



UNIVERSIDADE CATÓLICA PORTUGUESA

# Improving Operations through Data Collection and Analysis

A Case Study at The Feeting Room

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Católica Porto Business School  
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A Case Study at The Feeting Room

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by

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# Resumo

O surgimento do mercado omnicanal transformou a forma como as organizações interagem com os clientes através de vários canais, evidenciando a importância de uma estratégia sólida apoiada na rápida adaptação à procura no mercado e à satisfação das preferências dos consumidores através de planos e processos precisos, bem definidos e flexíveis.

Este projeto foi realizado no âmbito de um estágio curricular na empresa The Feeting Room, tendo como foco a melhoria da eficiência dos processos e a integração de ferramentas de análise para agilizar e facilitar a tomada de decisões.

Foi efetuada uma análise dos processos de entrada e saída de produtos, de forma a compreender a sua complexidade e identificar lacunas, permitindo assim a implementação de soluções. Foram desenvolvidos dois modelos Excel com o objetivo de otimizar o processo de entrada de produtos em sistema, reduzindo a margem de erros, resultando numa melhor gestão de stock e no combate à perda de informação.

Além disso, foram criados três *dashboards* usando a ferramenta Power BI para recolher dados das vendas e volume de stock possibilitando o Departamento de Merchandising e a Direção da empresa de analisarem e tomarem decisões acertadas e eficazes.

Foi feita uma avaliação aos colaboradores da empresa de forma a compreender os efeitos da implementação e utilização destas ferramentas promovendo uma visão crítica do seu desempenho e utilidade.

Palavras-chave: Otimização de Processos; Logística; Visualização de Dados; PowerBI; KPI's; Análise de Dados; SKU's.



# Abstract

The emergence of the omnichannel marketplace has fundamentally transformed the way organisations interact with customers through various channels, highlighting the importance of a solid strategy supported by swiftly adjusting to market fluctuations and satisfying consumer preferences through precise, well-defined, and flexible plans and processes, providing a competitive advantage over competitors.

This project was carried out as part of a curricular internship at The Feeting Room, focusing on improving process efficiency and integrating analysis tools to streamline and facilitate decision-making.

An exhaustive examination of the procedures for product entry and returns was carried out to reveal complexities and identify shortcomings, therefore enabling the implementation of solutions. Two Excel templates were created to optimise the process of product creation, reduce errors and consequently, handle stock and mitigate information loss. These templates sped up creating products, guaranteeing precision and thoroughness in accordance with company protocols and standards.

Additionally, three Power BI dashboards were constructed to collect sales, inventory, and profitability data for the Merchandising Department and Board to analyse and make educated decisions.

Administrative department staff were assessed to determine the effects of implementing and using these problem-solving tools, promoting a critical view of their performance and usefulness.

Key-words: Process Otimization; Logistics; Data Visualisation; PowerBI; KPI's; Data Analysis; SKU's.

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# Introduction

In the fashion retail industry, various brands, and stores actively market and sell products, necessitating a combination of quality assurance, exploitation of online and physical sales channels, effective brand message, and improved operational processes to remain competitive.

The Feeting Room, a retail company established in Porto, has enhanced the idea of an omnichannel marketplace by focusing on apparel, footwear, and jewellery alongside the investigation for new brands and store concepts, providing the consumers with sensory interactions, guaranteeing a unique and attractive customer experience.

Efficiently synchronizing and enhancing the flow of product input and output processes, as well as conducting thorough data analysis, is crucial for achieving sales success and reducing mistake margins. This study, conducted as part of an educational internship at The Feeting Room, entails a thorough examination of the company's processes practiced by the company, examining strong and weak points with the aim of finding any problems and suggesting potential remedies.

By using Microsoft Excel, PowerBI and Primavera, the study seeks to automate the procedures practiced and speed up data processing to provide comprehensive support for the optimization of each department's methodologies and effective management of the company. Two automated models were built for product entry and recording of stock replenishment in the system, in Excel format, to improve the efficiency and quality of data entering the system, consequently minimizing the probability of errors in the partnership-company connection.

A total of three PowerBI dashboards were also created, allowing corporate divisions to regularly access updated and reliable databases, streamlining the

process of making well-informed decisions and detailed understanding key productivity indicators and organization's earnings, both for partner brands and employees themselves.

The project aims to understand the key elements of a retail business, specifically this company, and its weaknesses to create automated reports and templates that analyse productivity and data quality indicators to ensure organisational success. The research emphasises data analysis for merchandising, stock allocation, store personnel information, management support through brand analysis, and product reference quality and speed.

The investigation raises several crucial inquiries:

- What are the primary challenges associated with the methods required to sustain and enhance this business model?
- How does the method of product introduction affect the sales process in various channels and impact revenue analysis within the company?
- What is the impact of implementing PowerBI and automated tools on the company's operation and data analysis capabilities, and how does it contribute to improving efficiency and decision-making processes?

Based on the information, the work has six chapters. Chapter 1 reviews the research on organised and efficient procedures in this business model and the role of technology tools. Chapter 2 introduces The Feeting Room, detailing two key departments, data storage and processing methods, and the most important analysis metrics in this organisation.

Chapter 3 will analyse the company's methods and their strengths and weaknesses. This chapter will lead to chapter 4, which will describe how to tackle these problems. Chapter 5 provides an opportunity to analyse and discuss the

findings, while chapter 6 serves as a conclusion, summarising the work in a comprehensive manner.



# Chapter 1

## Literature Review

The retail business is undergoing fast upheavals, fuelled by technology breakthroughs, and shifting customer habits. In this setting, effective inventory, merchandising, and decision-making procedures are critical for retail firms to remain competitive and grow in the marketplace. This literature study will look at several areas of inventory management, merchandising tactics, and decision support systems in the retail sector, building on previous research and industry practices.

### 1.1 Omnichannel Marketplace

Omnichannel commerce has revolutionised retail to satisfy consumers' shifting needs. Omnichannel marketplaces seamlessly integrate several sales channels, allowing customers to interact with a brand via shops, websites, mobile apps, social media, and more. Retailers who want to offer a unified shopping experience, improve operational efficiency, and grow their business must understand omnichannel marketplace operations and dynamics (Asmare & Zewdie, 2022).

Using several sales channels, an omnichannel marketplace lets customers interact with a brand across multiple touchpoints. This business model allows customers to switch between online and offline channels while maintaining product availability, pricing, promotions, and customer service (Mishra et al., 2021).

### 1.1.2 Critical Practices in this Business Model

Retail operations depend on inventory management to ensure timely commodity supply and reduce overstocking and stockout costs. Traditional manual operations and periodic assessments often caused inefficiencies and errors. However, RFID and IoT provide real-time inventory tracking systems, improving visibility and accuracy (Rachad et al., 2017).

Furthermore, data analytics and predictive modelling have changed inventory management. Merchants can better forecast demand, optimise inventories, and boost supply chain efficiency (Marinagi et al., 2023). Retailers can predict consumer demand and adjust inventory levels using sales data, market trends, and external factors like weather and economic indicators.

Good inventory management and speedy product entry and replenishment are needed in today's retail environment. Simplifying operations helps companies stay competitive and meet consumer needs (Zennaro et al., 2022). Product entry involves close collaboration between suppliers, brands, and retailers, emphasising communication and information exchange (Ailawadi & Farris, 2017).

Maintaining optimal inventory levels and swiftly meeting client needs requires efficient restocking. Real-time inventory monitoring, demand forecasting, and automated replenishment systems reduce stockouts and boost efficiency (Seghezzi et al., 2023). Automating with templates and processes decreases errors, lead times, and operational inefficiency (Dahr et al., 2022; Peral, 2017).

ERP (Enterprise Resource Planning), SCM (Supply Chain Management) and EDI (Electronic Data Interchange) systems streamline product entry and replenishment, allowing stakeholders to seamlessly integrate and exchange data (Tarigonda et al. 2018). Advanced analytics and AI also improve inventory management, demand forecasting, and order fulfilment (Goti et al., 2023).

### 1.1.2 Merchandise and Store Performance Analysis

Retail management relies on merchandising and shop performance monitoring to optimise product assortments, boost sales, and satisfy customers. Store performance analysis evaluates sales, inventory, and operational efficiency to improve store performance (Midor et al., 2020). Merchandising, on other hand, involves product planning, purchasing, and selling.

Smart merchandising is essential for retailers to enhance sales and profitability. To construct product assortments that are attractive to the intended clients, merchandisers must possess a comprehensive understanding of consumer preferences, market trends, and the dynamics of competition (Ailawadi & Farris, 2017).

Retailers can utilise data analytics and market insights to identify popular items, optimise pricing, and change promotions for increased sales and profitability (Milosavljević et al., 2020).

Store performance analysis is essential for merchandising and operational success. Sales per square foot, gross margin, inventory turnover, and customer satisfaction ratings are all standard KPIs used to evaluate store performance and highlight areas for improvement (Widyarto et al., 2019). By examining store-level data, retailers can identify high-performing stores, evaluate their performance compared to industry peers, and implement best practices to enhance efficiency (Tarigonda et al., 2018).

KPIs (Key Performance Indicators) are quantitative assessments of the success of essential components of a business or activity, frequently related to organisational goals (Huygevoort, 2021). Strategic project KPIs help managers track progress, identify areas for improvement, and make data-driven decisions to improve performance.

Retail merchandising and shop operations KPIs assess sales revenue, profit margins, inventory turnover, customer satisfaction, and store efficiency (Fagan,

2014). These indicators help retailers evaluate merchandising tactics, operational efficiency, and consumer interaction to grow business and compete.

Retailers employ analytics for merchandising and shop performance evaluations. Merchants can gather data from several sources, assess patterns, and act on findings via retail analytics systems, business intelligence (BI) software, and data visualisation tools (Bodea et al., 2008). Predictive modelling, clustering, and sentiment analysis are used to find hidden consumer behaviour patterns, identify new trends, and predict demand (Peral et al., 2017).

## 1.2 Data Analytics

Retailers need data analytics to improve decision-making, operational efficiency, and customer experience. Retailers are using advanced analytics to understand consumer behaviour, market trends, and operational performance from massive amounts of data from point-of-sale transactions, online interactions, and customer feedback (Seghezzi et al., 2023).

Through historical sales data, demand projections, and pattern and trend analysis, predictive analytics models help retailers make better strategic and tactical decisions. Retailers may predict consumer preferences, optimise pricing, and efficiently deploy resources to meet demand using predictive analytics (Verhoef et al., 2015).

Retail operational efficiency is also affected by data analytics. Inventory management, supply chain optimisation, and product restocking can be automated to improve efficiency, cost, and productivity for merchants. Analytics-derived insights help retailers manage shop layouts, staff numbers, and promotional activities, enhancing operational efficiency and profitability (Shi & Lu, 2010).

Data analytics enables marketers to adapt product offerings, promotions, and marketing strategies based on consumer interests and behaviour. Merchants can

enhance customer loyalty and build smooth omnichannel experiences by utilising consumer data from several touchpoints (Verhoef et al., 2015).

Retailers utilise various data analytics methods and technology to gain insights from massive databases. Predictive analytics predict future patterns, descriptive analytics summarise historical data, and prescriptive analytics recommend actions (Goti et al., 2023). Hidden data patterns and correlations are often found using machine learning methods including clustering, classification, and regression (Wengler et al., 2020).

### 1.3 Dashboard Design and Visualisation

To gain insights and make informed decisions, retailers need good dashboard design and visualisation. Dashboards show KPIs, metrics, and trends so stakeholders can follow performance, discover anomalies, and make data-driven decisions in real time.

Retail dashboard design should prioritise simplicity, clarity, and relevance, according to research. Dashboards should have succinct, straightforward information with clear labelling, relevant graphics, and interactive components to engage users and increase usability, allowing them to customise displays and explore detailed data (Cai & Lo, 2020 & Milosavljević et al., 2020)

Retailers need visualisation tools to display complicated data relationships and trends. Retail dashboards utilise bar charts, line graphs, pie charts, and heat maps to assist customers understand trends, comparisons, and distributions (Anand & Grover, 2015). Interactive tools like filters, drilldowns, and hover-over tooltips allow users to dynamically analyse data and better understand retail KPIs like sales performance and consumer behaviour (Tarigonda et al., 2018).

Retail dashboards should be customised for executives, managers, and frontline workers. Executive dashboards provide an overview of performance and trends using high-level KPIs and strategic insights (Rigby, 2011).

However, managerial dashboards provide more accurate analytics and operational data, allowing managers to compare performance to goals, identify areas for improvement, and efficiently allocate resources (Zennaro et al., 2022). Sales workers and store managers use frontline dashboards to make daily decisions and prioritise work by receiving real-time statistics on sales, inventory, and customer interactions (Fagan, 2014).

Retailers can use commercial software, open-source frameworks, and custom apps to develop dashboards. Merchants can develop customised dashboards using these technologies' drag-and-drop interfaces, pre-built templates, and third-party data sources (Wengler et al., 2020).

# Chapter 2

## The Feeting Room

The Feeting Room, created in 2014, sells online and in stores in Porto and Lisbon. The company concentrates on new fashion trends and businesses in footwear, apparel, jewellery, and everyday products. The idea is to give customers a unique shopping experience that goes beyond simple transactions by letting them explore many independent brands.

Emerging Portuguese enterprises are highlighted for their social responsibility and sustainability. The organisation establishes synergistic relationships with business partners through consignment, buy, and drop shipment contracts.

Consignment involves giving items to a third party to sell, with the seller receiving a commission. Consignment options vary by partner, with or without an additional fee. Partners with fee-inclusive consignment contracts must pay a monthly fee for company-channel product sales. This approach eliminates inventory, protecting the company against low sales volume.

The Feeting Room guarantees to bring back all current inventory in stores, matching it with new stock, considering sales, faults, and returns after each sales season (Spring-Summer March 1–August 31 and Fall-Winter September 1–February 28/29). Inconsistencies result in the company compensating for unreturned stock.

The Feeting Room offers a contract type called "Buying," where they buy items from strategic partners, usually well-known, financially successful companies. However, if unsold products remain, the company stocks them for future sales.

