Revista Multidisciplinar do Nordeste Mineiro, v.19, 2025
ISSN 2178-6925
DOI: 10.61164/6ppp1r07

LOGISTICAL BARRIERS AND PURCHASING ACTIVITIES: A STUDY WITH SELF-EMPLOYED SALESWOMEN IN THE CITY OF MANAUS

BARREIRAS LOGÍSTICAS E ATIVIDADES DE COMPRAS: UM ESTUDO COM VENDENDORAS AUTÔNOMAS DA CIDADE DE MANAUS

BARRERAS LOGÍSTICAS Y ACTIVIDADES DE COMPRA: UN ESTUDIO CON VENDEDORAS AUTÓNOMAS DE LA CIUDAD DE MANAUS

Tatiana dos Santos
Logistics Technical Course Student, Federal Institute of Education, Science and Technology of Amazonas, Brazil.
Email: santostaty720@gmail.com

José Luciano Rodrigues Alves Neto
Master in Environmental Sciences and Sustainability, Federal Institute of Education, Science and Technology of Amazonas, Brazil.
E-mail: jose-luciano.neto@gmail.com

Jefferson Fernando da Silva
Master's student in Economics, Federal Institute of Education, Science and Technology of Amazonas, Brazil.
E-mail: jefferson.silva@ifam.edu.br

Daniel Nascimento-e-Silva
PhD in Production Engineering, Federal Institute of Education, Science and Technology of Amazonas, Brazil.
E-mail: danielnss@gmail.com
Orcid: https://orcid.org/0000-0001-9770-575X

Revista Multidisciplinar do Nordeste Mineiro, v.19, 2025
ISSN 2178-6925
DOI: 10.61164/6ppp1r07

Recebido: 00/00/0000 – Aceito: 00/00/0000

Abstract

This study aimed to identify the logistical barriers to the purchasing activities of self-employed salespeople operating in the city of Manaus. A survey method was used, with a purposive sampling of six respondents. Data were collected through a semi-structured interview guide and organized into frequency tables. The results were generated through frequency and content analysis and interpreted comparatively with the theoretical framework developed for the study. The results showed that a) the businesses are from diverse sectors, with a median market tenure of 16 years, their customers are from Manaus and the interior of the state, and their suppliers are from all regions of Brazil; b) the main logistical barriers to purchasing are supplier registration, costs, supply, and transportation; c) the barriers are caused by a lack of technical knowledge, deficient national logistics infrastructure, and low quality of the services demanded by the salespeople; d) the barriers arise due to informality, transportation costs, demand exceeding supply, and deficient local and national transportation logistics; These barriers are avoided through some formalization of the company, technical inventory management, the application of modern purchasing techniques, and the use of their own transportation when possible. The conclusion showed that independent salespeople have sought to overcome these barriers so they can achieve higher operational standards.

Keywords: Logistics barriers; Purchasing activities; Independent salespeople; Purchasing process; Purchasing management.

Resumo

Este estudo teve como objetivo identificar as barreiras logísticas às atividades de compras de vendedoras autônomas que atuam na cidade de Manaus. Foi utilizado o método de levantamento, com amostragem intencional de seis respondentes, cujos dados foram coletados através de um roteiro de entrevista semiestruturada, organizados em forma de tabelas de frequência; os resultados foram gerados através de análise de frequência e de conteúdo e interpretados de forma comparativa com a arquitetura teórica elaborada para o estudo. Os resultados mostraram que a) os empreendimentos são de diversos ramos de atividades, com tempo de mercado mediano de 16 anos, seus clientes são de Manaus e do interior do estado e os fornecedores são de todas as regiões do Brasil; b) as principais barreiras logísticas às compras são o cadastro de fornecedor, custos, suprimento e transporte; c) as barreiras são causadas por desconhecimento técnico, deficiência de infraestrutura logística nacional e baixa qualidade dos serviços demandados pelas vendedoras, d) as barreiras acontecem porque há informalidade, custos dos transportes, demanda

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

é maior do que a oferta dos produtos e a logística de transporte local e nacional é deficiente; e as barreiras são evitadas com alguma formalização da empresa, gestão técnica de estoque, aplicação de técnicas modernas de compras e utilizando transporte próprio, quando é possível. A conclusão mostrou que as vendedoras autônomas têm procurado encontrar saídas para essas barreiras para que possam alcançar padrões mais elevados de operação.

Palavras-chave: Barreiras logísticas; Atividades de compras; Vendedoras autônomas; Processo de compras; Gestão de compras.

Resumen

Este estudio tuvo como objetivo identificar las barreras logísticas para las actividades de compra de las vendedoras autónomas que operan en la ciudad de Manaus. Se empleó un método de encuesta, con un muestreo intencional de seis encuestadas. Los datos se recopilaron mediante una guía de entrevista semiestructurada y se organizaron en tablas de frecuencia. Los resultados se generaron mediante análisis de frecuencia y contenido y se interpretaron comparativamente con el marco teórico desarrollado para el estudio. Los resultados mostraron que a) las empresas pertenecen a diversos sectores, con una mediana de permanencia en el mercado de 16 años, sus clientes provienen de Manaos y del interior del estado, y sus proveedores provienen de todas las regiones de Brasil; b) las principales barreras logísticas para la compra son el registro de proveedores, los costos, el suministro y el transporte; c) las barreras se deben a la falta de conocimientos técnicos, la deficiente infraestructura logística nacional y la baja calidad de los servicios que demandan las vendedoras; d) las barreras surgen debido a la informalidad, los costos de transporte, la demanda superior a la oferta y la deficiente logística de transporte local y nacional. Estas barreras se superan mediante la formalización de la empresa, la gestión técnica del inventario, la aplicación de técnicas modernas de compra y el uso de transporte propio cuando sea posible. La conclusión mostró que los vendedores independientes han buscado superar estas barreras para alcanzar estándares operativos más altos.

Palabras clave: Barreras logísticas; Actividades de compra; Vendedores independientes; Proceso de compra; Gestión de compras.

1. Introduction

In formal organizations, purchasing plays two fundamental roles: the first is the organization's relationship with the external environment, through which information is exchanged to ensure periodic organizational supplies, and the second is the beginning of the logistics process, which, in turn, also initiates the

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

production process. These two roles are addressed in different ways by science: as management (Prastyantoro et al., 2024), decision-making (Zengil et al., 2024), action (Dhara et al., 2025), and acquisition (Prałat, 203), among others. Both relationships and processes (logistics and production) are carried out through procedures known as rational, because they are based on the law, technical-scientific knowledge of business and economics, and the use of specialized personnel, which constitute what is commonly called bureaucracy. These characteristics confer a high degree of rationality on formal organizations in their actions, which helps reduce the likelihood of failure in achieving their objectives and goals. However, the market is not made up exclusively of formal organizations. Informal organizations and businesses play essential roles in all business environments, characterized by their lack of formal constitution and legal protection (Henderson, 2022; Ten; Wang, 2025). An informal organization can be defined as any group of people that shares at least one common goal, regardless of its formal structure. In contrast, an informal enterprise operates normally, but outside the bounds of the law and the official jurisdiction of government agencies. In this study, the term "informal enterprise" is conceptually equivalent to "informal enterprise," always with the meaning of achieving business objectives through informal enterprises. This conceptual framework encompasses so-called independent sellers, who are, in fact, informal entrepreneurs who play essential economic and social roles.

