

Re-engaging after restrictions

How fitness industry copes with the Covid-19
pandemic

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Data: 20/06/2022

MEMÒRIA DEL TREBALL FINAL DE GRAU

Curs: 2021-2022

Estudis: Administració d'Empreses i Gestió de la Innovació

ACKNOWLEDGEMENTS

The making of this final degree project has been possible because of the advice and interest of some individuals whom I would like to thank.

First and foremost, I would like to thank my tutor Dr. Giovanni Giusti for his unconditional dedication, involvement and all the support he has provided. He motivated me from the first day and helped me with the direction and design of this project.

I would also like to express my gratitude for the contributions of the court, formed by Dr. Josep Maria Raya Vilchez and Maria Armiñana Maristany, as well as for their consistent feedback. Thank you for reading the document carefully and giving invaluable advice.

Also, I would like to give special thanks to Oriol Gallardo, who is the data base responsible of the collaborator company. He has been a keystone from the beginning of this project.

Moreover, I would like to say thank you to Tecnocampus University for these 5 years together and to help me finding my path in the professional world. It also allowed me to find great people that have accompanied me all this journey and they will do so for many years.

Last but not least, I want to thank all my colleagues from Business Administration and Tourism and my family for supporting me always.

Thank you all very much.

ABSTRACT

ENGLISH

This study aims to expand the knowledge of a flexible strategy when it comes to re-engaging the sport center's customers. It is focused on the COVID-19 pandemic, since it has implied notable changes in the health and sport sector, as well as in many more. The objective is to come to a conclusion in regards to a system that makes the feeling of obligation more flexible in a time where there are already many restrictions, and be able to determine if it helps to increase the customers' loyalty or, at least, limit its decline. Therefore, this paper will analyse if a special *pass* which allows the user to go to different sport centres in the same time is an efficient option. To achieve this aim, we study the effect of a natural experiment that was conducted by Cet10, a Spanish company. They have provided the data base of 6 different sport centers of which 3 of them offer the special fee, and an analysis of these gym attendants' behavior has been done in order to understand if the freedom of choice implies a greater commitment.

CASTELLANO

Este estudio pretende ampliar el conocimiento de una estrategia de flexibilidad a la hora de captar a los clientes de los centros deportivos. Se centra en la pandemia del COVID-19, ya que ha supuesto cambios notables en el sector de la salud y el deporte, así como en muchos más. El objetivo es llegar a una conclusión respecto a un sistema que flexibiliza el sentimiento de obligación en un momento en el que ya existen muchas restricciones, y poder determinar si ayuda a aumentar la fidelidad de los usuarios o, al menos, limitar su declive. Por ello, este trabajo analizará si un pase especial que permite al usuario acudir a diferentes centros deportivos al mismo tiempo es una opción eficiente. Para conseguir este objetivo se estudia un experimento natural realizado por Cet10, una empresa española. Se nos ha facilitado la base de datos de 6 centros deportivos diferentes de los cuales 3 de ellos ofrecen la tarifa especial, y se ha realizado un análisis del comportamiento de los asistentes de los gimnasios para entender si la libertad de elección implica un mayor compromiso.

CATALÀ

Aquest estudi pretén ampliar el coneixement d'una estratègia de flexibilitat a l'hora de recaptar els clients dels centres esportius. Està centrat en la pandèmia de la COVID-19, ja que ha implicat canvis notables en el sector de la salut i l'esport, així com en molts més. L'objectiu és arribar a una conclusió sobre un sistema que flexibilitza el sentiment d'obligació en un moment on ja hi ha moltes restriccions, i poder determinar si ajuda a augmentar la fidelització d'usuaris o, almenys, limitar el seu declivi. Per tant, en aquest treball s'analitzarà si un abonament especial que permeti l'accés a diferents centres esportius al mateix temps és una opció eficient. Per aconseguir aquest objectiu, s'estudia un experiment natural realitzat per Cet10, una empresa espanyola. Se'ns ha facilitat la base de dades de 6 centres esportius diferents dels quals 3 ofereixen la quota especial, i s'ha fet una anàlisi del comportament dels assistents dels gimnasos per entendre si la llibertat d'elecció implica un major compromís.