At last, the "drop shipping" contract lets the corporation sell online without storage or processing facilities. Alternatively, the merchant sells the product and transmits the sales order to a third-party supplier, who ships it to the consumer.

Finance, marketing, online sales channel administration, shipping, merchandising, and consultancy are housed at The Feeting Room to ensure operational uniformity. This final service, restricted to partners, addresses network administration, social issues, and promotional campaign decisions.

The Feeting Room employs people in its three Porto and Lisbon sites outside of the mentioned departments. These employees manage sales, product collection, shipment, and store operations while communicating with the back office.

This chapter introduces the two departments that are key to the firm's procedures and necessary to study the thesis theme, detailing how the company stores and manages its data.

## 2.1 Logistics Department

The logistics department is essential for fulfilling the requirements of partners and ensuring accurate registration of all goods in the company's database using the Primavera platform. This department is tasked with overseeing four distinct functions.

Firstly, its responsibility is to document the entry of products into the system by utilising invoices/templates provided by brands. The logistics team ensures the precise completion of all necessary data, including the allocation of new SKU's, descriptions, families, subfamilies, brands, seasons, product type, dimensions and weight, name, colour, and quantity of units. The SKU (Stock Keeping Units) is a unique identifier generated by the company's system that functions as the product's citizen card number. It follows a specific format that includes the season, year, brand/supplier code, item number, and size, ensuring accurate identification.

Additionally, the department is accountable for supervising system improvements pertaining to changes in prices, corrections of names or colours,

alterations to supplier codes, weights, and quantities. When managing brand orders, the logistics personnel assess the quantity of ordered items in stock and their respective locations, then communicating with the stores in order to arrange the shipment of the merchandise, along with a document supplied by them that authorises the operation.

Furthermore, the department oversees the procedure of repatriating unsold inventory to brands at the end of each season, particularly for consignment agreements. When partners notify the department about any missing items, a comprehensive examination is conducted on all incoming material, as well as the stock that has been sold, returned due to problems, or requested by the brand. Performing a thorough analysis is crucial for maintaining precise and relevant information for partners, thereby avoiding the costs associated with stock shortages caused by system errors.

Challenges often arise at the end of each season when returning products, particularly when there are disparities in reported data, such as differences between the numbers that were stated and the quantities that were really received. These discrepancies require scrutiny and resolution to maintain accurate records and safeguard financial integrity.

## 2.2 Merchandising Department

The Merchandising department has three functions. Starting with a thorough product selection procedure, in which they select products from various brands based on prior sales statistics and market trends.

Brands provide an inventory catalogue that the department uses a year in advance to choose seasonal merchandise. Assessing retailer quantities and distribution is crucial. For instance, the Fall-Winter 2023 product range is generally finished twelve months in advance, requiring selection during or before the 2022 season.

This collection is curated utilising the company's partner brands and possible external companies. The selection procedure evaluates product range, revenue estimates, market conditions, and brand willingness to sign a deal.

Contracts with partner brands determine product selection for the following year. Consignment products are chosen by the department for free, whereas if the contract is "Buying", the department and board buy the product.

Ensuring that the partner companies deliver needed products consistently and accurately is their second function. It is crucial to enforce compliance with corporate regulations among partners and maintain effective communication with all parties involved. This is essential since the logistics department requires accurate information to seamlessly integrate various components into the system. This technique requires rigorous research of historical sales data and consumer behaviour, as poor decisions could harm the company.

Finally, the merchandising section has the function of regularly analysing the store's stock levels, evaluating the need to allocate products between shops, or the need to re-stock them.

## 2.3 Data Storage and Processing

In early 2023, Power BI was implemented using Primavera's SQL database and SharePoint data, which manages all company operations. Thanks to the information extracted, it was possible to obtain dashboards related to brand analysis, sales indicators, retail performance, and seasonal target achievement. The use of these data analysis and visualization tools, however, were in some way insufficient because doing complete product analysis for a brand still required exporting data from the Primavera system in Excel format.

This data was subsequently processed in order to meet the user's desired analysis, which became an extensive, repetitive and time-consuming process, which required optimization and mechanization of the process.

## 2.4 Main Metrics Used in The Feeting Room

The organisation has set some measures that are necessary for evaluating key features. These metrics include the sales-to-inventory ratio, profitability of brands and items, and customer conversion rate.

The initial and paramount metric, known as the Sell-Out Ratio, was calculated using the following formula.

$$\text{Sell - out Ratio} = \frac{\text{Quantity of Inventory Sold}}{\text{Quantity of Inventory Sold} + \text{Present Stock}} \times 100$$

This measures the proportion of inventory that was sold within a specific time frame, relative to the total inventory available during that same time frame. This indicator offers vital insights into the rate at which inventory is being sold or depleted from the available supply, reflecting the company's performance in terms of products sold by partner brands.

The second metric is the items profitability, derived from the following formula.

$$\text{Profitability per SKU} = \frac{\text{Total Sales Revenue of the Season}}{\text{Number of SKUs in Stock}}$$

The algorithm calculates profitability per SKU by dividing the total sales income by the number of parent SKUs with available stock. This metric indicates how efficiently the available stock is being sold during the defined season, providing a comprehensive understanding of a product's behaviour. Additionally, when considering the combined sales and stock quantity of a brand, it offers a holistic perspective on the brand's overall performance.

When assessing the performance of the workers at the company's points of sale, the board considers the conversion rate indicator, which was obtained by utilising the subsequent formula.

$$\textit{Conversion Rate} = \frac{\textit{Number of Sales}}{\textit{People Count}} \times 100$$

The formula calculates the ratio of sales transactions to the number of store visitors, indicating the proportion of visitors who made a purchase. This indicator is frequently employed to evaluate the efficacy of a store's sales endeavours and its capacity to convert visitors into customers.

All the metrics presented encompass crucial aspects for the business's success, demanding focused attention from both the board and other company departments.

# Chapter 3

## Company Procedures

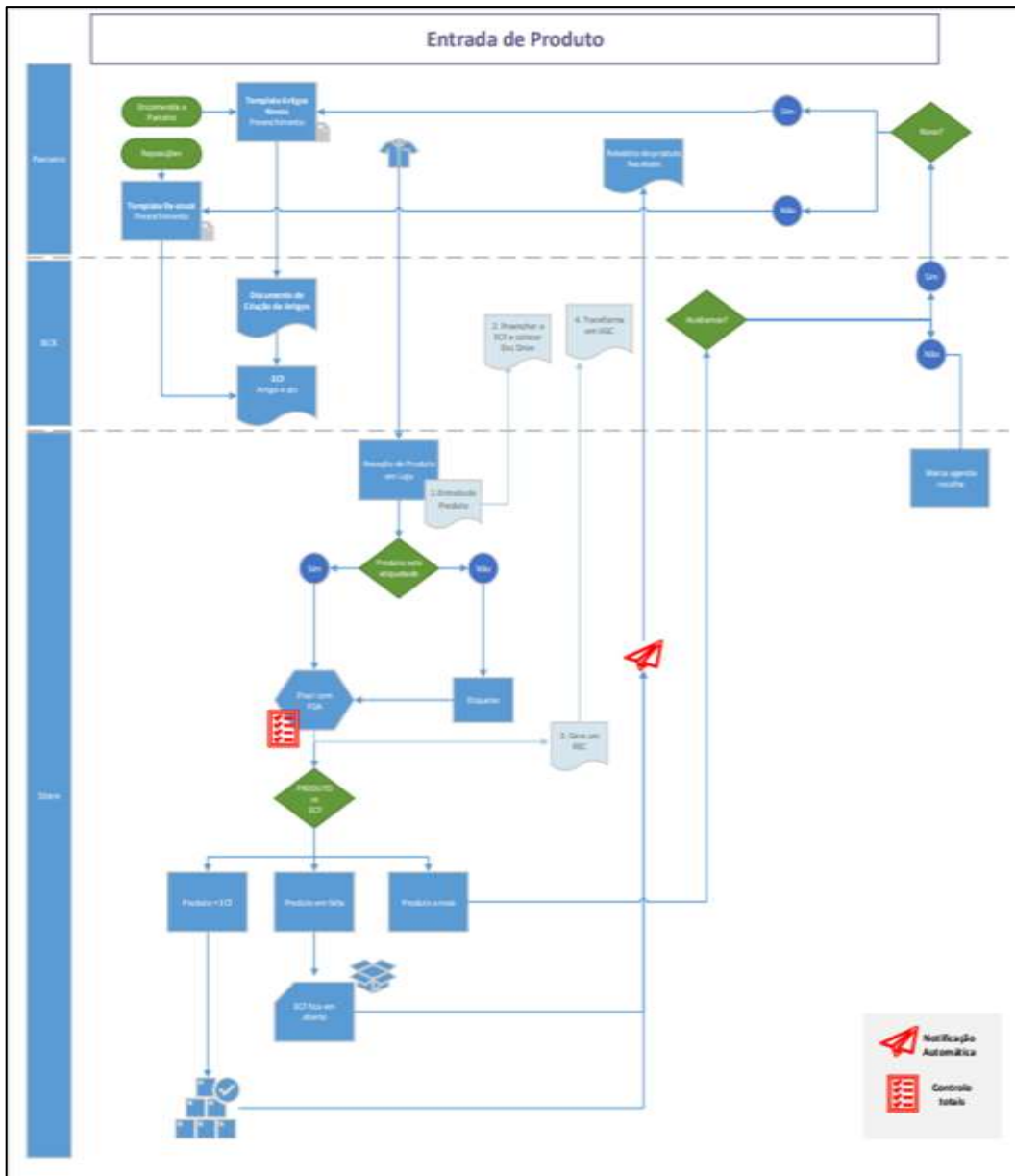
This discussion will examine the specific procedures involved in entering and exiting a product, which are essential for the functioning and expansion of the firm and involve various parties.

### 3.1 Product Entry Process

#### 3.1.1 Process Explanation

As previously said, the input and output process require the involvement of several departments, each of which has a vital role in guaranteeing smooth operations.

The flowchart illustrates the intricate process of including products for sale at The Feeting Room, which involves three essential entities: the affiliated companies, the administrative departments, and the retail locations (stores and their employees).



**Figure 1:** Product Entry Process Flowchart

Source: Self Elaboration for the Company

The process begins when the partner brands send a confirmation of the product order to the Merchandising department for the stores. This confirmation is usually in the form of a business template or invoice. These orders can refer to either acquiring new items or replenishing current ones. During the re-stock process, the software only logs the quantity of Stock Keeping Units (SKUs) that are already present in the system and will be delivered. For new items, the

logistics department is responsible for creating a product creation document that includes all necessary product details, with great attention to detail.

Afterwards, the Primavera system automatically generates a Supplier Order (ECF) document to formally record the products and amounts that will be exchanged. This order is then published in a company drive to ensure that retailers are informed about it. Subsequently, the individual brands send the goods to the retail establishments. Upon receiving the delivery, the store personnel authenticate the contents by cross-referencing them with the ECF stored in the drive. They evaluate the recorded stock and the received products, and then proceed to carry out comprehensive quality inspections. The store personnel proceed to affix identification labels, including the SKU, product name, colour, and barcode, to the merchandise that has been delivered, using the company's internal labelling system.

Once the correct quantity of the product is received, as indicated in the issued document, and after notifying the administrative office, the product is swiftly placed on display, and a confirmation report is given to the partner. Any inconsistencies in inventory are promptly communicated and reported to the brand for resolution, guaranteeing precision and comprehensiveness.

The board management has the authority to decide whether to accept or reject any excess products (not included in the initial ECF) if they deem it impractical to accept this additional stuff. After approval is established, a new ECF is launched to record the revised values, so restarting the process for these products.

The successful addition of products to the system relies on effective communication between partner brands and the organisation, as well as the completion of all pertinent fields to guarantee a precise and accurate introduction of the items into the system. Efficient inventory management is crucial for

maintaining compliance with quality control methods and conducting precise analysis of discrepancies in received amounts and products.

The system ensures transparency and clarity through the deployment of open communication and rigorous verification processes by both the retailers and the administrative office. This not only guarantees the achievement of internal operations within the organisation, but also fosters transparency in the information exchanged with partners.

### 3.1.2 Process Fragilities

The process of introducing products is intricate and prone to vulnerabilities. Difficulties arise due to the complexity of establishing alliances with partner businesses, as well as the complexity of the steps necessary for a product to be put on sale.

The partners, often overwhelmed by the volume of products they handle, struggle to meet the company's protocol standards necessary for integration into the system. Consequently, this hampers the logistics department's ability to obtain adequate product information, creating challenges for the merchandising department.

Regular communication is essential to ensure partner companies adhere to company guidelines. However, this also affects the timely availability of products for sale. Delays in communication have a significant impact on the entire process, including stores receiving stock without prior information about the products.

Another significant challenge is the labour-intensive process of completing product templates for introduction into Primavera, relying on tabulated data. Human error is more likely due to the influx of products from various companies and the numerous regions requiring completion.

These gaps can lead to traffic congestion during the entry process, causing delays in product registration and resulting in financial losses in terms of sales, which not only impacts The Feeting Room but also partner businesses.

Even in the case of re-stocking of products, brands may complete restock templates assuming their products have already been sold on The Feeting Room. However, upon system inspection, no SKU associated with those products is found, potentially due to alterations in brand references or name changes. In such instances, the logistics department, in collaboration with the merchandising department, must contact the brands to obtain information about the missing products.

This issue poses a certain degree of harm to the company. Changes in the company's information or incorrect data for product filling can lead to the creation of two SKUs for the same item, causing confusion and additional costs during the stock delivery process for the season.



Operational procedures are seamlessly coordinated with the process of returning merchandise to partner brands. At the end of each season, brands initiate the return process for their products, particularly under consignment contracts. Upon receiving the return request, the back office collaborates with the logistics department and the merchandising department to assess its feasibility.

Next, all existing stock for each brand is meticulously analysed within the system, with stores conducting checks to ensure compatibility with Primavera values. The identified stock for return is then registered in the Primavera system, generating a Customer Return Request (PDC) document. This document is shared on a company drive for store access. Stores utilize the PDC file to segregate and package the designated return products. Subsequently, after analysing and registering the products, the store generates a Return Document (PKPDC) for stock control measures.

