32 (2) 2024 IIUMLJ 193 - 230

ISO CERTIFICATIONS AND SUSTAINABLE FASHION PRACTICES IN MALAYSIA: A LEGAL PERSPECTIVE

Suriyati Salim*

Suzi Fadhilah Ismail**

ABSTRACT

This study aims to investigate the impact of International Organisation for Standardisation (ISO) certifications, specifically ISO 14001 for Environmental Management System (EMS) and ISO 9001 for Quality Management System (QMS), on Malaysia's fashion industry. The research examines the effects of adhering to international standards on the industry's environmental performance, quality, safety, and efficiency and emphasises the importance of compliance within the existing legal framework. This study leverages qualitative and doctrinal approaches, employing a literature review of research from academic articles, statutes and national policy frameworks to explore the impact of ISO certifications, particularly focusing on ISO 14001 for EMS and ISO 9001 for QMS, and identifies challenges faced by the industry, including compliance costs, lack of specific guidance, and resistance to change, while also investigating the potential positive impact by drawing parallels from other industries. The findings demonstrate that following the ISO standards has positive effects on the legal environment, financial performance, and business operations of fashion companies, enhancing the industry's sustainability, quality, safety, and efficiency. However, the

* Advocate & Solicitor of the High Court of Malaya (Non-Practising) and Ph.D. Candidate, Ahmad Ibrahim Kulliyyah of Laws, International Islamic University Malaysia, PO Box 10, 50728 Kuala Lumpur Malaysia. Email: surisalim92@gmail.com / suriyati.salim@live.iium.edu.my (Corresponding Author).

** Associate Professor, Civil Law Department, Ahmad Ibrahim Kulliyyah of Laws, International Islamic University Malaysia, PO Box 10, 50728 Kuala Lumpur Malaysia. Email: suzi@iium.edu.my.

[Received: 8 December 2023, Accepted: 9 October 2024, Published: 31 November 2024]

study suggests that ISO should provide more industry-specific guidance to assist Small and Medium-sized Enterprises (SMEs) in the fashion industry, promoting broader and more effective adoption of these standards in Malaysia. The research aligns with the United Nations (UN) Sustainable Development Goals (SDGs) and provides valuable insights and potential strategies for the fashion industry in Malaysia to embrace sustainable and ethical practices in their operations.

Keywords: ISO Standards, Fashion Industry, Environmental Management System (EMS), Quality Management System (QMS), Malaysia.

PENSIJILAN ISO DAN AMALAN FESYEN LESTARI DI MALAYSIA: SUATU PERSPEKTIF UNDANG-UNDANG

ABSTRAK

Kajian ini bertujuan untuk menyiasat impak pensijilan piawaian Pertubuhan Standardisasi Antarabangsa (ISO), khususnya ISO 14001 untuk Sistem Pengurusan Alam Sekitar (EMS) dan ISO 9001 untuk Sistem Pengurusan Kualiti (QMS), terhadap industri fesyen Malaysia. Kajian ini menguji kesan pematuhan terhadap standard antarabangsa terhadap prestasi alam sekitar, kualiti, keselamatan, dan kecekapan industri dan menekankan kepentingan mematuhi standard ISO dan kepentingan pematuhan terhadap kerangka undang-undang yang sedia ada. Kajian ini menggunakan pendekatan-pendekatan doktrinal dan kualitatif dengan melibatkan semakan literatur dari artikel akademik, statut dan kerangka dasar kebangsaan untuk meneroka kesan pensijilan ISO, dengan penekanan terutamanya kepada ISO 14001 untuk EMS dan ISO 9001 untuk QMS, dan mengenal pasti cabaran yang dihadapi oleh industri, termasuk kos pematuhan, kurangnya panduan khusus, dan rintangan terhadap perubahan, sambil juga menyiasat impak positif yang mungkin dengan merujuk kepada industri-industri yang lain. Dapatan menunjukkan bahawa mematuhi standard ISO memberikan kesan positif terhadap persekitaran undang-undang, prestasi kewangan, dan operasi perniagaan syarikat fesyen, meningkatkan kelestarian, kualiti, keselamatan, dan kecekapan industri. Walau bagaimanapun, kajian mencadangkan bahawa ISO seharusnya menyediakan panduan yang lebih khusus kepada Industri Kecil dan Sederhana (SME) dalam industri fesyen, untuk mempromosikan penerimaan standard ini secara lebih meluas dan berkesan di Malaysia. Kajian ini sejajar dengan Matlamat Pembangunan Lestari (SDG) Pertubuhan Bangsa-Bangsa Bersatu (UN) dan menyediakan pandangan berharga serta potensi strategi-strategi bagi

industri fesyen di Malaysia untuk merangkul amalan lestari dan etika dalam operasi mereka.

Kata Kunci: Piawaian ISO, Industri Fesyen, Sistem Pengurusan Alam Sekitar (EMS), Sistem Pengurusan Kualiti (QMS), Malaysia.

INTRODUCTION

Industry experts create standards based on their knowledge and expertise that meet unique organisational requirements.[1] ISO, the acronym of the International Organisation for Standardisation, has established a system that enables experts to reach a consensus on standards that are then universally accepted.[2] The acronym for ISO varies in different languages; for example, in French, it is OIN, which stands for Organisation Internationale de Normalisation, while in English, it is IOS.[3] The selection of the acronym ISO was based on the Greek word "iso", which means "equal".[4] The ISO is a federation of national standards bodies and member bodies. The ISO technical committees develop International Standards, with each interested member body having the right to be represented on the committee. Various international governmental and non-governmental organisations collaborate with the ISO through their liaison.[5] The ISO standards are classified into six major groups encompassing different management and safety areas which are quality management, environmental management, health and safety, energy management, food safety, and IT security standards.[6]

---

[1] 'Standards', International Organization for Standardization (ISO), accessed 15 March 2024, https://www.iso.org/standards.html.

[2] 'Standards'.

[3] 'About Us', International Organization for Standardization (ISO), accessed 15 March 2024, https://www.iso.org/about-us.html.

[4] Lawrence D. Eicher et al., *Friendship Among Equals: Recollections from ISO's First Fifty Years* (ISO (International Organization for Standardization), 1997), 20, http://www.iso.org/iso/home/about/the_iso_story.htm.

[5] 'ISO 14001:2015(En) Environmental Management Systems — Requirements with Guidance for Use', International Organization for Standardization (ISO), accessed 15 March 2024, https://www.iso.org/obp/ui/en/#iso:std:iso:14001:ed-3:v1:en.

[6] 'Standards'.

The textile industry is a significant contributor to environmental degradation and climate change.[7] For example, in the garment manufacturing industry, the production process follows a sequence of steps that are often affected by unpredictable changes. The quality of the final product is significantly influenced by the expertise of the workers in handling different types of fabrics, accessories, and sewing machines. To ensure that the quality of the products meets the industry standards, garment manufacturers have devised quality control systems that regularly monitor and evaluate the manufacturing processes to minimise variations.[8] Qaisar Ali et al. observed that, there is currently no designated entity responsible for evaluating the validity, impact, and performance of major fashion companies globally. This lack of standardised assessment contributes to inconsistent customer reception of EMS, affecting apparel manufacturers' performance. On the other hand, in Malaysia, the prevailing EMS standard in manufacturing is ISO 14001.[9] The study by Qaisar Ali et al' has highlighted the fact that while there may be a general lack of international recognition and standardised assessment mechanisms for fashion giants' adherence to EMS standards globally, the ISO 14001 stands out as a well-recognised and widely implemented EMS standard in Malaysia.

Nina Muslim's article "Saving the Environment One Dress At A Time" in Fokus BERNAMA and Earth.Org website reveals that 100

---

[7] Dominik Zimon, Peter Madzik, and Robert Sroufe, 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry', *Sustainability (Switzerland)* 12, no. 10 (2020): 1, https://doi.org/10.3390/su12104282.

[8] N. J. M. Yusof, T. Sabir, and J. McLoughlin, 'Quality Approaches for Mass-Produced Fashion: A Study in Malaysian Garment Manufacturing', *International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering* 9, no. 10 (2015): 1675, https://www.researchgate.net/profile/Nor-Mohd-Yusof-2/publication/313006281_Quality_Approaches_of_Mass-Produced_Fashion_-_A_Study_in_Malaysian_Garment_Manufacturing/links/588c2d5292851cef13601250/Quality-Approaches-of-Mass-Produced-Fashion-A-Study-in-Mala.

[9] Qaisar Ali et al., 'Green Behavior and Financial Performance: Impact on the Malaysian Fashion Industry Qaisar', *SAGE Open* 10 (2020): 4, https://doi.org/10.1177/2158244020953179.

billion garments are manufactured annually, with 92 million tonnes ending up in landfills.[10]

Since the Industrial Revolution, the apparel industry has experienced economic growth due to mass production and global trade. However, these practices have also caused sustainability problems, including pollution and resource depletion.[11] In today's economic context, ensuring the sustainability of Malaysia's apparel industry has emerged as a significant concern.[12]

Thus, this study aims to evaluate the impact of ISO certifications on both the global and Malaysia's fashion industry's environmental performance, quality, safety, and efficiency by aligning with international standards. Utilising doctrinal and qualitative approaches, the study conducts a thorough literature review to analyse existing research from academic journals and identify the implementation of ISO standards in various industries in Malaysia as well as textiles industry, and analysing the benefits of adhering to ISO standards in these industries, especially the fashion industry. The review emphasises the importance of integrating sustainable practices into the fashion industry's operations. It also advocates for the adoption of the ISO standards, particularly those related to environmental management (such as ISO 14001), as effective measures to address issues like fashion waste and promote sustainability within the sector.