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1. Introduction

There is scientific evidence that physical activity promotes better quality of life (Sato, Jordan, & Funk, 2014; Angosto, Berengüí, Vegara-Ferri, & López-Gullón, 2020; Buszko, 2020; de Melo, 2020) and can be used as a non-pharmacological therapy for different chronic illnesses (de Sousa et al., 2021). A lot of mental disorders such as depression and anxiety diseases have been arising due to the current situation (Taquet et al., 2021) and mental health is a very important factor that enables the required adjustment to cope with positive and negative emotions (Anderson and Jané-Llopis, 2011; Fusar-Poli et al., 2020; Gross et al., 2019). Since sport can be used as a treatment for mental health and physiological well-being (Fox, 1999), the importance of keeping this industry alive in these days is evident.

The ongoing pandemic has made sport entities change their market strategies to cope with the new circumstances. However, it has to be mentioned that the COVID-19's restrictions had different effects regarding the outdoor activities compared to the indoor ones. That is why this article will only focus on the indoor fitness clubs or gyms, since they are the ones who suffered a mayor number of limitations concerning their danger (Myers K., Brown, M. B., Payne, S. C., & Rosney, D. M, 2020).

As far as the impact is concerned, the indoor sport entities such as fitness clubs or gyms have suffered an immediate financial collision with loses caused by the lack of users (Myers et al., 2020). The social distancing measures in order to stop the transmission of the virus provoked difficulties in regards to carrying out the fitness activities as usual (Narayanan, Nordlund, Pace, & Ratnadiwakara, 2020). In addition, the fear of being infected was another reason why people decided to unsubscribe from their fitness clubs. The governments of many countries have been imposed to implement strong restrictions which not only have changed the lives of people but also the organizations and entities (Rio-Chanona, R. del, Mealy, P., A. P.-O. R., 2020).

As noted by Ratten, 2020 in *Coronavirus Disease (COVID-19) and Sport Entrepreneurship*, "the sport sector has been especially influenced by the COVID-19 crisis in a way that has never been seen before". Thereby, a new approach is required to get the customers back. And, as mentioned above, this is currently essential since sport provides a needed source of entertainment and the industry is strongly suffering (Ratten, Management, et al., 2021).

Taking all of this into account plus the long-term shutdown of the companies, it all resulted in huge monetary losses which were poorly offset by the financial government support.

Numerous studies have attempted to explain the importance of sports entrepreneurship for overcoming crisis situations (Escamilla-Fajardo Núñez-Palomar, Calabuig-Moreno, Gómez-Tafalla; 2020). Thus, companies should handle this new situation and respond to the crises by being adaptive.

Once deeper research in the field is done, an entrepreneurial understanding is needed concerning the change in the engaging strategies.

2. Literature review

2.1. Scientific relevance

Sport is a clear and a very important contributor to economy and it plays a crucial social role when it comes to the general wellbeing of the society. Thus, as stated in the previous section, Covid-19 pandemic has had a great impact to this industry (Grix et al., 2021).

To see the wingspan of the sector, before the pandemic, the global fitness industry achieved the total revenue of 90,3 billion of euros in 2019. Moreover, there were more than 184 million members belonging to almost 210.000 fitness centers (Chang et al., 2022).

Given the closure of the sport clubs due to the 2020 pandemic, the shock was rapid and big since no one was ready for it. In a sample of 2000 fitness business of 8 different countries, the gym attendance levels decreased around 91% compared to the previous data. Because of the pandemic crises, it is estimated that gyms and health facilities have lost about 10M of euros from 2020 (The Impact of COVID-19 on Sport, Physical Activity and Well-Being and Its Effects on Social Development | DISD).

As far as the reasons for cancelling the gym membership are concerned, in the following graph taken from Statista, the different motives for giving up gyms after the lockdown in Spain are shown. 8000 people were surveyed, and the results show that the main reasons were basically the potential price increase and the lack of security (Spain: Reasons to Quit the Gym after Coronavirus Lockdown 2020 | Statista).

