Integrating Behavioural Factors into the Fashion Renting Supply Chain: A Simulation-Based Approach

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KEYWORDS

Fashion renting, Customer behaviour, Sustainable supply chain, Circular economy, Hybrid Simulation

ABSTRACT

The fashion industry has a significant environmental impact. To minimize its effects, circular business models like fashion renting emerged. However, simulation models that combine supply chain operations with customer behaviour to assess environmental sustainability are still underexplored. This study develops a simulation model to evaluate how fashion renting supply chains perform when customer behaviours are integrated. Using a real-world use case, this research compares six scenarios with different rental periods, transport frequencies, and truck types. The results indicate that higher transport frequencies increase the share of renting among enjoyment-driven customers but can negatively impact sustainability. Notably, the findings demonstrate that fashion renting is not inherently more sustainable than traditional buying, presenting underperforming results in some scenarios. Only specific supply chain configurations successfully lowered aggregate emissions. This research highlights the importance of aligning supply chain design with behavioural factors to achieve true sustainability.

INTRODUCTION

The fashion industry plays an important role in the global economy, involving more than 300 million individuals across its supply chain and moving approximately USD 1.3 trillion (Gyde & McNeill, 2021). On the other hand, the fashion industry is one of the most impactful, both in terms of resource utilization and pollution (EUR-Lex, 2022; Mukendi & Henninger, 2020), generating 10% of the world greenhouse gas emissions (Kala & Chaubey, 2024). In this context, the shift toward more sustainable and circular business models is becoming increasingly urgent, and fashion renting, can allow to extend the product life cycle and reduce environmental impact (Mont, 2002).

Considering fashion's significant environmental impact and its capacity for change, comprehending the dynamics of fashion renting within this sector can enhance broader initiatives toward circular economy practices, potentially providing a model for other businesses seeking sustainability (Lang et al., 2025). These dynamics, in fashion renting systems, are strongly influenced by customer behaviour, an aspect that has been studied by several authors in the literature (Ahmed et al., 2024; Lang & Zhang, 2024; Noe & Hyun, 2024).

Simulation models offer a valuable approach to analysing complex systems and have already been applied in other context to evaluate the performance of renting systems (Roci & Rashid, 2023). However, existing studies rarely combine the modelling of customer behaviour with a quantitative assessment of the environmental sustainability of fashion renting systems. This gap limits the ability to fully understand and capture how behavioural dynamics influence sustainability outcomes and to support decision-making. As suggested by Quadras et al., 2025, future research is needed to develop quantitative models that integrate customers' behavioural factors into decision support systems for renting businesses.

In response to this gap, this study aims to develop a simulation model that incorporate customer behaviour to assess the sustainability performance of the renting system and further support companies in designing and managing successful sustainable fashion renting supply chains. Specifically, this study aims to address two main research questions:

- RQ1: How can customer behavioural factors be integrated into simulation-based decision support systems for assessing the environmental sustainability of fashion renting businesses?
- RQ2: How do fashion renting supply chain configurations influence the sustainability performance of the renting system when behavioural factors are considered?

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The study is presented as follows: section 2 provides the literature background. Section 3 describes the simulation model and the scenario configuration. Section 4 presents the results of the simulated scenario and their discussion, finally, section 5 concludes the paper highlighting the main contribution, limitations and further research.

LITERATURE BACKGROUND

Factors influencing customer behavior

There are different factors that influence the customer behaviour in fashion renting business models. The main factors and their average impact were identified within a previous systematic literature review (Quadras et al., 2025). The factor of enjoyment emerges as the most significant positive factor with a correlation of 0.7 on the customers intention to rent fashion (Jain & Mishra, 2020; Kim & Jin, 2020; Lang et al., 2019). Enjoyment is the pleasure derived from using luxury fashion items or from the collaborative consumption process. It can also be understood as the pride derived from the experience of treasure hunting for luxury rentals. Fashion renting (also known as clothing libraries or collaborative consumption), has emerged as a modern business model where customers do not purchase items, but rent them for a certain period, allowing extension of the product life cycle and reduction of environmental impact. This business model, which falls within the Product-Service System (PSS) research area, is a clear strategy that companies can adopt to transition towards a circular economy and therefore a more sustainable consumption of fashion (Mont, 2002). Hence sustainability is assumed to be a driving factor for the fashion renting business case. Sustainability factors are the level of awareness and concern a customer has for environmental issues related to clothing production and waste. It reflects the customer's consideration of environmental impact when making consumption choices, prior engagement in sustainable practices and the perceived environmental benefits of online fashion renting, like reducing waste and resource conservation (Jain & Mishra, 2020; Kim & Jin, 2020; Savelli et al., 2024).