This study is structured into eight parts, including an introduction, an exploration of the applicability of ISO certifications in the fashion industry, an analysis of sustainability practices in conjunction with ISO certifications, an examination of the

[10] Nina Muslim, 'Saving The Environment One Dress At A Time', *Fokus BERNAMA*, 18 September 2023, https://www.bernama.com/en/bfokus/news.php?environment&id=2226538#:~:text=FASHION WASTE&text=According to SWCorp and KlothCares,tonnes end up in landfills.; Martina Igini, '10 Concerning Fast Fashion Waste Statistics', Earth.Org, 2023, https://earth.org/statistics-about-fast-fashion-waste/.

[11] Yiyan Wang and Norsaadah Zakaria, 'Influence of Size and Fit on Malaysian Apparel Industry Sustainability : A Scoping Review', *Sustainability (Switzerland)* 16, no. 6 (2024): 1, https://doi.org/https://doi.org/10.3390/su16062486.

[12] Wang and Zakaria, 'Influence of Size and Fit on Malaysian Apparel Industry Sustainability : A Scoping Review', 4.

implementation of ISO certifications in the Malaysia's fashion industry, a discussion of the challenges associated with implementing ISO standards in other industries in Malaysia and their challenges, an exploration of compliance measures and regulatory alignment in the Malaysia's fashion industry, an analysis of international practices and the impact of ISO standards adoption on textile industry, and a concluding section.

APPLICABILITY OF ISO CERTIFICATIONS IN THE FASHION INDUSTRY

EMS and QMS

The ISO introduced the ISO 14000 series in 1996 to promote environmental responsibility among companies.[13] ISO 14001 is a widely recognised EMS framework that helps organisations manage their environmental impact and demonstrate sound environmental management practices.[14] The EMS comprises five components; environmental policy, planning, implementation, operation, and checking. It also includes corrective action, review, and improvement based on ISO standards in Geneva.[15] According to the "Environmental Management Systems - Requirements with Guidance for Use (First Revision)" (ISO 14001:2004, IDT), the term "environment" refers to the surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation. An "environmental aspect" is an element of an organisation's activities, products, or services that can interact with the

[13] Goh Eng Ann, Suhaiza Zailani, and Nabsiah Abd Wahid, 'A Study on the Impact of Environmental Management System (EMS) Certification towards Firms' Performance in Malaysia', *Management of Environmental Quality: An International Journal* 17, no. 1 (2006): 73, https://doi.org/10.1108/14777830610639459.

[14] Ann, Zailani, and Wahid, 'A Study on the Impact of Environmental Management System (EMS) Certification towards Firms' Performance in Malaysia', 75.

[15] Siti Fahazarina Hazudin et al., 'ISO 14001 and Financial Performance: Is the Accreditation Financially Worth It for Malaysian Firms', *Procedia Economics and Finance*, 2015, 57, https://doi.org/10.1016/s2212-5671(15)01131-4.

environment. An "EMS" is part of an organisation's management system that is used to develop and implement its environmental policy and manage its environmental aspects. "Environmental performance" is a measurable result of an organisation's management of its environmental aspects, and an "organisation" refers to an institution, or a part or combination thereof, whether a company, corporation, firm, enterprise, authority, or incorporated or not, public or private, that has its functions and administration.[16] For example, the ISO 14001:2015 standard applies to organisations of any size, type, or nature and is designed to help them achieve their desired outcomes for their EMS. They cover the environmental impact of their controllable or influential activities, products, and services. EMS aims to enhance environmental performance, satisfy compliance requirements, and attain environmental objectives. Thus, an organisation's environmental policy should align with these outcomes.[17]

Dominik Zimon et al. investigate the role of standardised quality and EMSs in supporting sustainable supply chain management (SSCM) within the manufacturing industry. While ISO 9001 primarily targets enhancing internal processes and collaboration within supply chain links, it also influences environmental processes to some extent. On the other hand, ISO 14001 significantly impacts environmental process implementation within organisations. The study suggests that organisations implementing both standards yield the most favourable outcomes, as they complement and contradict each other in achieving objectives.[18]

In this regard, ISO 9001 is a standard that outlines the requirements for a QMS. It applies to organisations seeking to demonstrate their ability to consistently deliver products and services that meet customer expectations and comply with relevant laws and

[16] Department of Standards Malaysia, 'Environmental Management Systems – Requirements With Guidance For Use (First Revision) (ISO 14001:2004, IDT)' (2005), http://reg.upm.edu.my/eISO/portal/standard ISO/MS ISO 14001 2004.pdf.

[17] 'ISO 14001:2015 Environmental Management Systems — Requirements with Guidance for Use', International Organization for Standardization (ISO), accessed 15 March 2024, https://www.iso.org/standard/60857.html.

[18] Zimon, Madzik, and Sroufe, 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry', 16.

regulations. Additionally, it aims to improve customer satisfaction by effectively implementing processes for system improvement and ensuring conformity to customer and regulatory requirements. These requirements are generic and intended to be applicable to organisations of any type or size, offering any range of products and services.[19]

Other Crucial ISOs in The Fashion Industry

Undoubtedly, the ISO standards play an essential role in the apparel industry. For example, ISO 11612:2015[20] is significant as it specifies the requirements for flexible protective clothing to shield the body (excluding hands) from heat and flames. Whereas ISO 45001:2018 outlines provisions for an occupational health and safety management system. It helps organisations establish secure and healthy workplaces, prevent work-related injuries and illnesses, and improve health and safety.[21] Another related ISO standard is ISO 8559-2:2017, which provides garment measurements to complement anthropometric measurements from ISO 8559-1. It aims to establish a sizing system for manufacturers and retailers to indicate each garment's intended wearer's body dimensions. Consumers can then easily and accurately choose clothes that fit them well. This sizing information can be displayed through labelling or other means.[22]

The study of various ISO standards in the context of ISO certifications and their relevance to the fashion industry, particularly in apparel and textiles is integral for several reasons. These standards contribute to enhancing the quality, safety, and efficiency of processes

[19]'ISO 9001:2015 Quality Management Systems — Requirements', International Organization for Standardization (ISO), 1, accessed 15 March 2024, https://www.iso.org/standard/62085.html.

[20]'ISO 11612:2015', International Organisation for Standardisation (ISO), accessed 15 March 2024, https://www.iso.org/standard/57457.html.

[21]'ISO 45001:2018 Occupational Health and Safety Management Systems — Requirements with Guidance for Use', International Organization for Standardization (ISO), accessed 15 March 2024, https://www.iso.org/standard/63787.html.

[22]'ISO 8559-2:2017 Size Designation of Clothes — Part 2: Primary and Secondary Dimension Indicators', International Organization for Standardization (ISO), accessed 15 March 2024, https://www.iso.org/standard/64075.html.

within the industry. Firstly, ISO 11612:2015 (Protective Clothing against Heat and Flames) is relevant as this standard is crucial in ensuring the safety of workers in the apparel industry, especially those involved in processes that expose them to heat and flames. Consequently, in this context, compliance with ISO 11612:2015 helps manufacturers design and produce protective clothing that meets specified requirements, safeguarding workers from potential hazards. Next, ISO 45001:2018 (Occupational Health and Safety Management System) is relevant as this standard is highly relevant to the fashion industry, emphasising the importance of creating and maintaining a safe and healthy working environment. ISO 45001:2018 aids organisations in establishing effective occupational health and safety management systems, reducing the risk of work-related injuries and illnesses, and fostering continuous improvement in health and safety practices. Whereas the ISO 8559-2:2017 (Garment Measurements for Body Dimensions) standard is significant in addressing the need for standardised garment measurements, contributing to improved sizing and fit for consumers. By adhering to ISO 8559-2:2017, manufacturers and retailers can implement a consistent sizing system. This facilitates consumer decision-making, allowing them to select clothing that aligns with their body dimensions, ultimately enhancing customer satisfaction and reducing returns.

In summary, the relevance of these ISO standards lies in their ability to address specific aspects of the fashion industry, ranging from worker safety to consumer satisfaction. By implementing these standards, the industry can benefit from improved processes, increased safety measures, and enhanced product quality, aligning with the broader objectives of ISO certifications in promoting excellence and sustainability in various sectors of the fashion industry.

ISO CERTIFICATIONS AND SUSTAINABILITY PRACTICES IN THE FASHION INDUSTRY

The UN's SDGs provide a comprehensive framework for tackling global challenges, including inequality, poverty, climate change, environmental degradation, peace and justice, and creating a better and

more sustainable future for everyone.[23] The ISO standards align with social, economic, and environmentally sustainable development pillars.[24] Two ISO standards, such as ISO 14000 and ISO 14001, are closely aligned with SDG 13, a climate action which aims to fight climate change and its adverse effects. Specifically, ISO 14000 equips organisations with practical tools to manage their environmental footprint, while ISO 14001 offers guidance and requirements for EMSs, making it a universally recognised standard. These standards cover various areas such as communication, audits, frameworks, life-cycle analysis, labelling, and techniques to mitigate and adapt to climate change.[25] The textile industry is an important contributor to the depletion of the ozone layer, the formation of smog, the greenhouse effect, and global warming. It is vital to address the climate emergency by reducing carbon footprints from textile emissions and effluents.[26]

Within the ISO, Technical Committees are responsible for developing standards within various areas of expertise. These committees cover a wide range of subjects, from screw threads to the circular economy. They are organised sequentially, with TC1 being the earliest, established in 1947, and TC 323 being one of the most recent, focused on standardising the circular economy. Each committee is chaired by a designated individual, and the secretariat is held by an ISO member.[27] ISO/TC 38 is a Technical Committee that aims to establish standards for various aspects of textiles, which are essential to the fashion and apparel industry. Its scope includes standardising fibres,

---

[23] 'Take Action For The Sustainable Development Goals', United Nations, accessed 15 March 2024, https://www.un.org/sustainabledevelopment/sustainable-development-goals/.