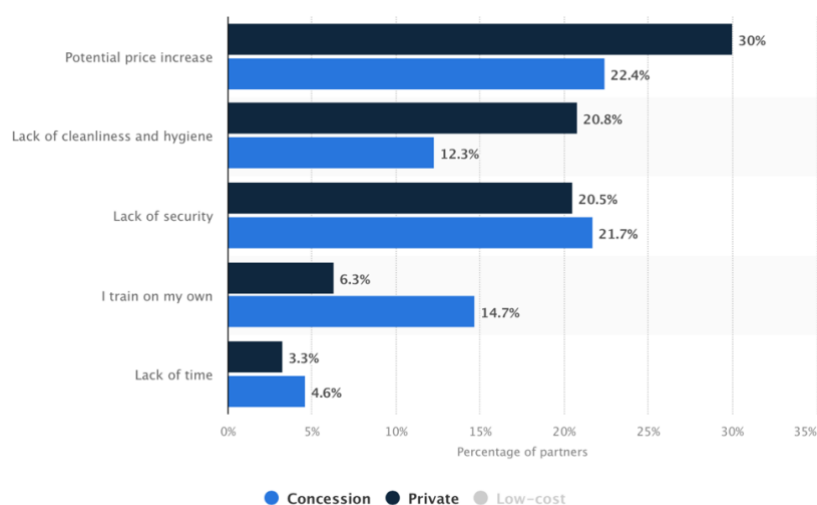


Figure 1. Reasons to Quit the gym after Coronavirus Lockdown

The outbreak of Covid-19 has become a big challenge for the sport industry, since the behavior of people totally changed. Regarding the sporting fans, for example, it had a great impact, considering that they started to watch live events on the internet instead of purchasing tickets and watching them physically (Chang et al., 2022).

As stated in the article *Effects of the COVID-19 pandemic on sports entrepreneurship*, “Organizations need to adopt innovative and proactive behaviors to create value, gain competitive advantages, and maintain pre-crisis performance levels.” According to an analysis made by the stated article above, it has been proved that Spanish sports companies increased their innovation levels due to the pandemic situation, since they were indirectly forced to take risks.

A lot of gyms implemented creative solutions to deal with the challenges of social distancing, such as virtual training; and gym owners had to rethink their businesses models to maintain solvency and develop new programs (Myers K., Brown, M. B., Payne, S. C., & Rosney, D. M, 2020).

2.2. Theoretical framework

Looking to different papers which have differences between them, there is a common statement which determines that there is a high possibility of dropping out of sport centers after enrollment. Different aspects can be related to this behavior, such as the age of people, their gender or their particular financial situation (Sperandei et al., 2019). Thus, there are several studies which analyse the possible reasons that cause the lack of customers' loyalty and therefore the solutions to solve this problem.

There is one which studied if financial incentives could be a motivation in order to increase gym attendance. They did an experiment giving a discount on the fee to some subjects during a specific period. They finally came to the conclusion that gym attendance can definitely be improved via stimulus, but the incentives which are not related to the financial aspect should be also explored (Rohde & Verbeke, 2017).

Another study concluded that limited attention of people was the main reason for the low engagement. They established that people in general have poor cognitive ability and they might forget to do exercise during their daily life, and therefore the solution should be focused on frequent reminders (Habla & Muller, 2021).

What caught our attention is that none of them talk about special strategies focused on the behaviors' changes that Covid-19 pandemic brought into our lives. The crises is a new and unknown situation with an undisclosed time period. For this reason, it is harder to predict the future in order to anticipate it. However, it is very clear by now that innovation and entrepreneurship are totally needed in our lives (Andersen & Ronglan, 2015), and the sport field is not an exception. In order to deal with uncertainties and generate value, entrepreneurship is definitely required (Ratten and Babiak, 2010).

As it has been mentioned, many gyms suffered constant cancellations, and one of the causes is that some clients discovered cheaper ways to practice sport and training. In addition, when gyms reopened, membership rates began to decline (Staley K., Randle, E., Donaldson, et al., 2021). Therefore, engagement strategies have to be applied and the challenge of engaging existing members back to the clubs and attracting new clients will be essential in regards to rebuilding community (Elliott, S., Drummond, Prichard, I.; et al., 2021).

Nevertheless, there is general gap in the comprehension about new fitness clubs' schemes taking into account the current perspective of potential users after the pandemic. Thereby, this paper wants to outline the actions taken and the strategies implemented by fitness clubs and gyms, as well as find out which is the best tactic to recover and get back the customers' loyalty.

