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TRABAJO FIN DE GRADO EN PROGRAMA INTERNACIONAL DEL GRADO EN
ADMINISTRACION Y DIRECCIÓN DE EMPRESAS

EMPIRICAL ANALYSIS OF AN ACTION RESEARCH:
OPTIMIZATION OF OPERATIONS

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ABSTRACT

This project aimed to address operational and business problems in the social company Elkarkide, specifically in the leafleting services offered in Pamplona, using Action Research (AR). Initially, the solution to the business problem was thought to be linked to route optimization. However, through the cyclical process of Action Research, the critical and current problem was identified as the decreasing market share of letterboxing as a means to market products, due to the trend of reducing paper consumption in society. This led to a redefinition of both the problem and the solution. To complete the research, proposals were implemented to optimize routes and actions were taken to motivate employees.

Key words: Action Research, optimization, leafleting, Human Resource practices, routes.

RESUMEN EJECUTIVO

La investigación muestra un proyecto llevado a cabo en el centro social de empleo Elkarkide, concretamente, en el servicio de reparto de folletos ofrecido en la comarca de Pamplona. El objetivo principal es identificar y resolver su problema operativo empresarial utilizando la metodología de Investigación Acción. En este caso, la solución del problema se planteaba vinculada a la optimización de rutas. No obstante, el proceso cíclico de Investigación Acción permitió centrarse en las necesidades del estudio y, finalmente, tanto el problema como la solución se redefinieron claramente. Por lo tanto, el problema crítico y actual es la decreciente cuota de mercado de la actividad de buzoneo, dada por la tendencia a reducir el consumo de papel en la sociedad. Para completar la investigación, no sólo es necesario implementar propuestas para optimizar las rutas, sino también implementar acciones para la motivación de los empleados.

Palabras clave: Investigación en acción, optimización, buzoneo, prácticas de Recursos Humanos, rutas.

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LIST OF ABBREVIATIONS

AR	Action Research
SME	Small and Medium Enterprise
HR	Human Resources

1. INTRODUCTION

Since the 1950s, the number of firms in the paper industry has been steadily decreasing, currently standing at less than half of what it was in 1960 (Järvinen, 2006). This is due to technological advancements, such as digitalization, a decrease in demand for print, and a growing demand for sustainable and eco-friendly papers. Moreover, there is a greater focus on the circular economy and a shift towards paperless offices and digital communication. These are among the many trends impacting the industry, especially those distributing printed advertisements.

This article focuses on a social employment company and its mailing tasks. Social employment centres, which provide vocational training, job coaching, and employment support to disadvantaged populations, such as those with disabilities, the long-term unemployed, and those facing social and economic challenges. This plays a critical role in addressing unemployment and promoting social inclusion (Aneshensel, 1986).

The objective of the present project, which is an experimental research conducted at Elkarkide, a social employment company located in Navarra, is to optimize the routes and tasks of the employees in different situations by resolving them in the most efficient way.

To achieve these objectives, the project uses an Action Research (AR) approach, collaborating closely with professionals from Elkarkide to identify several recommendations. The resulting conclusions and proposals are expected to help enhance the company's current activity and improve its effectiveness and profitability.

The study will be structured as follows: first, a contextualization of the sector will be presented, followed by a description of the methodology used. The research process, which includes planning, data analysis, and results, will be discussed. Finally, conclusions and proposals will be presented.

2. SOCIAL ENTERPRISE IN SPAIN

2.1 Elkarkide

Before going deeper on the topic covered, it is important to contextualize both the sector and the company that will be analysed. As mentioned above, the research will be based on the company called Elkarkide, considered a social employment company located in Noain, Navarre.

This company was founded in 1991 with the aim of been a social company providing social and labour inclusion of people with mental illness and disabilities. They have three different working environments: Occupational centres, special employment centres and employment programs. Nevertheless, all of them present the same idea: trying to facilitate the access or maintenance of a job position for a specific segment of workers. In such, their intention in the job is to provide the highest degree of autonomy and normalization within the individual.



Figure 1: Elkarkide's entrance

Source: Author's elaboration

Among the activities carried by the company, they can be divided into 3 main groups: advertising services, environmental activities and manipulated food.


Environment 	
<ul style="list-style-type: none">○ Collection of food and oil for domestic use○ Products in recycled plastic○ Organic waste management	<ul style="list-style-type: none">○ Gardening○ Organic farming○ European projects○ Urban gardens

Table 1: Environmental activities

Source: Adapted by Amaia López from Elkarkide

Manipulated



- Assembly and handling of different products
- Packaging of food products

Table 2: Manipulated activities

Source: Adapted by Amaia López from Elkarkide

Advertising services



- Advertising distribution

Table 3: Advertising services

Source: Adapted by Amaia López from Elkarkide

During this this project, the advertising service will be the one studied in detail. Elkarkide can be considered a reference in the sector since the year 2000 offering a wide variety of different services. Among them, these ones could be identified: mass leafleting; large format leafleting; impression; hand delivery; wind screening; posters and advertising services with electric cars and vehicles. However, the project will be dealing in detail with the service based on leafleting by manual and electrical car.

Before going out to the street, the activity starts with a group of workers packing the brochures in the warehouse. Those packages have specific details set by the client as the measures, number of papers and so on. Once the work has been done, the second group goes into action. They pick up the finished packages and they begin to distribute them through stablished routes. As mentioned, the packages are variable and totally depend on the client.

They can differ each one by the distribution channels, the distribution day or the neighbourhoods covered. Indeed, the distribution mode is not the same in all the different areas, it could do either with the manual car or with the electric one. Each of it has a different working way. Those owning a manual car work in teams composed by 5 workers in which 1 of them is a supervisor. They work in pairs, each individual covering each side of the street.

As it is not big enough to hold everything, throughout the morning 3-4 loads will be necessary. On the other hand, those owning the electric car work individually, normally in wider roads, due to the length of the vehicle. The electric car is big enough to afford all the brochures so, usually they do not face the problem of not having sufficient brochures.