Once all items are registered and packaged, the back office issues a Customer Return (DVC) document, signalling approval for shipment. The logistics department then collaborates with the partner to organize the return. Shipping can be handled either by the brand's transport company or by The Feeting Room, with costs later charged to the partner. Transport documents are prepared and sent to stores for coordination with transport companies regarding pick-up and collection schedules.

Upon receipt of the merchandise, the third party conducts a comprehensive inventory assessment, promptly notifying the back office of any stock discrepancies. In case of disparities, management and logistics conduct an in-depth analysis of incoming stock, sales, brand orders, damaged items, and customer returns. This analysis is crucial for providing valid explanations to partners and justifying any differences found.

It is imperative to strictly adhere to stock control, quality, and packaging rules while maintaining open and clear communication with partners and parties involved in the process.

Key performance indicators (KPIs) focus, firstly, on the quality of the data in the system, as it must be correctly entered into the system and synchronized at stock level with what exists in each of the stores. Other important points include the control of products for shipping, which is done considering a set of procedures, from analysing products in the back office to counting, recording, and packaging in store, which guarantee accuracy in the information that is returned to the partner brand.

It is important that all parties involved in this procedure have a continuous and fluid line of contact, guaranteeing solutions for any errors that appear (mostly stock outs).

Failure to comply with these standards can have negative consequences on company operations, as any stock value inconsistencies due to internal failures may result in the company covering the costs of missing units. It is important to note that if the partner's assessment is incorrect, the company is not liable for the unaccounted amount.

In summary, the successful implementation of return procedures underscores the importance of effective communication, meticulous inventory control, and organizational diligence, ensuring smooth operations and reducing financial risks for the company.

### 3.2.2 Process Fragilities

It is possible to assess, by concluding the important points of the operation touched on in the previous chapter, that one of the pillars for the operation to run as planned consists of the quality of the information on the products introduced

into the system, as well as their respective stock, which must be in line with the quantities in store.

However, due to errors arising from the incorrect entry of information and product guidelines, such as possible stock errors or duplicate products, possibly by the company's departments or by the partner's own error, this process ends up incurring many difficulties. In addition to this fact, stores often end up losing track of the correct quantity of products in stock due to the high volume of parts.

These difficulties can result in inconsistencies between the data presented by the brand and what The Feeting Room sends, which could result in costs for the company.

### 3.3 Solutions

Considering the numerous shortcomings in the procedures and departments, steps were taken to address and resolve them.

A significant obstacle that affects all areas of the organisation is the difficulty in insuring precise and organised input of data into the system, without any inconsistencies.

To optimise efficiency and decrease the probability of errors, it became imperative to minimise human participation in this procedure. By doing this, the workers in the logistics department can allocate their time and resources to attend to other needs and issues. Thus, this project improves this approach by developing two automated Excel templates that automatically populate all the required data for integration into the Primavera system, utilising the information supplied by the partner organisations.

Furthermore, the board and merchandising department faced a major challenge in their decision-making process due to the lack of tools that could give them a complete and current understanding of the brands' success, stock variances between locations, and store performance analysis. These tools should

provide a comprehensive overview, considering several factors from a high-level perspective. This includes analysing sales data for each business and expanding to include product types and colours. This information is crucial since it offers substantial insights into the brand's success, allowing management to make well-informed decisions about the brands and products it owns.

By leveraging this information in conjunction with a store performance analysis tool, the board may identify and rectify shortcomings while promoting growth. It is crucial to have a clear understanding of customer and store behaviour during the sales process, when introducing new items and brands to customers, at The Feeting Room points of sale. This insight helps reduce the number of SKUs shown in the shop and enhance sales volume.

The upcoming chapter will discuss the approaches used to create Excel templates for launching and restocking products. It will also cover the development of three PowerBI dashboards that provide help for the merchandising department, store analysis, and brand analysis.

# Chapter 4

## Methodology

This dissertation describes a case study conducted at The Feeting Room with the objective, as mentioned earlier in chapter 3, of enhancing the methodologies employed in the organisation.

Since brands are already familiar with the process of providing product information and quantities, we leverage this familiarity to create new automated templates. The goal is to minimise human intervention in the system implementation process and reduce the time required for this step.

In addition, dashboards were created to aid the merchandising department and management by providing valuable insights on brands performance ("Brand's X-Ray"), store efficiency, and the assessment of stock distribution across stores. These dashboards were enhanced using the Transform Data tool in the Power Query editor, as well as the DAX programming language and SQL coding.

Existing tables were modified and improved to align with the desired analysis, which involved creating new tables and developing customised metrics to cater to the specific analytical requirements of each user.

The primary data source for the research was a SQL database acquired from Primavera, supplemented by data from Excel files stored in the company's SharePoint.

### 4.1 Product Entry Templates

In this section, the two templates intended to assist The Feeting Room's logistics department, will be presented. This topic will elucidate the procedure

involved in their formulation and arrangement, along with the mechanisation of entering the necessary product information for the organisation, while defining the purpose of these templates.

#### 4.1.1 New Product Template

Four fields were deliberately placed in the original template to provide The Feeting Room with order information. The sender's brand, collection (typically season and year), delivery store, and expected arrival date are entered.

To provide a thorough and ordered overview of order features, columns with required fields were created. These contain the brand's product reference, which is needed to search the partner brand's website for product details and photos. The website management and marketing department will post this information on the company's website. Name, description, gender, category, subcategory, product type, material/characteristics, and price are also required fields. To determine the exact quantity of each size for each product, size boxes must be completed.

Four tables classify sizes. Two of these tables list garment sizes in numbers or letters. The third table lists shoe sizes numerically. If product sizes differ, the brand can fill in an empty fourth size field. Size nomenclatures vary by product type and country requirements.

Predefined options from The Feeting Room populate the delivery location, item gender, category, subcategory, product type, and field. This list is saved in an auxiliary Excel sheet and linked to cells using Data Validation.

Left-to-right product data entry is sequential. Prior selections determine each stage's completion options, creating a hierarchical structure seen in tables 8–10 in the annexe.

According to the table columns, gender is the primary criterion, with each gender having its own category. This company offers the same categories to both

genders, except for unisex, which includes an extra component. The brand can choose subcategories based on the category, which affects product type. The colour choice is independent of the previously selected variables and linked to a separate and unique table, as seen in table 11.

Brand cells are linked to the system's introduction template cells immediately. This connecting is automatic because brand data is linked. Unlike the brand filling template, the filled cells are coded.

Previous tables specify genre, category, subcategory, and product type codes. Brand codes, usually uppercase contractions of brand names, are also associated with brand names. Code formatting strategy ensures accurate and error-free product data entry, simplifying the process.

Weight data variables were also established to correlate weight with partner brand product type (table 12).

The HTML code of each product, generated from the brand code and the "material/product specifications" provided by the brand, was added to the weight field to help the website maintenance department insert product information. This ensures that the product description meets online sales requirements, including precise information and weight specifications that affect price, notably shipping costs.

Additionally, the product description is formed by merging the name, description, and colour fields, and the number of units for each size is filled in the same way the brand does.

Besides the static elements needed for system integration, the model only requires manual input of three fields: the product's SKU, which is calculated by extracting information from the system based on the brand, supplier, season, and number of the latest product registered. Due to possible brand-firm contractual modifications, the precise contractual connection between the business and the brand is done manually.

This template automatically populates most Primavera fields, ensuring accurate and clear item information. Although it does not eliminate human participation, it considerably decreases it, minimising the probability of errors generated by mapping all extracted data.

#### 4.1.2 Re-stock Template

The replenishment model for products already in the system adheres to a comparable format as the prior one. The brand is required to furnish details on the product reference, name, colour, and numbers, under the condition that the product is already present in the system.

When accessing the concealed cell that links to Primavera, this automated sheet merely populates the amounts of items that will be transported to the retailers, unlike the previous one.

Subsequently, the logistics department conducts a search of the company's inventory using the reference, name, and colour of the items to ascertain the SKU of the product. This SKU is then inserted into the automated template, which is prepared for updating stocks.

The department's sole responsibility is to locate and input the SKU into the template, and subsequently input it into the Primavera system, which greatly reduces the workload and time required by workers, while also providing precise stock management that is in line with the real merchandise received in stores.

It is crucial to acknowledge, as previously said, that the quantities or products of each order that come into the business may differ and may not always align with the initial communication. Hence, it is imperative to consistently update the system to rectify any discrepancies.

## 4.2 PowerBI Models

Prior to beginning this task, all Primavera SQL database and SharePoint data were extracted and arranged to streamline targeted research and speed up the results-gathering process.

Before beginning the process of creating dashboards, it is crucial to understand the origin of the data and the way it is organized and structured within PowerBI. As such, a total of twenty-three distinct tables were obtained, holding vital information for assessing the entire operation, which will be analysed subsequently.

### 4.2.1 Contextualization of the Information Used

As previously mentioned, a total of twenty-three tables were extracted from an SQL Database and other critical data sources, necessary to evaluate the entire procedure and obtain important indicators for management, which serve as the basis for any analysis that is carried out in PowerBI in the company.

The presence of differences in the types of data in each extracted table forced the organization of the data, separating them into Fact and Dimension tables. Dimension tables provide contextual and historical data about a specific point, and fact tables show quantitative numbers, which are related to stock levels, sales, seasons, time, and dates.

Finally, Bridge Tables were integrated, which remain essential to PowerBI in that they include individual records for each key field value that connects two tables. They are useful because they can link dimension tables or even fact tables to lower-level hierarchical dimensions.

The table below shows all the tables used, divided by type of table, name of the table (names in Portuguese at the request of the company), what they are represent/meaning and finally the database from which they were extracted.

Type of Table	Table Name	Meaning of the Tables	Origin Table	Main Source
Fact Tables	Fact_Vendas	Sales Table	LinkaDoc	dbo SQL Server in Primavera
	Fact_Stock	Stock Table	INV_ValoresActualizado	
	Fact_MargenPorcentaje	Business Partner Margin	dbo raw_MCB_ListaConfiguracionFormeedor_Marca_Plataforma_ERP	
	Fact_DocumentoVendas	Sales Budget Table	DocumentoCentroContas	
	Fact_Stock_Atual	Current Stock Table	INV_ValoresActualizado	
	Fact_DiagnosticoCompras	Other Documents Table	inv_MCB_ListaConfiguracionFormeedor_Marca_Plataforma_ERP	
	Fact_People_Counter	People Counter Table	File updated daily	
Dimension Tables	Dim_Datas	Date Table	Created in PowerBI	Created in PowerBI
	Dim_Intervales_Vendas	Sales Range Table	Created in PowerBI using JSON Format	
	Dim_Horas	Time Table	Created in PowerBI using JSON Format	
	Dim_Season_Date	Season Dates Table	Created in PowerBI	
	Dim_Artigo	Item Table	Arigo	
	Dim_Familias	Family Table	Familias	
	Dim_Marcas	Brand Table	Marcas	
	Dim_SubFamilias	Sub-Families Table	SubFamilias	
	Dim_ArmazemLocalizacoes	Dim_ArmazemLocalizacoes	ArmaazemLocalizacoes	
	Dim_Armazens	Storage Table	Armaazem	
	Dim_Fornecedores	Supplier Table	Fornecedores	
	Dim_Plataformas	Stores Table	TDU_MCB_Plataformas	
	Dim_Season_Artigo	Items-Season Table	TDU_MCB_SHP_Season	
	Dim_MargemConfiguracao	Comignment Margins Table	TDU_MCB_MVC_MargemConfiguracao	
	Dim_PianoContas	Chart of Accounts Table	PianoContas	
	Dim_ArtigoSph	SKU Table	Arigo	
	Dim_SubCategorias	Sub-Category Table	TDU_MCB_SHP_SubCategorias	
Dim_TipoProduto	Type of Products Table	TDU_MCB_SHP_TipoProduto		
Bridge Tables	Bridge_SemoraDate	Bridge Season Date	Created in PowerBI	Created in PowerBI
	Bridge_ArtigoFormeedor	Bridge Item Supplier	ArigoFormeedor	dbo SQL Server in Primavera
	Bridge_Centros_Plataforma	Bridge Stores	PianoCentros	
Other Tables	Last Refresh	Table containing information about the Time of Information Update	Created in PowerBI	Created in PowerBI
	Measures	Measures Table	Created in PowerBI using JSON Format	Created in PowerBI
	inv_MCB_ListaConfiguracaoFormeedor_Marca_Plataforma_ERP	Table containing information about Configuration Brands, Lic, Suppliers, Brand and Store	inv_MCB_ListaConfiguracaoFormeedor_Marca_Plataforma_ERP	dbo SQL Server in Primavera

Table 1: Overview of the Tables used in the Model.

Source: Self Elaboration

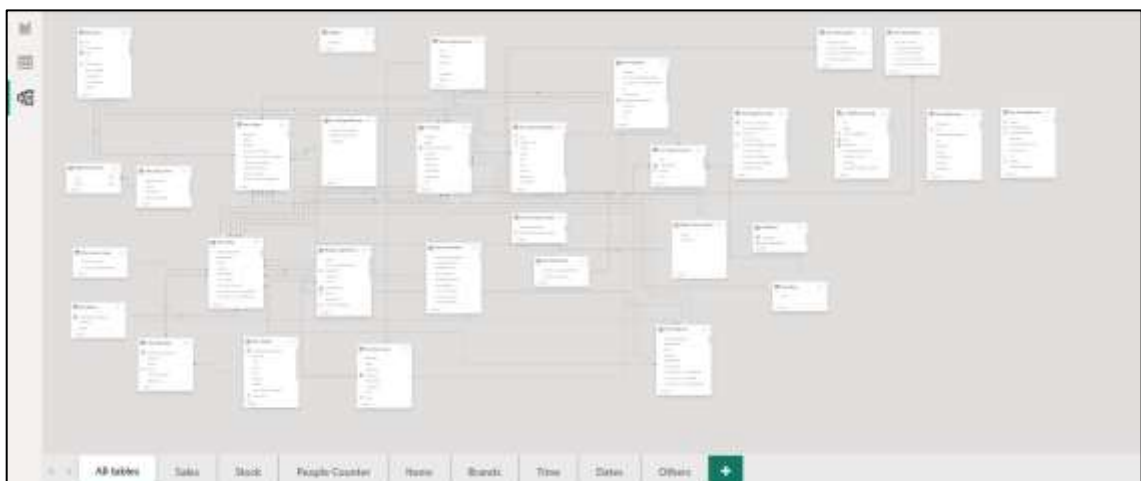
As it is possible to infer from the table above, there is a global database that integrates most of the company's fields of action and information extraction.