In this sense, this study aimed to identify the logistical barriers to the purchasing activities of independent sellers operating in the city of Manaus. Two main reasons led to this study. The first is theoretical, aiming to determine whether the barriers faced by formal organizations are like those faced by informal businesses. The aim is to identify, for example, barriers that formal organizations find easier to overcome than informal businesses. The second is practical, relating to the work of women entrepreneurs, which remains largely unexplored from a scientific perspective, leading to a lack of explanations regarding essential aspects of their businesses, such as understanding the barriers they face and what they have successfully done to overcome them.

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

2. Logistical barriers in purchasing: Theoretical architecture

A review of the literature on the phenomenon of barriers identified two distinct groups of approaches. The first views barriers positively, as measures that must be taken to restrict and reduce the harmful impact that a given mechanism can cause (Pilić et al., 2024). Barriers are often means or tools explicitly created for a specific purpose, such as protection, such as preventing a dangerous energy source from causing harm to people, as shown in the study by Erofeeva (2024), or the creation of mechanisms to control the movement of fluids in reservoirs, as presented in the study by Chen (2024). This positive view of barriers is relatively less frequent in the literature than the pessimistic view.

The second group of approaches to barriers is explicitly negative. Here, barriers predominate as impediments (Kuehner-Boyer, 2024; Clark et al., 2024; Civiero et al., 2024; Curran, 2024) and obstacles (Tuydes-Yaman et al., 2024; Ariyanti et al., 2025; Ottosson; Danell, 2024; Determeijer et al., 2024; Civiero et al., 2024; Bender, 2024), both with the same semantic meaning. Barriers as impediments obstruct progress, development, and the achievement of a specific objective or goal, which is why they all must be removed, so that their elimination represents the overcoming of these obstacles, because it removes the limitations that impede progress and evolution. Barriers as obstacles, on the other hand, share the same characteristics as impediments, so they can be considered synonymous concepts, requiring a great deal of creativity and rational thinking from people to remove them. Overcoming obstacles often requires a change in mindset because they are challenges to human capacity, as shown in the study by Civiero et al. (2024), and, therefore, creative management of this change in thinking (Tuydes-Yaman et al., 2024). Obstacles and impediments are occurrences, but they can be overcome through their removal, much like obstacles that obstruct the path people and organizations intend to follow.

Barriers are often circumstances that impede progress (Shankar et al., 2025), hindering the development of a course of action. Numerous examples of these circumstances can be found in the literature, as shown in the data contained in Table 1. The studies by Mukuka et al. (2025), Awoke et al. (2025), Liu et al. (2025), and Spaulding et al. (2025) point to transportation infrastructure as a

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

barrier that causes different types of impacts on organizations, such as impeding business expansion and increased production because the means through which production should be transported do not allow for distribution. Other effects of inadequate transportation found in the literature include inadequate functioning or insufficient production and operational capacity of organizations. external to the organization.

Table 1. Examples of types of logistical barriers and their impacts

References	**Types of Logistics Barriers**	**Impacts**
Babylon et al. (2025)	Reduced Distribution Points	Reduces supply capacity
Mukuka et al. (2025)	Poor Infrastructure	Hinders business expansion
Awoke et al. (2025)	Transportation Infrastructure	Hinders production development
Liu et al. (2025)	High Transportation Costs	Hinders athletes from training
Spaulding et al. (2025)	Scheduling conflicts Transportation issues Inadequate physical location	Low patient adherence to services
Dopelt (2025)	Inaccessibility to the product	Reduces use/acquisition decisions
Stevanović et al. (2025)	Difficulty scheduling Inadequate accommodations	Discourages internationalization
Fousseni et al. (2025)	Product unavailable Supply shortage Vaccination barriers Postponements and target restrictions Lack of equipment Lack of vehicles	Hinders vaccination

Source: Data collected by the authors.

The insufficient number of distribution points, as highlighted in studies by Babylon et al. (2025) and Spaulding et al. (2025), also hinders supply capacity because it cannot meet the demand for its products, despite the organization's production capabilities. This can result in a reduced purchasing decision for that supplier's products in favor of others with more appropriate location schemes. Dopelt's (2025) study identifies the inability to access a product as a barrier due to

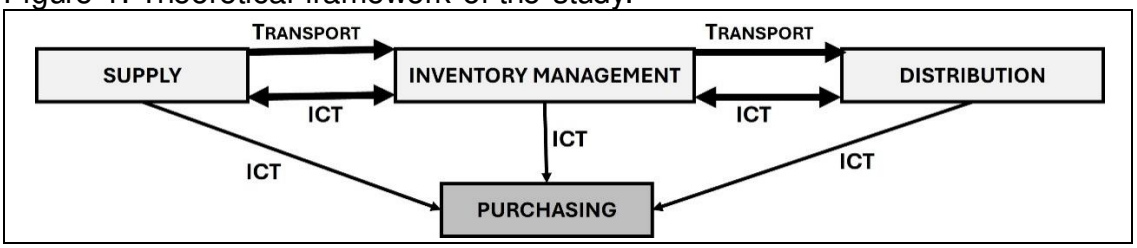
Revista Multidisciplinar do Nordeste Mineiro, v.19, 2025
ISSN 2178-6925
DOI: 10.61164/6ppp1r07

scarcity or bureaucratic circumstances that prevent acquisition, resulting in procurement failure and, consequently, the inability to meet the organization's customer needs. These are examples of logistical barriers that can be termed external, as they affect both the supply chain and the distribution chain, dimensions

Another major group of logistical barriers can be called internal logistical barriers. The study by Stevanović et al. (2025) reports scheduling difficulties, such as time management and inadequate accommodations, while a lack of equipment for service provision, as internal barriers within the studied organization that discourage the internationalization of its activities. The study by Fousseni et al. (2025) also describes a series of internal barriers that compromise the achievement of organizational objectives and goals, such as unavailability of vaccine stocks, shortages in vaccine supplies, bureaucratic and operational obstacles to vaccination, time management problems for scheduling operations, and a lack of equipment and transportation vehicles.

Internal and external logistical barriers are two analytical dimensions related to the purchasing process. In relational terms, the occurrence of logistical barriers impacts the purchasing process, often compromising the achievement of its operational objective, which is to meet organizational needs. Barriers related to supply logistics can take different forms. Still, they all focus on preventing supplies from being made, such as the lack of or limited quantity and quality of products on the market, discontinuity of product lines demanded by customers, order and product costs, and so on. Figure 1 shows the theoretical framework of the study.