Sustainability factors in Supply Chain Management Simulation

Sustainability in supply chains is characterized by the integration of environmental, social, and economic aspects within the supply chain operations (Adhitya et al., 2011; Barbosa et al., 2023). The effective management of sustainable supply chains requires the adoption of innovative tools aiming at achieving operational excellence and enhancing sustainability performance (Mangla et al., 2020). In this context, simulation modelling has emerged as a valuable tool to evaluate sustainable alternatives to conventional supply chain configurations. Existing literature on the application of simulation within sustainable supply chain management mainly focuses on the energy consumption of supply chains (Allen et al., 2019; Che et al., 2022; Fornasiero et al., 2017; Youssef et al., 2023). Further approaches include the reduction of carbon dioxide equivalent (CO_2) emissions (Jaegler & Burlat, 2012; Jager et al., 2017; Ketenci et al., 2025) or refer to the circularity of products in order to support waste reduction (Moreno et al., 2019). Simulation is commonly used to conduct scenario analyses based on a "what-if" logic, enabling the comparison of alternative supply chain configurations. Often, Agent-Based Modelling (ABM) and Discrete Event Simulation (DES) are employed in combination (Jager et al., 2017; Youssef et al., 2023). To support the simulation of distribution processes, Geographic Information Systems (GIS) have been integrated to account for realistic logistics routes (Barbosa et al., 2023). For example, Jaegler & Burlat 2012 model different supply chain configurations within the cooler manufacturing supply chain using DES to support supply chain management to select eco-friendly supply chains. Che et al. 2022 compare alternative supply chain configurations, explicitly considering centralized versus decentralized decision-making approaches using simulation. Moreover, Moreno et al. 2019 model the redistribution processes of plastic bottles and cardboard packaging fostering circular economy. Furthermore, Fani et al. 2025 use DES to compare supply chain network configurations to assess the trade-off between sustainability and service level in terms of time.

Regarding the fashion renting supply chain, the literature remains limited. Fani et al., 2022 employ a hybrid simulation approach to analyse the impact of customer behaviour in retail stores and its effects on peer interactions and business performance during and after the implementation of a rental service. Fani & Bandinelli, 2023 compare the environmental impact of conventional fashion supply chains and fashion renting supply chains using a hybrid simulation approach. Doing this, they model the actual customer behaviour, but do not analyse the effects on customer behaviour. Furthermore, Kumar et al., 2022 apply DES to model business-to-business workwear garment rental operations, with a specific focus on inventory management, but not addressing the behaviour of the customers. Therefore, this research aims to model different fashion renting supply chain configurations, integrate customer behaviour and analyse the impact on the sustainability performance of the renting system.

MODEL DESCRIPTION AND SCENARIO CONFIGURATION

Following the steps of simulation studies (Banks, 1999), the fashion renting system has been abstracted into a conceptual model showing the logical relationships concerning the components and the system structure, and then translated into a computerized model. The supply chain is modelled using AnyLogic™ simulation software. This section describes the mathematical modelling and the scenario configuration. The parameters used are described in Table 1.