Figure 2: Electric and manual car

Source: Author's elaboration

2.2 Social employment centres

As Elkarkide is considered a social employment centre, it should be explained in order to understand their activities, methodology and working way. The special employment centres are social economic companies that not only combine economic viability but also participation in the market with a social commitment to groups with fewer opportunities in the labour market. Their main aim is to facilitate the labour integration of workers with disabilities. In addition, their structure and organization is the same as that of ordinary companies (Defourny and Nyssens, 2006).

These centres have a detailed segment of potential workers. Those workers should have physical or sensory disabilities, with a recognized degree of disability equal to or greater than 65% or people with cerebral palsy, mental illness, or intellectual disabilities, with a recognized degree of disability equal to or greater than 33%.

There are also organizations like Workability international that is constituted as an international network of companies and entities whose purpose is the social and labour integration of people with disabilities. Additionally, EHLABE is the Basque Association of non-profit entities that promote the social and labour inclusion of people with disabilities. They promote and develop institutional dialogue actions, with social agents from member entities. Inside this last cited association, we can find the group Gureak, also considered a social economy business group, offering services in order to generate job opportunities of people with disabilities. In the figure showed above, the composition of their team can be seen.

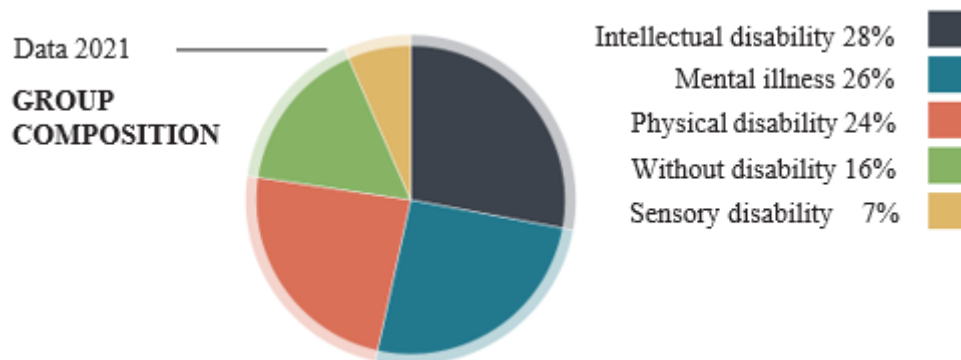


Figure 3: Group composition

Source: Adapted by Amaia López from Gureak

2.3 Competition inside the market

The competition of a market can either be analysed regionally or nationally. As Elkarkide is located in Navarre, the direct competition comes from the company's doing business in the same area. In this case, there is only one company doing this activity in Pamplona. The company is called Dag distribuciones, and it is located in Mutilva. The company was founded in the year 1992 and over time, different activities have been created. They are mainly dedicated to advertising distribution, correspondence, billboards, wind screening and hand delivery.

Alternatively, there are also 3 companies working in the same sector and in Navarre. However, an agreement done between them has segmented the market, making a division of areas. Buzón Rioja is the one working in the area of Estella, Punto Publicitario is the responsible of the area of Tudela and Mailposta is dealing with the northern part of the region. Accordingly, each of them concentrate on different segment of the same region.

In fact, the main competition is with the advertising agencies. Where those act as intermediaries between the client and the company, creating a reduction of prices and also decreasing the number of direct clients for the acting companies. These agencies are located mainly outside of Navarre, some of them could be Geobuzon, Dispublic or Euskal correo or Traycco.

2.4 Evolution of the market

The sector of advertising has always been on society with different flows of increasing and decreasing market share, with innovation and some market exists. Nevertheless, the last years have suffered a lot from the crisis, or at least the mailing, decreasing in relative terms. As stated in InfoAdex (2021), the *estimated means* in 2020 represented 54.8% of the total investment, with 5,914.7 million euros invested interannually, 17.8% lower than the 7,193.8 registered the previous year. In the group corresponding to this estimated means we can include: catalogues, mailing, influencers and so on. Just three out of the seventeenth medias that complete the group have obtained a positive result in respect to the previous year, 2019. So, it can be seen that this sector has also been affected by the health crisis of the COVID-19. Mailing and brochures appear in seventh place with 196.0 million, which has meant a decrease of -21.7% compared to the figure of 250.4 million invested in 2019. Their participation represents 3.3% of the total estimated media. As the following Figure of InfoAdex (2021) shows (see Fig. 1), the industry has been decreasing.

Medios estimados	2018	2019	2020	%20/19
Actos de patroc., mecenaz., mark. social y RSC	562,2	566,1	510,3	-9,9
Actos de patrocinio deportivo	369,0	405,1	356,9	-11,9
Animación punto de venta	71,7	70,6	49,7	-29,6
Anuarios, guías y directorios	122,2	132,8	80,5	-39,4
Branded Content	316,3	357,9	363,7	1,6
Buzoneo/folletos	319,8	250,4	196,0	-21,7
Catálogos	46,6	42,4	28,7	-32,4
Ferias y exposiciones	76,2	78,9	24,6	-68,8
Influencers	37,0	61,8	75,6	22,3
Juegos promocionales off line	27,6	26,6	7,7	-71,2
Mailing personalizado	1.922,6	1.736,1	1.420,6	-18,2
Marketing telefónico	1.570,2	1.585,9	1.383,4	-12,8
P.L.V., merchandising, señalización y rótulos	1.733,2	1.757,4	1.308,9	-25,5
Public. de empresas: revistas, boletines, memorias	26,0	27,6	24,8	-10,0
Publicidad nativa		22,5	28,5	26,9
Regalos publicitarios off line	38,0	40,5	26,8	-33,8
Tarjetas de fidelización off line	30,6	31,2	28,0	-10,2
Subtotal medios estimados	7.269,2	7.193,8	5.914,7	-17,8

Figure 4: Estimated real investment in millions of euros

Source: InfoAdex

In this sector specially, the tendency held by the society of reducing physical paper by digital supports will define a before and after, determining which companies remains and which exists the market. Therefore, it is very important that those acting in the market achieve the necessary competitive advantage that allows them to survive, following the classical marketing factors. In other words, firms should specialize in their target group in order to achieve their maximum coverage, reduce their cost at a high level and so on (García-Alonso, 1993).