Figure 1. Theoretical framework of the study.



Source: Prepared by the authors.

The distribution chain also negatively impacts the purchasing process, as it

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

is through it that managers define the products and the procurement schedule to be executed. Therefore, its main impact can be translated into inaccuracy regarding the products to be purchased. Internally, the logistical barriers that impact purchasing stem from inventory management, encompassing a broad spectrum that begins with inaccuracies regarding product attributes and records, quantities and replenishment points, and physical and financial inventories.

Logistical barriers to the purchasing process are complemented by those related to transportation, communication, and information systems. Available transportation systems, modes, and types decisively affect the purchasing process, both positively and negatively, depending on their suitability or inadequacy. Since barriers represent negative aspects, transportation deficiencies represent a large portion of the factors that prevent organizations from normalizing their procurement efforts, compromising the achievement of their objectives and goals by not having their orders delivered according to the established schedule. Transportation connects supply logistics to the organization, as well as between the organization and its distribution system. A similar connection is also established by communication and information systems, which operate as a two-way street, unlike transportation systems, which run from supply points to the organization and from the organization to its customers, from upstream to downstream in the global logistics chain. The more accurate and effective the use of communication and information systems, the less likely external logistical barriers will negatively impact the purchasing process and, consequently, the achievement of procurement objectives and goals.

3. Research methodology

This research is characterized as qualitative because its data are nominal, expressed primarily in terms of words, phrases, and sentences. The unit of analysis consisted of self-employed salespeople working in the city of Manaus who agreed to participate in the study. The level of analysis was group-based, given that the explanations developed apply only to the group of self-employed saleswomen studied, and no generalizations are possible. The analytical

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

perspective was synchronic, also known as cross-sectional, because the intention was to create a snapshot of the current reality of the saleswomen being studied.

4.1 Guiding research questions

Five guiding questions were developed, each linked to the specific research objectives, as suggested by the studies by Nascimento-e-Silva (2020; 2021a; 2021b; 2021c; 2023). The first was "What are the main characteristics of the businesses of independent saleswomen in Manaus?", aimed at understanding the operational context of the saleswomen. The second was "What are the main logistical barriers to purchases for independent saleswomen in Manaus?", aiming to list all the obstacles that need to be faced and overcome by the respondents. The third was "How do barriers to purchases arise?", aiming to understand the operational procedures and the dynamics that cause these barriers to prevent the saleswomen from achieving their purchasing objectives. The fourth question was "Why do barriers to purchases occur?", aimed at understanding the causes of the barriers, which is fundamental knowledge for developing solution schemes. The fifth and final guiding question was “How to prevent barriers from occurring,” to understand the saleswomen’s suggestions for overcoming obstacles to their purchasing activities.

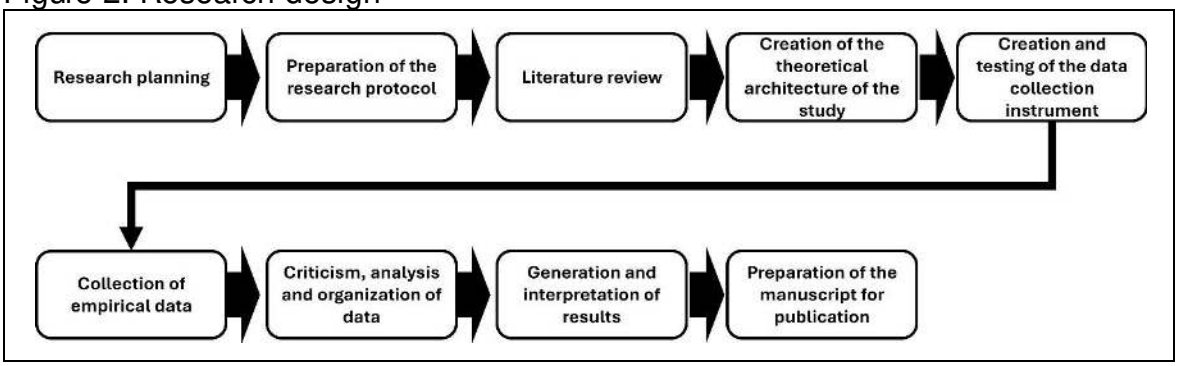
4.2 Research design

This research was implemented in nine stages, based on the studies by Paiva et al. (2025), Montenegro et al. (2025), Silva and Nascimento-e-Silva (2025), Silva et al. (2025), Morais et al. (2025), and Veloso and Nascimento-e-Silva. The first was research planning, defining the scope, level, and unit of analysis, as well as the scope of the literature review. The second step was to develop the research protocol for both the literature review and the field research activities. The third was reviewing the literature, conducted in the Scopus, Web of Science, and Google Scholar databases. The fourth was developing the theoretical framework as an extension of the literature review, identifying possible dimensions and analytical categories, as well as their interrelationships. The fifth was creating and testing the data collection instrument to assess its validity and

Revista Multidisciplinar do Nordeste Mineiro, v.19, 2025
ISSN 2178-6925
DOI: 10.61164/6ppp1r07

reliability. Figure 2 summarizes the procedures applied in the research design.

Figure 2. Research design



Source: Prepared by the authors.

The sixth stage was the collection of empirical data from self-employed saleswomen working in the city of Manaus. The seventh stage involved critiquing the collected data, followed by its subsequent analysis and organization into tables and summary charts. The eighth stage was the generation of the research results and their interpretation, done by comparing them with the theoretical framework of the study. The ninth and final stage was the preparation of the manuscript for publication, after approval by the international scientific community.

4.3 Sample characteristics

The sample consisted of six adult respondents. The age range was 10 years, resulting from the difference between the oldest (42 years) and youngest (32 years). The mean and median were 39 years, the mode was 36 years, and the standard deviation was only 3 years. This represents a highly mature sample, providing information about the logistical barriers that impact purchases from the businesses surveyed.

The sample consisted exclusively of female respondents. Despite all the researchers' efforts, it was not possible to obtain the participation of male representatives of the self-employed professionals working in purchasing and resale in the city of Manaus. Perhaps the lack of male representatives is because they are significantly fewer in number than women, so their lack of responses does not significantly compromise the survey results.

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

The education level of self-employed purchasing and resale professionals working in the city of Manaus is predominantly high school, with only one respondent having a higher education. No representative was identified with only an elementary education. These results indicate that, to a certain extent, a secondary education is necessary to face and overcome the challenges of adequate purchasing and selling. It is likely that a primary education, for the types of businesses surveyed in this study, does not offer a high probability of success.