Most of the same tables contain attributes that are extracted directly from the Primavera system, with the exception of the table for counting people entering the store, available on the company's SharePoint; and also tables related to dates and time frames , bridge tables and other tables that were created within PowerBI, through the Transform Data function (PowerQuery), to support data organization and clarity.

In addition to the previous ones, a table was created to summarise all the calculated metrics that serve as a key performance indicator (KPI's) for analysis, ensuring a greater degree of organisation.

#### 4.2.2 Model Overview and Connections

All the tables were consolidated into one comprehensive model visualisation sheet to analyse how the tables are divided based on the data's unique characteristics and functionalities, as well as their connections. The graphic below is a complete model overview.



**Figure 3:** Overview of the Entire Model and Connections.

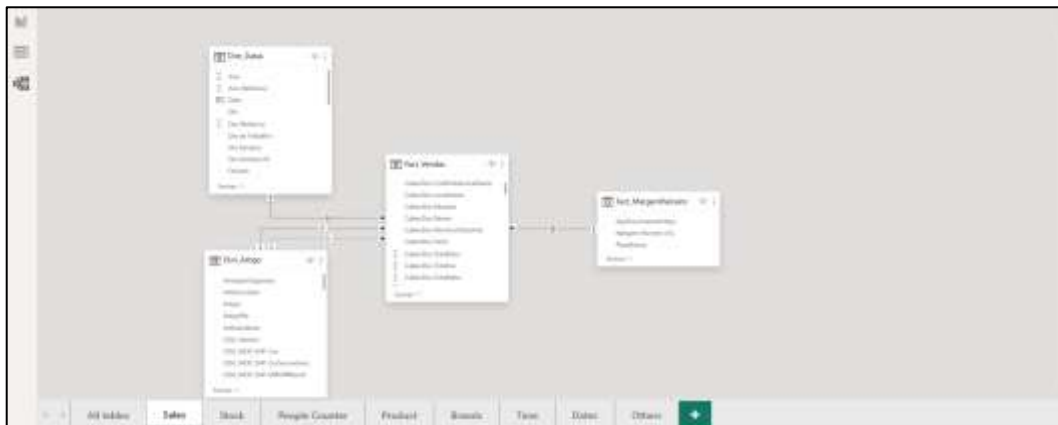
Source: Company's PowerBI Base Model

Since most data in the other tables is connected to Items (Dim\_Artigo) and Sales (Fact\_Vendas), they have the most relationships. The item table details all system products, including categories, classifications, and stock levels. The sales table (Fact\_Sales), on other hand, links to product attributes and sales statistics tables. It also connects to date tables, allowing users to compare sales over seasons and years.

To simplify understanding and analysis, tables were separated into pages, built to simulate sales, stock, people counter, product information, brands, time, dates, and other tables. Every sheet covers a specific field, allowing for thorough data analysis and strategic insights.

#### 4.2.2.1 Sales

A detailed analysis of item attributes allows The Feeting Room's system to analyse sales, anticipating future sales and aiding supply planning.



**Figure 4:** Sales Model.

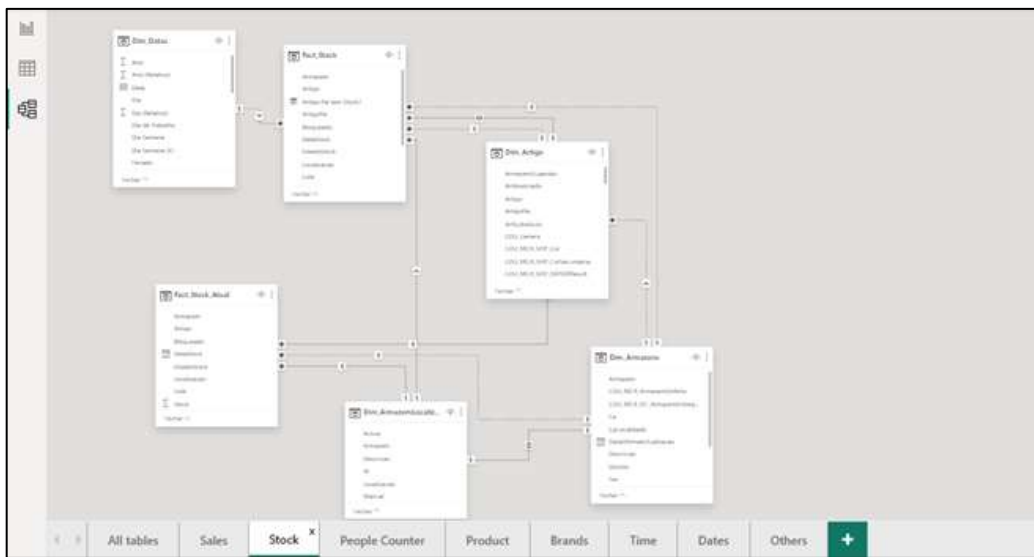
Source: Company's PowerBI Base Model

The sales data (Fact\_Sales), item characteristics (Dim\_Artigo), and date (Dim\_Datas) tables are the data model's main links. The Fact\_Sales-Dim\_Datas connection tracks sales trends, while the Fact\_Sales and partner's margin table

link accesses the company and partner brand revenue from each transaction. The tables in this model help analyse sales over a certain time and understand the company's total revenue.

#### 4.2.2.2 Stock

The sales sheet generates item attributes (Dim\_Artigos), their availability by dates (Dim\_Datas) and stock location by warehouse.



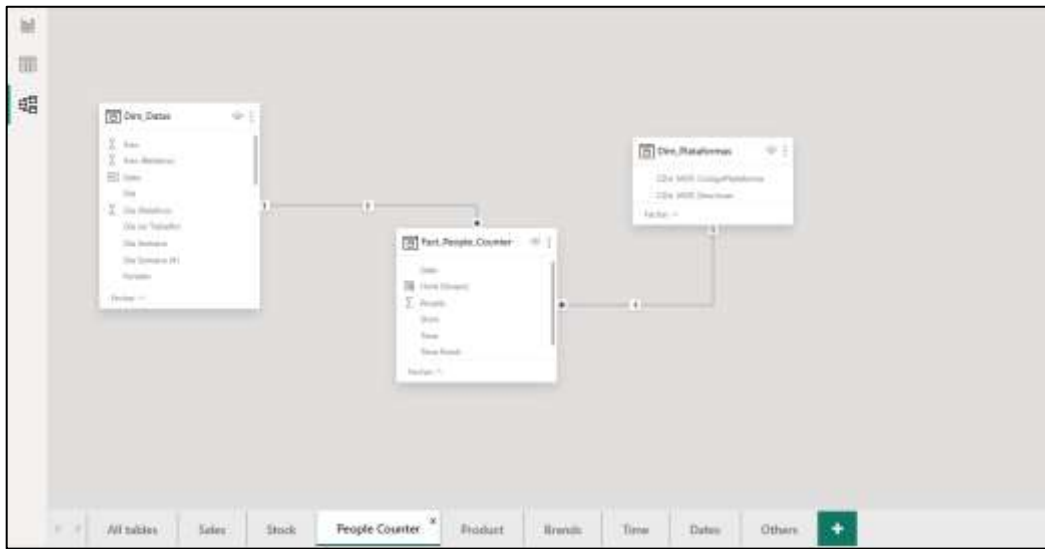
**Figure 5:** Stock Model.

Source: Company's PowerBI Base Model

The stock-product connection shows item classification features, allowing users to understand their inventory in detail. The model also displays item availability, warehouse management, and inventory dynamics in interconnected tables to simplify stock analysis.

### 4.2.2.3 People Counter

This dataset is updated daily by automatic processes in each store from an Excel file in a company SharePoint site. These automatic devices track store visitors and exits daily, so the back-office collects and manually drops the revised Excel file into the SharePoint folder to ensure the newest data for analysis.



**Figure 6:** People Counter Model.

Source: Company's PowerBI Base Model

These relationships shown are essential for reliably linking entry counts to dates and retail locations for foot traffic analysis. This model is most useful for analysing store traffic dynamics by associating entry counts with dates and store locations.



#### 4.2.2.5 Brands

Two crucial factors for establishing a product's brand are its inherent features and the provider it is sourced from.



**Figure 8:** Brands Model.

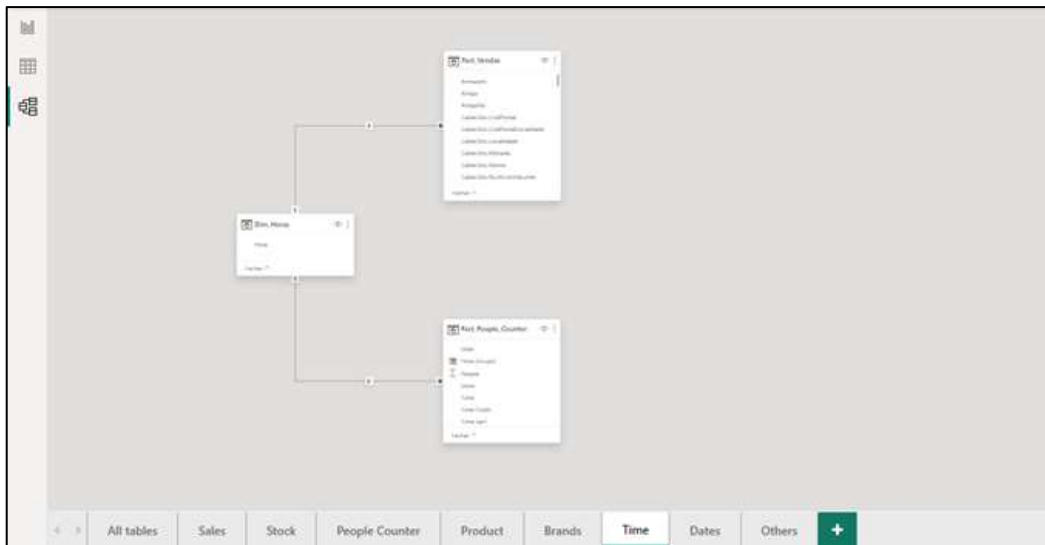
Source: Company's PowerBI Base Model

Image shows that the brand table (Dim\_Marcas) is not linked to the supplier's table due to brand closures and product supplier changes.

The model optimises data management and supports branding and supplier relationship decisions through careful organisation and strategic separation of data.

#### 4.2.2.6 Time and Dates

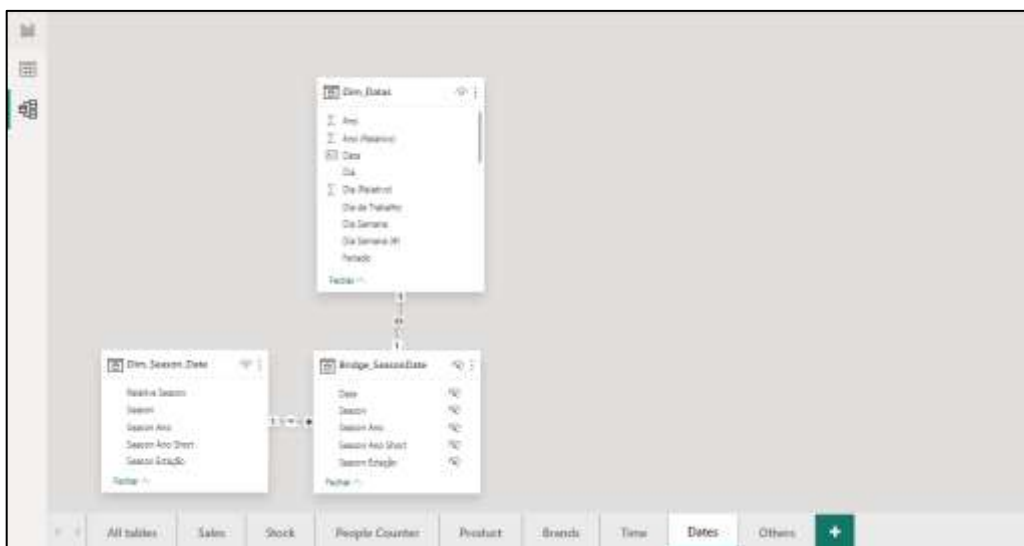
The "Dim\_Horas" table is essential for analysing sales and customer entrance times, serving as the foundation for time analysis.



**Figure 9:** Time Model.

Source: Company’s PowerBI Base Model

The table is linked to the sales (Dim\_Vendas) and customer entry (Fact\_People\_Counter) tables, helping determine peak hours and consumer traffic-sales correlations.



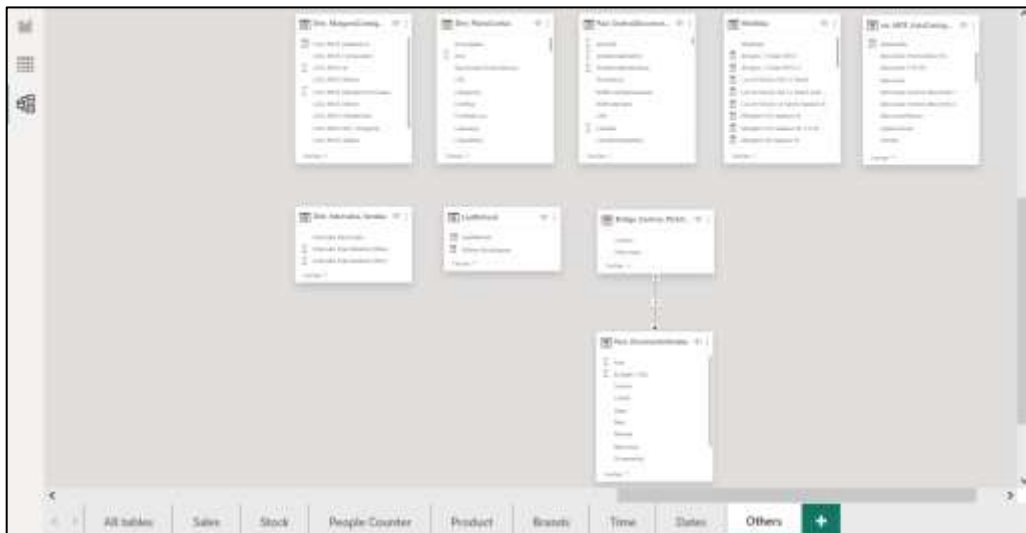
**Figure 10:** Dates Model.