[24] 'Contributing to the UN Sustainable Development Goals with ISO Standards', International Organization for Standardization (ISO) (Geneva, Switzerland, 2018), 2–3, https://www.iso.org/publication/PUB100429.html.

[25] 'Contributing to the UN Sustainable Development Goals with ISO Standards', 33.

[26] Alka Madhukar Thakker and Danmei Sun, 'Sustainable Development Goals for Textiles and Fashion', *Environmental Science and Pollution Research*, 2023, https://doi.org/10.1007/s11356-023-29453-1.

[27] 'Technical Committees', International Organisation for Standardisation (ISO), accessed 24 April 2024, https://www.iso.org/technical-committees.html.

yarns, threads, cords, cloth, and other fabricated textile materials, along with the testing methods, terminology, and definitions relating to them. The committee also focuses on raw materials, auxiliaries, and chemical products required for textile processing and testing, specifications for textile products, and ethical and environmental issues in the textile supply chain. Moreover, it addresses the issue of micro-plastics from textile sources and animal fibre's traceability and responsible sourcing in the textile supply chain.[28] The inclusion of traceability within the scope of ISO/TC 38 signifies the committee's recognition of the importance of tracking and verifying the origins and processing of animal fibres in the textile supply chain, thereby promoting transparency, accountability, and ethical sourcing practices within the industry.

Therefore, as mentioned above, the efforts of ISO/TC 38 in establishing standards for traceability and responsible sourcing of animal fibres directly respond to the challenges faced by companies in implementing traceability measures within the fashion industry. As an example, companies like Patagonia in the United States (US), an outdoor clothing and gear company, have exemplified implementing traceability measures.[29] The case of Patagonia allowing customers to verify the origins of raw materials used in their products underscores the necessity for tailored solutions in traceability initiatives. This highlights the significant challenge faced by companies in developing ad hoc practices for traceability practices, especially in the absence of standardised requirements or regulations for traceability systems in collaborative networks.[30]

According to Michael Hultgren et al. in the year 2018, the utilisation of blockchain technology presents a digitalised solution to enhance traceability and mitigate the risk of data falsification within intricate supply chains. Through the implementation of this

[28]'ISO/TC 38 (Textiles)', International Organization for Standardization (ISO), accessed 15 March 2024, https://www.iso.org/committee/48148.html.

[29]'Material Traceability', Patagonia, accessed 6 May 2024, https://www.patagonia.com/our-footprint/material-traceability.html.

[30] Laura Macchion, Andrea Furlan, and Andrea Vinelli, 'The Implementation of Traceability in Fashion Networks', in *18th Working Conference on Virtual Enterprises (PROVE)* (Vicenza, Italy, 2017), 84, https://inria.hal.science/hal-01674902/file/455531_1_En_8_Chapter.pdf.

technology, it becomes possible to authenticate the origins of materials, track their manufacturing processes, and monitor their handling procedures[31].

Aayushi Badhwar et al. in the year 2023 observed that the fashion and textile industry lacks technological solutions to address traceability concerns.[32] They further added that ISO has also provided a definition of traceability, but it has been modified and improved to suit the needs of different industries. Specifically, in the year 2005, ISO defined traceability in the context of the food industry as the identification of the origin of materials and parts, the processing history, and the distribution and location of the product after delivery. However, traceability has not yet been defined in the fashion and retail industry context.[33]

It is submitted that this issue has underscored the need for tailored definitions and standards within the fashion and textile sector to address traceability concerns adequately. Conversely, the inclusion of traceability within the scope of ISO/TC 38 demonstrates the committee's acknowledgment of the significance of traceability in ensuring transparency, ethical sourcing, and accountability specifically within the textile supply chain. While the ISO standards provide a framework, the industry still lacks specific definitions and technological solutions to effectively implement traceability measures.

In a nutshell, the ISO standards as explained earlier under this heading, including the aspect of traceability set by committees like ISO/TC 38, are crucial for promoting sustainability globally in the fashion industry. These standards help companies track the origins of

[31]Michael Hultgren and Fredrik Pajala, 'Blockchain Technology in Construction Industry- Transparency and Traceability in Supply Chain' (ROYAL INSTITUTE OF TECHNOLOGY, 2018), 6, http://www.diva-portal.org/smash/get/diva2:1229861/FULLTEXT01.pdf.

[32]Aayushi Badhwar, Saniyat Islam, and Caroline Swee Lin Tan, 'Exploring the Potential of Blockchain Technology within the Fashion and Textile Supply Chain with a Focus on Traceability, Transparency, and Product Authenticity: A Systematic Review', *Frontiers in Blockchain* 6, no. February (2023): 15, https://doi.org/10.3389/fbloc.2023.1044723.

[33]Badhwar, Islam, and Tan, 'Exploring the Potential of Blockchain Technology within the Fashion and Textile Supply Chain with a Focus on Traceability, Transparency, and Product Authenticity: A Systematic Review', 11.

materials, monitor production processes, and ensure ethical practices, aligning with SDGs such as responsible consumption and production (SDG 12) and climate action (SDG 13). In Malaysia, adopting these standards can improve transparency in supply chains, support sustainable practices, and enhance competitiveness in the global market, contributing to both national development and global sustainability efforts.

MALAYSIA'S FASHION INDUSTRY AND ITS IMPLEMENTATION OF ISO CERTIFICATIONS

As delineated in the Annual Economic Statistics 2022 report, the manufacturing sector encompasses the physical or chemical alteration of materials or components to create new products, regardless of whether the process is mechanised or manual, conducted in industrial facilities or domestic settings, and irrespective of whether the goods are distributed through wholesale or retail channels. Within this sector, there are eight sub-sectors classified by division. Specifically, the division focusing on textiles, wearing apparel, and leather products includes the manufacture of textiles, wearing apparel, and leather and related products.[34] Within the services sector, the classification of personal services and other activities encompasses a diverse range of service offerings, such as membership organisations, business and professional membership activities, trade unions, computer and household goods repair services, as well as personal care services like textile and fur product laundering and dry-cleaning.[35]

Table 1 below represents the statistics for the sub-sector of textile, apparel, and leather products within Malaysia's manufacturing sector from the year 2017 to 2021, as reported in The Annual Economic Statistics (AES).[36] This data shows that the textile, wearing apparel,

[34]Department of Statistics Malaysia, 'The Annual Economic Statistics (AES) All Sectors' (Putrajaya, Malaysia, 2022), https://newss.statistics.gov.my/newss-portalx/ep/epProductCatalogForm.seam?cid=8941.

[35]Department of Statistics Malaysia, 'The Annual Economic Statistics (AES) - All Sectors', 91.

[36]Department of Statistics Malaysia, 'The Annual Economic Statistics (AES) - All Sectors', 35.

and leather products, which represent the sub-sector of Malaysia's manufacturing sector, have shown consistent growth in terms of the value of gross output across the years.

Sector & Sub-sectors (Manufacturing: Textiles, wearing apparel and leather products) / Year	Value of gross output (RM/ million)	Value of intermediate input (RM /million)	Value added (RM /million)	Total number of persons engaged	Salaries & wages paid (RM /million)	Value of fixed assets (RM /million)
2021	20,315	13,887	6,428	99,199	2,220	5,622
2020	18,318	12,532	5,786	96,289	2,422	6,104
2019	20,846	14,340	6,506	108,133	2,700	6,653
2018	19,945	13,739	6,206	105,028	2,587	6,386
2017	19,486	13,445	6,041	107,619	2,451	6,593

Table 1: Principal Statistics of the Malaysia's Manufacturing Sector by Sub-sector from the year 2017 to 2021

According to the Standards of Malaysia Act 1996 (Act 549),[37] "standard" means;

> "a document established by consensus and approved by a recognised body, that provides, for common and repeated use, rules, guidelines, or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context, with which compliance is not mandatory."

The provisions outlined in the Standards of Malaysia Act 1996 (Act 549) carry substantial implications for the implementation of ISO certifications in Malaysia's fashion industry. Section 15(1) grants the Minister authority to designate and modify standards, providing a framework for the adoption, revision, amendment, or withdrawal of Malaysia's Standards (MS) which is necessary for the fashion sector's adherence to ISO certifications. Simultaneously, Section 10(2) empowers the Director General to play a vital role in international standardisation and accreditation activities, facilitating the alignment

[37] 'Standards of Malaysia Act 1996 (Act 549)' (n.d.), https://jsm.gov.my/images/1-about-dsm/corporate-info/document/Act_549mStandards_of_Malaysia_Act_1996_as_at_30_April_2012.pdf.

of Malaysia's fashion industry with global standards. The significance lies in these provisions enabling Malaysia's government, through the Department of Standards Malaysia (DSM), to advocate for and advance standardisation and accreditation, ensuring the fashion industry's compliance with ISO certifications. The intersection between Malaysia's legislation and the ISO framework, established by Act 549, underscores the legal foundation for Malaysia's legislation adherence to international standards.