One of the limits that a gym mainly has is that it forces people to be registered in a unique centre. In a delicate moment such as COVID, people tend to commit less to something that is extremely limited by external conditions. As many studies concluded, people are more likely to reject if they feel forced to it, and sport sector is not an exception.

There are infinity of reserch projects that prove that labour flexibility strategies have positive effects. Then, why should it not be applied on the other side of the business? The users.

According to research done by McKercher and Pine (2005), discounts and flexibility are a very effective way to encourage clients since the fact of offering flexible alternative plans is a very powerful strategy (Mirehie M., & Cho, I. 2021). Therefore, new iniciatives with more flexibility should be given to the potential customers.

It should be mentioned that two different types of labor flexibility have been defined in several papers about the topic: functional and numerical. While the numerical one is the fact of adjusting the quantity of labor in order to satisfy the demand, the functional is the fact of giving freedom to the employees and increasing their opportunities in a way that enables them to improve the general outcome and the variety of skills (Martínez-Sánchez et al., 2008).

Through a review of the literature and using insights from different research methods, it is proven that there is a positive relation between functional flexibility and the effectiveness of a company. On the other hand, any direct relationship has been found on the numerical one yet (de Spiegelaere et al., 2013). In fact, a particular study in which a sample of manufacturing and service firms were surveyed, it was found that the financial flexibility has negative effects (Martínez-Sánchez et al., 2008).

Furthermore, a survey of a Spanish companies' sample was conducted and they concluded that the most innovative Spanish businesses are more flexible than the low-innovative ones. Therefore, the concepts "innovation" and "flexibility" are related in terms of business strategies (Martínez-Sánchez et al., 2009).

In regards to the employees in general, as it has been proved, the capacity to choose is one of the key factors when it comes to increasing their satisfaction. In fact, 80% of the employees who decide between two equal offers opt for the more flexible one sheds some light on the matter.

As stated in the spanish paper "*La flexibilidad laboral*" written by Fausto Miguélez Lobo, work flexibility is nowadays the most important companies' strategy since the actual competition is much more stronger as it was years ago.

In a world full of uncertainties, there are many factors which cannot be controlled by humans, and the risk for the future is present in our daily life and the objective of everyone is to minimize it in order to have things under control. The pandemic COVID-19 is a very good example, since no one could have expected it.

For this reason, the fact of having labor autonomy, which means giving the possibility of managing the employees daily life, is essential in order to have a better workforce in a company (Miguélez, 2004).

It has been proved that giving this flexibility have positive consequences in terms of working conditions and social cohesion, since the results of the company experience improvements. These improvements will probably allow better salaries and a better relationship between the employees and the company (Martínez-Sánchez et al., 2009).

Moreover, there are also some studies which establish the customers as another beneficiary from the flexibility strategy. The indicators from the studies done show a higher probability to increase profits and the positive effects of the workers empowerment, having more satisfaction and trust on the company (Flexibility and Stability in Working Life –Furaker, Hakansson et al.).

A very relevant finding that we want to highlight is the concept “loyalty”. It is shown that the term “loyalty” has a significant relationship with flexible strategies (Zhou et al., 2011). Therefore, if gyms want to increase their customers’ loyalty, flexibility could be an effective strategy in order to reach their objective and achieve an organizational commitment.

It is clear by now that having more availability to organize the time of each private life is a very appreciated factor by human resources (Miguélez, 2004). Therefore, if the labor flexibility is clearly effective as a strategy, why should it not be the same in regards to the customers of a service?

If it has been proved and studied that entrepreneurial freedom is very important in general terms, this study wants to know if the customers mentality works in the same way that the employees one.

Moreover, it is not only about the time flexibility, but also the individual choice of the place. For this reason, the fact of giving the customers the choice of the activity type they can do and in which sport center they can go (paying the same amount of money) may increases their commitment since it may empowers the customers.

For all these reasons, this paper will analyse if a special *pass* which allows the user to go to different sport centres is a possible option in order to know if the freedom of choice implies a good reaction. Additionally, this possible system could have different effects depending on the user profile, which will be also analyzed.