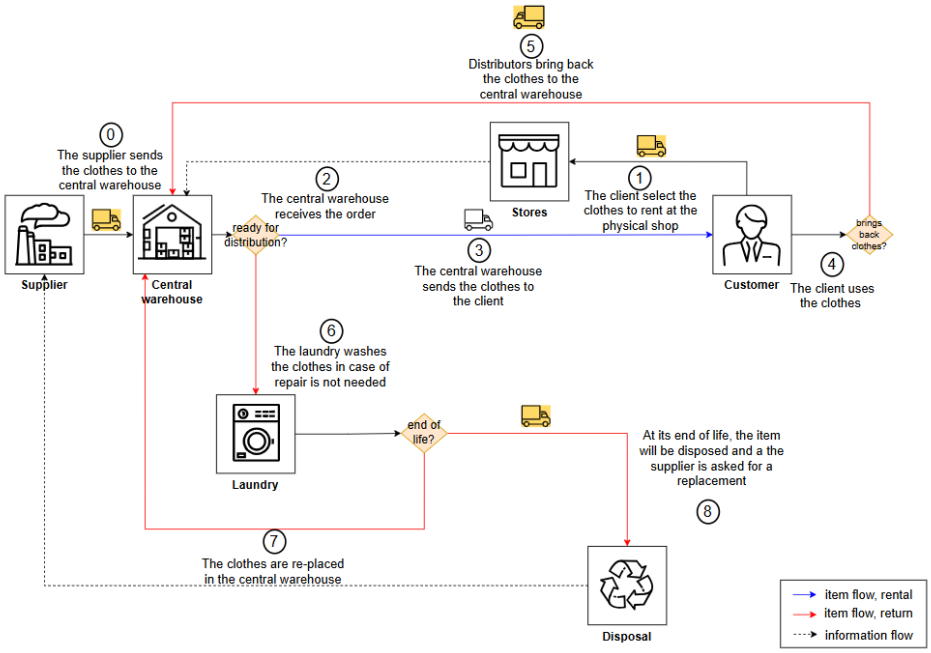


Figure 1: Fashion renting supply chain

Table 1: Parameters for mathematical modelling

Symbol	Description
K	Set of Retail Stores
P	Set of Items (Products)
C	Set of Item Categories
P_{CK}	Set of items (products) of category C in the retail store K
ξ_c^{buy}	Emission of buying new item from category c
$\xi_{p,c,k}^{agg}$	Aggregate emissions of rented item p, from category c at store k
$S(t)$	State Variable that represents the latent satisfaction level at observation time t.
E_i	Impulse Magnitude that represents positive or negative experiences retrieved from the database ($\in \{+1, -1\}$).
t_i	Event Timestamp, i.e., the specific point in time when the i-th experience occurred
e	Euler constant
β	Decay Coefficient, a positive parameter ($0 < \beta < 1$) that determines the rate of information loss over time.
$\lambda(t)$	Current rate of return
λ_0	Return rate of a neutral customer

The supply chain is represented in Figure 1. The actors involved in the value chain are the main representatives of the fashion renting supply chain: supplier, central warehouse, stores, customer, and laundries. The supply chain considers only in-store rental, and the possibility of recycling clothes is not included. The items (parameter P in Table 1), divided into eight different item categories (parameter C in Table 1), and information flows within the system and among the involved stakeholders are displayed in Figure 1. This configuration is based on the use case of Please Don't Buy company placed in Italy (Arrigo, 2023).

The supply chain system is composed by one central warehouse, located in Carpi, and six stores (parameter K in Table 1) located in Rome, Milan, Bari, Salerno, Turin and Modena. The cleaning process (i.e., the service provided by laundries) is performed inside the warehouse as an internal service. Real-world locations for the six stores and central warehouse are modelled using GIS to simulate realistic logistics, with internal laundry processing defined by a triangular distribution (1, 2, 3 hours). The model assumes unconstrained sales staff and allocates one truck per store for special occasion items used once per rental.

The customer represented in the supply chain is configured to have different behaviours. Based on a prior study by Quadras et al. (2025) on customer behaviour in fashion rentals, it was possible to identify two primary preferences that can influence attitudes and, consequently, the adoption of fashion rentals as opposed to traditional clothing purchases: enjoyment and sustainability factors. Two main customer typologies were derived from these two factors, they are:

- Enjoyment-driven: this customer type values the overall experience and enjoyment of renting fashion. They care about a smooth service (e.g., no waiting times).
- Sustainability-driven: this customer type chooses renting as an ethical and sustainable lifestyle decision. They care about reducing the environmental footprint.