Furthermore, this Act establishes the DSM, the National Standards Body (NSB) and the National Accreditation Body (NAB). DSM plays a crucial role in advocating and advancing standardisation and accreditation to enhance the national economy, safeguard public health, safety and welfare of the public, protect consumers, boost industrial efficiency and development, facilitate trade domestically and internationally, and promote international cooperation.[38]

The fashion industry in Malaysia is committed to maintaining high-quality standards. As such, the industry generally adheres to ISO standards. These standards include MS ISO 9001:2015[39] and MS ISO 13688:2004, which cover general protective clothing conditions similar to ISO 13688:1998. Additionally, the industry follows the MS ISO 4415:2005[40] for size designation of clothes, particularly for men's and boys' underwear, nightwear, and shirts, which is similar to ISO 4415:1981. Whereas MS ISO 5084:2003, which deals with determining the thickness of textiles and textile products, was developed by the Technical Committee on Textiles and Textile Products under the authority of the Chemicals and Materials Industry Standards Committee and is identical to ISO 5084:1996, Textiles – Determination of thickness of textiles and textile products. Another

[38]'DSM-Malaysia-Membership: Member Body', International Organization for Standardization (ISO), accessed 15 March 2024, https://www.iso.org/member/1911.html.

[39]'MS ISO 9001:2015' (2015), https://www.iium.edu.my/media/70818/MS ISO 9001 2015 ENG.pdf.

[40]'MS ISO 4415:2005' (2005), https://mysol.jsm.gov.my/getPdfFile/eyJpdiI6IkhYamZ5OHE0NW1VZi9XeC9pd3F5a1E9PSIsInZhbHVlIjoiNE9QNDZ1OEJjbzRMTURCRGJwWlFQQT09IiwibWFjIjoiYTYyMWQ1NmMwZmEyN2I4MTgxZGE0NDcwMzg0OTI3MjYzZTVmYjZkMGQwZjNiMzQzMGY3MWNkNjZhOGEwMTM1MSJ9.

closely related MS is the MS ISO 139:1995, which refers to ISO 139:1973 for Textiles – Standard atmospheres for conditioning and testing.[41]

In a study conducted by Yusof et al. in 2021 to examine quality approaches in Malaysia's garment manufacturing, it was that only 13 surveyed companies had adopted an international quality system, with almost half doing so in fewer than five years. Interestingly, the most popular quality system among these companies was ISO 9001, with nine companies certified.[42] The study by Yusof et al. reveals that certified companies, including those with ISO 9001:2008, WRAP, and OEKO-TEX® Standard 100 certifications, exhibit superior execution of quality programs compared to uncertified counterparts. Notably, ISO 9001-certified firms employ various tools and techniques such as problem-solving, supplier evaluation, staff training, and internal quality audits more extensively. The findings have shed light on the prevalent reliance on traditional quality control and inspection methods among Malaysia's garment manufacturers.[43] In another research, Er Ah Choy discusses the relationship between vertical integration and environmental performance in Malaysia's textile and apparel industry. The study highlights that complying with environmental requirements can help maintain or gain market access, given the export-oriented nature of the industry. Hence, certifications such as Oeko-Tex Standard 100, WRAP, and compliance with ISO 9000, ISO 14000, and ISO 18000 standards facilitate market access and act as market agents.[44]

---

[41]'MS ISO 5084:2003', Department of Standards Malaysia § (2003), https://mysol.jsm.gov.my/getPdfFile/eyJpdiI6IkdDN3IwdUsxQ2ErcVFjNHZjeTZHN2c9PSIsInZhbHVlIjoiSkgxZHNwU2lZZ2sxenZXM0xlblFqdz09IiwibWFjIjoiYmFmNWQ3ZGMyMmNjZTA0ZTAyZTQxYjVhMDk1Yzc3NmRkZjMxZWI1YWIyNjQ0YTZiNDUwYmRkNzVmZTIxNjIyOCJ9.

[42]Yusof, Sabir, and McLoughlin, 'Quality Approaches for Mass-Produced Fashion: A Study in Malaysian Garment Manufacturing', 1678.

[43]Yusof, Sabir, and McLoughlin, 'Quality Approaches for Mass-Produced Fashion: A Study in Malaysian Garment Manufacturing', 1680.

[44]Er Ah Choy, 'Prestasi Alam Sekitar Rantaian Industri Tekstil Dan Pakaian Di Malaysia: Faktor Dorongan Daripada Perspektif Pemodenan Ekologi (The Environmental Performance of the Textile and Apparel Industrial Linkage in Malaysia: Motivating Factors from an Ecological ', *GEOGRAFIA Online Malaysian Journal of Society and Space* 5, no. 3 (2009): 53, https://doi.org/ISSN 2180-2491.

In Malaysia's manufacturing sector, Qaisar Ali et al. noted that ISO 14001 stands out as an established EMS, widely embraced by textile firms nationwide. This system is a crucial benchmark for assessing EMS adoption within the industry.[45] The MS ISO 14000 series encompasses standards parallel to twenty international ISO 14000 standards, tailored to accommodate local standards and cultural nuances. To attain MS ISO 14001 certification, companies undergo a six-step process, including application submission, adequacy audit, compliance audit, certification, yearly surveillance, and reassessment.[46] Another important observation concerns a group of 72 textile companies operating in Malaysia's fashion and textile manufacturing sector, which were identified in a study conducted by the abovementioned authors. These companies have obtained several certifications, including ISO 9001 and ISO 27001:2005. Financial data from the years 2013 to 2015 for Malaysia's textile firms were obtained from the DSM database, which was sourced from online databases and firms' annual reports.[47] According to the research, textile companies that adopted EMS certification, such as ISO 14001, saw significant changes in their performance compared to those that did not adopt EMS certification. The study also found that eco-conscious consumerism directly impacted the performance of companies that adopted EMS certification.[48] The study analysed data from 7 ISO 14001 certified firms and 59 non-certified firms and found that certified firms experienced significant changes in return on assets (ROA), return on sales (ROS), and sales over assets (SOA) over three years, while non-certified textile firms showed no significant changes in their performance.[49]

[45]Ali et al., 'Green Behavior and Financial Performance: Impact on the Malaysian Fashion Industry Qaisar', 6.

[46]Shahryar Sorooshian and Lee Sue Yee, 'Demotivating Factors Affecting the Implementation of ISO 14001:2015 in Malaysia', *Environmental Quality Management* 29 (2019): 2–3, https://doi.org/10.1002/tqem.21664.

[47]Ali et al., 'Green Behavior and Financial Performance: Impact on the Malaysian Fashion Industry Qaisar', 6.

[48]Ali et al., 'Green Behavior and Financial Performance: Impact on the Malaysian Fashion Industry Qaisar', 1.

[49]Ali et al., 'Green Behavior and Financial Performance: Impact on the Malaysian Fashion Industry Qaisar', 10.

Goh Eng Ann et al. conducted a study to assess the effects of EMS certification on firms' performance, examining the benefits of ISO 14001 adoption and comparing them to implementation costs.[50] They discovered that achieving ISO 14001 positively influences the perceived efficiency and effectiveness of EMS, with notable improvements in various performance dimensions. Nonetheless, firms with ISO 14001 certification tend to exhibit enhanced environmental responsibility and overall efficiency, potentially making them better suppliers.[51] Although ISO 14001 appears advantageous, their research uncovered drawbacks. Implementing an ISO 14001 EMS did not facilitate reductions in lead times, costs, or quality enhancements. Furthermore, enhancing environmental quality necessitates collaboration among government, businesses, and the community.[52] Their research concludes that ISO 14001 certification positively affects firms' performance, particularly in perceived economic impact, environmental impact, and customer satisfaction, and enhances an EMS, even in its mature stage, as a continuous improvement initiative. While ISO 14001 is not the sole method for effective environmental management, and registration alone does not ensure exceptional business outcomes, their study demonstrates its significant impact and benefits for overall company positioning.[53]

[50]Ann, Zailani, and Wahid, 'A Study on the Impact of Environmental Management System (EMS) Certification towards Firms' Performance in Malaysia', 87.

[51]Ann, Zailani, and Wahid, 'A Study on the Impact of Environmental Management System (EMS) Certification towards Firms' Performance in Malaysia', 87.

[52]Ann, Zailani, and Wahid, 'A Study on the Impact of Environmental Management System (EMS) Certification towards Firms' Performance in Malaysia'.

[53]Ann, Zailani, and Wahid, 'A Study on the Impact of Environmental Management System (EMS) Certification towards Firms' Performance in Malaysia', 88.

Hartini Mohd Razali et al.'s study implies that adherence to ISO standards and obtaining patents can help protect the designs and innovations of batik producers in Malaysia, contributing to the industry's growth and sustainability.[54]

As reported in the Green Technology Master Plan Malaysia 2017-2030 executive summary, a survey that was conducted on ISO 14001-certified manufacturers registered with the Federation of Malaysian Manufacturers (FMM) in the year 2013, shows a result that these manufacturers could reduce the negative impact of their activities on the environment due to their sound environmental management abilities. Additionally, these organisations were adept at implementing environmental management accounting practices in their business operations. As of the year 2017, over 500 ISO 14001-certified companies, including SMEs and large enterprises, are registered with the FMM.[55]

As far as the government's role is concerned, the MyHIJAU SME and Entrepreneur Development Programme is one of the Malaysia's government's initiatives that encourage local businesses to adopt eco-friendly practices and offer green products and services. The programme aims to help participating companies integrate the best green practices into their operations.[56] Referring to Green Technology Master Plan Malaysia 2017-2030, the programme will expand its scope to educate and train businesses on the implementation of green manufacturing practices and will also encourage manufacturers to obtain specific certifications, such as ISO 14001, which promote adherence to global environmental management standards. By

[54]H. M. Razali et al., 'Current Challenges of The Batik Industry in Malaysia and Proposed Solutions', *AIP Conference Proceedings* 2347, no. July (2021): 6, https://doi.org/10.1063/5.0055651.