Once the sector and the company have be defined, the research can start. This study will be focus on Elkarkide's activity with the objective of providing them new suggestions to implement in their current business. In any case, in the following paragraphs the methodology that will be used and process of the research will be explained.

3. METHODOLOGY

This project will be based on a technique called Action Research (hereafter, AR). This approach was developed by Coughlan and Coghlan with the aim of not only providing a methodology that considers the actions of a process, but also the idea of obtaining valuable outputs through the considered actions (Coughlan and Coghlan, 2002).

Among many possible systems, AR was the selected one due to two main facts. First, the direct implication on the problem among the entire process and second, because it promotes changes that generate cooperation in the organization between the researches and the organization. As mentioned above, the main idea of the project is to find new and more efficient ways of doing the activity, analysing how are they working and thus, completing the cyclical process of AR. The used technique is completely participative and interactive, meaning that it allows the participants to work actively hand to hand with the involved parties building up cooperation between the researchers and the company. By the use of it, the researchers will be directly involved with the company and thus, closely related. That will lead to a better understanding of how they are presently working in order to propose useful and suitable changes.

Sometimes, when companies are dealing with a challenging problem or they are facing some controversial projects, it can be hard for them to make proper and accurate decisions internally, without the support of some external parties. In such cases, they work with consultants to provide different points of view in order to search for the proper decision. The consultancy can be useful for any business, in the case of SMEs a rate of 85% from a mail survey of 126 businesses indicate that overall, business manager or owners were highly satisfied with the services they received and that they found them useful (University of Utah 2017). Hence, even both concepts may seem similar, there are some differences that make them distinct. On the one hand we have action research, where the researcher is an active participant in the problem-solving process, working closely with stakeholders to identify problems, develop solutions, and implement changes. However, in consulting, the consultant is typically an outside expert who is brought in to provide advice and recommendations to the organization or individual (Creplet, 2001). Besides, if there is a consideration in the time framework, the AR is often conducted over a longer period of time, with a focus on continuous improvement and ongoing reflection while consulting engagements are typically shorter-term, with a focus on achieving specific goals within a defined timeframe. Overall, both AR and consulting can be valuable approaches for improving practices and solving problems within organizations. Nevertheless, the choice between the two will depend on the specific goals and needs of the organization seeking assistance.

Additionally, the process of AR is divided into two parts. On the one hand it tries to understand the problem (researching). Here, the problem will be communicated and thus, everyone will have precise information to understand it. However, on the other hand, it gives the justification through action. For such, six main steps should be taken into account, for which the collaborative participation of the researchers in the organization will be remarkable a thus, the direct work will also help them to have the accurate information in order to reach a solution with more authenticity. This second block has been controversially seen by some authors, nevertheless, Westbrook (1995) and Coughlan and Coughlan (2002) have always argued that the identity of the AR model is divided into five steps, composed as follow: recognition and diagnosis of the problem, action

planning, action taking, and assessment of results and reports generation. Nevertheless, in the following paragraphs a clear explanation will be provided.

As stated, before start finding errors and trying to solve the problem, a clear planification should be done. In such, the recognition and the diagnosis of the problem will be understood by everyone and that will lead the team to achieve proper results. At this stage, the main goal is trying to understand how the problem can be improved. For it, the participation between the organization and the researchers should be based on mutual trust to obtain veracious data. This pre-step can also be summarized as a driven of two main questions, concerning the rationale for action and for research.

Right after the planning, a cyclical process composed by six steps will help the procedure to see how the actions are taking place and how they are developing, figuring out the direction the problem.

A step called **data gathering** will be the starting point. As predicted, not all the data is gathered in the same way, so, depending on whether we are dealing with qualitative or quantitative results, the process will vary. We can define between “hard” and “soft” data, been the first one related to data collected through operational statistics or financial accounts, and the second one to those facts that can be obtained by observation or discussion (Coughlan and Coughlan, 2002). In this way, for the action researcher the generation of the data will come through an active involvement in the day-to-day organizational process. Briefly, the data will not only be obtained by the observations made in the period, but also by those interventions which will be made to advance the project.

This collection will lead to the **data feedback** step. As the name says, the gathered data will give information to the client system, making it available for the analysis. In this way, the data that at the beginning was not as useful as it might be, with time it would become meaningful. Once the data has received feedback, the **data analysis** starts its role. This third step is collaborative, meaning that the firm needs to express how the company works under perfect conditions, in order for the researcher, to apply the adequate tools to

solve the problem. It is important to express the criteria and basis for the analysis for been directly linked to the purpose of the research and the aim of the interventions.

The end of the data analysis will lead to the **action planning**, where the researchers finds actions that will be implemented. As in the entire process, some questions like: what needs to be change? or which parts of the organization should be established? can be appeared. Again, the cooperation between the firm and the researchers will be the key for the finding of the conclusion. Continuing with the process, the step of the **implementation** will come up. Once the ideas are concluded, the client will implement them. This involves making the desired changes real. To conclude with the process, the researcher should **evaluate** the changes and the consequences for the company, comparing with the expected situation stated at the beginning. In the case that the expectations have not been fulfilled, the researchers should repeat the cycle until the problem is solved, knowing that the changes proposed have not been the ideal ones and that some new actions should be implemented.