Source: Company’s PowerBI Base Model

The link between Dim\_Datas, Bridge\_SeasonDate, and Dim\_Season\_Date tables is critical for correlating dates and seasons. This arrangement lets business seasonal patterns be analysed methodically. These links allow researchers to smoothly add seasonal fluctuations into the study, revealing how seasons affect business operations.

#### 4.2.2.7 Other Tables

Dimension tables hold important information in the omnichannel marketplace business model, but they are not used as much for management and decision-making.



**Figure 11:** Other Data Tables Model.

Source: Company's PowerBI Base Model

These tables include partner brand charts, margin and consignment lists, budgets, sales intervals, other operational documents, and PowerQuery Editor-generated tables. The "LastRefresh" field helps determine the most recent database update, while the "Medidas" table organises and consolidates all analytical metrics.

The model provides a complete foundation for operating omnichannel marketplace business. Some of these tables may not be used for management

analysis and decision-making, but they provide important operational efficiency data.

### 4.3 Dashboards Development

Having already provided context for the data and models used to analyse the company's components, this topic proceeds to elucidate the specific attributes and metrics employed in the building of Dashboards to assist the board's management and the merchandising department.

A table (table 13 annex) was generated to present comprehensive information on the attributes used in the dashboards, together with the corresponding calculated metrics.

#### 4.3.1 Merchandising Department Support Dashboard

The merchandising department is tasked with analysing the sales performance of partner brands and determining how to effectively manage stockpiles and allocate goods across outlets.

However, this technique got quite intricate since it required extracting the documents straight from the Primavera system and undergoing a data processing procedure to derive conclusions.

Consequently, a dashboard was developed to enable the department to scrutinise the sales performance of the brands, examine the stock levels at each store in a comprehensive manner, evaluate the necessity for allocations, and obtain a summary of the profitability of partners.

#### 4.3.1.1 Construction and Attributes Used

The data required to construct this dashboard was obtained by gathering information from several fact and dimension tables as indicated in the table, originating exclusively from the SQL database connected to the Primavera system. The tables contain comprehensive information regarding the products offered in the store, from the brand to the product type, their matching sales and stock data. This information is supported with seasonal data that provides details about the association and relationship of components.

Certain tables were subjected to targeted alterations using the Transform Data function (PowerQuery) to ensure their proper formatting for interpretation within the model.

The created data tables led to a precise classification of the seasons (Fall-Winter and Spring-Summer) and their respective years, ensuring analysis from a temporal perspective, both of sales and products.

Furthermore, the calculation of metrics pertinent to this analysis was suggested, in addition to the basic attributes. These metrics encompass the primary facets of the department's functioning, which include evaluating the sales volume in comparison to the original inventory, brand profitability, as well as the allocation of inventory throughout various sales outlets.

The dashboard was designed with the intention of structuring information using tables. It starts by providing a broad summary of the sales performance of the brands in relation to the initial stock, and then proceeds to delve into specific details, such as brand references and the types of products.

This analysis enables the user to comprehend the shortcomings in sales, crucial areas for investigation and intervention, and the need of understanding inventory distribution to aid proper allocation.

#### 4.3.1.2 Metrics Developed

Metrics were developed by integrating calculations into both Fact and Dimension Tables, leveraging sales (Fact\_Sales) and product stock (Fact\_Stock) data. In the sales domain, the focus was on computing the company's sales revenue, achieved by multiplying the price, excluding VAT, by the quantity sold.

Meanwhile, to ascertain item availability in the stock table, a combination of functions such as IF, SUM, and ALLEXCEPT was utilized to determine the presence or absence of products ("True" or "False" result).

To enhance the organization and understanding of analysed data, a dedicated "Medidas" (Metrics) table was created to house all supplementary and complex calculated metrics. Among the key metrics, Sell-out values were prominently featured, filtered for both the current and previous seasons to enable effective comparison. Additionally, brand profitability metrics were emphasized as vital indicators.

Other metrics included the integration of sales data with seasonal variations, SKU counts for each product, and the utilization of "True" values (indicating items in stock) to determine SKU availability. Furthermore, to allocate stock among stores, the percentage of stock distributed across stores was calculated by aggregating stock values using the SUM function and then dividing it by the total available stock.

#### 4.3.2 Store Performance Dashboard

The purpose of this dashboard is to offer the user precise insights regarding the stores and their services during different seasons, enabling them to make informed decisions regarding brands and individual stores, as well as conduct performance evaluations for each store. Through this comprehensive analysis, the board gathers valuable insights on consumer behaviour, store traffic, and employee performance.

#### 4.3.2.1 Construction and Attributes Used

The primary objective of this dashboard was to evaluate the sales volume per store and the contribution of workers to these sales, considering the influx of people in the store. Therefore, data was obtained from both the Primavera SQL database and the company's SharePoint file. It is crucial to reconcile these two sources of information as it is the sole means of cross-referencing data on sales and foot traffic in the business.

Furthermore, in addition to the attributes used in the previous dashboard, attributes related to the documents issued in store, were used indirectly in the metrics calculations, to gain insights into the number of invoices issued and the quantity of products sold per invoice.

#### 4.3.2.2 Metrics Developed

Within the Fact\_Sales database, the firm calculated not just sales but also margins and costs. These computations were designed to validate and apply the metrics specified in the "Measures" table.

Cost estimations for the company include expenses incurred if a product fails to sell or value lost owing to consignment arrangements (partner's margin). The IF and OR functions were used to produce the desired results. For products marked as "Buying" or "TFR," costs were calculated by multiplying the cost price by the quantity. For consigned goods, the cost is the partner's profit not received by the company, which is calculated by multiplying the partner's margin (as a percentage) by the price (excluding VAT) and quantity sold.

The IF function was used in company margin calculations as well. If the number of products sold is zero, the company's loss margin is calculated by adding the sales price and cost. If the amount sold exceeds zero, the company's profit margin is calculated by subtracting the cost from the revenue generated by the sale.

Moving on to the "Medidas" table, key metrics include comparing sales revenue for the current season to the previous one, assessing the company's overall profit margin for the current season versus the previous one, and comparing the number of store visitors and their average ticket for the current month to the previous one.

Other important data are brand profitability per shop, sell-out ratio, and customer conversion rate for sales, as shown in a line graph. These metrics serve as the foundation for analysing store employees' performance, which may lead to the construction of a compensation scheme if the conversion rate increases, allowing stores to meet or exceed sales targets.

Supplementary measures, such as the number of products per ticket and the number of invoices with cross-selling, were used to supplement the data analysis. Tables were created to evaluate brand performance based on sell-out and profitability factors, allowing for unambiguous comparisons between top-performing and underperforming brands in each store.

### 4.3.3 Brand's X-Ray Dashboard

The need to extract Excel data and do an "X-Ray" analysis of brands at the start of each season is a problem in brand performance analysis for board decision-making. It takes time to work on Primavera excel files outside of the main analytic platform.

This dashboard keeps brand information up to date and saves workers time when extracting and working with Primavera data, helping determine the brand's success and choose products for the upcoming season based on high sales, reducing exposed SKUs, and increasing income.

#### 4.3.3.1 Construction and Attributes Used

The attributes utilised in this study comprise shop data, as well as all fields regarding product characteristics, by brand. Hence, various tables were generated to display sales volume, stock quantity, and sell-out ratio, considering a comprehensive list of items features. The analysis was conducted in a hierarchical manner, beginning with shop, followed by gender, subfamily, subcategory, product type, size, and colour.

#### 4.3.3.2 Metrics Developed

The metrics formulated for this model were previously used in the other dashboards, encompassing the revenue earned by seasonal sales, the sell-out ratio expressed as a percentage, and the quantity of units available in stock (determined by summing all the stock attribute values from the Fact\_Stock table).

# Chapter 5

## Results and Discussions

This chapter presents the templates for introducing new products and adjusting quantities for restocking in the system, along with the dashboards specifically created to assist the Merchandising Department, analyse Store Performance, and Brand's "X-Ray". To conclude, the results of a questionnaire applied to the company's employees were analysed, regarding satisfaction and usefulness of the tools created.

### 5.1 Product Entry Templates

The development of these templates focused on maximising automation by utilising auto-fill functionality for product information fields, while adhering to the company's rules. This was accomplished by establishing several links between tables that were discreetly embedded within the file.

Furthermore, the brand's filling model incorporated cells that imposed a limited set of filling fields, forcing users to adhere to specific guidelines, as can be seen in the attached figures 24 to 29. This measure ensures that the information provided to the company is in line with its requirements, thereby streamlining the completion process and ensuring the data's clarity and accuracy.

#### 5.1.1 New Product Template

This subtopic will demonstrate all the elements of the template used to introduce new items for sale into the system. It will cover the form completed by the brand as well as the template that directly interfaces with the Primavera system.



The Feeting Room & LOT												
Packing list for product introduction												
Brand:		Collection:		<b>NEW PRODUCT: Template exclusively for new products</b>								
Delivery Location:		Expected Deliver Date:										
#	New Product in TFR	Product Reference	Product name (Mandatory)	Product description (Mandatory)	Gender (Mandatory)	Category (Mandatory)	Subcategory (Mandatory)	Product Type (Mandatory)	Color (Mandatory)	Material/product specifications	Recommend Retail Price (Mandatory)	One Size TU (Insert qty)
1	Yes											
2	Yes											
3	Yes											
4	Yes											
5	Yes											

**Table 2:** Sheet for Brands to Fill Out New Product Inform.

The provided image displays the template utilised for inputting shipment and product details. The template can be divided into three unique sections: brand and delivery location information, product attributes, and sizes and quantities.

Brand:		Collection:	
Delivery Location:		Expected Deliver Date:	

**Figure 12:** Delivery Information Fields.

The figure above displays the necessary information that the brand must provide for the company to understand who is accountable for the order and its intended destination.

The section where the brand provides all the necessary details about the products to be dispatched, such as the product type and colour, is depicted in the table illustration bellow.

#	New Product in TFR	Product Reference	Product name (Mandatory)	Product description (Mandatory)	Gender (Mandatory)	Category (Mandatory)	Subcategory (Mandatory)	Product Type (Mandatory)	Color (Mandatory)	Material/product specifications	Recommend Retail Price (Mandatory)
1	Yes										
2	Yes										
3	Yes										
4	Yes										
5	Yes										
6	Yes										
7	Yes										
8	Yes										
9	Yes										
10	Yes										

**Table 3:** New Product Information.

The final form that must be filled out is the "sizes" field. In this field, the brand is required to input the quantities of each product that will be delivered, corresponding to their respective size columns, as depicted in the figure below.



Artigo	Descrição	TipoArtigo	Familia	SubFamilia	Marca	Season	Codigovia	Tratamento Dimensoes	TipoDimensoes	Dimensao	PIP1	PIP2	PesoLiquido	Unidade Base	Stopify	Descricao Online	Gênero	SubCategoria	Tipo de Produto	Nome do Produto	Cor	Consecutaria
		3		FALSE	#N/A		23	1	TAM		0		#N/A	UN	1	Φ×/p×	FALSE	#N/A	#N/A	0		
		3		FALSE	#N/A		23	1	TAM		0		#N/A	UN	1	Φ×/p×	FALSE	#N/A	#N/A	0		
		3		FALSE	#N/A		23	1	TAM		0		#N/A	UN	1	Φ×/p×	FALSE	#N/A	#N/A	0		
		3		FALSE	#N/A		23	1	TAM		0		#N/A	UN	1	Φ×/p×	FALSE	#N/A	#N/A	0		
		3		FALSE	#N/A		23	1	TAM		0		#N/A	UN	1	Φ×/p×	FALSE	#N/A	#N/A	0		

**Table 5:** Product Information Autofill Fields.



### 5.1.2 Re-stock Template

This template is more streamlined compared to the previous one, since the brand's sheet has fewer fields to fill in. The introduction file in Primavera remains the same format, but the only information that needs to be filled in are the SKUs and quantities.

The Feeting Room & LOT Packing list for product introduction																														
Brand: <input type="text"/>		Collection: <input type="text"/>		<b>RE-STOCK: Template exclusively for products that we already received</b>																										
Delivery Location: <input type="text"/>		Expected Deliver Date: <input type="text"/>		Clothing A				Clothing B				Footwear				Other (please fill in if applicable)														
#	New Product In TFR	Product Reference	Product name (Mandatory)	Color (Mandatory)	One Size	32	34	36	38	40	42	44	46	XX S	XX L	XX XL	XX L	35	36	37	38	39	40	41	42	43	44	45	46	Total
1	No				TU (Insert qty)																									0
2	No																													0
3	No																													0
4	No																													0
5	No																													0

Table 7: Sheet for Brands to Fill Out Re-stock Products Information.

## 5.2 PowerBI Dashboards

The informative and intuitive design of the dashboard was achieved through a process of carefully selecting relevant information and studying its suitability for presentation. This approach enabled easy access to information, as well as the monitoring and comparison of variables. The inclusion of filters on all pages is a key feature of this report, providing users with the ability to select the desired information, as well as the time horizon.

To safeguard the confidentiality of the company's data, certain data columns were anonymized.