The two customer typologies are modelled as agent types within the model, and they decide whether to rent an item based on their preference factors. The enjoyment-driven customer decides to rent or buy based on the availability of the item. If the item is available in the store, the

customer will rent. If it is not available for renting, the customer will buy the item. The sustainability-driven customer decides to rent or buy based on the sustainability factor of the item, as expressed in equation (1). Equation (1) compares the average of aggregate emissions of the item category C at the store K. If the client perceives that renting the item is more sustainable than buying it, the sustainability-driven customer will rent, otherwise he will buy the item.

$$\frac{\sum_{p=0}^{P_{CK}} \xi_{p,c,k}^{agg}}{P_{CK}} < \xi_c^{buy} \quad (1)$$

The customer renting rate (parameter $\boldsymbol{\lambda_0}$ in Table 1) is one per two months at the simulation start. However, the return rate is modelled to account the customer's satisfaction from the rental experience. To incorporate the satisfaction state into the customer's behavioural dynamics, the transition frequency is modelled using a stochastic intensity function. In this framework, the baseline return rate λ_0 is modulated by the latent satisfaction variable $S(t)$ through an exponential transformation, as presented in Equation (2). This formulation ensures that the rate remains strictly positive $(\lambda(t) > 0)$ while quantifying the elasticity of retention relative to past experiences.

$$\lambda(t) = \lambda_0 e^{S(t)} \quad (2)$$

The experience value of each customer is between -1 and 1. An experience value of -1 means the customer is unsatisfied, while an experience value of 1 means the customer is satisfied. Every time a customer rents an item the experience value is changed. In the model, the newest experiences have greater intensity compared to the more antique ones to simulate the memory loss. This event is modelled as presented in Equation (3), that represents a time-dependent stochastic accumulation where the current satisfaction level $S(t)$ is the sum of all past experiences E_i, each individually discounted by an exponential decay function. The term $(t - t_i)$ calculates the temporal distance between the present moment and each past event, ensuring that as time progresses, the weight of older experiences diminishes toward zero. The decay coefficient β works as a sensitivity parameter: a higher β creates a "short-term memory" effect where only the most recent events influence the agent's state, whereas a lower β allows historical experiences to persist longer. The model is based on the Hawkes process (Hawkes, 1971), where the current state of a system is an accumulation of weighted past events, the Ebbinghaus's forgetting curve (Averell & Heathcote, 2011), which states that memory retention declines at an exponential rate, and the exponentially weighted moving average (Hunter, 1986), to monitor processes while prioritizing recent data.

$$S(t) = \sum_{i=0}^{I} E_i e^{-\beta(t-t_i)} \quad (3)$$

New customers are assigned types randomly (50%) or inherit the type of their referrer via Word of Mouth (WoM).

To address RQ2, six scenarios vary rental duration (4 or 8 days), transport frequency (1 or 2 weekly), and truck size (small or big). These configurations explore trade-offs: longer rentals improve sustainability but increase waiting times, while higher transport frequency enhances customer enjoyment through faster delivery at the cost of higher CO2 emissions. The scenario configuration is summarized in Table 2.

Table 2: Scenarios configuration

Scenario	Rental period share [4/8 days]	Transport frequency [per week]	Transport type
1	50%/50%	2	Small truck
2	50%/50%	1	Big truck
3	80%/20%	2	Small truck
4	80%/20%	1	Big truck
5	20%/80%	2	Small truck
6	20%/80%	1	Big truck

To evaluate scenario impacts and address RQ2, four KPIs are compared. PSS performance is assessed via overall satisfaction and the share of renting versus buying customers. Sustainability is measured through monthly and aggregate CO_2 emissions derived from production, transport, and laundry activities. These metrics determine how supply chain configurations influence sustainability when behavioural factors are integrated. The simulation time is two years.

RESULTS AND DISCUSSION

Regarding the overall satisfaction over the simulation time for all scenarios, the results are shown in Figure 2. As the results show, after about one year, there is a decline in overall satisfaction for all scenarios. For scenario 3 the decline of satisfaction starts at the latest. The scenarios with two small trucks receive a higher mean overall satisfaction and a higher final value for overall satisfaction. Moreover, as Figure shows, these scenarios achieve higher satisfaction values for a longer time.