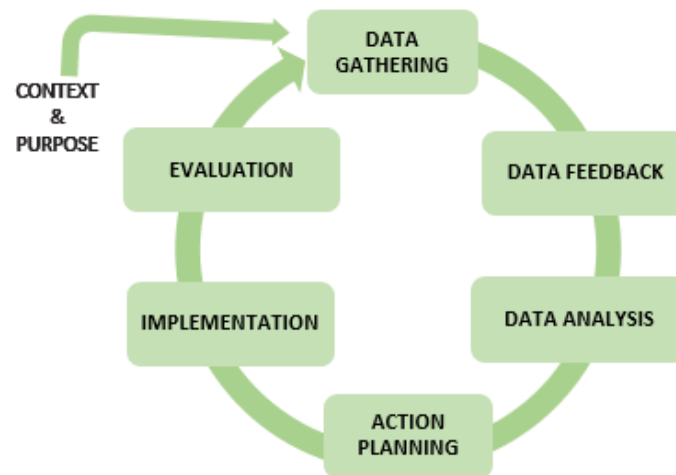


Figure 5: Action Research cycle

Source: Coughlan and Coughlan (2002)

To sum up, it is significant to remark that the AR is theoretical-practical research that requires security and experience. However, it cannot always be accurate and sometimes the final result was not as expected or planned. Indeed, AR does not create universal knowledge, since it is applied to specific problems in specific companies as in our case directly involving Elkarkide's activity.

4. ACTION RESEARCH EMPIRICAL ANALYSIS

Once the methodology has been described, the AR process adapted to our case will be expressed. As it mentioned, the procedure start with the diagnosis and the definition of the problem.

4.1 Diagnosis and definition of the problem

Companies working in the sector have suffer in the last years market changes that had complicate their activities. The main reason behind it could be the drop on prices established by customers, which implies a lower marginal profit for the company. Having this situation on the working niche, the companies should try to maximize the use of the services as much as possible. That could be the main reason for Elkarkide for start working on the optimization of their routes, trying to obtain their services and resources at maximum.

To perform the optimization and according to the information facilitated by the company, they obtain benefits on the number of brochures distributed, that is, the more brochures are delivered, the more profit the company will obtain. This is the point where the company earns with the optimization of the workers tasks and routes. Thus, it is important to keep in mind the workers behaviours. However, the timetable could be an issue taken into consideration, since the employees can not start the distribution of brochures that have to be delivered inside the hall, because it implies ringing the bell. Therefore, if the stablished paths were divided in two, those who are dedicated to basket mailing, that is, abroad, could start their day before those who distribute inside, dedicating themselves to lazed and package. With this modification, there will be new and more efficient routes that saves workers' time.

To visualise the routes, figure 7 shows the third one, corresponding to the Ensanche. Where the blue arrows show the area of distribution, and the black ones represent the displacement. In this way, it can be seen how there is a loss of efficiency and resources in the black areas, where researchers should pay more attention in order to optimise them.

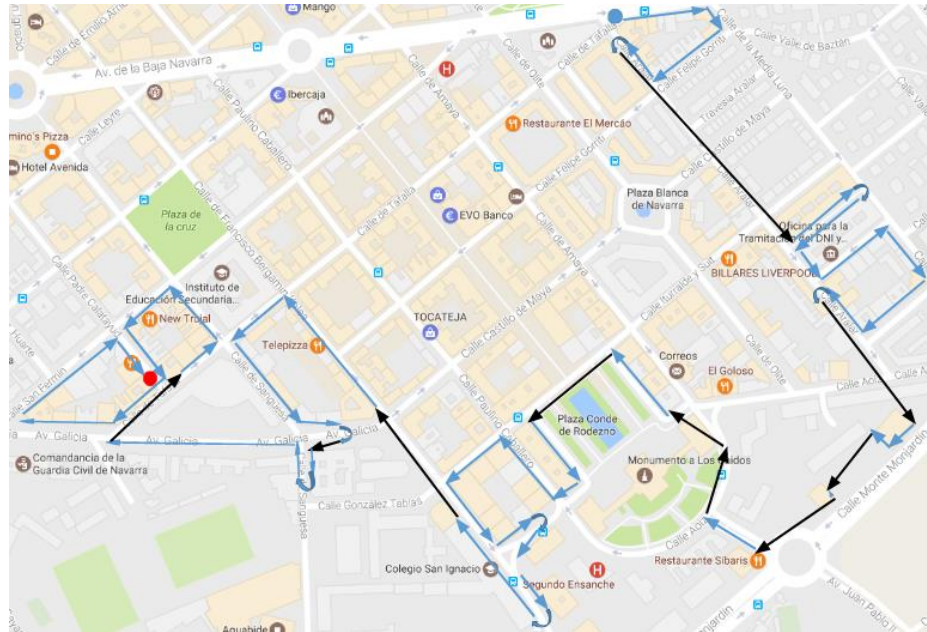


Figure 6: Ensanche 3rd zone

Source: Elkarkide

Nevertheless, once the action started, two new problems have come up. Firstly, that not only there should be a focus on the optimization of routes, but also the HR department should be working hand to hand with the workers motivation, trying to give them incentives or prominence to increase their performance and feeling them part of the company. And secondly, that Elkarkide should be aware of the negative evolution of the market, having a negative impact on the volume of work. Moreover, they have already perceived it directly in the month of February, with a client who represented 12% of the company's activity, with a profit of 100,000 euros per year has left, assuming 340.000 brochures less annually (Resano, 2023).

It is important to emphasize on the characteristics of the model applied, giving importance to the interactive relation between the researchers and the workers, making essential the AR. If one of the parties is not collaborating, it will be almost impossible to develop an action-research.

4.2 Action research planning

The action research is the second step to be fulfilled. Overall, the reason for doing research planning is to ensure that a research project is well-designed, feasible, and meets its objectives. For such, an explanation will be provided in the following lines.

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As it is common, once the main idea of the problem is clear, those parties involved should make questioning of the situation. In such, some general wonders may appear, which can serve as a guide to get the answer to the problem. Among them, the typical ones may appear: What needs to change? In which parts of the organization? What types of change are required? Whose support is needed? (Coughlan and Coughlan, 2002).

Therefore, the first thing should be deciding if it is worthy to develop the research and with it, the main controversies that can appear to the researches:

- **HOW** the problem is going to be solved and analysed. The solution for the problem proposed by Elkarkide can be solved by optimizing the worker's path. Nevertheless, mathematical help is going to be necessary in order to obtain accurate results.
- **WHO** is going to be analysed is also an issue to define. As told by the company, outside the warehouse two types of workers with different roles can be distinguished. For such reason, the behaviour and inquisitiveness of each of them could also provide determining information
- **HOW** and **WHY** are also two important concerns while thinking on starting a project. On the one hand, the researcher should think on how the selected methodology is going to be applied and if it fits with the final goal. On the other hand, it always benefit the task since the beginning if the individuals wonder why should the develop the project and which results are they going to expect.