It was found that half of the sample had no professional training. Their formal education likely provides them with the reasoning skills and the ability to develop and execute courses of action and decision-making to meet the challenges of their business. One has a degree in aesthetics, which appears to be crucial to their success in the perfume and cosmetics trade. This contrasts with the nursing professional, who works in the school supplies trade. Finally, a degree in business administration is always essential for any business.

The respondents' time as self-employed had an average of nine years, a median of six years, and a standard deviation of six years, although the modal class is five years, the range is 15 years, and the standard deviation is five years. The respondents are experienced and have in-depth knowledge of the key aspects of purchasing. This finding is due to the average length of service of seven years, with a median of six years, a mode of five years, and a standard deviation of four years, with a range of 11 years. Because the data are not normal, the median is the measure of central tendency that best represents the data set. These results indicate that six years of working in purchasing provides respondents with the necessary maturity to answer the guiding research questions formulated for this investigation.

4.4 Data: Collection, analysis, and organization instrument and strategies

The data collection instrument consisted of three parts. The first contained demographic data (gender, age, length of service as a winner, professional training, and education), the second presented explanatory data (barriers to purchasing, how they manifest, why they manifest, and mitigation strategies), and the third focused on the logistical aspects of the enterprise (industry, time in the

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

market, origin of main customers and suppliers). Only the demographic data were numerical or rational (age and length of service). All others were of the nominal type.

The instrument was tested with college-educated female students who were also self-employed salespeople, and the necessary adjustments were made to ensure internal and construct validity. Data were collected through a persuasive effort to interview, with almost all the salespeople I knew declining to participate, citing various concerns, such as authorities being aware of their activities for tax purposes and competitors having access to their data, among other reasons. The researcher read the questions to the interviewee and listened to their responses, followed by further questions until the desired answer was clear, particularly for the explanatory questions.

Data analysis followed the research protocol. Nominal numerical data were organized into simple frequency tables, calculating the mean, mode, median, and standard deviation. In contrast, nominal data expressed in words were broken down into their focal units (for example, the response "my main clients are from Rio Grande do Sul and also from Ceará" was summarized as "Rio Grande do Sul" and "Ceará"). These "broken" data were then also organized into tables so that the intended answer for each question could be seen and understood. Frequency tables (for numerical and nominal data) and relational frequency tables, which are used when two or more types of data are presented simultaneously and related (as in phrasal nominal data), were the data organization techniques employed.

4.5 Result generation and interpretation techniques

The results were generated by organizing the data into tables. The numerical nominal results were generated from frequencies, followed by the behavior of the measures of central tendency (mode, mean, median, and range) and the standard deviation as a measure of dispersion. The phrasal results, which are non-numerical, were generated by combining semantic analysis, aiming to pinpoint the meaning of the data in each table, what they portray, with content analysis, which is the search for meaning and the logic of the meaning of the set of numbers or groupings of words or phrases. In the example of a mean of 9

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

years, a range of 15 years, and a standard deviation of 5 years, this means that the salesperson's time as an employee can be considered long (based on the mean), even though there is one salesperson with more experience (as shown by the range) and that this time is representative of all the salespeople interviewed due to the standard deviation of 5. This means that the variation, either positive or negative, is between 4 and 14 years, meaning that 9 years can be taken as a standard time very close to reality. The results were interpreted by comparing the empirical findings with the theoretical framework developed for the study, which appears in the discussion of the results.

4. Results and discussion

This section presents and discusses the results obtained from the research that sought to identify the logistical barriers to the purchasing process carried out by independent salespeople operating in the city of Manaus. To this end, the strategy used was to answer the guiding questions of the study in the following sequence: a) what are the main characteristics of the businesses of independent saleswomen in Manaus, b) what are the main logistical barriers encountered in the purchasing process, c) how the barriers occur, d) why the barriers occur and e) how to prevent the barriers from occurring.

4.1 Characteristics of the enterprises

The businesses of the professionals interviewed in this survey are predominantly commercial. Clothing products predominate, such as those worked on by respondents B, D, and F, but always with the addition of complementary products, such as clothing accessories, and parallel product lines, such as cosmetics, worked on by respondent F. The optical product line, worked on by professional A, and school and office supplies, worked on by respondent E, cater to more specific audiences. At the same time, clothing is more general, because everyone needs to dress. This means, among other things, that purchases for more general audiences are more challenging because they need to keep up with fashion trends while also requiring segmentation and focus on a specific market

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

niche. School supplies and optical products are more stable, both in terms of trends and segmentation, but require greater investment and working capital, for example. However, in all of them, partnerships are an essential practice, both with suppliers and customers. The data contained in Table 2 reinforce these findings.

Table 2. Business lines of the enterprises

Respondents	Business lines
A	Optical product sales
B	Clothing and accessories sales
C	Perfume and cosmetics sales
D	Clothing and accessories sales
E	School and office supplies sales.
F	Clothing and cosmetics sales

Source: Data collected by the authors.

The length of time in the market for the businesses of the professionals responding to this survey varies considerably. The total length of time is 42 years, a significant difference between those already established in the market and those who have recently entered, although this short period represents considerable maturity in terms of experience, as shown in Table 3.

Table 3. Business Length of Businesses

Respondents	Business lenght (in years)
A	5
E	5
F	6
B	25
D	25
C	47

Source: Data collected by the authors.

This range is also confirmed by the mean of 19 years, the median of 16 years, and two modal classes (5 and 25 years, respectively), which, in turn, generated a significant standard deviation of 17 years. These results indicate that

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

the data cannot be considered normal, justifying the adoption of the median as the most appropriate measure of central tendency to represent the data set. In any case, the results also confirm the respondents' extensive experience with their businesses and the market, enabling them to adequately answer the guiding questions of this survey.

Table 4 shows the data obtained for the question that sought to determine the origin of the main customers of the survey respondents' businesses. The predominance of customers is noted in the city of Manaus, the interior of the state of Amazonas, and the Northern region of Brazil. These results assume a center of irradiation and evolution in the capital of Amazonas, which then spreads to the interior of the state and culminates in regional coverage. However, more precisely, they initially follow the logic of territorial segmentation, so that entrepreneur E's focus is the city of Manaus, which does not prevent him from meeting the demands of the capital and other Amazonian towns. These results are crucial for respondents to accurately identify the logistical barriers they encounter when making their purchases.

Table 4. Origin of main customers

Respondents	Customer Origin
A	Manaus and the Inland region
B	North region
C	Manaus
D	Manaus
E	Tefé
F	Manaus

Source: Data collected by the authors.

The origin or location of the leading suppliers for the businesses of the respondents in this study also varied, as shown in Table 5. Only respondents A and E listed suppliers located in the capital of Amazonas, while the others purchase from and are supplied by suppliers in other states. Rio Grande do Sul,

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

cited by respondents B and D, and São Paulo, indicated by respondents C and F, are the most frequently cited states of origin. Bahia and Paraná, cited by respondent C, and Goiás and Ceará, cited by respondent F, are also essential origins for the self-employed professionals surveyed.