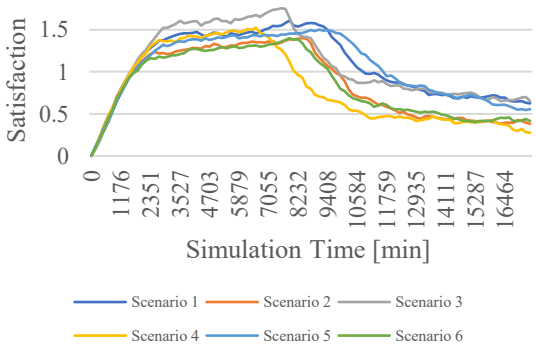


Figure 2: Evolution of satisfaction KPI of each simulation scenario over two years

Regarding the share of renting and buying customers, there is a difference in the behaviour of the two customer types (Figure 3 and Figure 4). In the scenarios with higher transport frequency (scenarios 1, 3, and 5),

the share of renting for the enjoyment-driven customer is higher. While, as expected, the share of renting among the sustainability-driven customers is lower in these scenarios.

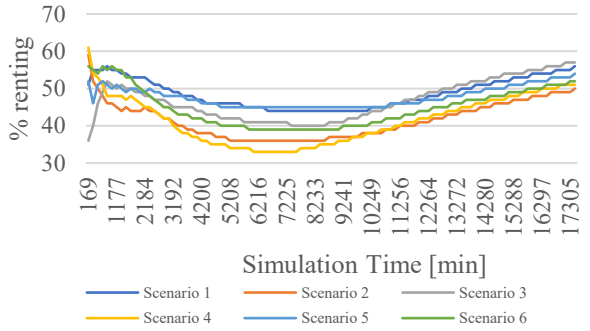


Figure 3: Share of renting of enjoyment-driven customer

The results for the mean monthly emissions for renting, in scenario 5, achieve the lowest value (1195 CO_2), while the mean monthly emissions for renting in scenario 3 achieve the highest value (2346 CO_2) compared to the other scenarios. Moreover, in scenarios 1, 2, 3 and 4, a higher frequency of transports increases the monthly emissions for renting by 6% (scenarios 1, 2) and 12% (scenarios 3, 4). While in scenario 5 and 6 a higher frequency of transports decreases the monthly emissions for renting by 38%. This shows that in scenarios with a longer period of renting the long renting period has a higher impact on reducing the monthly emissions for renting than the transport frequency.

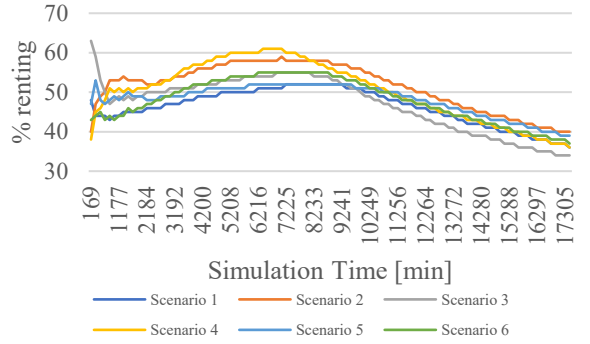


Figure 4: Share of renting of sustainability-driven customer

Comparing the mean monthly emissions for renting and then ones for buying, monthly emissions for renting are higher than those for buying in the first year, then, starting from the middle of the simulation period, monthly emissions for renting start to get lower, as shown in Figure 5. This is expected since the overall satisfaction for renting starts decreasing at the end of the first year, meaning fewer people is choosing the rental system instead of traditional purchase. In terms of average values, the mean monthly emissions for renting in scenario 5 are the lowest compared to the other scenarios. They are about 37% lower than the emissions for buying. However, this is the only scenario where the monthly emissions of renting are lower.