Nonetheless, the cost of developing a research adapted specially for a particular firm can be expensive. However, this research is a final degree project facilitated by the Public University of Navarre, where a student with the help of professors are going to be the ones who extract the information. For such reason, there are no cost for Elkarkide. Alternatively, if the company should be the one affording the cost of it, a previous evaluation of expenses, profitability and expected results should be done.

4.3 Data collection

In this third step the researchers try to obtain relevant information that should be used for improvement. However, the data can be acquired in two modes: by observation, discussion, and interventions or through financial accounts and marketing reports. In this case, the information was mainly obtained during a working day, being more accurate the 7th and 8th of November, where the assistant taught different routes with different operators to the those involved in leading the project. Here a list of the highlighted information obtained:

- The Action Research will be carried out in the neighbourhoods of Pamplona and the town of Cizur, paying special attention to those routes that need to be modified.
- Since the activity takes place every day from Monday to Friday, there was no problem in agreeing on possible dates with Elkarkide. Nonetheless, this project is also led by Diego Ruiz-Hernandez, Jesús María Pinar-Pérez, and Amaya Erro Garcés, which meant that all have to coincide in order to be able to carry out the research. For this reason, on the 7th and the 8th of November, the meeting at the offices in Noain took place.
- The attention will be focused on the assistants and operators. The assistants are those who give the load, therefore, it is convenient to know how often and how it is done. On the contrary, the operators, are those who distribute the brochure that has been previously loaded in the cart. In this case, what should be looked at is how they complete the routes, if they follow them or not, and if so, what is their reason for not following them, maybe there can be a clear answer of optimization of routes.

- Regarding the methodology of the data collection, the routes that the workers are currently doing were designed some years ago and have not been modified in the last years. So, taking them as reference, the researchers have obtained information through observation. Not only by seeing them how they fulfil their tasks, but also at the possible improvements or modifications they made for themselves to make their work more effective. In fact, the main idea to collect information was through an application to count the steps, but in the end, with the use of google maps it was enough.

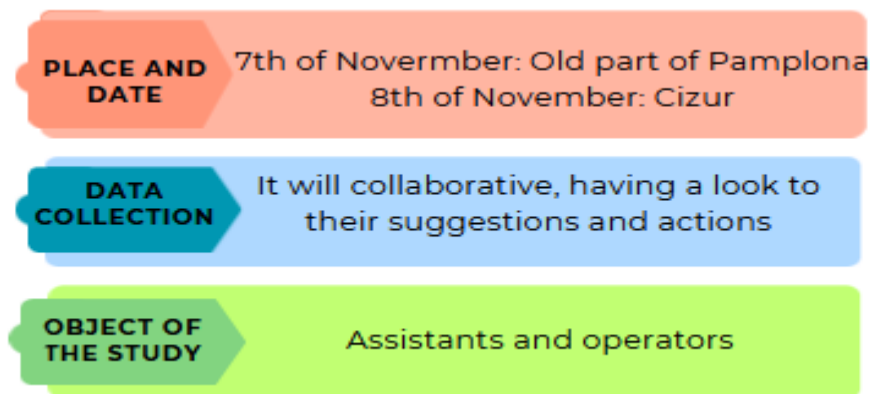


Figure 7: Data collection scheme

Source: Author's elaboration

Therefore, after collecting data, it will proceed to the next step; the analysis of the data, which will help us to evaluate the company's state.

4.4 Data analysis

Once the data has already been obtained, next step is to analyse it. This step is considered a critical part of any research, as it allows for the interpretation and understanding of the data collected previously. The main reason for doing data analysis is to extract meaningful insights and knowledge, which can then be used to inform decision-making or conclusions about a particular situation.

Data analysis involves a range of techniques and methods, such as statistical analysis, data visualization, and data mining, that help to identify patterns, trends, and relationships

within the data. By applying these techniques, researchers and analysts can uncover hidden wisdom and make predictions about future outcomes.

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As previously mentioned, the researchers walked with several workers in different areas of the routes in order to observe how the work was being done, and from such, relevant information was obtained. In order to discuss the different ideas of each one, a meeting in the office was necessary. Notwithstanding, the most significant aspects are explained below.

Firstly, one of the concept all the researches touched on was the term of empowerment. It is known by empowerment the action of bringing people who are outside the decision-making process into it (Rowlands, 1995). Through the working day, the researchers asked different workers on different occasions why they were not following the instructions given by their superiors. By chance, their response was always aimed in the same direction: to clarify that they were doing it to speed up their work and to do it as effective as possible.

This was especially the case for those workers who had the manual trolley, especially when they were approaching a square or a closed place. At that moment, they used a point as a reference, which was where they left the trolley with all the leaflets. Once the trolley was parked, the workers would take the leaflets and carry them in their hands, so that their work was done in less time as they did not have to drag the trolley in an enclosed place. For this reason, the main insight is that if those who are doing the delivery work were asked how to improve the routes, they will feel part of the company as they will see how their opinion and their point of view can influence in their work. For the same reason, one of the major benefits of the implementation of the term is that employees will increase their commitment to the company's values, creating greater productivity, better work and above all, an improved working environment. Moreover, Ines Girones, the advertising solutions manager of Elkarkide, cited how the rate of absenteeism in the company is above the mean.

So, by applying actions that promote empowerment, Elkarkide could benefit from a higher index of employee satisfaction, which is linked to a lower rate of absenteeism (Bowen and Lawler III, 2006).

Secondly, a term that was also discussed at the meeting was the image that workers can give to neighbours. On several occasions workers mentioned how there are doorways where they no longer open the door or answer the bell, which impedes their work. Knowing that the firm has benefits on the leaflets distributed, it is an aspect to be taken into account since the fewer leaflets are distributed, the less profit the company will make.