### 5.2.1 Merchandising Department Support

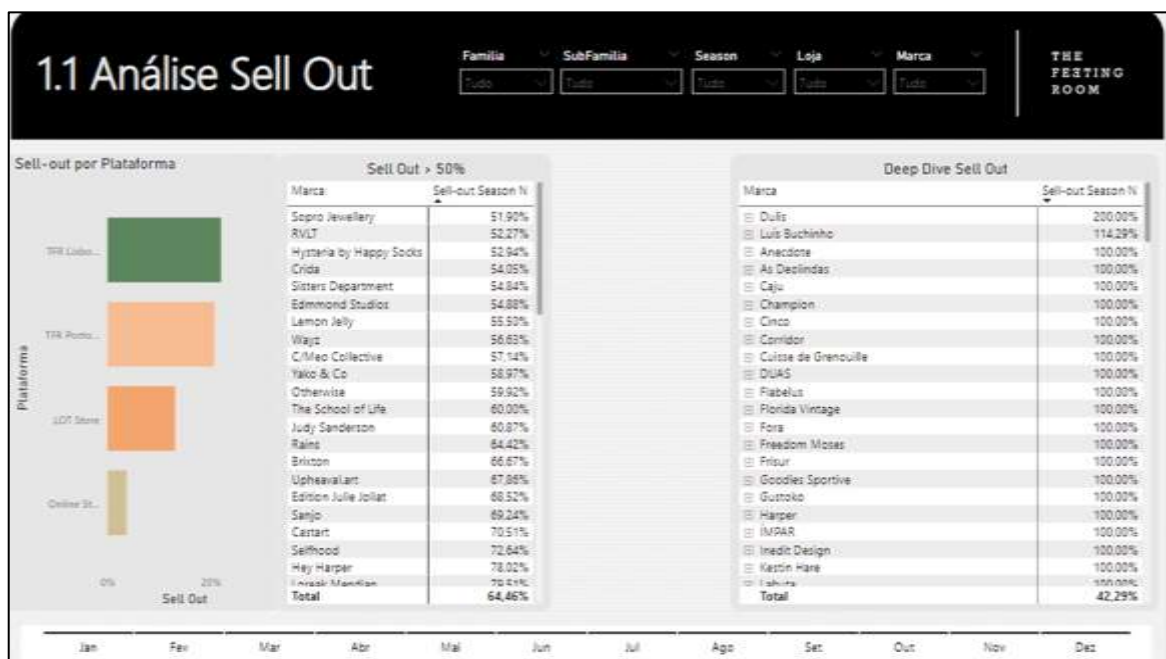


Figure 13: Brand's Sell-Out Analysis



Figure 14: Support for Product and Brand Selection.

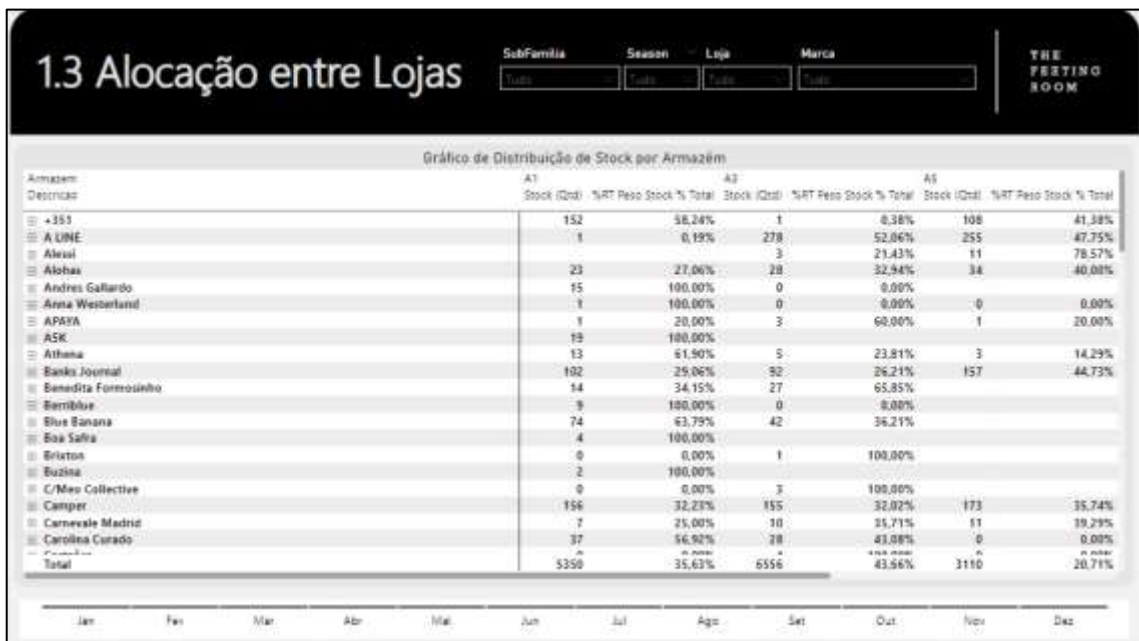


Figure 15: Allocation Between Stores.

Panel 1.1 provides the merchandising department with a comprehensive overview of brands that require restocking. This is achieved by initially presenting a general perspective of the ratio per store through a graph on the left. Additionally, a table is included that displays brands with sell-outs exceeding

50%. Upon careful analysis of the other options, the appropriate table provides the department with the opportunity to thoroughly investigate and replenish products.

Panel 1.2 shows two tables: the left table shows the volume of quantities sold per store for each brand, while the right table shows the number of SKUs in stock, seasonal sales revenue, and most importantly, brand and SKU profitability. This panel lets the department choose brands and products that may boost company revenue.

Finally, panel 1.3 determines whether store allocations are needed by assessing the percentage of brand and product stock distributed by store.

### 5.2.2 Store Performance Dashboard



Figure 16: Store Performance Overview.

The panel displays a 5-field summary of store performance. In these fields, it is possible to compare the sales revenue of the current month to the previous month, the average ticket value (which provides insights into purchasing power

and consumer behaviour), the number of store visitors, the margin achieved during the season to determine if the sales objective was met or exceeded, and the conversion rate. All metrics provide a general view of store success in sales.

A line graph (top right) was created to compare conversion rates across stores over time using weight. A bar graph in the lower right corner shows the number of people who entered each store over time.

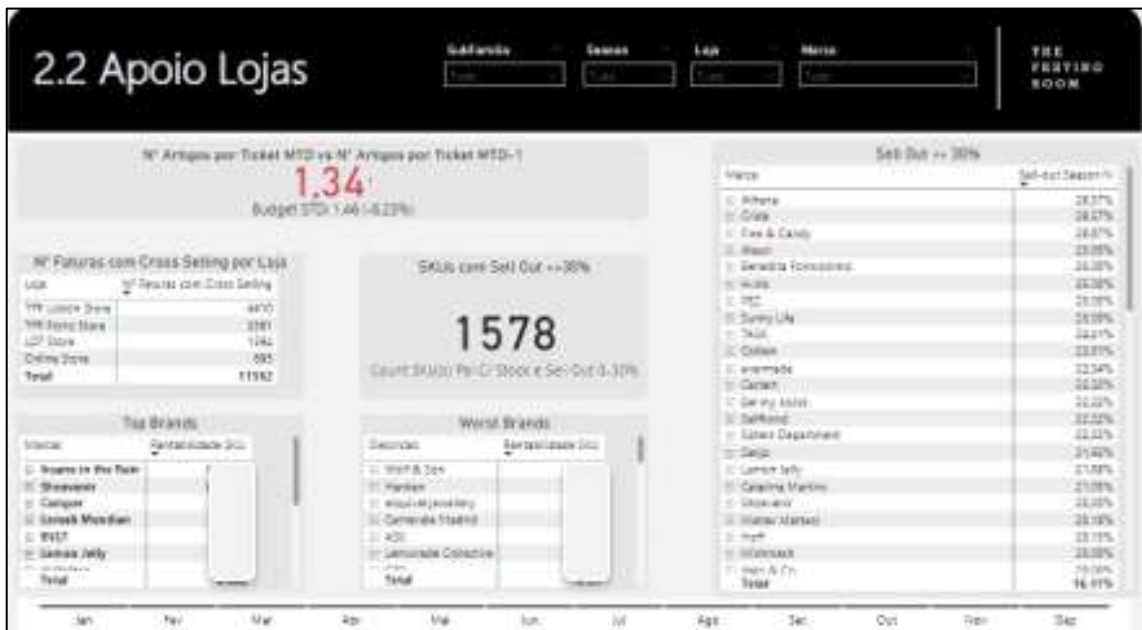


Figure 17: View of Stores directed to Brand's and Invoice Analysis.

Panel 2.2 shows brand performance by store, including profitability (the two lower tables) and sell-out ratio. The table on the right evaluates the sell-out ratio with a filter of values below 30% to identify underperforming brands.

Indicators of SKUs with sell-out below 30%, invoices selling multiple products, and average ticket product count complement the remaining data.

## 5.2.3 Brand's X-Ray Dashboard



Figure 18: Brand's X-Ray 1.



Figure 19: Brand's X-Ray 2

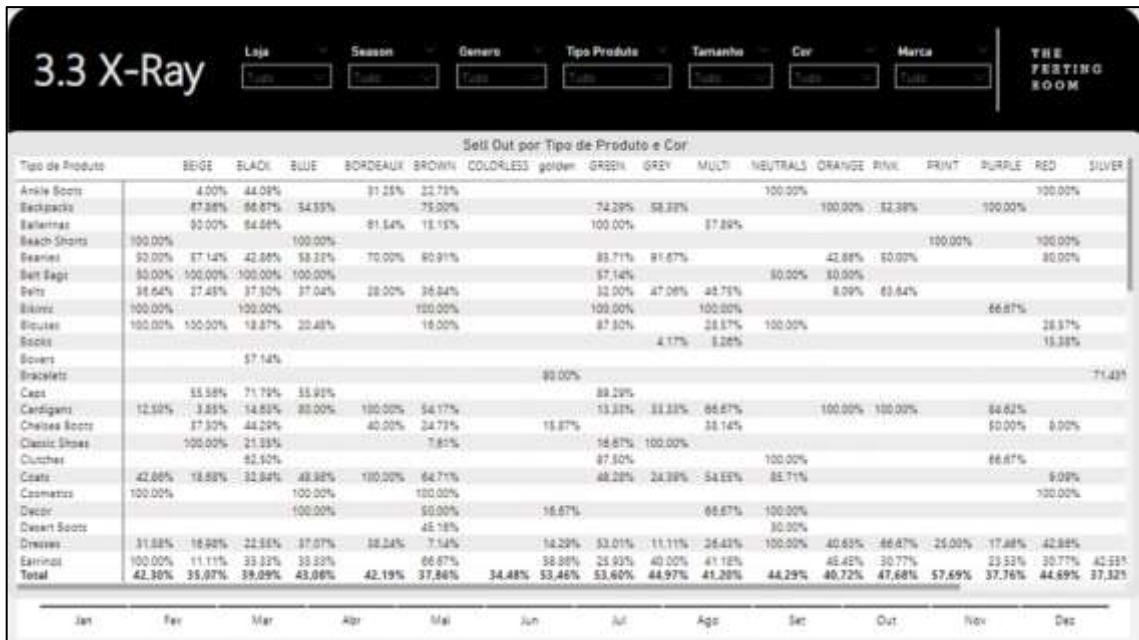


Figure 20: Sell-Out of the Product Type and Colour Relationship.

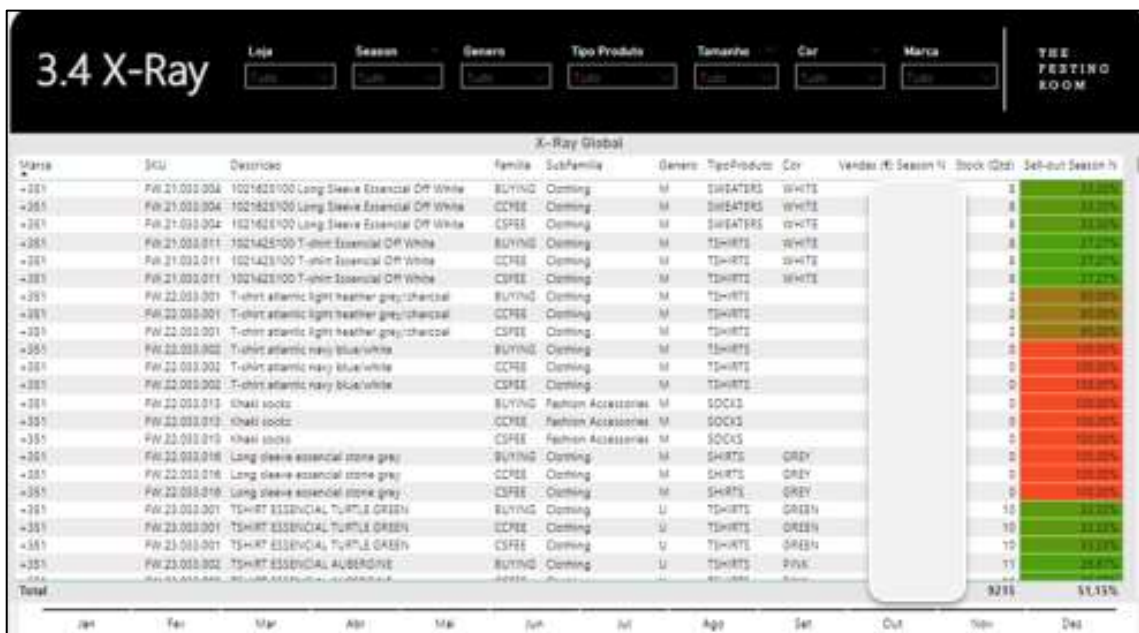


Figure 21: Global Brands's X-Ray.

The panels above show tables with seasonal sales, stock, and sell-out ratios.

Each table evaluated a specific indicator, starting with shop, then product type, and colour.

Panel 3.3 compares product type and colour to determine the best sales combinations. The final panel compiles all analyses into one table. On this dashboard, red numbers are closer to 100% (items sold well and need restocking) while green values are closer to 0% (products did not sell).

### 5.3 Usage and Satisfaction Survey

Based on a poll conducted among the company's employees, it was confirmed that the templates and dashboards generated were beneficial for carrying out certain operations, as well as for detailed business analysis.

The survey was presented to the board, as well as the logistics and merchandising departments, to understand how the tools were accepted, comprehending their usefulness and the users' satisfaction.