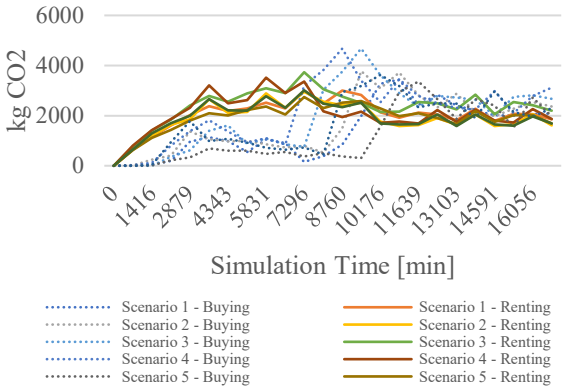


Figure 5: Monthly emissions KPIs of each simulation scenario over two years

Regarding the aggregate emissions for renting and buying (Figure 6) there is just one scenario, where the aggregate emissions for renting are lower than for buying (scenario 4). However, the difference is small (1%). For all other scenarios the aggregate emissions for buying are lower than for renting. The highest variation is achieved by scenario 5 (58%). Regarding the aggregate emissions per store, the store in Modena was found to have the lowest aggregate emissions for all scenarios (mean: 469 CO_2), while the store in Bari has the highest aggregate emissions for all scenarios (mean: 11435 CO_2), followed by the store in Salerno (mean: 10369 CO_2). This can be explained by the distance of the stores to the warehouse, which is based in Modena.

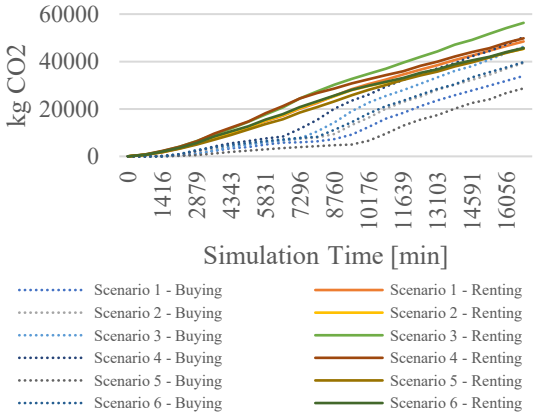


Figure 6: Aggregate emissions KPIs of each simulation scenario over two years

However, while the aggregate results suggest that buying generally leads to lower emissions compared to renting in most scenarios, a temporal analysis of the simulation reveals an important dynamic trend. Specifically, emissions associated with the buying model show a consistent increase from the midpoint of the simulation onwards. This trend coincides with a decline in user satisfaction with the renting model, which in turn drives a higher adoption of traditional purchase behavior. Although this shift is not fully captured within the simulation time horizon, it suggests that extending the simulation over a longer period could potentially alter the overall outcomes. In particular, a continued increase in buying adoption may lead to a reversal of the observed

results, with renting becoming comparatively more sustainable in the long term. This highlights the importance of considering behavioral feedback loops and long-term adoption dynamics when evaluating the environmental impact of alternative consumption models.

CONCLUSION AND OUTLOOK

This study addressed the need to incorporate behavioural dimensions into fashion renting decision-making by developing a simulation model in AnyLogic that integrates these factors into sustainability performance analysis.

Theoretically, this extends decision support system literature by demonstrating how behavioural variables can be systematically embedded to reflect realistic system dynamics (RQ1). Customers preferences and their satisfaction clearly influence the adoption of the renting system and the overall performance. The results indicate that fashion renting is not inherently sustainable and often performs worse than traditional sales (RQ2). However, the findings indicate that the environmental advantage of buying may be transient and dependent on short-term system simulation. When accounting for longer-term behavioural adaptation, the renting model could potentially outperform buying in terms of CO2 emissions.

Practically, the study provides a decision supporting tool for companies to assess the environmental performance of their fashion renting systems while also considering customer behaviour and their overall satisfaction level. The tool can help companies in configuring their rental system to achieve sustainable fashion renting supply chains. Longer rental periods with frequent small-truck transport proved to perform better in achieving realistic sustainability goals, suggesting the variability of results due to the renting system configuration, although this depends heavily on customer adoption and behaviour.

Despite its contributions, this study has some limitations. Behavioural factors are modelled based on assumed and aggregated patterns, which may not fully capture the complexity and heterogeneity of real-world user behaviour. In practice, customer typologies are likely to be more nuanced, as hybrid profiles that combine multiple decision drivers. Also, only two of the most recurrent behavioural factors were included in the developed model. Moreover, the simulation is conducted over a limited time horizon, which constrains the ability to fully observe long-term system dynamics.

