Possibilities of applying ABC analysis in terms of increasing the share of Fairtrade-certified products on the food market

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Abstract: The article deals with the application of the ABC method for fairtrade products on the spot market of food products. On the basis of Pareto's principle, the aim of the article is to define key items of specific consumption of food products from the point of view of a selected retail chain, which in case of their substitution by Fairtrade-certified products would significantly increase the market share of certified products and potentially also their consumption. According to the results of the analysis performed on a set of 4,405 stock items, a group of 140 items was created that represent the most significant part of the business range, since in the cumulative sum of the sub-items they represent the highest share of the annual turnover of the entire company and thus represent the most potentially significant groups for the expansion of the Fairtrade product range.

Keywords: Logistics, ABC analysis, Fairtrade
JEL Classification: M19

1 Introduction

Fairtrade can be defined as a social movement that promotes a more democratic development of the global economy by under-promoting access to global markets for small-scale producers from developing countries located in the global south (Stiglitz & Charlton, 2005). Currently, Fairtrade represents the most well-known and globally widespread social certification concept, according to Petersen and Snapp (2015). Conventional trade has serious environmental, social, economic, and political impacts, which raises to engage fair trade as an ethical idea behind various issues. The co-consumer is confronted daily with a series of ethical decisions that can be summarized in the main motivation of "doing good". There, the consumer's engagement is expected to have a positive impact on ethical behaviour related to broader issues of sustainability (Kutaula et al, 2022).

The Fairtrade social system represents more than 1.6 million farmers and workers, mainly from developing countries, with nearly 1,600 products certified by producer organisations in 75 countries. Farmers and workers producing mainly bananas, coffee, cocoa, sugar, tea, flowers and cotton earned €178 million in premiums, a 19% increase. Global retail sales of fairtrade products reached $8.5 billion in 2017. The largest countries by retail sales are the UK, Germany and the USA (Bhavsar et al, 2021).

In the retail sector, according to Berry and Romero (2021), fairtrade products are becoming more prominent, thus bridging the gaps in assortment between conventional and fairtrade goods. Global sales of fairtrade products, approximately US$ 9.2 billion, are steadily increasing. While the initial focus of fairtrade was on fruit and coffee, there has been an increase in the number of products being marketed with this type of label. Awareness of Fairtrade has made more consumers aware of consumption patterns that lead to environmental damage in the production of, for example, clothing or flower growing (Rashid, Buyn, 2018).

The principles of fairtrade are currently becoming more and more familiar to Czech consumers and are already influencing their purchasing behaviour to a large extent. However, in terms of overall market share of food products, certified production is still a minority, as current data show. The most traded fair-trade commodities are currently coffee, of which 1,399 tonnes were sold in the Czech Republic in 2022, followed by cocoa, of which 4,536 tonnes were sold. This huge increase in sales of Fairtrade cocoa or Fairtrade cocoa beans, which was already recorded in 2021 compared to previous years, is mainly due to the introduction of the Fairtrade Cocoa product label, which is included in all products containing Fairtrade cocoa. It is also worth mentioning the growth in sales of Fairtrade cotton, which is most often offered in our conditions in the form of cotton shopping bags or company uniforms, Fairtrade bananas, which have been offered since this year in addition to the Kaufland chain also in Lidl chains, and Fairtrade flowers, which can be considered a kind of breakthrough in the mainstream offer of non-food Fairtrade goods. Over 4 million cut stems were sold last year.

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This is a relatively large increase compared to the previous period. Customers can find cut fairtrade flowers in the Kaufland and Lidl chains.

The authors' ambition in this article is therefore to define, on the basis of Pareto's principle, the key items of specific consumption of food production from the perspective of a selected retail chain, which, if substituted by Fairtrade-certified products, would significantly increase the market share of certified products and potentially their consumption. This is, according to the authors, one possible way of giving more support on the market to produce that meets social, economic and environmental standards that contribute to more sustainable economic development.

The ABC method is traditionally used in logistics as a method of differentiated inventory management, which is based on the fact that it is often difficult and impractical to pay the same attention to, monitor and manage all items of a given type of inventory in the same way. Therefore, ABC analysis is applied, which allows inventories to be divided into three specific groups and then to treat these groups differently in terms of their management methodologies (Emmett, 2008).

The analysis of ABC is based on a regularity defined by the Italian economist and sociologist Vilfredo Frederico Damaso Pareto at the turn of the 19th and 20th centuries. This regularity states that very often 80% of the consequences result from only 20% of all possible causes (the so-called 80/20 rule). This method can thus be used to advantage, for example, to optimise the frequency and method of delivery with regard to the potential for reducing the financial capital tied up in inventories. The method, based on Pareto's principle, means that the improvement of one objective must be achieved at the expense of but-at least one of the other objectives. (Steuer, 1989) However, the application possibilities of this method are not exhausted, as inventory differentiation also allows, for example, the optimisation of the inventory storage system itself in production or commercial warehouses with a view to reducing the intensity of handling and thus influencing the level of overall logistics costs. However, the authors have chosen this method for data analysis with the intention of defining a narrow proportion of the appropriate Fairtrade-certified range that will have the highest possible impact on the consumer market in terms of its preference. In addition, in linking the ABC method with Fairtrade certification, the authors also see some symbolism in the common philosophy on which both principles were founded, namely the ABC method was developed as a recognition of social inequalities in Italian society and Fairtrade certification seeks to redress the social and economic inequalities between developed countries and producing, especially developing, countries.

