotler, P., & Keller, K. L. (2012). *Marketing management* (14th ed.). Pearson Education.
- Laroche, M., Ueltschy, L. C., Abe, S., Cleveland, M., & Yannopoulos, P. P. (2004). Service quality perceptions and customer satisfaction: Evaluating the role of culture. *Journal of International Marketing, 12*(3), 58–85.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing, 64*(1), 12–40.
- Puri, G., & Singh, K. (2018). The role of service quality and customer satisfaction in tourism industry: A review of SERVQUAL model. *International Journal of Research and Analytical Reviews, 5*(4), 745–751.
- Solomon, M. R. (2009). *Consumer behavior: Buying, having, and being* (8th ed.). Pearson Prentice Hall.
- Timm, P. R. (2005). *Customer service: Career success through customer satisfaction* (3rd ed.). Prentice Hall.
- Zhao, Y. L., & Di Benedetto, C. A. (2013). Designing service quality to prevent tourist dissatisfaction and secure destination loyalty. *Journal of Travel & Tourism Marketing, 30*(7), 692–711.