Upon evaluation of the data through the creation of a graph evaluating the relationship between the number of employees who use the templates and dashboards, and the degree of use, it can be ascertained that the tools are utilised on a daily or weekly basis. The produced templates are heavily utilised due to a significant influx of items being put into the system. On the other hand, the dashboards are mostly utilised on a weekly basis, as seen in the figure bellow.

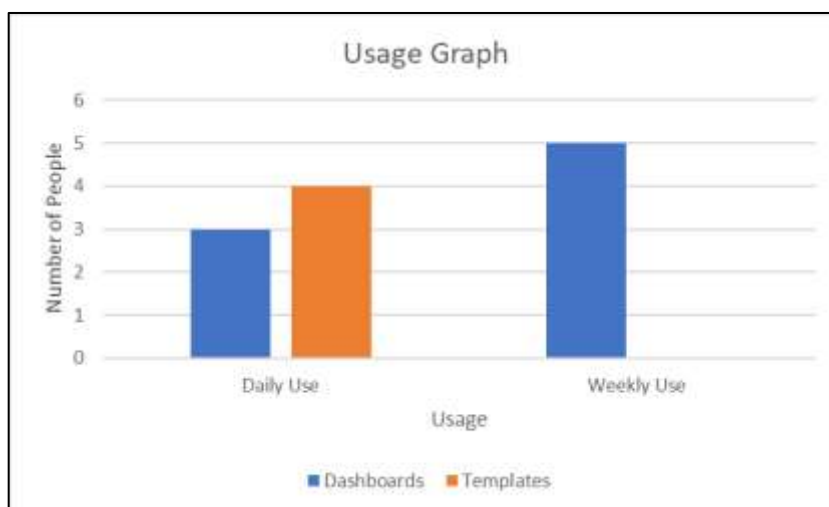
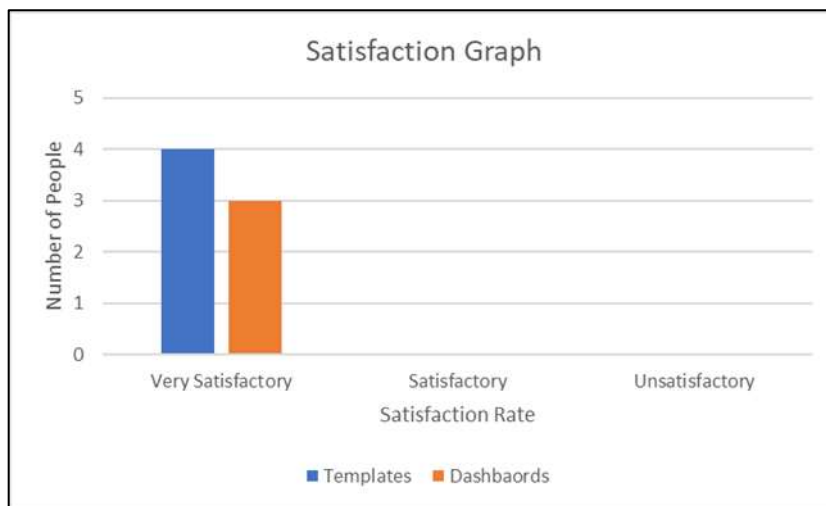


Figure 22: Supporting Tools Usage Graph.

Source: Self Elaboration

The daily-utilized dashboard proved to assist the merchandising department and the brand's "X-Ray" by providing support in decision-making related to brand performance and determine which brands to allocate more resources to and how to distribute stock across stores.

Furthermore, the questionnaire confirmed that the company's operations benefit from the tools' level of utilisation and prompt deployment. Additionally, the graph below illustrates a significant level of satisfaction with the dashboards.



**Figure 23:** Satisfaction Rate Graph.

Source: Self Elaboration

Although the evaluation yields highly good findings in terms of satisfaction and utility, its validity is constrained by the company's smaller workforce, preventing a more full and critical assessment.



# Conclusion

This study thoroughly examined The Feeting Room's data analytics technologies, aiming to streamline operations, improve data accuracy, and provide stakeholders with practical insights. User-friendly templates for entering and restocking items were carefully created, utilizing autofill and data validation criteria to save manual effort and ensure accuracy. Dashboards were also developed for the Merchandising Department, Store Performance, and Brand X-Ray, offering stakeholders a quick overview of performance metrics and key issues. Additionally, data analytics tools were implemented to aid in informed decision-making and improve operational efficiency.

To resolve data quality and comprehension issues, careful data pre-processing and user education were undertaken. Stakeholders were provided with the necessary skills and expertise to effectively utilize the tools. Feedback from stakeholders confirmed the effectiveness of these tools in both daily operations and strategic decision-making. By investing in data analytics technology, The Feeting Room aims to improve data-driven decision-making and innovation in the omnichannel marketplace. Further enhancements in analytical skills can be achieved by adding data sources and optimizing systems for efficiency.

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# Appendices

## Survey Google Forms

- Product Entry Templates

Do you perceive the development of this template as a beneficial enhancement for the company? What advantages does it emphasise?
It was a great asset, because through automation, we were able to speed up the process and mitigate errors.
Speed in creating items, consistency between the information added to each product/brand, ease of analysing information based on the fields filled in.
Simplification and speed in the process of entering all new products into the company's system and, consequently, into the store.
N/A

- Dashboards

What is your perspective on the new data display format?
Very positive, easy, and intuitive.
Great for decision making.
Very intuitive, complete, and useful format with valuable insights into the performance of The Feeting Room's partner brands.
Quite positive.
Very useful for Store Directors
Very useful

What is your perspective on the new data display format?
Allows you to have better visibility in real time over sales results, allowing you to act more quickly.
Yes, it allows intuitive and simple navigation.
Access to real-time data.
It's something new, so there's no point of comparison.
It allows a detailed view of the performance of various brands, allowing us to obtain very revealing insights.
Information detail.
Practical, intuitive, and relevant to assist in decision-making in terms of selecting new products and re-stocks.

## Figures and Tables

Gender	Gender Code	Category	Category Code	Subcategory	Subcategory Code	Product Type	Product Type Code
Woman	W	Footwear	FTWR	Boots	BTS	Chelsea Boots	CHELSEAB
						Ankle Boots	ANKLEB
						Lace-up Boots	LACEUPB
				Sneakers	SNK	Knee-High Boots	KNEEHIGHB
						High-top Sneakers	HIGHTOPS
						Low-top Sneakers	LOWTOPS
				Sandals	SND	Runners	RUNNERS
						Strap Sandals	STRAPS
						Mules	MULES
				Shoes	SHS	Slides	SLIDES
						Loafers	LOAFERS
						Espadrilles	ESPADRILLE
						Ballerinas	BALLES
						Pumps	PUMPS
						ClassicShoes	CLASSICS
		Clothing	CLTG	Dresses & Jumpsuits	D&J	Dresses	DRESSES
						Jumpsuits	JUMPSUITS
				Outerwear	OTW	Jackets	JACKETS
						Coats	COATS
				Tops	TPS	Blouses	BLOUSES
						Shirts	SHIRTS
						Sweaters	SWEATERS
						T-shirts	TSHIRTS
						Light Tops	LIGHTTOPS
				Bottoms	BTM	Cardigans	CARDIGANS
						Trousers	TROUSERS
						Skirts	SKIRTS
				Beachwear	BCW	Shorts	SHORTS
						Bikinis	BIKINIS
				Fashion Accessories	FACS	Bags	BGS
		Backpacks	BACKPACKS				
		Shoulder Bags	SHOULDERB				
		Travel Bags	TRAVELB				
		Clutches	CLUTCHES				
		BeltBags	BELTB				
		ToteBags	TOTEB				
		Handbags	HANDB				
		Laptop Cases	LAPTOPC				
		Wallets	WALLETS				
		Small Goods	SMG			Key Rings	KEYRINGS
						Belts	BELTS
						Pins	PINS
Eyewear	EWR	Cardholders	CARDH				
		Sunglasses	SUNGLASSES				
Scarves & Gloves	S&G	Chains	CHAINS				
		Gloves	GLOVES				
		Scarves	SCARVES				
Headwear	HDW	Beanies	BEANIES				
		Caps	CAPS				
		Hats	HATS				
		Headbands	HEADB				
Nightwear & Underwear	N&U	Lingerie	LINGERIE				
		Pajamas	PJS				
		Socks	SOCKS				
Jewellery & Watches	J&W	Watches	WATCHES				
		Earrings	EARRINGS				
		Rings	RINGS				
		Bracelets	BRACELETS				
Necklaces	NECKLACES						

**Table 8:** Brand's Choice Categories within the Women's Gender.

Source: Self Elaboration for the Company

Gender	Gender Code	Category	Category Code	Subcategory	Subcategory Code	Product Type	Product Type Code		
Man	M	Footwear	FTWR	Boots	BTS	Chelsea Boots	CHELSEAB		
						Lace-up Boots	LACEUPB		
						Desert Boots	DESERTB		
				Sneakers	SNK	High-top Sneakers	HIGHTOPS		
						Low-top Sneakers	LOWTOPS		
						Runners	RUNNERS		
				Sandals	SND	Strap Sandals	STRAPS		
						Mules	MULES		
						Slides	SLIDES		
				Shoes	SHS	Loafers	LOAFERS		
						Espadrilles	ESPADRILLE		
						Classic Shoes	CLASSICS		
		Clothing	CLTG	Outerwear	OTW	Jackets	JACKETS		
						Coats	COATS		
				Tops	TPS	Polos	POLOS		
						Shirts	SHIRTS		
						Sweaters	SWEATERS		
						T-shirts	TSHIRTS		
						Cardigans	CARDIGANS		
				Bottoms	BTM	Trousers	TROUSERS		
						Shorts	SHORTS		
				Beachwear	BCW	Beach Shorts	BEACHSHORT		
				Fashion Accessories	FACS	Bags	BGS	Backpacks	BACKPACKS
								Shoulder Bags	SHOULDERB
		Travel Bags	TRAVELB						
		Clutches	CLUTCHES						
		Belt Bags	BELTB						
		Tote Bags	TOTEB						
		Handbags	HANDB						
		Laptop Cases	LAPTOPC						
		Small Goods	SMG			Wallets	WALLETS		
						Key Rings	KEYRINGS		
						Belts	BELTS		
						Pins	PINS		
		Eyewear	EWR			Sunglasses	SUNGLASSES		
						Gloves	GLOVES		
		Scarves & Gloves	S&G			Scarves	SCARVES		
						Beanies	BEANIES		
		Headwear	HDW			Caps	CAPS		
						Hats	HATS		
		Nightwear & Underwear	N&U			Boxers	BOXERS		
						Socks	SOCKS		
Pajamas	PJS								
Jewellery & Watches	J&W	Watches	WATCHES						
		Earrings	EARRINGS						
		Rings	RINGS						
		Bracelets	BRACELETS						
		Necklaces	NECKLACES						

**Table 9:** Brand's Choice Categories within the Men's Gender.

Source: Self Elaboration for the Company

Gender	Gender Code	Category	Category Code	Subcategory	Subcategory Code	Product Type	Product Type Code		
Unisex	U	STATIONARY	LFST	Others	OTH	Beach	BEACH		
						Furniture	FURNITURE		
						Paintings	PAINTINGS		
						Sculptures	SCULPTURES		
						Prints	PRINTS		
						Food & Drinks	FOODRINK		
						Kitchenware	KITCHEN		
						Perfumes	PERFUMES		
						Home Scents	SCENTS		
						Cosmetics	COSMETICS		
						Shoe Care	SHOECARE		
						Stationery	Stationery		
						Tech	TECH		
						Wall Clocks	WALLCLOCKS		
		Frames	FRAMES						
		Toys	TOYS						
		Garden	GARDEN						
		Others	OTHERS						
		Footwear	FTWR	Boots	BTS	Chelsea Boots	CHELSEAB		
						Lace-up Boots	LACEUPB		
				Sneakers	SNK	High-top Sneakers	HIGHTOPS		
						Low-top Sneakers	LOWTOPS		
						Runners	RUNNERS		
				Sandals	SND	Strap Sandals	STRAPS		
						Mules	MULES		
						Slides	SLIDES		
				Shoes	SHS	Loafers	LOAFERS		
						Espadrilles	ESPADRILLE		
						Classic Shoes	CLASSICS		
						Jumpsuits	JUMPSUITS		
		Clothing	CLTG	Dresses & Jumpsuits	D&J	Jackets	JACKETS		
						Coats	COATS		
				Outerwear	OTW	Shirts	BLOUSES		
						Sweaters	SWEATERS		
						T-shirts	TSHIRTS		
				Tops	TPS	Cardigans	CARDIGANS		
						Trousers	TROUSERS		
				Bottoms	BTM	Shorts	SHORTS		
						Backpacks	BACKPACKS		
				Fashion Accessories	FACS	Bags	BGS	Shoulder Bags	SHOULDERB
		Travel Bags	TRAVELB						
		Clutches	CLUTCHES						
		Belt Bags	BELTB						
		Tote Bags	TOTEB						
		Handbags	HANDB						
		LaptopCases	LAPTOPC						
		Wallets	WALLETS						
Key Rings	KEYRINGS								
Belts	BELTS								
Small Goods	SMG	Pins	PINS						
		Cardholders	CARDH						
		Sunglasses	SUNGLASSES						
Eyewear	EWR	Headbands	HEADB						
		Gloves	GLOVES						
Scarves & Gloves	S&G	Scarves	SCARVES						
		Beanies	BEANIES						
Headwear	HDW	Caps	CAPS						
		Hats	HATS						
		Lingerie	LINGERIE						
Nightwear & Underwear	N&U	Pajamas	PJS						
		Socks	SOCKS						
Jewellery & Watches	J&W	Watches	WATCHES						
		Earrings	EARRINGS						
		Rings	RINGS						
		Bracelets	BRACELETS						
								Necklaces	NECKLACES

**Table 10:** Brand's Choice Categories within the Unisex Gender.

Source: Self Elaboration for the Company

Colour
Beige
Black
Blue
Bordeaux
Brown
Golden
Green
Grey
Multi
Neutrals
Orange
Pink
Purple
Red
Silver
White
Yellow

