

EUROPEAN INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND MANAGEMENT STUDIES

VOLUME03 ISSUE05

DOI: <https://doi.org/10.55640/eijmrms-03-05-05>

Pages: 21-32



SUPPLY CHAIN SEGMENTATION

Abdiraximov Azizbek Abdiqaxxor's Son

3rd-Year Student Of Andijan Machine-Building Institute, Uzbekistan

ABOUT ARTICLE

Key words: Segmentation, supply chain, temperature, regime, logistics, trend, market, design, service, company, owner, customer, consumer, product, demand, combination, fashion, principles, value, cost-effective.

Received: 01.05.2023

Accepted: 05.05.2023

Published: 10.05.2023

Abstract: Designing and operating distinctly different end-to-end value chains (from customers to suppliers) optimized by a combination of unique customer value, product attributes, manufacturing and supply capabilities, and business value considerations. Several methods can be used in supply chain optimization. In this article, we will consider the reason why segmentation stands out among them and the solutions to existing problems.

INTRODUCTION

A 'one-size-fits-all' approach to logistics is not appropriate in most instances. Some form of supply chain segmentation is therefore necessary for a company to satisfy the various service and cost needs of its customers. In addition to the channel options discussed as this raises the question of exactly how a company's supply chain should be segmented. For example, one type of supply chain may be appropriate for large bulky items and another for small parcels. Similarly, a supply chain may be necessary for highly demanding customers separate from that generally available to the market. There are many different ways in which supply chains may be segmented and this chapter explores some of the more common segmentation bases that are available.

Supply chain segmentation is a term used to explain supply chain operations in terms of small segments of operations from suppliers to customers. Supply chain segmentation describes the dynamic alignment of customer channel demands and supply response capabilities. The term helps businesses to focus on each segment of the supply chain to optimize for net profitability.

Supply chain segmentation looks different for each specific company. To optimize processes, maximize profits, make customers happy, and grow your business, it is helpful and perhaps essential to manage supply carefully and in smaller segments for greater control. For example, one segment might be ordering raw materials, another segment might be storing those materials, another might be processing the materials, and another one might be delivering the final product to the customer. Supply chain segmentation will be unique to each SMB but is an essential part of overall supply chain management for all businesses.

Product segmentation

It may be necessary to have different supply chains because of the very nature of the products. For example, when delivering to petrol stations the fuel may be delivered in large road tankers whereas the food and other items for the petrol forecourt shop would need to be delivered in clean, enclosed vans or trucks. Some key product characteristics were described. Such product characteristics are often an important basis for supply chain segmentation.

Examples include:

- **Size:** the size of the product (or the total order) may determine whether it is best suited to be delivered via a palletized delivery network or by parcel carrier or by post. Another example is where large items, such as beds or sofas, require two people to unload and, in such instances, it is often found more cost-effective to set up a separate network just for large bulky items, rather than having two people in a vehicle for all deliveries.
- **Temperature regime:** there are three main temperature regimes for food products, namely frozen (about -18 to -25 °C), chilled (about $+2$ to $+5$ °C), and ambient (normal outside) temperatures. These often form the basis for segmented supply chains, although it is quite common to find chilled and ambient goods combined. It is possible to combine all three in a single supply chain that comprises multi-temperature warehouses and compartmentalized vehicles.
- **Bulk:** some products are well suited to bulk handling (eg liquids, powders, and granules) and therefore require specialist storage, handling, and transport facilities.
- **Hazard:** hazardous goods may require a separate supply chain so that all the necessary safety measures can be implemented.
- **Contamination:** even where goods are not hazardous, they may be able to contaminate other products (eg by their smell).

- Pilferable goods: certain goods may be the target of opportunistic or planned robberies and therefore require greater security. An obvious example of this is where armored vehicles are used for banknote and bullion deliveries.
- Value: the value of goods may be important for segmentation purposes as this affects how costly it is to hold inventory in the supply chain. For example, goods that are low in value may be held at multiple locations close to the customers, whereas high-value goods may be centralized to reduce safety stocks.
- Variety: some goods by their nature are sold in a wide variety of forms. For example, a single shirt 'product line' may have many different collar sizes, colors, and sleeve lengths.

Each combination of these is significant to the customer and therefore many individual stock-keeping units (SKUs) need to be made available for sale. It is very difficult to forecast demand at the SKU level for every geographic region and therefore, as with high-value goods, the stockholding of these may be centralized to minimize safety stocks.