[55]'Green Technology Master Plan Malaysia 2017-2030', *Ministry of Energy, Green Technology and Water (KeTTHA)* (Putrajaya: Ministry of Energy, Green Technology and Water Malaysia (KeTTHA), 2017), 56, https://www.pmo.gov.my/wp-content/uploads/2019/07/Green-Technology-Master-Plan-Malaysia-2017-2030.pdf.

[56]'MyHijau SME & Entrepreneur Development Program', Malaysian Green Technology And Climate Change Corporation, accessed 15 March 2024, https://www.mgtc.gov.my/our-services/myhijau-sme-entrepreneur-development-program/#:~:text=MyHIJAU SME and Entrepreneur Development,local green products and services.

obtaining these certifications, companies can effectively reduce the negative impact of their activities on the environment and improve their environmental management system framework.[57]

There are several examples of companies successfully implementing the ISO standards, and one such company is Penfabric in Malaysia. [58] Penfabric is a textile manufacturer located in Penang, Malaysia, and is a subsidiary of Toray Industries Inc. from Japan. The company specialises in yarn spinning, weaving, dyeing, and finishing and has diversified into higher value-added textiles while prioritising sustainability in response to global competition. Penfabric has obtained certification in occupational safety, environmental management, and product quality, following ISO 9001-2008 and ISO standards.

A more recent example of an approach towards implementing standardisation in the Malaysia's fashion industry is Malaysia's first 3D Fashion Pod which was introduced during a Show and Tell Press Segment at Mayamode, the nation's premier co-working fashion studio around the year 2023 as reported by Malaysiakini news.[59] This innovative pod incorporates 3D body scanning technology, facilitating precise body measurements, accelerating production, eliminating physical samples, reducing sample-making costs, and minimising material waste, thereby promoting sustainable fashion practices. The initiative aims to empower virtual fashion and made-to-measure clothing while complementing the National Size Malaysia Campaign, which seeks to establish a national standard sizing system through the analysis and collection of Malaysia's body data measurements. Developed in collaboration with Puspamara Sdn Bhd, a prominent garment manufacturing company, this advancement underscores Malaysia's progress as a leader in digitised garment development, leveraging 3D body scanning and Computer-Aided Design (CAD) technologies to drive innovation in the fashion industry.[60] Hence, Malaysia's first 3D Fashion Pod signifies the fashion industry's shift towards ISO standards by promoting sustainability (reduced waste,

[57]'Green Technology Master Plan Malaysia 2017-2030', 63.

[58]'Penfabric: About Us - OEKO-TEX', Penfabric, 2023, https://www.penfabric.com.my/aboutus/OEKO-TEX.html.

[59]'Taylor's University Continues to Be a Trailblazer in Fashion Education', *Malaysiakini*, 10 July 2023, https://www.malaysiakini.com/brandedcontent/671461.

[60]'Taylor's University Continues to Be a Trailblazer in Fashion Education'.

aligning with ISO 14001) and quality (precise sizing, meeting ISO 9001) through 3D body scanning technology, even without explicit ISO certification. This approach fosters environmental responsibility and customer satisfaction, making Malaysia's fashion more competitive.

The significance of ISO implementation in the fashion industry is further supported in the most recent study by Wang and Zakaria in the year 2024, which focuses on how garment sizing and fit affect the sustainability of Malaysia's apparel industry.[61] It explores the sizing and fit issues in the Malaysia's apparel industry, identifies sustainability challenges arising from these issues, and proposes strategies to address them. The ultimate goal is to provide empirical support and strategic guidance for the sustainable development of the Malaysia's apparel industry, emphasising the importance of establishing a standard sizing system in Malaysia.[62]

This study critically evaluated the literature and identified the urgent need for a standardised sizing system to alleviate consumer dissatisfaction and market chaos.[63] The study suggests that establishing a proprietary sizing system in the Malaysia's apparel industry is crucial for enhancing sustainability and addressing the gaps in standardised apparel sizing. By tailoring sizing systems to align with Malaysia's population anthropometric data, the industry can enhance customer satisfaction, minimise waste and returns, and foster a more sustainable and economically viable ecosystem. The study advocates for a customised sizing regime to enhance sustainability, improve garment fit, and minimise environmental impacts, highlighting the importance of garment size and fit in global sustainability efforts.[64] Additionally, it aligns with the principles of standardisation by ISO, which can streamline processes, enhance efficiency, and improve consumer satisfaction in the apparel industry. This study resonates with ISO

[61]Wang and Zakaria, 'Influence of Size and Fit on Malaysian Apparel Industry Sustainability : A Scoping Review'.

[62]Wang and Zakaria, 'Influence of Size and Fit on Malaysian Apparel Industry Sustainability : A Scoping Review', 1.

[63]Wang and Zakaria, 'Influence of Size and Fit on Malaysian Apparel Industry Sustainability : A Scoping Review', 10–11.

[64]Wang and Zakaria, 'Influence of Size and Fit on Malaysian Apparel Industry Sustainability : A Scoping Review', 11.

standards in the fashion industry by emphasising the significance of establishing a standardised garment sizing system.

ISO STANDARDS IMPLEMENTATION IN OTHER INDUSTRIES IN MALAYSIA AND THEIR CHALLENGES

To meet the unique demands of the Malaysia's fashion industry, ISO must continue to evolve. Meanwhile, the fashion industry in Malaysia can take steps to improve its adherence to the ISO standards. This can be exemplified by the study of Mohd Rizaimy Shaharudin et al. which found that the efficacy of ISO 9001 for QMS adoption in Malaysia's electrical and electronics (E&E) firms is influenced by various factors. The study suggests that companies should prioritise internal motivation, employees' attributes, and top management's commitment to achieving the effectiveness of ISO 9001 for QMS adoption. Specifically, inner drive and employees' attributes play a significant role in adopting ISO 9001 for QMS, particularly in continuous improvement, prevention of non-conformities, customer satisfaction, and prevention of non-conformities. Top management's support is also essential for continuous improvement within an organisation. The contingency theory can serve as a foundation for successfully utilising these factors to adopt ISO 9001 for QMS.[65] Although the study was conducted on Malaysia's E&E firms, the finding is relevant and can also be adopted in Malaysia's fashion industry to ensure the successful adoption of ISO 9001 for QMS.

On the other hand, Shahryar Sorooshian and Lee Sue Yee highlighted barriers to implementing ISO 14001:2015 in Malaysia.[66] Internal factors include a lack of employee commitment, training, and management support. External factors range from high implementation

[65]Rizaimy Mohd Shaharudin et al., 'Determinants of ISO 9001 Quality Management System Effectiveness Amongst Electrical And Electronics Manufacturing Firms In Malaysia', *International Journal for Quality Research* 12, no. 3 (2018): 670, https://doi.org/10.18421/IJQR12.03-07.

[66]Sorooshian and Yee, 'Demotivating Factors Affecting the Implementation of ISO 14001:2015 in Malaysia'.

costs and lack of resources to the absence of legal requirements. High costs are found to be the major obstacle for smaller companies.[67]

In the year 2016, Keng and Kamal conducted a literature review in their study on the implementation of ISO for QMS in construction companies in Malaysia.[68] According to their findings, there are two main categories of problems that arise during the implementation process, which are human-related problems and technical-related problems. Human-related problems arise from people's involvement during implementation, such as lack of commitment, poor communication, resistance to change, inadequate training, and lack of participation. At the same time, the latter is caused by high implementation and maintenance costs, lack of resources, difficulty in interpreting the standard, increased paperwork, and remote job sites.[69] According to them, in Malaysia, ISO-certified construction companies faced implementation challenges, prompting them to send employees for training conducted by some ISO consultants. However, such training was limited to department heads, leading to a communication gap with subordinates. The documentation process was hindered by a lack of human resources.[70] The findings of Tan Chin Keng and Syazwan Zainul Kamal's research on ISO for QMS implementation in construction companies in Malaysia, particularly the identified human-related and technical-related problems, offer valuable insights for the fashion industry in Malaysia. Understanding and addressing issues like lack of commitment, poor communication, resistance to change, and inadequate training are crucial in ensuring a smooth ISO implementation process. Additionally, insights into technical challenges as discussed and obtained from Tan Chin Keng and Syazwan Zainul Kamal's research can guide fashion and industry

[67]Sorooshian and Yee, 'Demotivating Factors Affecting the Implementation of ISO 14001:2015 in Malaysia', 6,9,10.

[68]Tan Chin Keng and Syazwan Zainul Kamal, 'IMPLEMENTATION OF ISO QUALITY MANAGEMENT SYSTEM IN CONSTRUCTION COMPANIES OF MALAYSIA', *Journal of Technology Management and Business* 3, no. 1 (2016): 1–23.

[69]Keng and Kamal, 'IMPLEMENTATION OF ISO QUALITY MANAGEMENT SYSTEM IN CONSTRUCTION COMPANIES OF MALAYSIA', 8.

[70]Keng and Kamal, 'IMPLEMENTATION OF ISO QUALITY MANAGEMENT SYSTEM IN CONSTRUCTION COMPANIES OF MALAYSIA', 16.

players in overcoming similar obstacles. The emphasis on comprehensive training beyond department heads and the importance of strong leadership support underscores the need for holistic and inclusive approaches. These findings can serve as a blueprint for enhancing ISO implementation in Malaysia's fashion industry, fostering better compliance with standards and improved overall efficiency.