So, above all, the conclusion is that a flexibility strategy is required in order to overcome the situation. Thereby, a natural experiment with a real spanish gym will be performed in

order to determine the hypothesis which states that a system that makes the feeling of obligation more flexible in a time where there are already many restrictions helps to increase the customers' loyalty or, at least, limit its decline; and then, conclude if a flexible system would engage new customers.

2.3. Personal motivation

I am a very sportive person and I could not understand my life without it, since not only is my hobby but I also consider it essential. Due to the pandemic situation, I have also been affected for the restrictions applied in the fitness industry, and that is why I immediately thought about doing a research paper in the sports' field. Thinking how could I combine the fitness industry and the current situation, I realized that one of the issues which were more common during the pandemic was the impossibility to choose. Therefore, a strategy related to having more freedom of choosing could be a potential solution, and this is how the issue of flexibility started to arise.

Furthermore, I have the opportunity to gather real information of a Spanish company, since my dad is working on the field. Real data collection is usually one of the obstacles when it comes to scientific studies. Thereby, I could not lose the chance of having actual and recent data, and I was sure that I wanted to focus in how sport companies are dealing with the COVID -19 situation. Talking to a member of the respective company, I realized that using a natural experiment of a new strategy being implemented in the moment was a perfect fit for my paper, since the strategy is based on the flexibility aspect.

So, what interested me was not only the advantage of using data base directly provided by a real company, but also the fact of analyzing the new sales strategy that was being implemented in the moment.

In addition, one of the subjects that caught my attention the most during the University double degree was "Leisure facilities and equipment", which is perfectly related with the present paper. Moreover, those subjects based on statistics and research were always an interesting challenge for me, and I found them so useful and necessary. Thus, I quickly saw the opportunity to work on it.

For all of the reasons mentioned, I think that focusing in such an interesting and new strategy is not only important for me, but also for the society and the fitness industry.

3. Objectives and hypotheses

Taking all of the facts mentioned into consideration, as we have exposed in the previous points, this study has made earlier research in order to know how fitness clubs in Barcelona are coping with the crises for attracting new clients. In other words, find out the different strategies that Catalan gyms are using to re-engage after the restrictions.

As mentioned before, the paper will focus in a specific company called Cet10, since gathering information is going to be possible and they are already applying a new strategy which implies more flexibility regarding the user's ability to choose. Therefore, since there is a general gap in the relationship between a flexible new strategy and the customers re-engagement, the main goal of the present paper is to come to a conclusion regarding to the increasing of possibilities as a solution for having more sales.

For achieving this aim, a natural experiment being applied in 3 different Catalan centres will be used.

It has to be said that the hypothesis is based on the privatization of freedom that people has been through during the pandemic, and what we expect is that the following statement will be verified in these sport centres.

Hypothesis

The presence of a more flexible fee in sport centres will imply a higher number of entrances in the respective gyms.

As it can be observed, we will basically focus in an only specific variable that will show the customers' loyalty, which is *the number of entrances in the centres per month*. In other words, the gym attendance.

In this way, we will be able to conclude if it would be an effective strategy to capture new customers in the new paradigm.

This paper is structured in the following way.

Firstly, the natural experiment analysis is well defined and the data collected is organized in order to have a better understanding of the whole study. Then, the control group and the treatment group are compared in order to carry out a proper analysis and have significant results. Once the comparison is finished, an extended result analysis is embodied in the paper. Therefore, the hypothesis is going to be rejected or accepted, and a proper inspection of the experiment is done.

Finally, the main argument will be restated in the conclusion in order to come to an end and summarize the whole paper.

The specific schedule with the dates can be observed in the Table 9 of the Annex.

4. Research design and methods

4.1. Natural experiment

In order to achieve the main objectives of this study, specific tools have to be used to collect and analyse the empirical data.

Since the hypothesis is focused on the new flexible *pass* offered by the company CET10, the methods used are quantitative because they are all based on numerical data.



Figure 2. CET10 logo

Therefore, a natural experiment is going to be analyzed and used with the collaboration of CET10 (*Col·lectiu d'Esports per a Tothom 10*), which is a Catalan business group that manages various sports centers, facilities and services around the world related to sports and education. Concretely, it manages more than 10 sports centers (gyms, tennis clubs, paddle and football equipments) and leisure (adventure park and elastic lists) located in Barcelona, Valencia, Madrid and Menorca. Moreover, they work with more than 30 schools and bring sports and educational leisure to more than 4,500 children.