Workers are a fundamental part of building a company's corporate image. The way employees interact with customers, how they carry out their work and their attitude are all factors that directly influence the image projected. In addition, when employees are satisfied and motivated in their work, they tend to provide better customer service, having a positive influence on the corporate image. On the other hand, if workers are not committed to the company, they may have negative attitudes towards work and customers, which can negatively affect the company's image. For this reason, the profile of Elkarkide's workers should be made more visible. In such way, the neighbours would be aware of what is behind their work and can better understand their situation and have more understanding. Given that in most of the occasions, the main reason for not opening the door is that they do not trust that they are a commercial postman. Nevertheless, on some occasions the researchers found that during the working day, some employees did not have the proper behaviour as they smoked or listened to music with headphones while handing out leaflets. In brief, those conducts may influence customers' prejudices.

Last but not least, it is worthy to mention how well the teammates get along with each other. Any company should pay attention to team building because it can have a significant impact on the overall success and performance of the organization. In this case, Elkarkide benefits in many different aspects from such issue. On the one hand because it can increase job satisfaction. A positive work environment, created through good team building, can lead to increased job satisfaction and a sense of purpose among team members. On the other hand, it can affect to particular problem-solving situation, due to the trust among team members.

Overall, team building is an important aspect of organizational success, as it can lead to improved collaboration, productivity, creativity, employee engagement, communication, and relationships.

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After several months of research, thinking that the work should be focused on the optimization of the routes, it was seen that it was not the real problem. Indeed, it was the negative evolution of the market what prevented Elkarkide from optimizing its resources to the maximum.

The paper market has undergone significant evolution in recent decades due to various factors, such as growing environmental concerns, changes in communication technology, and the evolution of e-commerce. Besides, what has damaged the market mostly has been the adoption of digital technology, for example email communication, e-invoicing, and e-books have reduced the demand for paper. Nevertheless, the industry has responded to this trend by developing new products and technologies, such as recycled papers and paper certified by environmental organizations. Consequently, some letterboxes have embraced new technologies such as QR codes and augmented reality to create more immersive and interactive letterboxing experiences.

Furthermore, in order to evaluate and analyse the portfolio of products or businesses of a company, the BCG matrix is a useful tool. A concept developed by the Boston Consulting Group (BCG) in the 1970s can help the business corporations for the improvement of the skills to run their business efficiently and profitability (BGC, Website). The BCG matrix categorizes a company's products or businesses into four categories based on their market growth rate and relative market share. It is also considered as one of the most famous strategic tools in business ever developed (Ansoff and McDonnell, 1990). The BCG matrix divides the business products into four categories as:

1. Question Marks: indicate the products in high growth markets and with low market share.
2. Stars: products or businesses with a high market share and high market growth rate.
3. Cash Cows: predicts that the products are in low growth markets, and market share is high.
4. Dogs: displays that both growth and market share are in low position.

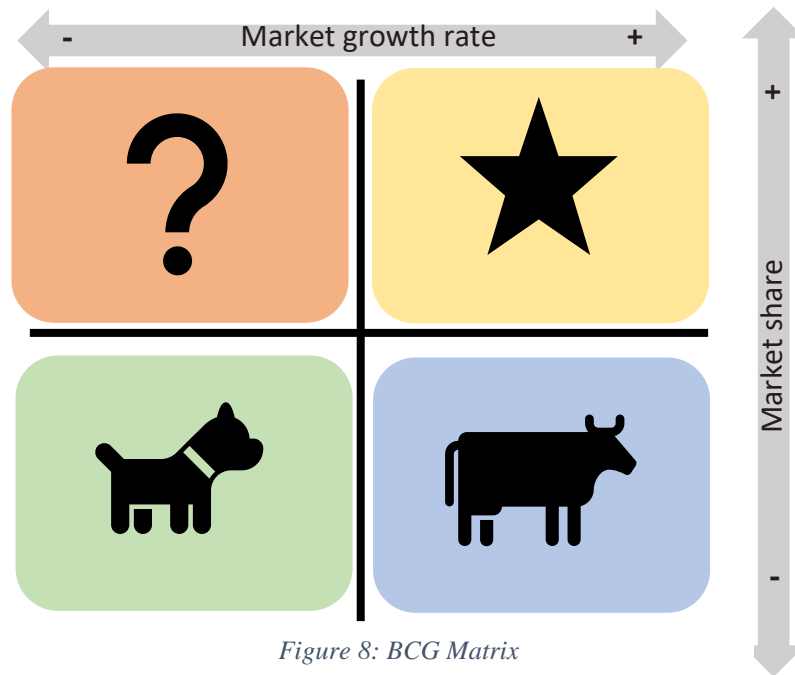


Figure 8: BCG Matrix

Source: Adapted by Amaia López from Boston Consulting Group

Having explained the current situation Elkarkide is facing and the theory of BCG, it can be concluded that the state of the company is reflected in the dog's box. Where the businesses can be characterized by a low market share and a low market growth rate, generating minimal revenue and profit for the company and may need to be divested.

Indeed, it was the managing director of Elkarkide, Marcos Resano, who mentioned that in February a client who accounted for 12% of the activity and a profit of 100,000 euros stopped working with them. However, they also commented that they had already started to relocate workers to other activities, as they are aware of the future evolution of this activity.

4.5 Action taking planning

Once the data has been analysed and studied, some conclusions can be obtained. First of all, the identification of the real problem, since after analysing the case, it has been seen that it is not the same as the initial one. The dealing problem lies not only with possible route improvements, but also in the low productivity of the whole market. Taking into account all the information observed, there will be an action taking planning based on five proposals. In spite of that, it is important to emphasize that the first three suggestions will have a focus on the HR department, and the other two will be related to the optimisation of resources in the part of the routes.

Proposal 1- Informative panels for neighbourhoods



Dealing face-to-face with customers has never been an easy task for all personalities. Due to it, there are a number of ways to make it easier for those involved parties. For such reason, the use of Informative panels can be a valuable tool for communication and education, providing valuable information and promoting understanding and appreciation of various activities, as is in this case the distribution of information leaflets.