In summary, Mohd Rizaimy Shaharudin et al.'s study on ISO 9001 for QMS adoption in the E&E sector underscores the importance of internal motivation, employees' attributes, and top management commitment, a framework applicable to achieving ISO standards in the fashion industry. Goh Yen Nee and Nabsiah Abdul Wahid's research on ISO 14001 for EMS in SMEs highlights the positive impact on operational and business performance, offering a model for collaboration in promoting ISO benefits to SMEs. Shahryar Sorooshian and Lee Sue Yee's study and identification of barriers, including cost and resource constraints, resonates with the challenges faced by smaller fashion companies. Tan Chin Keng and Syazwan Zainul Kamal's insights on ISO for QMS implementation in construction companies pinpoint human-related and technical challenges, serving as a blueprint for the fashion industry to address issues of commitment, communication, resistance to change, and interpretation difficulties, ultimately guiding a comprehensive and inclusive approach for successful ISO implementation in Malaysia's fashion industry.

ENSURING ISO STANDARDS COMPLIANCE IN THE MALAYSIA'S FASHION INDUSTRY AND REGULATORY ALIGNMENT

Liabilities may arise if a product fails to meet the required specifications or production process requirements, resulting in non-conformities with ISO standards. These non-conformities may be due to production errors or faulty product components.[71] As an example, liabilities may arise if products fail to meet required specifications or

[71]Shaharudin et al., 'Determinants of ISO 9001 Quality Management System Effectiveness Amongst Electrical And Electronics Manufacturing Firms In Malaysia', 666.

production process requirements, leading to non-conformities with ISO standards. Non-conformities, stemming from production errors or faulty components, necessitate corrective actions under Clause 10.2.1 of the MS ISO 9001:2015.[72]

Beyond ISO standards, Malaysia's fashion industry operates within a comprehensive legal framework covering IP, consumer protection, and labour laws. While ISO certification is a valuable tool for enhancing a company's credibility and products' quality assurance, misrepresenting the ISO certification can lead to severe consequences. In a recent case, *Awise Co Ltd v Carely Industries Sdn Bhd (formerly known as LLH Solutions Sdn Bhd) & Ors [2023] MLJU 2157*[73], Anand Ponnudurai J held that the defendants made reckless misrepresentations to induce the plaintiff to place orders with them. The misrepresentations include the fact that the first defendant allegedly claimed that it is a glove manufacturing company and the defendants sent fake 1SO 9001 certificates to the plaintiff. As a result of these continued misrepresentations, the plaintiff was prevented from discovering the true nature of the first defendant's business and the collaboration would not have been entered between the parties. The judge found the defendant liable for fraudulent misrepresentation under the Malaysia Contracts Act 1950. Applying this principle to the Malaysia fashion industry, the legal ramifications of ISO misrepresentation become evident. Liabilities may arise by adducing a fake ISO 9001 certificate and it added legal weight in light of the *Awise Co Ltd's* case. The misrepresentation of ISO credentials not only violates ethical standards but also carries substantial legal risks. This misalignment with ISO standards in the fashion industry can result in a legal issue of misrepresentation similar to those established in this case, emphasising the imperative for accurate representation.

The Legal Dimensions of ISO Implementation

Legal frameworks are essential to ensure that organisations comply with the ISO standards. These frameworks may include regulatory compliance, certification processes, and legal implications for non-

[72] MS ISO 9001:2015, 19.

[73] Awise Co Ltd v Carely Industries Sdn Bhd (dahulunya dikenali sebagai LLH Solutions Sdn Bhd) & Ors [2023] MLJU 2157 (2023).

compliance. The Standards of Malaysia Act 1996 establishes the DSM and empowers them to promote and advocate for standardisation and accreditation. Although not directly imposing legal obligations, the Act creates a legal framework that indirectly influences companies seeking to demonstrate adherence to best practices.

The fashion industry in Malaysia is subject to a complex and ever-changing legal framework that requires businesses to comply with various regulations and standards. It is important to note that the ISO standards themselves are not mandated by Malaysia's law, but their implementation can have legal implications. However, companies can become contractually bound to implement them and to show the credibility of their businesses conducted. This has been evidenced in the case of *Awise Co Ltd*. For example, a foreign buyer may require a Malaysia's garment manufacturer to be ISO-certified as a condition of doing business and failure to adhere to such contractual obligations could lead to legal disputes settled under Malaysia's contract law. Additionally, ISO certification can be used as evidence in product liability lawsuits, and implementing ISO standards can help companies comply with Malaysia's environmental regulations.

Implementing ISO 14001 for EMS can indirectly address legal compliance. While not a substitute for adhering to specific environmental regulations, a robust EMS can demonstrate a company's proactive approach to environmental responsibility. Conversely, the absence of such a system could increase the risk of regulatory violations and legal penalties under Malaysia's environmental legislation.

In Malaysia, remote legal issues and frameworks in fashion industries refer to the challenges that organisations face in fully implementing ISO standards due to factors such as cost constraints, regulatory complexities, and a lack of understanding and awareness of the standards. This could lead to partial implementation, making it important to address legal issues and frameworks effectively for successful and comprehensive ISO implementation through this research. Therefore, this analysis provides a better understanding of the implementation of ISO within the Malaysia's fashion industry by addressing the potential implications and legal consequences. It emphasises the significance of navigating the legal aspects of ISO standards to ensure a successful and comprehensive integration within the industry.

ANALYSIS OF INTERNATIONAL PRACTICES: EXAMINING THE IMPACT OF ISO STANDARDS ADOPTION ON TEXTILE INDUSTRY

Abbes Nedra et al. conducted a study to investigate the impact of implementing the ISO 9001:2008 standard on the success of Lean Six Sigma (LSS) programs within SMEs. They achieved this by analysing data from surveys, interviews, and case studies of 85 SMEs.[74] Their study found that implementing the LSS methods is the most effective way to achieve successful results in textile companies with ISO 9001 certification. They concluded that the ISO 9001 certification is crucial for successfully implementing the LSS tools and methods in textile companies and integrating the LSS projects with management systems such as the ISO 9001 standard is essential for implementing LSS in an organisation.[75] As per the study, 90% of textile companies surveyed agreed that the primary advantage of ISO 9001 certification is improved implementation of the LSS tools and methods, making them more efficient. The study found that 62.14% of organisations perceived improved problem-solving as the main benefit, followed by quality problem reduction, which is 32.56% and waste reduction, 31.26%. These results confirm the positive impact of ISO 9001 standards and articles on the successful implementation of the LSS in textile companies.[76] This study compares the quality management practices of Malaysia's textile companies and Eastern European SMEs regarding the ISO 9001 certification and LSS implementation. The research reveals that there are differences between the two regions, and Malaysia's companies are not exploiting the ISO 9001 certification to integrate the LSS practices effectively like their Eastern European SME counterparts. This gap could be due to differences in organisational culture, resources, and management approaches. The

[74]Abbes Nedra et al., 'Effect of ISO (9001) Certification and Article Type Produced on Lean Six Sigma Application Successes: A Case Study Within Textile Companies', *Fibres and Textiles in Eastern Europe* 30, no. 2 (2022): 17, https://doi.org/10.2478/ftee-2022-0003.

[75] Nedra et al., 'Effect of ISO (9001) Certification and Article Type Produced on Lean Six Sigma Application Successes: A Case Study Within Textile Companies', 19.

[76] Nedra et al., 'Effect of ISO (9001) Certification and Article Type Produced on Lean Six Sigma Application Successes: A Case Study Within Textile Companies', 21.

Eastern European SMEs tend to be more proactive in quality management and process improvement initiatives. The study recommends that Malaysia's companies should leverage their ISO 9001 certification and embrace LSS practices to enhance their quality management systems and process improvement initiatives.

A research study by Lo et al. analysed the impact of ISO 14000 adoption on textile companies in the US, particularly those publicly listed and certified.[77] The research findings show that being certified significantly impacts the Return on Assets (ROA) and Return on Sales (ROS) of firms. Over a period of three years, when compared to non-certified firms, certified firms saw a median abnormal improvement in the ROA ranging from 1.2% to 2.9%, resulting in additional profits of up to US$31.05 million. This indicates that certified firms have a financial advantage over their non-certified competitors. The study focused on the commonly used EMS in the fashion and textile industry, ISO 14000, and found that it contributes to firms' profitability in the fashion supply chain. Certified firms were more cost-efficient in their production processes, resulting in a better ROS than their non-certified competitors.[78]

Zimon et al. conducted research to classify textile industry organisations in a European country cluster.[79] The study classified organisations for research based on their compliance with the ISO 9001 or ISO 14001 requirements and their involvement in the textile industry.[80] Implementing the ISO 9001 requirements streamlined supply chain integration and market adaptation.[81] The ISO 14001 standard strongly supports product design, cost reduction, and

[77]Chris K.Y. Lo, Andy C.L. Yeung, and T.C.E. Cheng, 'The Impact of Environmental Management Systems on Financial Performance in Fashion and Textiles Industries', *International Journal of Production Economics* 135 (2012): 561–67, https://doi.org/10.1016/j.ijpe.2011.05.010.

[78]Lo, Yeung, and Cheng, 'The Impact of Environmental Management Systems on Financial Performance in Fashion and Textiles Industries', 565.

[79]Zimon, Madzik, and Sroufe, 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry'.

[80]Zimon, Madzik, and Sroufe, 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry', 4.