Future research could validate the proposed customer typologies using empirical data and extend the model to include more realistic dynamic behaviour. Additionally, exploring other supply chain configurations (including decentralized warehouses, online shops, and local distribution strategies) could be interesting to enrich findings related to the sustainability of fashion renting systems. Expanding the analysis to include economic dimensions would also provide a more comprehensive evaluation of the viability of fashion renting systems.

REFERENCES

Adhitya, A., Halim, I., & Srinivasan, R. (2011). Decision support for green supply chain operations by integrating dynamic simulation and LCA indicators: Diaper case study. *Environmental Science & Technology*, *45*(23), 10178–10185.

Ahmed, B., El-Gohary, H., Khan, R., Gul, M. A., Hussain, A., & Shah, S. M. A. (2024). The Influence of Behavioral and ESG Drivers on Consumer Intentions for Online Fashion Renting: A Pathway Toward Sustainable Consumption in China's Fashion Industry. *Sustainability*, *16*(22), 9723.

Allen, P., Robinson, M., Butans, E., & Varga, L. (2019). Innovations for sustainable lifestyles: an agent-based model approach. *Sustainability Science*, *14*(2), 341–354.

Arrigo, E. (2023). Fashion rental as a new and innovative channel alongside fashion retail. *Sinergie Italian Journal of Management*, *41*(1), 127–145.

Averell, L., & Heathcote, A. (2011). The form of the forgetting curve and the fate of memories. *Journal of Mathematical Psychology*, *55*(1), 25–35.

Banks, J. (1999). Introduction to simulation. In *WSC'99. 1999 Winter Simulation Conference Proceedings. 'Simulation - A Bridge to the Future'* (pp. 7–13).

Barbosa, C., Malarranha, C., Azevedo, A., Carvalho, A., & Barbosa-Póvoa, A. (2023). A hybrid simulation approach applied in sustainability performance assessment in make-to-order supply chains: The case of a commercial aircraft manufacturer. *Journal of Simulation*, *17*(1), 32–57.

Che, C., Zheng, H., Geng, X., Chen, Y., & Zhang, X. (2022). Research on Carbon Emission Reduction Investment Decision of Power Energy Supply Chain—Based on the Analysis of Carbon Trading and Carbon Subsidy Policies. *Energies*, *15*(17), 6151.

EUR-Lex. (2022). *Communication From the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: EU Strategy for Sustainable and Circular Textiles*.

Fani, V., & Bandinelli, R. (2023). Sustainability Assessment Through Simulation: The Case of Fashion Renting. In *2023 Winter Simulation Conference (WSC)* (pp. 899–909).

Fani, V., Bucci, I., Bandinelli, R., & Da Silva, E. R. (2025). Sustainable reverse logistics network design using simulation: Insights from the fashion industry. *Cleaner Logistics and Supply Chain*, *14*, 100201.

Fani, V., Pirola, F., Bindi, B., Bandinelli, R., & Pezzotta, G. (2022). Design Product-Service Systems by Using a Hybrid Approach: The Fashion Renting Business Model. *Sustainability*, *14*(9), 5207.

Fornasiero, R., Brondi, C., & Collatina, D. (2017). Proposing an integrated LCA-SCM model to evaluate the sustainability of customisation strategies. *International Journal of Computer Integrated Manufacturing*, *30*(7), 768–781.

Gyde, C., & McNeill, L. S. (2021). Fashion Rental: Smart Business or Ethical Folly? *Sustainability*, *13*(16), 8888.

Hawkes, A. G. (1971). Spectra of Some Self-Exciting and Mutually Exciting Point Processes. *Biometrika*, *58*(1), 83.

Hunter, J. S. (1986). The Exponentially Weighted Moving Average. *Journal of Quality Technology*, *18*(4), 203–210.

Jaegler, A., & Burlat, P. (2012). Carbon friendly supply chains: a simulation study of different scenarios. *Production Planning & Control*, *23*(4), 269–278.