On the day the investigators had the opportunity to see how the work was carried out, they were able to observe that there were numerous portals where the workers did not ring the bells even though there were marked on their work map. Knowing that the firm earns profits as more brochures are distributed, there was no choice to ask why there were not fulfilling their task correctly. All of them answer a similar response: they never open us the door even if they are at home.

So, in view of this situation, we would like to propose as a suggestion the placing of informative posters inside the hall. On it, some data of the company would be visible, such as the objectives, values, culture, or principles. Additionally, some personal information of the workers will also be there, as a way to be know and respect in the neighbourhood. This activity will not only generate trust for the employees, but also the customers will be aware of Elkarkide's activity and labour force, because even it is a local

firm, is not known by everyone. In order to facilitate the idea of the first proposal, above can be seen an example of it.



Figure 9: Informative panel

Source: Author's elaboration.

Proposal 2- Employee of the month

The employee of the month award is a popular method for recognition. As the name suggest, it is an award program for exceptional performances every month. The company sets specific standards, and the best-performing employee receives the award. It can have different benefits for the selected, recognition, appreciation or an increase on job satisfaction could be some of them.

When a company wants to give rewards to its employees, it can be done with two main ways: Extrinsicly or Intrinsicly. Extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome. However, Intrinsic motivation is defined as the doing of an activity for its inherent satisfactions rather than for some separable consequence (Ryan and Deci, 2000).

Having in mind the definition for the second term defined, we would like to propose this initiative, in order to appreciate the work and make the effort visible in front of his colleagues. The idea is that the HR department should set a number of objectives or task per month, followed by a list of parameters. Once it has been known by everyone, the last day of the month a poster will be set in the entrance of the warehouse. This idea can serve as a form of appreciation and motivation for employees, contributing to their overall job satisfaction and performance.

Proposal 3- Education training


This third proposal can be linked to the first one. Knowing the profile of Elkarkide's labour force and the continuous interaction with customers, it could be helpful for them to receive a course related to education.

Some workers mentioned how they get nervous in different situations, which had an impact on their dealings with the customer. Therefore, it would be a nice action in order to make those situations more pleasant. Besides, the employees will benefit from a better skill development and personal growth, without forgetting about the contribution to their professional growth.

Proposal 4- Change of labour field

Given the current market situation and taking into account the diversity of activities that Elkarkide provides for its workers, one way to maintain most of the labour force will be by re-distributing them. In this way, more services would be covered. Additionally, Elkarkide as a business could benefit of this strategical change by the opportunity to enter new and growing markets. Nevertheless, there are also advantages for those involved workers, such as the learning of new skills or de social benefits they could obtain.

Overall, labour force redistribution can have numerous benefits, including economic growth, regional development, enhanced labour market efficiency, diversification of skills and industries, and social benefits. However, it also requires careful planning, coordination, and support measures to ensure a smooth transition for workers and minimize errors.


Proposal 5- Change in working schedule 

This last proposal aims a change in the timetable for outdoor activities. As it has been mentioned several times, street delivery can be split into two sub-groups. On the one hand, the leaflets that are placed in the basket, which do not require ringing the bell. On the other hand, the mailboxes, which means ringing the bell to get access to them.

Actually, the workers meet in Noain at 7:30 am, and until the time of departure (9:00 am), they are making packages in the warehouse. However, this proposal suggest a change in such time such schedule, with the aim of doing the task more effective by starting to distribute easier. Some changes are explained bellow:


- At the beginning there was just a team, covering inside and outdoor activities. Now, there would be a split into two teams: one team distribute brochures without ringing the bell and the other will ring the bell.
- Outdoor distribution: This team will start its activity at 7:30am but in the meeting point, not in Noain. As the task does not disturb the neighbours and will only cover the outer baskets, the task should be finished by 10:00am.
- Inside distribution: This new team will start at 7:30am but in the warehouse. From 7:30am to 9 a.m. workers will be packing the leaflets. Once the packages are ready, they will be delivered to the mailboxes. However, this second group should finish its work at 12:00pm.

Therefore, once each group has delivered what they should, they return to the warehouse to speed up handling and loading tasks. In this way, the packages will be ready for the next day. From our perspective, parallel distribution allows for a more efficient use of the company's resources. Reducing total delivery times and, consequently, the resources required.

Proposal 6- Focus on census codes 

The routes were originally created on a neighbourhood basis, as it is the customer who decides in which areas to distribute their leaflets. However, if the company wants to optimise the routes, they should base new routes on census codes. In that way, the optimisation will be simpler and more efficient.

Through this change Elkarkide could benefit from data availability, since data is often readily available and accessible for a wide range of geographic areas. Additionally, census codes provide standardized values, which can be important when comparing data from different sources or when different routes are compared. Besides, it facilitates spatial analysis, allowing for the examination of patterns, trends, and relationships in data across different geographic areas. However, this is the direction customers are taking, which would be a favourable strategic move for the company to adopt it as soon as possible.

Proposal 7- Need of database and continuous information actualization 

Once a company is aware that it needs to improve its activity, it is essential to have access to the necessary data well organised and updated, in order to be able to commit best decisions.

In this case, the researchers encountered difficulties obtaining accurate data because the information provided was not updated. For instance, some of the manual trolley routes were modified by workers without updating the databases, making it harder to make changes to the tasks based on inaccurate information.

To address these challenges, implementing an information system would greatly benefit the company in multiple ways. Firstly, an information system would ensure efficient communication within the organization, ensuring that employees have access to the information they need to perform their tasks effectively. Secondly, a well-designed information system can enhance productivity by streamlining workflows, automating routine tasks, and eliminating redundant processes, ultimately leading to increased productivity.

4.6 Implementation of the actions

In this case, implementation will not follow the steps set out in the AR methodology due to the lack of time established by the Public University of Navarre and the market changes. Nevertheless, some actions are going to take place in the near future. So, a forecast could be done.