Demand and supply segmentation

In addition to the physical characteristics of the goods, there may be a distinction between whether the goods are 'functional' or 'innovative' in nature, as noted by Fisher in 1997. Thus, functional goods may have a steady demand and require a cost-efficient supply chain. On the other hand, innovative products may be new to the market, may be quite unpredictable in terms of demand, and therefore require a much more responsive supply chain.

This type of distinction between products with predictable and unpredictable demand is often associated with the lean and agile concepts respectively. A traditional view of the nature of products was described as 'the product life cycle'. Demand is, however, only one side of the supply chain. The nature of supply also needs to be taken into account. An important factor on the supply side is the length of the supplier lead time – from the time of placing orders on the supplier up to the time of physically receiving the goods.

Under this segmentation framework, lean supply chain principles can be applied where there is predictable demand. In the case of long lead times, the sourcing, production, storage, and movement of goods can be planned most cost-effectively. Where lead times are short, then quick response and continuous replenishment policies can be adopted so that goods are supplied on a 'just-in-time' basis at the last possible moment, again keeping inventories and waste to a minimum.

However, if demand is unpredictable, agile policies can only be fully adopted where supplier lead times are short. In this circumstance, supply can flex to meet the rapidly changing demands of the marketplace, and again inventories can be kept low. However, where supplier lead times are long, then this is likely to lead to either an oversupply of goods (leading to high inventories) or an undersupply (leading to lost sales).

Other approaches, therefore, need to be explored to combat this, such as production postponement, whereby goods are configured to the actual specification of the customer at the last possible moment – thereby holding goods in a generic form, which can be more easily forecast than at a more detailed level. An example of this would be the holding of personal computer components ready to be assembled once an order is received, rather than manufacturing computers to exact specifications of memory size, etc, and holding a multitude of finished goods SKUs in stock.

Policies such as postponement that combine elements of lean and agile approaches are sometimes referred to as ‘agile’. However, particular circumstances will dictate whether such approaches are possible, as a combination of long supplier lead times and unpredictable demand tends to lead to the need for high-safety stocks. This is the case in many industries following the globalization of supply. The geographic location of supply is a very important factor in supply chain design.

Separate supply chains will be needed, for example, to bring goods from the Far East to European markets, rather than from local European suppliers. The decision as to where to source is often part of the supply chain design process.

For example, goods with predictable demand may be sourced from low-cost suppliers in distant parts of the world (ie part of a ‘lean’ approach) whereas goods with unpredictable demand may be sourced locally where lead times are generally much shorter and therefore supply can easily be changed to meet fluctuating levels of demand (ie part of an ‘agile’ approach). Understanding factors such as these are key to the development of an effective logistics operation and is integral to the logistics network planning process described.

However, it may be rather simplistic to categorize the demand for goods as being either predictable or unpredictable. Another approach is to examine whether there is a ‘base’ demand that can be identified separately from unpredictable ‘surges’. In this circumstance, it may be advantageous to segment the supply chain accordingly, with a lean supply chain for the base demand (eg by sourcing in low-cost countries) and an agile supply chain for the surging demand (eg by sourcing locally).

A similar approach could be taken by segments following the Pareto classification of the goods. Thus, fast-moving goods normally have more predictable demand than slow-moving goods, as the latter tend to be demanded only occasionally and in small quantities.

A lean approach could therefore be adopted for the fast-moving goods and an agile approach for the slow-moving goods.

The portfolio management approach

The overarching challenge faced by supply chain managers—providing excellent customer service while reducing the cost of goods sold (COGS) and minimizing investment in new fixed assets and inventory—can be summarized in a return-on-investment (ROI) equation that considers such factors as return on assets (ROA), return on invested capital (ROIC), or economic profit (EP).

Segmentation provides a means by which supply chain managers can tailor service agreements with customers to increase sales while reducing operating costs and both fixed and inventory assets. It does this by aligning supply chain policies to the customer value proposition as well as to the value proposition for the company as a whole.

Segmentation is driven by a unique value proposition offered to a given customer for a given product. This value proposition will include the price, the quantity, the delivery times, the degree of flexibility, and the service-level agreement for that customer/product relationship. The supply chain must be aligned with this value proposition with different policies. This may include unique policies for one or more of the following: promising, fulfillment, transportation, inventory, manufacturing mode, and sourcing. It will also be reflected in the supply chain network and transportation design.