Table 5. Origin of main suppliers

Respondents	Supplier Origin
A	Manaus
B	Rio Grande do Sul
C	Bahia, Paraná, and São Paulo
D	Rio Grande do Sul
E	Manaus
F	Goiás, Ceará, and São Paulo

Source: Data collected by the authors.

São Paulo, as it is well known, has a multifaceted industrial park and has become the leading supplier of all types of products to all Brazilian states. Rio Grande do Sul has emerged with a highly competitive industrial and commercial sector in key economic sectors, such as apparel, which is where respondents said they source their apparel products. Paraná, Ceará, Goiás, and Bahia have developed regionally prominent industrial and commercial parks, which are now expanding more rapidly to other regions, such as the Amazon region and, especially, to the state of Amazonas.

4.2 Main Logistical Barriers to Purchasing

Table 5 shows the responses to the guiding question that sought to identify the main logistical barriers faced by self-employed professionals during the purchasing process for their businesses. Eleven barriers were found, organized into four groups, called barrier focus. The first focus was called supplier registration, which is fundamental to supplier development (Khan et al., 2024; Baig et al., 2020), because this barrier lies precisely within the process, represented by the difficulty of developing a supplier portfolio due to the lack of registration data and the lack of knowledge on how to reach suppliers. The second focus was on

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

cost, as it represents the monetary and temporal aspects of all the expenditures that businesses must incur to ensure that purchased materials reach the hands of professionals, as suggested by studies by Lopes et al. (2024) and Sağlam (2024). The third focus was called supply because a lack of products compromises this important logistical modality: having the products customers want available for delivery. When there is inefficiency and ineffectiveness in supply, purchasing is compromised, as can be seen from the study by Valizadeh et al. (2024), as are planning errors (Sonar et al., 2024). The fourth and final focus was termed transportation because its origin lies in the physical movement of purchased products from the supplier to the respondents' businesses. When transportation systems are absent or inefficient, they become logistical barriers (Yadav; Gaur; Jain, 2021; Tian et al., 2023).

Table 5. Main logistical barriers in purchasing activities

Respondents	Logistical barriers to purchasing	Barrier Focuses
A	How to reach the distributor	Supplier Registration
A	Registration process	Supplier Registration
C	Minimum order	Cost
E	High shipping costs	Cost
F	Delivery time	Cost
F	Transportation costs	Cost
C	Shortage of products	Supply
D	Shortage of product	Supply
B	Transportation logistics	Transportation
B	Drought in the region	Transportation
D	Difficulty receiving products	Transportation
E	Discrepancy between the order and the received product	Transportation

Source: Data collected by the authors.

Supplier registration has been a significant logistical barrier because it compromises the ability to locate suppliers, allowing businesses to reach out to their customers and fulfill their needs. Costs compromise the competitiveness of products and companies because they have been considered the primary factor in

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

customer purchasing decisions. Reducing costs and purchasing at the lowest possible price (without compromising product quality) has been a major challenge for all businesses to consolidate and thrive. Procurement is one of the two core activities of commerce, along with sales, so sales only make sense and are possible if purchases are made appropriately and rationally. A lack of products completely undermines commercial efforts because it represents a business impossibility. A continued lack of products leads entrepreneurs to discontinue a market niche or even the entire business. Transportation is one of the logistical pillars that, if not managed rationally, compromises the operation of any business. The Amazon region continues to pose a logistical challenge for all types of organizations, forcing entrepreneurs to develop creative and cost-effective ways to overcome it in the medium term.

4.3 How Barriers Occur

Barriers related to supplier registration arise due to respondents' lack of knowledge of supplier information, such as trade names, addresses, and telephone or email contacts, among other details considered essential for building a reliable supplier portfolio. This leads buyers to rely on recommendations from other entrepreneurs and buyers. Generally, the most professional and reliable suppliers have numerous ways to find and offer these resources in various ways. Cost-related barriers involve the minimum order size, which compromises the entrepreneurs' financial health, and the price of transportation, which varies depending on the type of vessel and mode of transport required, the occurrence of severe droughts in the Amazon region, and the type of postal service at official post offices. Table 6 summarizes these results.

Table 6. How the main barriers occur

R	Logistical barriers	How barriers ocurr
A	How to reach the distributor	Lack of supplier information
A	Registration process	It is done by recommendation
C	Minimum order	The delivery fee is high for orders below a minimum amount
E	High shipping costs	Each ship charges a different price

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

F	Delivery time	Prices and delivery times vary
F	Transportation costs	Sedex costs are higher
C	Shortage of products	The supplier cannot meet the requested quantity
D	Shortage of product	Product unavailability
B	Transportation logistics	The supplier is located in the South
B	Drought in the region	Difficulty getting around
D	Difficulty receiving products	The supplier is from the South
E	Discrepancy order vs received product	Orders are made through the catalog

Source: Data collected by the authors.

Supply logistical barriers arise when suppliers are unable to meet the quantities requested by respondents due to the high demand for the products requested, resulting in shortages in the market. This barrier originates in suppliers' production capacity and is therefore considered an external threat from the perspective of threat and opportunity analysis. The transportation-centric barrier arises from the distance products must travel from suppliers to the respondents' businesses. This great distance also presents its own complications, such as the lack of transportation and the fact that orders are placed from catalogs, which creates distortions between what is ordered and what is delivered.

4.4 Why Barriers Occur

Since every effect has its causes, we sought to identify the reasons that lead to the occurrence of logistical barriers in the purchasing process. The results obtained are shown in Table 7. The causes of obstacles related to supplier registration are the need for suppliers to prevent access to their information by those without a CNPJ (Brazilian Corporate Taxpayer Registry) and to prevent piracy. These causes are clearly attempts by suppliers to avoid losses from fake orders and imitation products. Cost barriers arise from suppliers being in territories far from buyers, but also to prevent dishonesty by some sorters and sellers when transporting products. As can be seen, apart from the distance factor, both groups of barriers are forms of protection that suppliers employ to avoid greater losses.

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

Table 7. Why barriers occur

Resp	Logistical barriers	Why barriers occur
A	How to reach the distributor	Prevent access to those without a CNPJ (Brazilian Corporate Taxpayer Registry)
A	Registration process	Prevent piracy
C	Minimum order	The factory is located in other states
E	High shipping costs	Cunning of separators and sellers
F	Delivery time	Need to buy from other states
F	Transportation costs	Products come from other states
D	Shortage of products	Demand is too high for the supplier to meet
D	Shortage of product	Due to customs delays and high demand
B	Transportation logistics	It isn't easy to reach the company due to the distance
B	Drought in the region	Rivers are the primary means of access
C	Difficulty receiving products	Products are in short supply at the supplier
E	Discrepancy order vs received product	She doesn't know why

Source: Data collected by the authors.