The company wants to start a manipulation work that they will do through a production chain. In this way, they will open up to a new market and all the benefits it brings. The activity will be based on the warehouse of Elkarkide, and the activity will be related to the automotive sector, for the labelling of certain parts that are placed inside the doors of the car, allowing the windows to be raised and lowered. It consisted of placing references on these parts. However, as stated above, this work has not yet been implemented due to a delay caused by a lack of materials.

Additionally, the proposed idea of focusing on census codes has been rewarding, as the company have begun to seek information and ways in which routes should be modified to suit better customer requests. Furthermore, one of their major clients, Eroski, has requested a study in which Elkarkide has to indicate for each shop, in which census codes they will distribute the leaflets and the number of leaflets per census code. In order to organize the information an Excel file has been created where different variables have been chosen to give an answer to the client. The excel is divided into 15 columns, firstly the number of the shop, the brand, the location up to the number of leaflets that the customer assigns for the distribution, the census codes and finally the quantity of leaflets to be distributed. Likewise, Elkarkide is betting that the future of distribution will be by census code and not by postcode.

4.7 Results

This section should be focused on the consequences of taking action but, in this case it is not possible to assess the consequences of something that is not yet implemented. However, it is possible to develop an analysis of the expected results, that is, the results and changes that will occur if Elkarkide implements the recommendations. However, these expectations cannot be set with certainty, as it cannot know what will happen until actions are taken, but they will help our article.

To wrap up, the table 4 shows the consequences expected of each of the proposals made to improve and solve the problem.

Proposal 1 – Informative panels for neighbourhoods <ul style="list-style-type: none">• Increasing awareness and enhancing safety
Proposal 2 – Employee of the month <ul style="list-style-type: none">• Worker’s motivation improvement, increasing productivity and boosting morale.
Proposal 3 – Education training <ul style="list-style-type: none">• Improved job performance.
Proposal 4 – Change of labour field <ul style="list-style-type: none">• Diversification of skills and new revenue streams
Proposal 5 – Change in working schedule <ul style="list-style-type: none">• Optimization due to parallel work.
Proposal 6 – Focus on census codes <ul style="list-style-type: none">• Client satisfaction and improved accuracy needs.
Proposal 7 – Need of database and information actualization <ul style="list-style-type: none">• Client satisfaction and improved accuracy needs.

Table 4: Expected results

Source: Author’s elaboration.

Having a look to table 4 some possible and feasible outcomes can be analysed. The idea of putting up information signs on doorways will help both employees and neighbours. On the one hand we have the neighbours, who will know about the social work that

Elkarkide does and will trust the deliverers more. And on the other hand for the workers, who will not only be able to do their job more effectively as they will spend less time ringing doorbells, but they will also be able to hand out more leaflets as there will be fewer neighbours who do not open their doors.

The second suggestion will help to foster motivation among workers. In this way workers will feel valued and motivated to continue working with the same dedication and effort. Additionally, being recognized as the employee of the month is a great way to feel appreciated and valued by your employer.

The third proposal could be linked to the first one. In order to create a closer and more positive atmosphere with the client, being more polite and in accordance. In addition, workers will not feel cut off when dealing with their neighbours as they will have some basic guidelines to follow in order not to make a negative impression.

With the implementation of the fourth idea, the company will be able to carry out more activities with the same number of workers. This would save money by hiring fewer workers and, at the same time, completing the more tasks faster and more effectively. Moreover, those workers will increase their skills and knowledge. However, as the company will work in different markets, the rate of growth of the company will be significantly increased.

The fifth and sixth proposals are referred to the main objective of the research, that is, optimize the routes. The aim of implementing the fifth idea is linked to the proper optimization of the activity, due to parallel work both groups will end up faster the task and thus, this will reduce cost. Furthermore, if Elkarkide focuses its distribution on census codes, the distribution will be done more effectively and printing costs will be reduced, as it will not be necessary to post all over the neighbourhood.

Therefore, before solving route optimisation, as is the main objective of this research, it is important to make sure that those involved departments are organised and aware of how the work needs to be done, as the key for improving productivity and reducing costs is to have and follow a good strategy, linked to good organisation.

5. CONCLUSION

Thanks to all of the above, it can be interpreted that the methodology used throughout the research has been adequate for trying to solve the proposed problems, since the main characteristics allows it to make it individualized and flexible, permitting the researches to know more problems than it was known at the beginning.

As it turned out, the direction of the project at the beginning only focused on the optimisation of the routes. However, over time more problems were identified as influencing the initial one, such as those related to human resources, organization management problem or the market downturn.

Additionally, it is worthy to clarify the cost reduction and profit increase it will suppose for Elkarkide if the established routes were divided into two sub-groups for the time being and not into one team as has been the case up to now. With this separation, Elkarkide would be able to distribute leaflets in a much more efficient way due to the parallel work. Therefore, the idea of making the routes more effective is not only about making modifications in plans so that the black arrows, seen in figure 10, become effective zones, but also about making use of the resources that the company has at its disposal, such as the workers.

However, the change in strategy of the Human Resources department would change the perception of workers, making their work more productive, loyal, and motivated. This would also reduce the absenteeism rate, which is quite high in Elkarkide.

The implementation of the proposed ideas and the analysis of the results until the real solution is found is the key factor to end the AR process. However, this could not be the case in this project as time was limited, still making some estimation of the potential results and consequences is possible.

Overall, the study showed a significant correlation between operational management problems and organisational strategies. As mentioned above, having the involved parties motivated and with the necessary skills is the key to success. Therefore, if the strategy is not communicated in an optimal way, workers do not understand the real tasks and problems arise. So, in order to avoid problems, the best solution is to optimise organisational strategies.

To conclude, I would like to personally thank the company Elkarkide for giving me the chance to collaborate with them during these months. With this project, I have not only been able to grow academically by applying my theoretical knowledge and implementing in the field of their work, but also I have been able to grow personally, where thanks to the social focus of the company they have allowed me to value the essential work that they do in society with unfavourable groups. Given the current complex socio-economic situation, it has been a personal satisfaction to contribute with them and I hope it will help them in the future of the company.

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