This essentially means that there will be multiple, virtual supply chains running against one physical supply chain. These virtual supply chains will be driven by unique value propositions

for groups of customer/product intersections and will be reflected through policies that are managed and administered by supply chain professionals.

Segmentation shows that supply chain management is evolving toward a process similar to portfolio management. Companies have a portfolio of customers and channels, a portfolio of products, and a portfolio of suppliers and supply modes. By matching those portfolios based on the best way at a given time to reliably and profitably serve each customer, companies will see tremendous value potential.

Marketing segmentation

Segmentation has been adopted in marketing for many decades. It is used for demand creation purposes and it has long been recognized that different classifications of customers require different marketing approaches. As it is the customer that supply chains are trying to satisfy, it would be sensible to examine whether marketing segmentation frameworks are relevant to supply chain design.

There are many categorizations of marketing segments but one such classification is as follows:

- Geographic: the location of the customer, eg by continent, country, region, or urban/rural.
- Demographic: populations are often broken down into categories according to such factors as age, gender, income, home/car ownership, employment, and ethnic origin.
- Psychographic: this form of segmentation is concerned with the interests, activities, and opinions of consumers, and is often related to lifestyles.
- Behaviouristic: this relates to how consumers behave, in terms of, for example, how frequently they buy certain products and whether they remain loyal to particular brands.
- Firmographic: in the case of industrial customers, a common form of segmentation is by such factors as turnover, number of employees, and industry sector.

The geographic location of the customer is relevant to the supply chain, as well as marketing segmentation. For example, export orders are often segregated within warehouses for specialist packing and are frequently dispatched using different logistics companies than is the case with home orders. Similarly, some companies deliver to the main urban conurbations using their vehicles, while they may use third-party logistics companies for more distant locations (as such companies can combine deliveries with goods from other companies to improve their load factors and routing efficiency).

It may also be argued that the other marketing segmentation frameworks are highly relevant to the supply chain in that each segment may represent a different demand characteristic that needs to be supplied differently. For example, psychographic factors, such as lifestyle, are important in the fashion industry. Customers who require standard commodity garments (eg low-price jeans) can probably be supplied using lean principles as demand tends to be fairly stable.

However, the demands of fashion-conscious buyers (ie who seek the latest fashions as seen on the catwalks or in fashion magazines) need to be satisfied in a much more agile way – for example, using rapid design and manufacturing techniques, local suppliers and cross-docking through the distribution

network immediately to the stores. Of course, it must also be remembered that customers may fit into each of these categories depending on the nature of a particular purchase (eg for everyday wear or special occasions).

Behaviouristic segments may also be very important for supply chain design. For example, Gattorna (2006) used personality types to investigate buying behaviors, particularly of commercial customers, and identified four common categories:

- Collaborative: this is where customers are seeking a close working relationship whereby both parties may benefit. It is a common behavior when dealing with mature products where demand is fairly predictable and is often associated with a supply chain design using continuous replenishment principles.
- Efficient: this is commodity-type buying where the price tends to be the 'order winner'. A lean supply chain at minimum cost is therefore suited to this segment.
- Demanding: in this segment, a rapid response is needed, often to cope with unpredictable supply and demand situations. An agile type of supply chain is therefore required.
- Innovative: this tends to be where the customer is continually seeking new developments and ideas from suppliers. The latter, therefore, need to be innovative in terms of supply chain solutions and fully flexible in their response.

Each of these categories of buying behavior may therefore require a different supply chain design.

Combined segmentation frameworks

Most segmentation policies involve some combinations of the various frameworks described above. For example, one that has been proposed (by Childerhouse, Aitken, and Towill, 2002) has been named "DWVVV" with the key factors being as follows:

- Duration: this refers to the length and stage of the product life cycle and may be related to Fisher's 'innovative' and 'functional' product segments.
- Window: this is the time window for delivery or the delivery lead time that is required.
- Volume: this relates to the Pareto volume classification, ie whether the products are fast or slow-moving.
- Variety: this relates to the product range, particularly in terms of the number of individual SKUs (eg colors, forms, sizes, etc).
- Variability: this relates to demand variability and unpredictability.

This framework has been applied successfully in many case studies but other investigations have found that additional factors may need to be incorporated, such as order line value and weight, and the number of customers buying each product.