**Table 11:** Colour Options Table.

Source: Self Elaboration for the Company

Product Type	Weight (gr) per Product Type
Ankle Boots	2
Baby Sets	0,5
Backpacks	1,5
Ballerinas	1,5
Beach	2
Beach Shorts	0,5
Beanies	0,5
Belt Bags	1
Belts	0,5
Bikinis	0,5
Blouses	0,5
Bodysuits	0,5
Books	1,5
Booties	0,5
Boxers	0,5
Brace-lets	0,5
Caps	0,5
Cardigans	1
Chelsea Boots	2
Classic Shoes	1,5
Clutches	1
Coats	2
Cosmetics	0,5
Desert Boots	2
Dresses	0,5
Earrings	0,5
Espadrilles	1,5
Food & Drinks	1
Frames	1
Furniture	1
Garden	1
Gloves	0,5
Handbags	1,5
Hats	0,5
High-top Sneakers	1,5
Home Scents	0,5
Jackets	1
Jumpsuits	0,5
Key Rings	0,5
Kids Boots	1
Kids Sandals	1,5
Kids Shoes	1,5
Kids Sneakers	1
Kitchenware	1
Knee-high Boots	2,5
Lace-up Boots	2
Lingerie	0,5
Loafers	1,5
Low-top Sneakers	1,5
Mules	1,5
Necklaos	0,5
Nursery	0,5
Others	1
Paintings	1
Perfumes	0,5
Polos	0,5
Prints	0,5
Pumps	1,5
Rings	0,5
Rompers	0,5
Runners	1,5
Scarves	0,5
Sculptures	1,5
Shirts	0,5
Shoe Care	0,5
Shorts	0,5
Shoulder Bags	1,5
Skirts	0,5
Slides	1,5
Slippers	0,5
Socks	0,5
Stationery	1
Strap Sandals	1,5
Sunglasses	0,5
Sweaters	1
Swimsuits	0,5
Tech	0,5
Tops	0,5
Tote Bags	1
Toys	1
Travel Bags	1,5
Trousers	0,5
T-shirts	0,5
Wall Clocks	1
Wallets	0,5
Watches	0,5

**Table 12:** Relationship Table Between Product Type and Weight.

Source: Self Elaboration for the Company

Dashboards	Attributes	Table Name	Direct or Indirect Use in Dashboard	Source		
Merchandising	Store	Dim_Plataformas	Direct	dbo Schema in a SQL Primavera Server		
	Storage	Fact_Stock	Direct			
	Brand	Dim_Marcas	Direct			
	Family	Dim_Familias	Direct			
	Subfamily	Dim_SubFamilias	Direct			
	Subcategory	Dim_SubCategorias	Direct			
	Product Type	Dim_TiposProducto	Direct			
	Color	Dim_Artigo	Direct			
	Product Description	Dim_Artigo	Direct			
	Product's SKU	Dim_Artigo	Direct			
	Season	Dim_Season_Artigo	Direct			
	Sales (Qt.) Total	Fact_Vendas	Indirect			
	Sales (€) Total	Fact_Vendas	Indirect			
	Sales (€)	Fact_Vendas	Indirect			
	Is it in stock?	Fact_Stock	Indirect			
	Stock	Fact_Stock	Indirect			
	Sold Products	Fact_Vendas	Indirect			
	Season	Dim_Season_Date	Indirect			
	Sell-out Season N	Medidas	Direct		Tables Created in PowerBI	
	Sales (Qt.) Season N	Medidas	Direct			
	Count SKU's without Stock Season N	Medidas	Direct			
	Count SKU's with Stock	Medidas	Direct			
	Sales (€) Season N	Medidas	Direct			
	Profitability per SKU	Medidas	Direct			
	Stock (Qt.)	Medidas	Direct			
	Stock Weight % Total	Medidas	Direct			
	Sales (€) MTD N	Medidas	Direct			Tables Created in PowerBI
	Sales (€) MTD -1	Medidas	Direct			
People Count MTD	Medidas	Direct				
People Count MTD N -1	Medidas	Direct				
Margin (%) Season N	Medidas	Direct				
Margin (%) Season N -1	Medidas	Direct				
Conversion Rate by Store MTD	Medidas	Direct				
Conversion Rate by Store MTD -1	Medidas	Direct				
Conversion Rate by Store	Medidas	Direct				
Profitability per SKU	Medidas	Direct				
Product per Ticket MTD	Medidas	Direct				
Product per Ticket MTD -1	Medidas	Direct				
Number of Invoices with Cross-Selling	Medidas	Direct				
Count SKU's with Stock and Sell Out <=30%	Medidas	Direct				
Average Ticket (€) MTD	Medidas	Direct				
Average Ticket (€) MTD -1	Medidas	Direct				
Sell Out Season N	Medidas	Direct				
People Count	Medidas	Direct				
Sales (€) Season N	Medidas	Indirect				
Sales (€) Season YTD N -1	Medidas	Indirect				
Nº of Sales MTD	Medidas	Indirect				
Nº of Sales MTD N-1	Medidas	Indirect				
Nº of Sales	Medidas	Indirect				
Margin (€) Season N	Medidas	Indirect				
Stock (Qt.)	Medidas	Indirect				
Count SKU's with Stock	Medidas	Indirect				
Margin (€) Season YTD N-1	Medidas	Indirect				
Sales (Qt.) Season N	Medidas	Indirect				
Year	Dim_Datas	Direct	dbo Schema in a SQL Primavera Server			
Month	Dim_Datas	Direct				
Week	Dim_Datas	Direct				
Date	Dim_Datas	Direct				
Day	Dim_Datas	Direct				
Season	Dim_Season_Date	Direct				
Season	Dim_Season_Date	Direct				
Product Season	Dim_Season_Artigo	Direct				
Store	Dim_Plataformas	Direct				
Brand	Dim_Marcas	Direct				
Product's SKU	Dim_Artigo	Direct				
Product Description	Dim_Artigo	Direct				
Subfamily	Dim_SubFamilias	Direct				
Company Margin	Fact_Vendas	Indirect				
Sales (€)	Fact_Vendas	Indirect				
Sales (€) Total	Fact_Vendas	Indirect				
Sales (Qt.) Total	Fact_Vendas	Indirect				
Costs for The Feeting Room	Fact_Vendas	Indirect				
Family	Fact_Vendas	Indirect				
Partner's Margin	Fact_Vendas	Indirect				
Average Cost Price	Fact_Vendas	Indirect				
Documents ID Number	Fact_Vendas	Indirect				
Document Type	Fact_Vendas	Indirect				
Price for Calculating Commissions without VAT	Fact_Vendas	Indirect				
Sold Products	Fact_Vendas	Indirect				
Is it in stock?	Fact_Stock	Indirect				
Stock	Fact_Stock	Indirect				
Flow of People in Store	Fact_People_Counter	Indirect	The Feeting Room Sharepoint Foulder			
Brands X-Ray	Sales (€) Season N	Medidas	Direct	Tables Created in PowerBI		
	Stock (Qt.)	Medidas	Direct			
	Sell-out Season N	Medidas	Direct			
	Season	Dim_Season_Date	Indirect	dbo Schema in a SQL Primavera Server		
	Gender	Dim_Artigo	Direct			
	Family	Dim_Familias	Direct			
	Subfamily	Dim_SubFamilias	Direct			
	Subcategory	Dim_SubCategorias	Direct			
	Product Type	Dim_TiposProducto	Direct			
	Size	Dim_Artigo	Direct			
	Store	Dim_Plataformas	Direct			
	Color	Dim_Artigo	Direct			
	Brand	Dim_Marcas	Direct			
	Product's SKU	Dim_Artigo	Direct			
	Product Description	Dim_Artigo	Direct			
	Season	Dim_Season_Artigo	Direct			
	Sales (€) Total	Fact_Vendas	Indirect			
	Sales (€)	Fact_Vendas	Indirect			
Stock	Fact_Stock	Indirect				

Table 13: Attributes and Metrics Used in the Dashboards.

Source: Self Elaboration.

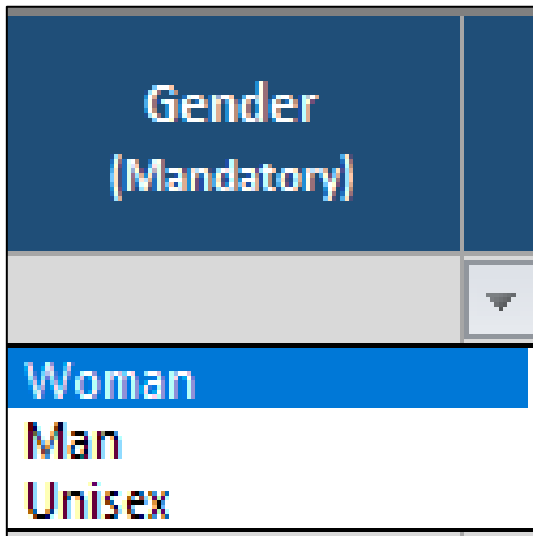


Figure 24: Gender Option List.

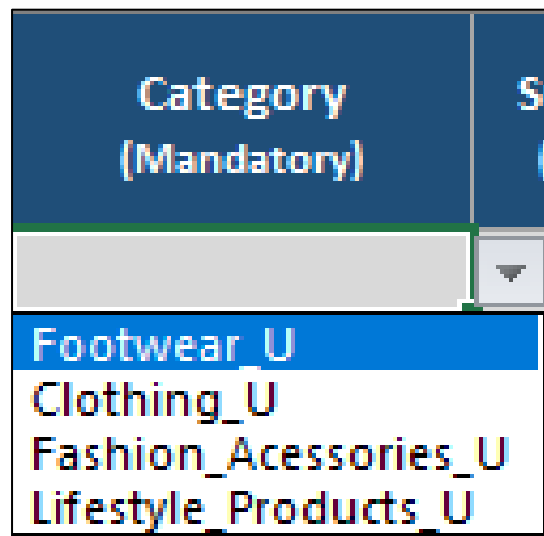


Figure 25: Category Option List.

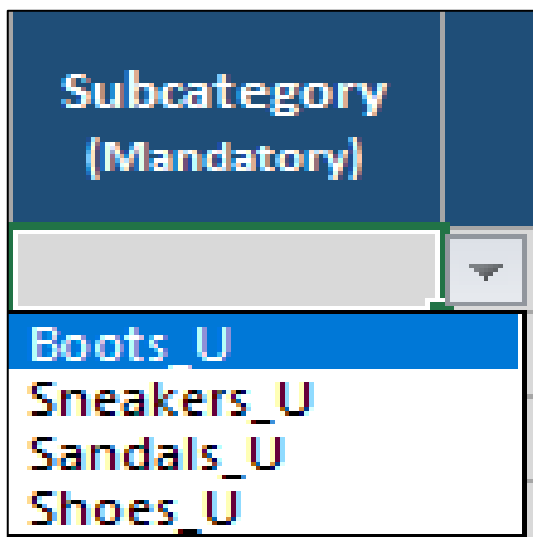


Figure 26: Subcategory Option List Example.

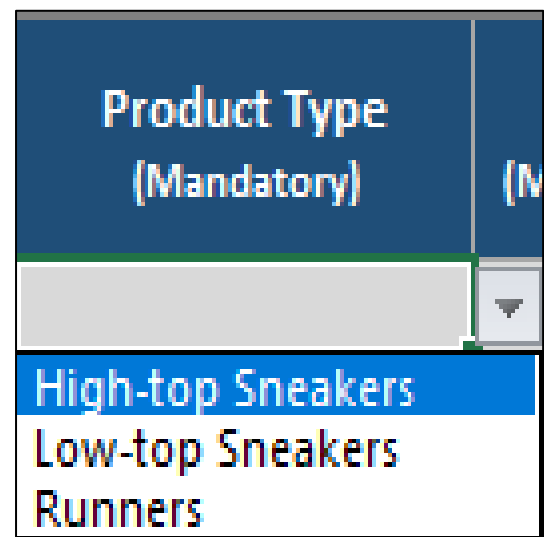


Figure 27: Product Type Option List Example.

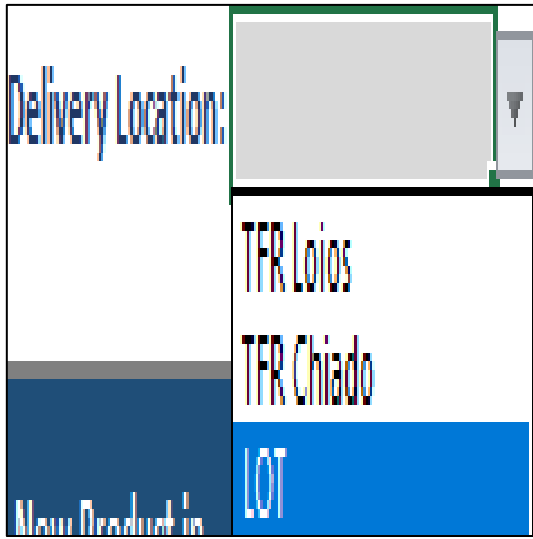


Figure 28: Delivery Location Option List.

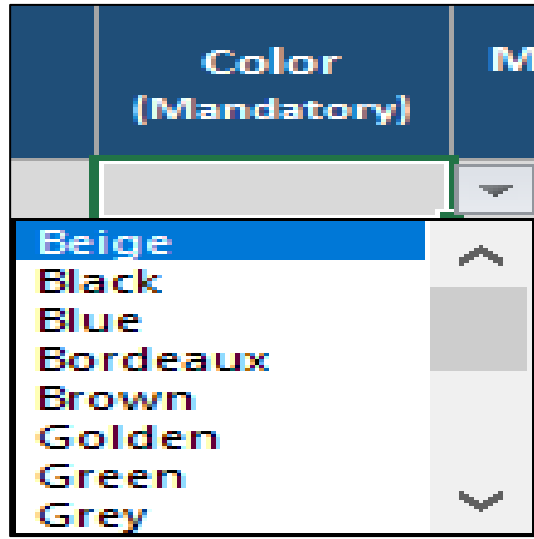


Figure 29: Colour Option List.