2 Methods

For the ABC analysis, a retail chain dealing with the distribution of food products in the South Bohemia region was chosen. The sales for a calendar year were analysed. The product range in the period under examination consisted of 4 405 items with an annual turnover of EUR 357,25 million. CZK.

Firstly, the ABC analysis itself is carried out in the paper. Due to the size of the business mix, only selected key A-type items that account for at least 0,1 % of the annual turnover of the entity under examination are examined. These items can potentially have the greatest positive impact on the market share of certified products. For these items, the paper further proposes a system of measures that should lead to a reduction in capital tied up in inventory, a streamlining of handling and warehousing operations and a more efficient purchasing management to make the set-up of an inventory management system for these items cost-effective.

The basic input information for performing the ABC analysis is the total annual turnover of each item in the business mix of the entity under consideration, which is further expressed as a percentage in relation to the total annual turnover of all items. The items are further ranked according to their share in the annual turnover of the enterprise from the most significant to the least significant and according to the cumulative totals with threshold values of 80% and 95%, they are classified into three basic groups A, B and C. (Toušek, 2016)

3 Research results

3.1 Pareto principle and method ABC

Vilfredo Pareto defined a regularity that reflected the fact that only 20% of the population of Florence at the time owned 80% of the real estate. This rule was later reflected in logistics and was the basis for setting the basic principles of ABC analysis. It divides the assortment according to its share of the firm's annual turnover into three basic groups (A, B, C), with group A having approximately 80% of the firm's total turnover, but the share of items included in this most important group is only approximately 20% of the total assortment. (Bazala, 2003)

However, company turnover is not the only criterion that can be used in ABC analysis. Individual items can be broken down, for example, according to the value of the trading margin realised by the entity in the course of one year, or the volume value of inventory turnover in units of measurement (pcs, kg, l) can also be used for the analysis. However, the authors chose to calculate the ABC analysis according to the turnover of the chain. The ABC analysis is always carried

out for one year, and the period examined may be a calendar year, i.e. January-December, or it may be a period covering the last 12 months for the sake of updating data, as the product range of many trading companies changes continuously and for these entities it is more than meaningful to carry out the analysis on items that are part of the currently traded range. However, the standard approach to performing ABC analysis is to process data for the previous calendar year (mainly for better access to data and also for the possibility of year-on-year comparison), where the main criterion for classifying items into groups A, B and C is their turnover in CZK excluding VAT.

Once the basic breakdown of items has been made, the result still needs to be corrected to reflect the fact that although some items reach the percentage of turnover of the total stock for categories B, it is appropriate to classify them in group A because, for example, they are susceptible to storage conditions and are subject to frequent losses, or they are items that can tie up a high proportion of financial capital in stock in small volumes. Conversely, some A items should be reclassified to Group B because of their low frequency of removal, and in the rare case where large volumes are removed only a few times a year, to Group C. A further adjustment is made at the level of thresholds, where it is necessary to assess whether the split between A and B, B and C is appropriate in terms of the share of threshold items in total warehouse turnover. A split strictly based on compliance with the 80 %, 15 % and 5 % turnover rule for a given group might not correspond to reality, and such a methodologically accurate implementation of the ABC analysis might not give the company the expected result. In practice, it also happens that type A items include, for example, only 78 % of the total annual turnover of a given warehouse, since if group A were to be supplemented by the missing 2 % of turnover, then items which have a turnover drop compared to the high-turnover type A items would have to be included in this group. The same procedure is then followed in finding the appropriate boundary between type B and C items.

Table 1 The result of ABC method application

Category	Border (in %)	Absolute number of items	Ratio of items (in %)
A	80,22	1 422	32,3
B	14,99	1 287	29,2
C	4,79	1 696	38,5
Total	100,00	4 405	100,0

Source: Own processing

As can be seen from Table 1, the application of the ABC method has led to the formation of three groups, with the main group A comprising 32.3% of the items in the total assortment, compared to the assumption of Pareto's regularity, which states that the share of these items should be around 20%. The most important item in group A is M10 eggs, packed in a suction carton, which accounts for 1,26 % of the annual turnover of the investigated entity. On the other hand, the least significant item in Group A is Rio Mare tuna in oil, which accounts for only 0,018 % of the total turnover of the store. The average share of Group A items in turnover per calendar year is 0,0564 %. However, only two items have a share of turnover higher than 1 % and only 140 items out of all items in Group A have a share of annual turnover higher than 0,1 %. These 140 items form a key part of the product range which has the potential to increase the market share of Fairtrade certified food products (see Table 2).