[81]Zimon, Madzik, and Sroufe, 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry', 6–7.

environmental awareness while adapting to changing business landscapes.[82] Implementing these two standardised management systems significantly impacted every aspect examined, particularly improving cooperation with external stakeholders and environmental performance.[83] Furthermore, organisations that have implemented both standards had a higher positive impact on supply chain integration than organisations that have only implemented the requirements of the ISO 14001 standard.[84] Based on the responses, it was found that the ISO 9001 standard has a better environmental performance than the ISO 14001 standard. Although the ISO 9001 standard is a QMS that can support ecological processes, its primary objective is not environmental performance. It has a lower impact on the environment than other systems, especially in terms of designing products with environmental performance in mind and increasing environmental awareness.[85] They added that implementing ISO 9001: 2015 can significantly support integrating environmental processes. The benefits of this standard mainly focus on improving relationships between supply chain links, internal processes, and external stakeholders.[86]

Two empirical studies examine the impact of the ISO implementation on promoting sustainable supply chains in the textile industry. The first study is by Zimon and Madzik which focuses on organisations operating in southeastern Poland and Slovakia that hold a certified QMS according to ISO 14001.[87] The objective was to determine the impact of ISO 14001 implementation on creating sustainable supply chains in the textile industry. The study revealed that ISO 14001 significantly impacts various aspects of environmental

[82] Zimon, Madzik, and Sroufe, 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry', 7.

[83] Zimon, Madzik, and Sroufe, 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry', 7.

[84] Zimon, Madzik, and Sroufe, 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry', 9.

[85] Zimon, Madzik, and Sroufe, 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry', 9.

[86] Zimon, Madzik, and Sroufe, 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry', 13.

[87] Dominik Zimon and Peter Madzik, 'Impact of Implementing ISO 14001 Standard Requirements for Sustainable Supply Chain Management in the Textile Industry', *FIBRES & TEXTILES in Eastern Europe* 27, no. 6 (2019): 8–14, https://doi.org/10.5604/01.3001.0013.4462.

management. The respondents emphasised that the standard has the greatest impact on promoting ethical leadership and environmental policy commitment among top management. Additionally, the standard helps conserve raw materials and energy by regulating activities to minimise consumption and promote recycling. Adopting ISO 14001 also increases environmental awareness, encouraging organisations to consider environmental issues throughout the product life cycle and promoting eco-friendly solutions among customers and supply chains. The standard significantly impacts streamlining reverse logistics, focusing on waste reduction and compliance with environmental standards, leading to reduced costs associated with waste recovery and management.[88] Another study, conducted by Zimon et al examines the influence of implementing standard QMSs on improving selected logistics processes in SMEs operating in the textile industry. The study was carried out on a group of 33 enterprises in Poland and Slovakia in the year 2017.[89] The results showed that ISO 9001 positively impacted procurement and production processes for SMEs, addressing issues related to supplier selection, timely deliveries, and product design. The study also revealed that QMSs improve logistics processes by enhancing product quality, streamlining supplier monitoring, and optimising procurement. Mature systems are more effective in improving logistics processes. However, simultaneously implementing two standardised management systems may not yield additional benefits due to the challenges of integrating multiple systems within smaller organisations. The research indicates limited influence on saving and generating costs associated with ISO 9001 implementation and improvement, so cost minimisation should be carefully analysed.[90]

At this juncture, it is worth noting that Malaysia's fashion industry employs ISO standards such as ISO 9001 and ISO 14001 to

[88] Zimon and Madzik, 'Impact of Implementing ISO 14001 Standard Requirements for Sustainable Supply Chain Management in the Textile Industry', 8–11.

[89] Dominik Zimon, Teresa Gajewska, and Marcela Malindzakova, 'Implementing the Requirements of ISO 9001 and Improvement Logistics Processes in Smes Which Operate in the Textile Industry', *Autex Research Journal* 18, no. 4 (2018): 392, https://doi.org/10.1515/aut-2018-0020.

[90] Zimon and Madzik, 'Impact of Implementing ISO 14001 Standard Requirements for Sustainable Supply Chain Management in the Textile Industry', 396.

ensure quality and environmental management. However, studies have shown that the adoption rate of these standards is lower compared to international benchmarks. While certified companies have experienced benefits in profitability and environmental impact, many manufacturers still rely on traditional methods. The government does provide programmes to promote green practices and certification, but there is room for wider industry adoption. To match international practices, it may be beneficial to focus on more advanced standards like ISO 14000 for a more comprehensive approach to sustainability and integrate the LSS with ISO 9001 to improve process efficiency and lead to further improvements.

CONCLUSION

The research underscores the profound benefits of implementing ISO certification and standards, from various perspectives, particularly from the perspectives of EMS and QMS, both at national and global scales. Furthermore, it advocates for a collaborative approach and highlights the importance of balancing the interests of fashion manufacturers, industries, governments, and consumers in promoting sustainable and ethical practices. This collaborative effort would provide companies with the necessary resources and guidance to implement ISO standards effectively and sustainably. Beyond its reputation as a mark of quality, ISO certification carries significant legal implications and benefits for the fashion industry and its key players.

Accordingly, further research is warranted to delve deeper into the challenges and opportunities associated with ISO implementation in the Malaysia's fashion industry, considering both qualitative and quantitative study perspectives. Such research initiatives in relation to this would empower companies to access the resources and support the need to enhance their sustainability and ethical practices.

In conclusion, this study highlights the multifaceted benefits of ISO certification for the fashion industry, including textiles, garments, and apparel sectors striving to improve their sustainability, quality, safety, and efficiency. By implementing the ISO standards and collaborating with relevant stakeholders, fashion companies can demonstrate their commitment to ethical and responsible practices,

reduce legal and reputational risks, and contribute towards achieving the SDGs, fostering more sustainable and ethical practices in the fashion industry.

As outlined in the Standards of Malaysia Act 1996 (Act 549), this study demonstrates a clear understanding of the legal framework governing standards and their adoption in Malaysia. By highlighting provisions such as Section 15(1) granting the Minister authority to designate and modify standards, and Section 10(2) empowering the Director General to engage in international standardisation activities, the article underscores the legal foundation for Malaysia's adherence to international standards. Moreover, the mention of ISO standards' potential role in legal compliance and regulatory adherence further emphasises the interconnectedness between ISO certification and legal considerations. Therefore, while the legal perspective may not be exhaustive, it offers a foundational understanding of the regulatory environment that governs ISO certifications in Malaysia, thereby enriching the discussion within the context of this study.

Overall, the analysis examines the ISO as an international organisation that independently develops and publishes standards for various industries and sectors, offering guidance and best practices for quality management, environmental management, occupational health and safety, information security, and other areas. While the ISO standards are voluntary and lack legal force, they can still play a crucial role in ensuring regulatory compliance and can bring significant implications for legal compliance and risk management within organisations. In some instances, governments or regulatory bodies may refer to the ISO standards in their laws, regulations, or procurement requirements. Implementing the ISO standards can also help organisations demonstrate legal compliance and mitigate legal risks by adopting internationally recognised best practices. Nonetheless, this study acknowledges that the ISO standards can impact legal compliance and regulatory adherence, as they may be referenced or adopted by governmental bodies in their laws, regulations, or procurement requirements. Hence, future research could explore the legal implications of the ISO certifications in greater depth, offering a more comprehensive examination of the intersection between the ISO standards and legal frameworks specific to the fashion industry in Malaysia.

REFERENCES

Ali, Qaisar, Asma Salman, Shazia Parveen, and Zaki Zaini. 'Green Behavior and Financial Performance: Impact on the Malaysian Fashion Industry Qaisar'. *SAGE Open* 10 (2020): 1–14. https://doi.org/10.1177/2158244020953179.

Ann, Goh Eng, Suhaiza Zailani, and Nabsiah Abd Wahid. 'A Study on the Impact of Environmental Management System (EMS) Certification towards Firms' Performance in Malaysia'. *Management of Environmental Quality: An International Journal* 17, no. 1 (2006): 73–93. https://doi.org/10.1108/14777830610639459.

Awise Co Ltd v Carely Industries Sdn Bhd (dahulunya dikenali sebagai LLH Solutions Sdn Bhd) & Ors [2023] MLJU 2157 (2023).

Badhwar, Aayushi, Saniyat Islam, and Caroline Swee Lin Tan. 'Exploring the Potential of Blockchain Technology within the Fashion and Textile Supply Chain with a Focus on Traceability, Transparency, and Product Authenticity: A Systematic Review'. *Frontiers in Blockchain* 6, no. February (2023): 1–19. https://doi.org/10.3389/fbloc.2023.1044723.

Choy, Er Ah. 'Prestasi Alam Sekitar Rantaian Industri Tekstil Dan Pakaian Di Malaysia: Faktor Dorongan Daripada Perspektif Pemodenan Ekologi (The Environmental Performance of the Textile and Apparel Industrial Linkage in Malaysia: Motivating Factors from an Ecological '. *GEOGRAFIA Online Malaysian Journal of Society and Space* 5, no. 3 (2009): 44–56. https://doi.org/ISSN 2180-2491.

Department of Standards Malaysia. ENVIRONMENTAL MANAGEMENT SYSTEMS – REQUIREMENTS WITH GUIDANCE FOR USE (FIRST REVISION) (ISO 14001:2004, IDT) (2005). http://reg.upm.edu.my/eISO/portal/standard ISO/MS ISO 14001 2004.pdf.

Department of Statistics Malaysia. 'The Annual Economic Statistics (AES) - All Sectors'. Putrajaya, Malaysia, 2022. https://newss.statistics.gov.my/newss-portalx/ep/epProductCatalogForm.seam?cid=8941.

Eicher, Lawrence D., Willy Kuert, Roger Maréchal, Vince Grey, Raymond Frontard, Olle Sturen, Anders Thor, and Roseline Barchietto. *Friendship Among Equals: Recollections from ISO's First Fifty Years*. ISO (International Organization for Standardization), 1997. http://www.iso.org/iso/home/about/the_iso_story.htm.