Key Practices in supply chain segmentation

Segmentation is not just a network strategy, an inventory strategy, or a fulfillment or manufacturing strategy. Rather, it is an end-to-end strategy for the supply chain that has implications for many areas, from the customer through to the supplier. To achieve maximum value from segmentation for both the customers and the enterprise, companies must have policies in each area that are coordinated with the value proposition offered to each customer/product combination.

Implementation

Supply chain segmentation can therefore be very complex as there is a wide range of factors that could be used as a basis for segmentation. If a company decided to use all of these possible segmentation bases then it would find itself with a multitude of different supply chains that would be impossible to manage. It is therefore important to choose the segmentation frameworks that are relevant to the particular product, supply, demand, and buying characteristics experienced. Many of the different segments that could be identified will require the same or similar supply chain designs and therefore these can be grouped. The objective is to have a manageable number of cost-effective supply chain networks that adequately meet the different demands of the market.

It should be noted that there are some different elements involved in designing a supply chain, such as:

- sourcing (eg local supply, 'near-shoring', or 'off-shoring');
- distribution network (eg the number, location, and role of warehouses);
- transport modes (eg road, rail, sea, or air freight).

The implementation of segmented supply chains requires decisions on all these elements. For example, a 'lean' supply chain may involve 'off-shore' sourcing (eg from a distant low-cost supplier), cross-docking through warehouses to meet a predictable demand, and transport by sea freight, which is relatively low cost. An 'agile' supply chain, on the other hand, may require local suppliers that can react quickly, a network of local depots holding small buffer stocks to service the immediate needs of customers, and the use of road freight, which tends to be relatively fast and flexible. There may be

synergies that can be gained by merging certain aspects of segmented supply chains – for example, the use of the same warehouses for holding buffer stocks and for cross-docking.

The design of segmented supply chains is an important business decision and requires the involvement of various departments across a company, including marketing, manufacturing, procurement, and logistics.

Segmentation gains ground

In previous generations, companies that wanted to create unique ways of serving customers or unique capabilities for a product would add physical assets. Today, they must utilize the same physical assets to serve customers and differentiate service, segmenting their supply chains utilizing information and decision-making within a management framework. Supply chain segmentation, therefore, advances a continuing macro trend toward information replacing the need to add physical assets.

Companies that successfully deploy segmentation strategies will improve the reliability of their customer service while increasing profitability across their product portfolio. Segmentation does so through better alignment of supply chain policies to customer/product value propositions. It also increases asset turnover (both fixed and inventory) through inventory positioning and aligning manufacturing and distribution assets to customer value propositions and profitability.

CONCLUSION

This article examined why a single company may need to have different supply chains, each operated separately. This may be because of the physical characteristics of the products themselves, the nature of the demand and supply conditions experienced, or the buying behavior of the customers. It is likely to be some combination of these. Once the different supply chain segments have been identified it is then necessary to plan the precise logistics networks required for each segment.

REFERENCES

1. Бекташев, И. Б., Юсупов, К. А., Жуманова, М. С., Юлдашева, Г. Т., & Мухтаров, З. М. (2020). ОСОБЕННОСТИ АНТИБАКТЕРИАЛЬНОЙ ТЕРАПИИ ТУБЕРКУЛЕЗА ЛЕГКИХ У ВИЧ-ИНФИЦИРОВАННЫХ БОЛЬНЫХ. Форум молодых ученых, (12 (52)), 80-84.
2. Maxsudaxon, J. (2022). PROCEDURE FOR INVESTIGATION AND ACCOUNTING OF ACCIDENTS IN THE PROCESS OF ACTIVITY IN PRODUCTION. Universum: технические науки, (6-6 (99)), 48-50.