The causes of supply chain logistical barriers are the inability of suppliers to fulfill all their customers' orders, which significantly impacts purchases made by respondents in this survey. Production capacity, which is currently limited, needs to be expanded to balance supply and demand. Furthermore, the large volume of orders also causes delays in customs clearance, adding another layer of complexity to purchasing. Regarding transportation, the causes include the distance between suppliers and businesses, insufficient products to meet buyer demand, and the fact that rivers are the primary means of transportation in the Amazon region, which, during severe floods, are entirely impossible to transport.

4.5 How to Prevent Barriers

Buyers offer a variety of suggestions for avoiding or mitigating logistical barriers to purchasing. For supplier registration barriers, the recommendations include presenting original buyer documentation and proof of the company's formal existence. To reduce cost barriers, the recommendations include personally

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

purchasing each item requested by customers and buying products in larger quantities, immobilizing them in inventory to avoid constant shortages. One recommendation that is beyond the capacity of logistics agents is the construction of the Transamerica Highway, which has been in the planning stages for quite some time. Table 8 summarizes these findings.

Table 8. How to prevent barriers from occurring

Resp	Logistical barriers	How to avoid barriers
A	How to reach the distributor	Presenting original documentation
A	Registration process	Proving the company's existence
B	Minimum order	Construction of the Transamerica Highway
F	High shipping costs	Unsure
E	Delivery time	Purchasing each item personally
C	Transportation costs	Having a larger inventory at the distributor
D	Shortage of products	Having a branch in the North
D	Shortage of product	Ordering in advance with a larger quantity
E	Transportation logistics	Having your own transportation
C	Drought in the region	Using your own vehicle for transportation
B	Difficulty receiving products	It's a natural act, inevitable
F	Discrepancy order vs received product	Increasing product availability

Source: Data collected by the authors.

Regarding supply-related barriers, buyers recommend that suppliers create a branch in the North of Brazil or establish a partnership with a distribution center to fulfill this role. One practice they have followed and recommended to their peers is to anticipate orders, purchasing in larger quantities to maintain a safety stock. Finally, to solve logistical transportation barriers, one solution is to have their own transportation, but this will increase and exacerbate cost barriers, as they use their own vehicles for transportation. Increasing product availability also reduces the impact of transportation and supply barriers. One respondent considered that their barrier has no solution because the Amazon River problems are natural.

4.6 Discussion of results

The theoretical framework of this study predicted that barriers are

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

consequences of three analytical dimensions (supply, inventory management, distribution, and transportation), as well as their interrelationships. The empirical findings confirm the validity of this framework, although inferences cannot be made. The empirically identified barriers were supplier registration, costs, supply (inventory management), and transportation. The barrier related to supply begins with the excessive bureaucracy that suppliers impose on self-employed sellers regarding the accuracy of the information they provide, such as their ID number and/or Individual Taxpayer Registry (CPF) or National Registry of Legal Entities (CNPJ) when they are registered as Individual Microentrepreneurs (MEI), because many registrations are canceled due to false information. The barriers continue due to suppliers' inability to fulfill sellers' orders, primarily due to low production relative to demand. Sellers have overcome these barriers by providing accurate information and copies of documentation, as well as by anticipating inventory needs by purchasing more products.

The second group of barriers relates to costs and, more specifically, inventory management. These barriers stem from suppliers' inability to meet demand because their production capacity is lower than their customers' needs. This causes frequent delays in shipments and, consequently, in product delivery to sellers, and from them to their customers. Another factor that has reinforced the need for inventory is the precarious condition of the roads that transport products to Manaus, as well as the seasonality of the Amazon rivers, which requires delivery during times of drought and flooding. Since inventory is tied up in cash, the larger the inventory, the higher the maintenance costs and the lower the working capital.

The third group of barriers concerns transportation, both upstream (suppliers) and downstream (customers) from the sellers' businesses. This is because most suppliers are from other states, mainly in the Northeast, South, and Southeast of Brazil, which means a long distance to travel by road, as air transport is costly for transporting the products they sell. The problem is that the streets to Manaus are extremely precarious, especially if the route involves traveling along BR-319, which is practically impassable during the rainy season (November to June). Transportation for delivering products to customers is also precarious,

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

especially for those living in the interior of the state, as rivers become impassable during periods of extreme drought or perilous during regular dry periods. However, during floods, deliveries also present difficulties because customers' businesses and homes tend to be flooded. Transportation for customers residing in Manaus has been replaced by in-person delivery by the saleswomen themselves. The solution to the transportation problem is to increase inventory, which, despite rising costs, maintains a financial margin for the business.

These results indicate that the logistical barriers faced by independent saleswomen in Manaus are multifactorial and interrelated. Supply barriers are impacted by the deficient transportation system, increasing in intensity and requiring innovative ways for the saleswomen to cope. A similar increase in intensity is observed in inventory management related to transportation and the distribution of products to fulfill customer orders. Proper inventory management has been the primary tool used to mitigate all other barriers. Still, it has increased the costs of logistics operations and the business, with significant repercussions on customer orders. In any case, the sales they make have remained a viable alternative for their customers compared to their competitors, whether end consumers or resellers, in the capital or in the interior.

5. Conclusion

This study identified eleven logistical barriers that negatively impact the purchasing process of independent sellers operating in the city of Manaus. These barriers were organized into four groups, called focuses: supplier portfolio, costs, supply, and transportation. Supplier registration barriers stem from unavailable data and professionals' inability to access them; cost-related barriers increase monetary expenditures beyond normal logistics costs; supply-related barriers stem from channel inefficiency and ineffectiveness, as well as planning failures; and transportation barriers stem from failures that occur during the movement of products from suppliers to buyers. These findings confirm the validity of the study's theoretical framework, which predicted that logistical barriers for independent sellers' businesses are in supply, inventory management, distribution, and transportation.

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

These barriers represent a form of abnormality in the natural flow of logistics or what is considered normal. This means that a regular flow has more or less predictable consequences. This predictability is taken into account in various calculations that enable agents to make strategic and business decisions. Barriers, therefore, pose a challenge to entrepreneurs because overcoming them almost always increases their competitiveness. The reason for this is that the obstacles facing a business are often the same for all competitors, so whoever first finds a solution to them is the first to reap the benefits of overcoming them. The participants in this research are aware that they need to find a way around these barriers to achieve higher operating standards.

To broaden and deepen the findings of this study, the following studies are recommended: first, a quantitative study involving a larger, statistically significant sample to determine whether these eleven barriers are experienced by the majority of independent salespeople in Manaus; the second is the comparative analysis of the logistical obstacles in purchases between the categories of products sold, such as clothing, beauty, fruits and electronics; and the third is the comparison between the barriers faced by sellers operating in the capital in relation to the barriers faced by sellers operating in cities in the interior of the Amazon.