'Green Technology Master Plan Malaysia 2017-2030'. *Ministry of Energy, Green Technology and Water (KeTTHA)*. Putrajaya: Ministry of Energy, Green Technology and Water Malaysia (KeTTHA), 2017. https://www.pmo.gov.my/wp-content/uploads/2019/07/Green-Technology-Master-Plan-Malaysia-2017-2030.pdf.

Hazudin, Siti Fahazarina, Siti Aishah Mohamad, Ilyani Azer, Rozain Daud, and Halil Paino. 'ISO 14001 and Financial Performance: Is the Accreditation Financially Worth It for Malaysian Firms'. *Procedia Economics and Finance*, 2015, 56–61. https://doi.org/10.1016/s2212-5671(15)01131-4.

Hultgren, Michael, and Fredrik Pajala. 'Blockchain Technology in Construction Industry- Transparency and Traceability in Supply Chain'. ROYAL INSTITUTE OF TECHNOLOGY, 2018. http://www.diva-portal.org/smash/get/diva2:1229861/FULLTEXT01.pdf.

Igini, Martina. '10 Concerning Fast Fashion Waste Statistics'. Earth.Org, 2023. https://earth.org/statistics-about-fast-fashion-waste/.

International Organisation for Standardisation (ISO). 'ISO 11612:2015'. Accessed 15 March 2024. https://www.iso.org/standard/57457.html.

International Organisation for Standardisation (ISO). 'Technical Committees'. Accessed 24 April 2024. https://www.iso.org/technical-committees.html.

International Organization for Standardization (ISO). 'About Us'. Accessed 15 March 2024. https://www.iso.org/about-us.html.

International Organization for Standardization (ISO). 'Contributing to the UN Sustainable Development Goals with ISO Standards'.

Geneva, Switzerland, 2018. https://www.iso.org/publication/PUB100429.html.

International Organization for Standardization (ISO). 'DSM-Malaysia-Membership: Member Body'. Accessed 15 March 2024. https://www.iso.org/member/1911.html.

International Organization for Standardization (ISO). 'ISO/TC 38 (Textiles)'. Accessed 15 March 2024. https://www.iso.org/committee/48148.html.

International Organization for Standardization (ISO). 'ISO 14001:2015(En) Environmental Management Systems — Requirements with Guidance for Use'. Accessed 15 March 2024. https://www.iso.org/obp/ui/en/#iso:std:iso:14001:ed-3:v1:en.

International Organization for Standardization (ISO). 'ISO 14001:2015 Environmental Management Systems — Requirements with Guidance for Use'. Accessed 15 March 2024. https://www.iso.org/standard/60857.html.

International Organization for Standardization (ISO). 'ISO 45001:2018 Occupational Health and Safety Management Systems — Requirements with Guidance for Use'. Accessed 15 March 2024. https://www.iso.org/standard/63787.html.

International Organization for Standardization (ISO). 'ISO 8559-2:2017 Size Designation of Clothes — Part 2: Primary and Secondary Dimension Indicators'. Accessed 15 March 2024. https://www.iso.org/standard/64075.html.

International Organization for Standardization (ISO). 'ISO 9001:2015 Quality Management Systems — Requirements'. Accessed 15 March 2024. https://www.iso.org/standard/62085.html.

International Organization for Standardization (ISO). 'Standards'. Accessed 15 March 2024. https://www.iso.org/standards.html.

Keng, Tan Chin, and Syazwan Zainul Kamal. 'IMPLEMENTATION OF ISO QUALITY MANAGEMENT SYSTEM IN CONSTRUCTION COMPANIES OF MALAYSIA'. *Journal of Technology Management and Business* 3, no. 1 (2016): 1–23.

Lo, Chris K.Y., Andy C.L. Yeung, and T.C.E. Cheng. 'The Impact of Environmental Management Systems on Financial Performance in Fashion and Textiles Industries'. *International Journal of Production Economics* 135 (2012): 561–67. https://doi.org/10.1016/j.ijpe.2011.05.010.

Macchion, Laura, Andrea Furlan, and Andrea Vinelli. 'The Implementation of Traceability in Fashion Networks'. In *18th Working Conference on Virtual Enterprises (PROVE)*. Vicenza, Italy, 2017. https://inria.hal.science/hal-01674902/file/455531_1_En_8_Chapter.pdf.

malaysiakini. 'Taylor's University Continues to Be a Trailblazer in Fashion Education'. 10 July 2023. https://www.malaysiakini.com/brandedcontent/671461.

Malaysian Green Technology And Climate Change Corporation. 'MyHijau SME & Entrepreneur Development Program'. Accessed 15 March 2024. https://www.mgtc.gov.my/our-services/myhijau-sme-entrepreneur-development-program/#:~:text=MyHIJAU SME and Entrepreneur Development,local green products and services.

MS ISO 4415:2005 (2005). https://mysol.jsm.gov.my.

MS ISO 5084:2003, Department of Standards Malaysia § (2003). https://mysol.jsm.gov.my

MS ISO 9001:2015 (2015). https://www.iium.edu.my/media/70818/MS ISO 9001 2015 ENG.pdf.

Muslim, Nina. 'Saving The Environment One Dress At A Time'. *Fokus BERNAMA*, 18 September 2023. https://www.bernama.com/en/bfokus/news.php?environment&id=2226538#:~:text=FASHION WASTE&text=According to SWCorp and KlothCares,tonnes end up in landfills.

Nedra, Abbes, Xu Jun, Sejri Nèjib, and Duan Jiajia. 'Effect of ISO (9001) Certification and Article Type Produced on Lean Six Sigma Application Successes: A Case Study Within Textile Companies'. *Fibres and Textiles in Eastern Europe* 30, no. 2 (2022): 17–22. https://doi.org/10.2478/ftee-2022-0003.

Patagonia. 'Material Traceability'. Accessed 6 May 2024. https://www.patagonia.com/our-footprint/material-traceability.html.

Penfabric. 'Penfabric: About Us - OEKO-TEX', 2023. https://www.penfabric.com.my/aboutus/OEKO-TEX.html.

Razali, H. M., M. Ibrahim, M. Omar, and S. F.M. Hashim. 'Current Challenges of The Batik Industry in Malaysia and Proposed Solutions'. *AIP Conference Proceedings* 2347, no. July (2021). https://doi.org/10.1063/5.0055651.

Shaharudin, Rizaimy Mohd, Siti Fairuza Hassam, Jamaludin Akbar, Nik Ramli Nik Abdul Rashid, and Noor Fatihah Natashabiha Mohd Noor. 'Determinants of ISO 9001 Quality Management System Effectiveness Amongst Electrical And Electronics Manufacturing Firms In Malaysia'. *International Journal for Quality Research* 12, no. 3 (2018): 655–76. https://doi.org/10.18421/IJQR12.03-07.

Sorooshian, Shahryar, and Lee Sue Yee. 'Demotivating Factors Affecting the Implementation of ISO 14001:2015 in Malaysia'. *Environmental Quality Management* 29 (2019): 1–11. https://doi.org/10.1002/tqem.21664.

Standards of Malaysia Act 1996 (Act 549) (n.d.). https://jsm.gov.my/images/1-about-dsm/corporate-info/document/Act_549_-_Standards_of_Malaysia_Act_1996_as_at_30_April_2012.pdf.

Thakker, Alka Madhukar, and Danmei Sun. 'Sustainable Development Goals for Textiles and Fashion'. *Environmental Science and Pollution Research*, 2023. https://doi.org/10.1007/s11356-023-29453-1.

United Nations. 'Take Action For The Sustainable Development Goals'. Accessed 15 March 2024. https://www.un.org/sustainabledevelopment/sustainable-development-goals/.

Wang, Yiyan, and Norsaadah Zakaria. 'Influence of Size and Fit on Malaysian Apparel Industry Sustainability : A Scoping

Review'. *Sustainability (Switzerland)* 16, no. 6 (2024): 1–14. https://doi.org/https://doi.org/10.3390/su16062486.

Yusof, N. J. M., T. Sabir, and J. McLoughlin. 'Quality Approaches for Mass-Produced Fashion: A Study in Malaysian Garment Manufacturing'. *International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering* 9, no. 10 (2015): 1675–81. https://www.researchgate.net/profile/Nor-Mohd-Yusof-2/publication/313006281_Quality_Approaches_of_Mass-Produced_Fashion_-_A_Study_in_Malaysian_Garment_Manufacturing/links/588c2d5292851cef13601250/Quality-Approaches-of-Mass-Produced-Fashion-A-Study-in-Mala.

Zimon, Dominik, Teresa Gajewska, and Marcela Malindzakova. 'Implementing the Requirements of ISO 9001 and Improvement Logistics Processes in Smes Which Operate in the Textile Industry'. *Autex Research Journal* 18, no. 4 (2018): 392–97. https://doi.org/10.1515/aut-2018-0020.

Zimon, Dominik, and Peter Madzik. 'Impact of Implementing ISO 14001 Standard Requirements for Sustainable Supply Chain Management in the Textile Industry'. *FIBRES & TEXTILES in Eastern Europe* 27, no. 6 (2019): 8–14. https://doi.org/10.5604/01.3001.0013.4462.

Zimon, Dominik, Peter Madzik, and Robert Sroufe. 'The Influence of ISO 9001 & ISO 14001 on Sustainable Supply Chain Management in the Textile Industry'. *Sustainability (Switzerland)* 12, no. 10 (2020): 1–19. https://doi.org/10.3390/su12104282.