3. Kuchkarova, C. H., Nizamova, U. S., Abdullaev, S., & Madrakhimova, G. A. (2019). The High Water Plants Water Road in Cleaning. Annual Research & Review in Biology, 1-5.
4. Kuchkarova, C. H. (2019). NATURAL DISTRIBUTION OF THE ALGAE PLANT OF THE TREATMENT OF TELEAROSOVODIS, SYSTEMATIC PLACE AND SEPARATE BIOLOGICAL FEATURES. Central Asian Problems of Modern Science and Education, 4(2), 117-124.
5. Yo'ldashev, A., & Jalilov, A. (2022). FAVQULODDA VA EKOLOGIK OFAT HOLATLARIDA KORXONALAR BOSHQARUVI. Eurasian Journal of Social Sciences, Philosophy and Culture, 2(13), 269-275.
6. Jalilov, A. (2022). MODEL FOR IDENTIFICATION AND ANALYSIS OF PROBLEMS IN THE ACTIVITIES OF OFFICIALS OF THE NATIONAL ACTION AND MANAGEMENT CENTER. Science and Innovation, 1(7), 286-294.
7. Yo'ldashev, A., & Jalilov, A. (2022). FAVQULODDA VA EKOLOGIK OFAT HOLATLARIDA KORXONALAR BOSHQARUVI. Eurasian Journal of Social Sciences, Philosophy and Culture, 2(13), 269-275.
8. Jalilov, A. (2022). MODEL FOR IDENTIFICATION AND ANALYSIS OF PROBLEMS IN THE ACTIVITIES OF OFFICIALS OF THE NATIONAL ACTION AND MANAGEMENT CENTER. Science and Innovation, 1(7), 286-294.
9. Jalilov, A. (2022). FAVQULODDA VAZIYATLAR VAZIRLIGINING FAVQULODDA VAZIYATLARDA HARAKAT QILISH VA BOSHQARISH MILLIY MARKAZI MANSABDOR SHAXSLARI FAOLIYATIDAGI MUAMMOLI MASALALARNI ANIQLASH VA TAHLIL QILISH MODELI. Science and innovation, 1(C7), 286-294.
10. Jalilov, A. (2023). «FVHQ VA BMM TIZIMINI TAKOMILLASHTIRISH MODELI». © ООО «МОЯ ПРОФЕССИОНАЛЬНАЯ КАРЬЕРА»
11. Jalilov, A., Нилуфар, К., & Xalmatov, M. (2023). WAYS TO IMPROVE THE EFFECTS OF HEAVY METALS IN THE ATMOSPHERE ON LANDSCAPE TREES AND SOILS. © ООО «МОЯ ПРОФЕССИОНАЛЬНАЯ КАРЬЕРА».
12. Jalilov, A., & JALILOV, A. (2022). O'zbekiston respublikasi atrof-tabiiy muhit va ekologiyaning yomonlashuvi bilan bog'liq favqulodda vaziyatlarning oldini olish muammolari.
13. Madaminjonovich, Q. H. (2022). AHOLI ZICH YASHAYDIGAN HUDUDLAR EKOTIZIMLARI BOSHQARUVI: QURILISHDA ATROF-MUHITNI BOSHQARISHNING EKOLOGIK VA IQTISODIY SAMARADORLIGI.