References

ARIYANTI, O.; SAMPAIO, D.; BAILEY, A. Barriers and facilitators to urban mobility for older adults in LMICs: A scoping review. **Journal of Transport Geography**, v. 127, p. 104289, 2025. https://doi.org/10.1016/j.jtrangeo.2025.104289.

AUVRIGNON, J. **The institutionalization of agroecology through the agroecological project for France**. 2024. Dissertação (Mestrado em Política e Gestão Ambiental). Lund University, Lund, Suécia,

AWOKE, M. D. et al. Exploring gender dynamics in climate-smart agriculture

ISSN 2178-6925
DOI: 10.61164/6ppp1r07

adoption: a study in semi-arid Dodoma, Tanzania. **Frontiers in sustainable food systems**, v. 8, p. 1507540, 2025. https://doi.org/10.3389/fsufs.2024.1507540.

BABYLON, P. et al. Barriers and facilitators influencing human papillomavirus vaccine uptake by caregivers for females aged 9-14 years in Taraba State, Nigeria. **Direct Research Journal of Health and Pharmacology**, v. 12, n. 2, p. 20-26, 2025.

BAIG, S. A. et al. Barriers to the adoption of sustainable supply chain management practices: Moderating role of firm size. **Cogent business & management**, v. 7, n. 1, p. 1-20, 2020. https://doi.org/10.1080/23311975.2020.1841525.

BASIR, M.; LOUKAIDES, E.; GIANNIKAS, V. Consolidating perspectives on digitalization: A structured review of factors influencing technology implementation in manufacturing. In: **31st European Operations Management Conference (EurOMA), Transforming People and Processes for a Better World**. Barcelona, 29 de junho a 04 de julho, p. 1-11, 2024.

BENDER, L. A. R. **Gateways, barriers, and facilitators to opioid use treatment for low-income pregnant and postpartum women in the State of Alabama**. 2024. Tese (Doutorado em Saúde Pública). The University of Alabama, Birmingham, Estados Unidos.

BRACKETT, S. N. **Examining barriers to technology integration practices of K-12 teachers**. 2024. Tese (Doutorado em Educação e Ciências Humanas). Walden University, Minneapolis, Estados Unidos.

CHEN, H. **Geological genetic analysis and application of oil and gas reservoirs**. Singapore: Springer Nature Singapore, 2024. p. 83-141. https://doi.org/10.1007/978-981-97-7628-3_3.

CIVIERO, P. et al. Operational insights and future potential of the database for positive energy districts. **Energies**, v. 17, n. 4, p. 899, 2024.

https://doi.org/10.3390/en17040899.

CLARK, M. et al. Being a woman and an orthopaedic surgeon: A primer on the challenges we face. **Journal of Isakos**, v. 9, n. 3, p. 449-456, 2024. https://doi.org/10.1016/j.jisako.2024.05.008.

CURRAN, S. **The effects of neobanks on the Irish consumer and barriers to adoption**. 2024. Dissertação (Mestrado em Administração de Empresas). Dublin Business School, Dublin, Irlanda.

DETERMEIJER, J. J. et al. The barriers and facilitators family caregivers experience when participating in resource-limited hospital care: a qualitative systematic review. **BMJ Global Health**, v. 9, n. 11, p. e015956, 2024. https://doi.org/10.1136/bmjgh-2024-015956.

DHARA, R. M.; DAWRA, J.; RISHI, B. The impact of regulatory focus on store promotions: The role of shopping enjoyment. **Journal of Marketing Communications**, v. 31, n. 2, p. 151-177, 2025. https://doi.org/10.1080/13527266.2023.2224346.

DOPELT, K. Sustainable public health policies: Understanding influenza vaccination uptake among college students in a changing society. **World**, v. 6, n. 2, p. 53, 2025. https://doi.org/10.3390/world6020053.

EROFEEVA, S. **Technical safety barrier assessment of liquid hydrogen storage system**. 2024. Dissertação (Mestrado em RAMS: Confiabilidade, Disponibilidade, Manutenibilidade, Segurança). Norwegian University of Science and Technology, Trondheim, Noruega.

FOUSSENI, S. et al. Navigating the road to immunization equity: systematic review of challenges in introducing new vaccines into Sub-Saharan Africa's health systems. **Vaccines**, v. 13, n. 3, p. 269, 2025. https://doi.org/10.3390/vaccines13030269.

HENDERSON, S. J. **A case study of informal women entrepreneurs in the Kingdom of eSwatini**. 2022. Dissertação (Mestrado em Política e Desenvolvimento Social). University of Johannesburg, South Africa.

KHAN, M. M. A. et al. Critical barriers to adopt sustainable manufacturing practices in medium-sized ready-made garment manufacturing enterprises and their mitigation strategies. **Heliyon**, v. 10, n. 20, p. 1-17, 2024. https://doi.org/10.1016/j.heliyon.2024.e39195.

KUEHNER-BOYER, C. **The effect of institutionalized barriers on historically excluded athletic training students**. 2024. Tese (Doutorado em Educação). Illinois State University, Normal, Estados Unidos.

LIU, J. et al. Societal attitudes and structural barriers in coaching para-athletes: A mixed-methods systematic review. **PloS one**, v. 20, n. 6, p. e0326585, 2025. https://doi.org/10.1371/journal.pone.0326585.

LOPES, M. R. V. et al. Identification of barriers to reverse logistics of organic waste: A literature review considering the stakeholder Public Entities. **Engenharia Sanitaria e Ambiental**, v. 29, p. 1-13, 2024. https://doi.org/10.1590/S1413-415220240079.

MONTENEGRO, S. et al. Analysis of applications of artificial intelligence in material storage: a bibliographical study. **Revista Multidisciplinar do Nordeste Mineiro**, v. 2, n. 01, p. 1-28, 2025. https://doi.org/10.61164/rmnm.v2i01.3491.

MORAIS, T. M. A. S. et al. Integrating logistics processes into the service operations of a home laundry in the city of Manaus, Brazil. **Revista Multidisciplinar do Nordeste Mineiro**, v. 12, p. 1-20, 2025. https://doi.org/10.61164/rmnm.v12i1.4228.

MUKUKA, S. et al. Challenges of internationalizing the firms business operations: The case of Zambian-based SMEs. **International Journal of Research and Innovation in Social Science**, v. 9, n. 2, p. 2642-2664, 2025.

https://dx.doi.org/10.47772/IJRISS.2025.9020206.

NASCIMENTO-E-SILVA, D. **Manual do método científico-tecnológico**: edição sintética. Florianópolis: DNS Editor, 2020.

NASCIMENTO-E-SILVA, D. **Handbook of the scientific-technological method**: Synthetic edition. Manaus: DNS Editor, 2021a.

NASCIMENTO-E-SILVA, D. **O método científico-tecnológico**: fundamentos. Manaus: DNS Editor, 2021b.