Jager, B., Agua, F. M. M., & Lienkamp, M. (2017). Agent-based simulation of a shared, autonomous and electric on-demand mobility solution. In *2017 IEEE 20th International Conference on Intelligent Transportation Systems (ITSC)* (pp. 250–255).

Jain, S., & Mishra, S. (2020). Luxury fashion consumption in sharing economy: A study of Indian millennials. *Journal of Global Fashion Marketing*, *11*(2), 171–189.

Kala, D., & Chaubey, D. S. (2024). Exploring the determinants of fashion clothing rental consumption among young Indians using the extended theory of reasoned action. *Global Knowledge, Memory and Communication*.

Ketenci, A., Gutmann, D., Wolf, M., & Ramsauer, C. (2025). Case Study on the Design of more Sustainable and Resilient Manufacturing Networks: A Simulation-Driven Approach. *Procedia CIRP*, *134*, 579–584.

Kim, N. L., & Jin, B. E. (2020). Why buy new when one can share? Exploring collaborative consumption motivations for consumer goods. *International Journal of Consumer Studies*, *44*(2), 122–130.

Kumar, V., Ekwall, D., & Zhang, D. S. (2022). Investigation of rental business model for collaborative consumption - workwear garment renting in business-to-business scenario. *Resources, Conservation, and Recycling*, *182*, 106314.

Lang, C., Seo, S., & Liu, C. (2019). Motivations and obstacles for fashion renting: a cross-cultural comparison. *Journal of Fashion Marketing and Management: An International Journal*, *23*(4), 519–536.

Lang, C., Seo, S., & Liu, S. (2025). Unlocking a Pathway to Fashion Circularity: Insights into Fashion Rental Consumption and Business Practices. *Administrative Sciences*, *15*(8), 288.

Lang, C., & Zhang, R. (2024). Motivators of Circular Fashion: The Antecedents of Chinese Consumers' Fashion Renting Intentions. *Sustainability*, *16*(5), 2184.

Mangla, S. K., Kusi-Sarpong, S., Luthra, S., Bai, C., Jakhar, S. K., & Khan, S. A. (2020). Operational excellence for improving sustainable supply chain performance. *Resources, Conservation, and Recycling*, *162*, 105025.

Mont, O. (2002). Clarifying the concept of product–service system. *Journal of Cleaner Production*, *10*(3), 237–245.

Moreno, M., Court, R., Wright, M., & Charnley, F. (2019). Opportunities for redistributed manufacturing and digital intelligence as enablers of a circular economy. *International Journal of Sustainable Engineering*, *12*(2), 77–94.

Mukendi, A., & Henninger, C. E. (2020). Exploring the spectrum of fashion rental. *Journal of Fashion Marketing and Management: An International Journal*, *24*(3), 455–469.

Noe, H., & Hyun, J. (2024). Why do and why don't consumers use fashion rental services? A consumption value perspective. *Journal of Fashion Marketing and Management: An International Journal*, *28*(3), 566–580.

Quadras, D., Mueller, K., Pirola, F., Heger, J., Fani, V., & Bandinelli, R. (2025). Towards Fashion Renting: Identification Of Influencing Factors For Consumer Behavior. In *ECMS 2025 Proceedings edited by Marco Scarpa, Salvatore Cavalieri, Salvatore Serrano, Fabrizio De Vita* (pp. 62–68).

Roci, M., & Rashid, A. (2023). Economic and environmental impact of circular business models: A case study of White Goods-as-a-Service using multi-method simulation modelling. *Journal of Cleaner Production*, *407*, 137147.

Savelli, E., Francioni, B., Curina, I., & Cioppi, M. (2024). Promoting access-based consumption practices through fashion renting: evidence from Italy. *Journal of Consumer Marketing*, *41*(1), 61–77.

Youssef, M., Schneider, D., Schulz, J., & Reinhart, G. (2023). Flexibility in Global Supply Chains: A Hybrid Energy Consumption Simulation Approach. In F. G. Galizia & M. Bortolini (Eds.), *Lecture Notes in Mechanical Engineering. Production Processes and Product Evolution in the Age of Disruption* (pp. 487–494).