Table 2 The 140 top items of A type analysis

Assortment category	Number of items	Turnover in pcs	Turnover in CZK	Turnover in %
Tobacco products	35	802 340	36 107 841,14	10,11
Table and mineral water	23	1 719 834	15 118 638,60	4,23
Fats and oils	14	470 402	10 472 044,42	2,93
Sweets	16	1 534 299	10 426 829,51	2,92
Colonial goods	9	761 343	9 409 224,46	2,63
Alcoholic beverages	9	93 841	7 586 425,81	2,12
Coffee	10	334 490	7 341 135,78	2,05
Eggs	3	335 416	7 197 207,20	2,01
Canning products	10	502 992	4 877 047,03	1,36
Producsts for pets	3	10 572	3 224 041,18	0,90
Milk and dairy products	4	180 573	2 580 095,83	0,72
Other soft drinks	3	77 908	1 358 156,31	0,38
Beer	1	113 520	615 777,83	0,17
Total	140	6 937 530	116 314 465,10	32,53

Source: Own processing

As can be seen from Table 2, the overall share of the most important items with an annual turnover of at least 0,1 % is 32,53 %. The main group is tobacco products, which account for more than 10 % of the annual turnover of the whole range (35 items are represented). The second most important group, with a difference of almost 6 % compared to tobacco products, is the range of table and mineral waters (23 items represented). Both of these groups are, however, insignificant in terms of Fairtrade certification, tobacco products are not traded under Fairtrade certification and for bottled table water it is not economically viable to import these products from producing countries into the Czech Republic. However, the confectionery group is significant from a Fairtrade point of view, representing 23,42 % of consumption in the Czech Republic and accounting for a share of 2,92 % in the examined retail chain for 16 types of products; the coffee group is also very significant, representing 2,05 % of the total annual turnover of the chain and including 10 products, canned products are a significant group with a share of 1.36%, as well as other non-alcoholic beverages, of which bottled fruit juices and lemonades represent the highest Fairtrade share (potential for the selected retail chain is 0.38%). Thus, if all products in the selected groups were replaced by Fairtrade products, their share could potentially reach 6.71% with an annual turnover (taking into account the prices of existing products) of almost €24 million. CZK.

If we divide the most important assortment groups of A-type items according to the units of measure exported, the most important group is the assortment of table and mineral waters, of which more than 1.7 million units were exported in the calendar year. The second largest group by number of packages shipped was confectionery, of which more than 1.5 million units were sold.

3.2 Design of measures according to the method ABC

Based on the ABC analysis, the authors recommended the following measures to the retail chain:

Priority should be given to promoting the sale of Fairtrade certified products in the confectionery, coffee, canned goods and soft drinks (or fruit juices) product groups.

For the most significant Fairtrade Group A items, stock levels and movements should be monitored regularly, and master commercial agreements including delivery terms, prices and discount rates should be negotiated with suppliers. It is advisable to establish a list of the most significant suppliers before starting to communicate with suppliers,

as one supplier of Fairtrade production may supply multiple items that appear in both Group A and the other groups. It is therefore advisable to discuss the completed deliveries of all items as a whole, but it is also possible to address sub-items separately, although this form is more time-consuming and organisationally demanding. In new contracts, the frequency of deliveries should be adjusted so as to reduce the normal stock, i.e. to achieve a shorter delivery cycle resulting in a reduction in order batches and a reduction in storage costs. In this case, the suppliers should not claim reimbursement of the costs of the increase in frequency of supply, as these are the most traded items for the company in aggregate on an annual basis, i.e. it would be undesirable for the supplier to lose its position in supplying the entity under investigation by increasing prices or worsening supply conditions. It is also possible to negotiate with the suppliers a change in payment terms in favour of an increase in supplier credit, i.e. an extension of the payment terms of the obligations towards the suppliers. Under certain conditions, it is advisable to consider establishing direct supply links with the main producers directly in the countries where the main raw materials are either produced or with the production plants, so that these supplies are not arranged through intermediaries, as is usual with the Fairtrade range (in particular German suppliers, whose trade margins make Fairtrade production significantly more expensive to enter the Czech market).

4 Conclusion

The ABC method is one of the best known methods for the analysis of inventories in logistics, but also for the segmentation of certain files according to the importance of sub-components in other areas of economic practice. The professional logistics literature in the Czech Republic mostly focuses on the general rules of application of the ABC method, so this article aims to present a broader application spectrum of this important method in more specific implications for the area of Fairtrade certified production, while respecting the individual differences and requirements of the food assortment traded by the studied entity. According to the results of the analysis carried out on a set of 4,405 stock items, a group of 140 items was created which represent the most significant part of the commercial assortment, since in the cumulative sum of the sub-assortments they represent the highest share of the annual turnover of the whole company and thus represent potentially the most significant groups for the extension of the assortment with Fairtrade products. In conclusion, the ABC method still has great application potential in the current market sub-market and it is up to the efforts and creative skills of individual managers to determine how this potential will be used and how much economic benefit will be derived from the application of this method.

The authors see the main theoretical contribution of this paper in the possibility of using Pareto's law in the area of the market share of Fairtrade certified products to increase the supply of these products in segments that have the highest market impact in consumer perception.

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