14. Sotvoldiyevich, A. R. (2021). Family Ceremonies In Connection With Funeral (On The Example Of The Karakalpaks Of The Fergana Valley). Berlin Studies Transnational Journal of Science and Humanities, 1(1.5 Pedagogical sciences).
15. АТАХАНОВ, Р. (2023). ФАРФОНА ВОДИЙСИ ПОЛИЭТНИК ТАРКИБИНИНГ ШАКЛЛАНИШИДА МИГРАЦИЯ ЖАРАЁНЛАРИНИНГ ТАЪСИРИ.
16. Атаханов Р. С. ФАРФОНА ВОДИЙСИ ПОЛИЭТНИК ТАРКИБИНИНГ ШАКЛЛАНИШИДА МИГРАЦИЯ ЖАРАЁНЛАРИНИНГ ТАЪСИРИ //Proceedings of International Educators Conference. – 2023. – Т. 2. – №. 3. – С. 27-31.
17. АТАХАНОВ, Р. (2022). МАТЕРИАЛЫ К ИССЛЕДОВАНИЮ ПОХОРОННО-ПОМИНАЛЬНОЙ ОБРЯДНОСТИ КАРАКАЛПАКОВ ФЕРГАНЫ: ТРАДИЦИИ И ИННОВАЦИИ (НА ОСНОВЕ ПОЛЕВЫХ ИССЛЕДОВАНИЙ). Ошского государственного педагогического университета.
18. Рахимов, А. Ю., Абдурахмонов, А. А., & Сулаймонов, Ш. А. (2015). Изучение состояния использования ваты-сдира и пути повышения качества коконного сырья. Журнал научных публикаций аспирантов и докторантов, (4), 152-157.
19. Abdurashid, A. (2023). Efficient Method Of Biogas Production. Eurasian Journal of Engineering and Technology, 17, 28-34.
20. Abdurakhmonov, A. THE CONCEPT OF NATURE AND HEROES IN “ROCKS ALSO CRY”. EPRA International Journal of Multidisciplinary Research (IJMR), 1, 481.
21. Abdurakhmonov, A. A., & Dadabayeva, N. A. PREVENT SERIOUS INFECTIOUS DISEASES AND THEIR SPREAD PRECAUTIONARY MEASURES.
22. Tursunov, X. T., & Rahimova, T. U. (2006). Ekologiya.
23. Jalilovna, Q. N., Rustamjon o'gli, Y. D., Xosiljon o'g'li, M. J., & Isroiljonovich, I. O. (2021, January). НИМОҲА ГАЗЛАРИ МУНИТИДА ПАЙВАНДЛАШДА МЕҲНАТ МУҲОҲАЗАСИ. In Archive of Conferences (Vol. 13, No. 1, pp. 47-48).
24. Yusupov, I. I., Qobulova, N. J., Xojiev, A. A., & Vaxobov, A. (2020). TO REDUCE GLOBAL CLIMATE ISLAND FOCUSED LOCAL COOPERATION. Theoretical & Applied Science, (11), 501-507.
25. Кобулова, Н. Ж., & Нарзиев, Ш. М. (2021, December). ХОДИМЛАРНИНГ МЕҲНАТИНИ МУҲОҲАЗА ҚИЛИШ САМАРАДОРЛИГИНИ ОШИРИШ ЙЎЛЛАРИ. In Здравствуйте, уважаемые участники международной научной и научно-технической конференции, дорогие гости (p. 485).
26. Кабулова, Н. Ж. (2020). Традиционно-национальный узбекский головной убор мужчин (тюбетейка-дуппи) ферганской долины. Universum: технические науки, (8-2 (77)), 10-12.

27. Матрасулова, Н. И. (2022). СОСТАВ И СОРБЦИОННЫЕ СВОЙСТВА НАТУРАЛЬНОГО ШЕЛКА. ТЕСНика, (1 (9)), 11-14.
28. Qobulova, N. J., Abdumutalibov, J., & Akbarov, A. (2022). ISHLAB SHIQARISH KORXONASIDA MENNAT XAVFSIZLIGINI BOSHQARISH TIZIMI (MXBT) NI TAHLILI. Theoretical aspects in the formation of pedagogical sciences, 1(6), 218-223.
29. Кабулова, Н. Д., Ходжакулов, М. Н., & Рахимов, Д. Б. (2021). АКТУАЛЬНОСТЬ ИСПОЛЬЗОВАНИЯ ПРОГРАММНОГО ОБЕСПЕЧЕНИЯ (ПОИСКОВО-ИНФОРМАЦИОННАЯ КАРТОГРАФИЧЕСКАЯ СЛУЖБА, ГЕОЛОКАЦИЯ) В ПОДРАЗДЕЛЕНИЯХ МИНИСТЕРСТВА ПО ЧРЕЗВЫЧАЙНЫМ СИТУАЦИЯМ РЕСПУБЛИКИ УЗБЕКИСТАН. Universum: технические науки, (7-1 (88)), 14-17.
30. Халматов, М. М., Исмаилходжаев, Б. Ш., Кабулова, Н. Ж., & Хусанов, Д. Д. (2021). ГЕОФИЗИЧЕСКОЕ МОДЕЛИРОВАНИЕ РАСПРЕДЕЛЕНИЯ АТМОСФЕРНЫХ ЗАГРЯЗНИТЕЛЕЙ В АНДИЖАНЕ НА ОСНОВЕ УРАВНЕНИЙ АЭРОДИНАМИКИ. Universum: химия и биология, (6-1 (84)), 30-34.
31. Goto, N., Shibata, Y., Rahmatillayev, J., Qobulova-tfd, N., Atajonova, S., Turg'unova, N., & Toxirov, A. Xorijiy hamkorlar ishtirokida o 'tkazilgan Respublika ilmiy-amaliy anjumani to'plaminig TAHRIR XAY'NATI.
32. Jalilovna, K. N., & Sattarovna, J. M. (2022). Procedure for Investigation and Accounting of Accidents in the Process of Activity in Production. European Journal of Life Safety and Stability (2660-9630), 200-204.