NASCIMENTO-E-SILVA, D. **O método científico-tecnológico**: questões de pesquisa. Manaus: DNS Editor, 2021c.

NASCIMENTO-E-SILVA, D. **O método científico-tecnológico**: coleta de dados. Manaus: DNS Editor, 2023.

OTTOSSON, M.; DANELL, J. Categorization, identification, and analysis of barriers to market growth in biogas solutions–The case of Sweden. **Journal of Cleaner Production**, v. 476, p. 143759, 2024. https://doi.org/10.1016/j.jclepro.2024.143759.

OUDBIER, S. J. et al. Implementation barriers and facilitators of remote monitoring, remote consultation and digital care platforms through the eyes of healthcare professionals: a review of reviews. **BMJ open**, v. 14, n. 6, p. e075833, 2024. https://doi.org/10.1136/ bmjopen-2023-075833.

PAIVA, V. C.; MARTINIANO, A. L.; NASCIMENTO-E-SILVA, D. Impacts of reverse logistics on regional development from the point of view of self-employed professionals in the city of Manaus, Brazil. **International Journal of Professional Business Review**, v. 10, n. 7, p. 1-28, 2025. https://doi.org/10.26668/businessreview/2025.v10i7.5574.

PILIĆ, V. et al. Innovative approach of damage mechanism identification for

energy equipment–A case study of oil refinery. **Energy sources, part A: Recovery, utilization, and environmental effects**, v. 46, n. 1, p. 9389-9403, 2024. https://doi.org/10.1080/15567036.2020.1776797.

PRAŁAT, Ewa. A new approach to purchase in domestic SMES. **Zeszyty Naukowe. Organizacja i Zarządzanie/Politechnika Śląska**, n. 170, p. 407-421, 2023. https://doi.org/10.29119/1641-3466.2022.170.26.

PRASTYANTORO, R.; PURNOMO, A.; GUNAWAN, A. Sustainable supplier selection using AHP: A green purchasing approach at PT Dapensi Trio Usaha. **Dinasti International Journal of Management Science**, v. 6, n. 1, p. 1-9, 2024.

RODRIGUEZ, N.; KATOOZIANI, A.; JEELANI, I. Barriers to energy-efficient design and construction practices: A comprehensive analysis. **Journal of Building Engineering**, v. 82, p. 108349, 2024. https://doi.org/10.1016/j.jobe.2023.108349.

SAĞLAM, Y. C. Smart logistics management in the age of digital transformation: A systematic literature review. **İnsan ve Toplum Bilimleri Araştırmaları Dergisi**, v. 13, n. 1, p. 11-31, 2024. https://doi.org/10.15869/itobiad.1283253.

SANTIZO, E. D. R. **Urban fragmentation and spatial segregation patterns in Europe**: A similarity analysis and the importance of local context. 2024. Dissertação (Mestrado em Arquitetura). Delft University of Technology, Delft, The Netherlands.

SHANKAR, M. L.; SHAILIN, S.; PHILLIPS, G. Learning from the lived experiences of medical women working and studying at the national hospital in Fiji: A mixed methods study. **Emergency Medicine Australasia**, v. 37, n. 1, p. e14547, 2025. https://doi.org/10.1111/1742-6723.14547.

SILVA, R. F. ; NASCIMENTO-E-SILVA, D. Analysis of the difficulties of humanitarian logistics practiced with the riverside residents of Tarumã Mirim

during the extreme Amazonian drought of 2024 and mitigation proposals. **Revista Multidisciplinar do Nordeste Mineiro**, v. 9, n. 1, p. 1-33, 2025. https://doi.org/10.61164/rmnm.v9i1.3990.

SILVA, R. G. C.; ENCARNAÇÃO, G. S.; NASCIMENTO-E-SILVA, D. Analysis of the material storage process of an industrial organization in Manaus, Brazil. **International Journal of Professional Business Review**, v. 10, n. 5, p. 1-24, 2025. https://doi.org/10.26668/businessreview/2025.v10i5.5493.

SONAR, H. et al. Navigating barriers to reverse logistics adoption in circular economy: An integrated approach for sustainable development. **Cleaner Logistics and Supply Chain**, v. 12, p. 1-10, 2024. https://doi.org/10.1016/j.clscn.2024.100165.

SPAULDING, S.; ORZECHOWSKI, K.; PATEK, K. Integration of a genetic counselor into a breast health center improves identification of patients needing genetic testing. **Annals of Surgical Oncology**, 32, 4002-4007, p. 2025. https://doi.org/10.1245/s10434-025-17112-3.

STEVANOVIĆ, A.; BJEGOVIC-MIKANOVIC, V.; LAASER, U. Ensuring justice in global health education initiatives–a review of pearls and pitfalls. **Frontiers in Public Health**, v. 13, p. 1574917, 2025. https://doi.org/10.3389/fpubh.2025.1574917.

TEN, G. K.; WANG, S. Minimum wage and unemployment in Russia: A new look on an old construct. **Economic Modelling**, v. 148, p. 107086, 2025. https://doi.org/10.1016/j.econmod.2025.107086.

TIAN, G. et al. A survey of multi-criteria decision-making techniques for green logistics and low-carbon transportation systems. **Environmental Science and Pollution Research**, v. 30, n. 20, p. 57279-57301, 2023. https://doi.org/10.1007/s11356-023-26577-2.

TUYDES-YAMAN, H. et al. Barriers and opportunities (B&O) for developing low

carbon transportation (LCT) policies in Turkey. **Journal of Transport Geography**, v. 118, p. 103903, 2024. https://doi.org/10.1016/j.jtrangeo.2024.103903.

VALIZADEH, M. et al. A hybrid analysis of reverse logistics barriers in Iranian construction. **Smart and Sustainable Built Environment**, Vol. ahead-of-print, No. ahead-of-print, p. 1-30, 2024. https://doi.org/10.1108/SASBE-02-2024-0067.

VELOSO, J. S.; NASCIMENTO-E-SILVA, D. A study on the application of artificial intelligence in material movement based on scientific publications. **Revista Multidisciplinar do Nordeste Mineiro**, v. 1, p. 1-30, 2025. https://doi.org/10.61164/rmnm.v1i1.3420.

YADAV, V.; GAUR, P.; JAIN, R. On adoption of green logistics: A literature review. **International Journal of Logistics Systems and Management**, v. 40, n. 2, p. 193-219, 2021. https://doi.org/10.1504/IJLSM.2021.118736.

ZENGIN, Y.; ÇETIN, B.; YÜKSEL, A. Covid-19, consumer responses, and impulse buying behavior: Anxiety levels of consumers and the role of traditional and new media. **Nevşehir Hacı Bektaş Veli Üniversitesi SBE Dergisi**, v. 14, n. 3, p. 1343-1367, 2024. https://doi.org/10.30783/nevsosbilen.1474448.