CET10 has provided their total subscribers report in order to understand which is their current situation and be able to see the impact that the pandemic has caused (comparing 2019 and 2020). This situation can be seen in the chart below.

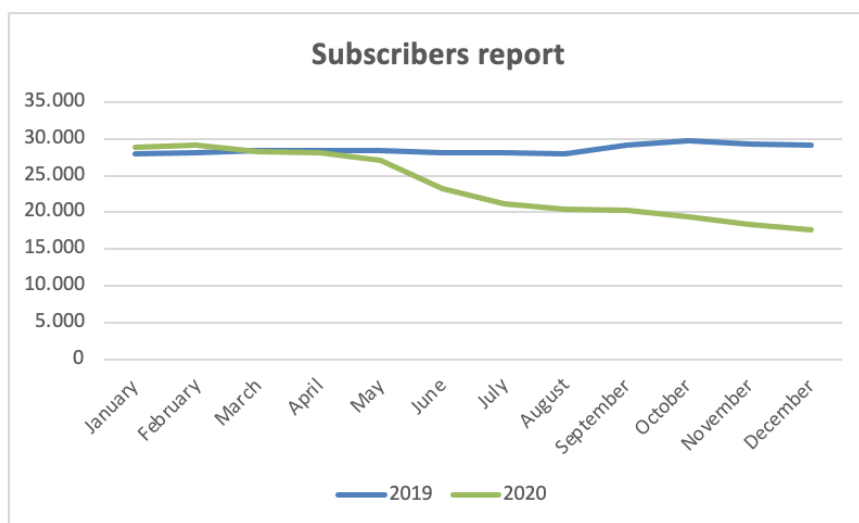


Figure 3. Decline of subscribers CET10 gyms

Having observed the financial statements of the company, we can conclude that the general problem is the fact that there has been a decline in the number of members since march 2020, due to the pandemic situation. Coming from approximately 30.000 subscribers in 2019, they ended the 2020 with almost the half of them (around 17.000 customers). So, taking into account the current circumstances, it will be the adequate fitness club to conduct the experiment, and we will take this company situation as an opportunity to analyze the new policy.

A survey of the gym customers concluded that one of the main reasons people unsubscribed was the uncertainty about whether its center would remain open (insecurity). Specifically, more than 40% of the people interviewed had this motive.

In order to face this problem, there is an alternative to solve uncertainty. According to the literature, providing the freedom to choose, to have more options, etc. could reduce the unpredictability.

Thereby, the test consists on implementing a new *pass ticket* to the treatment group, which is the center called *Bac de Roda* (T1). This innovative *pass* allows the customers to go to 2 more different gyms located in the same district of Barcelona: *Júpiter* (T2) and *Maresme* (T3). In this way, the range of possibilities are bigger and the customers are able to choose between a lot of activities.

The Cet10 Pass flyer is attached below.

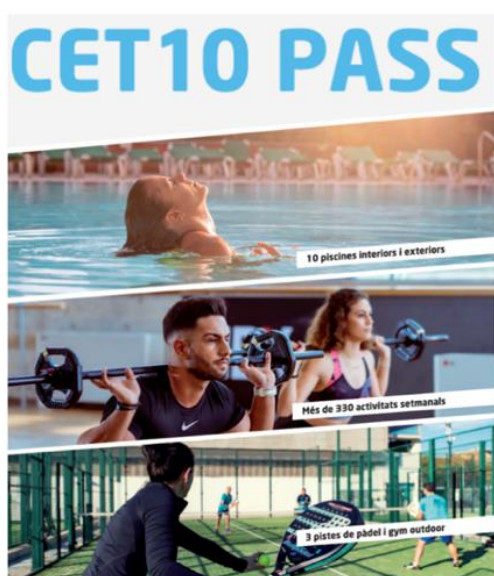


Figure 4. CET10 PASS flyer

For this reason, as we exposed in the hypothesis, we expect that the number of entrances to the centres will be higher in the gyms in which the specific pass (that gives the possibility to choose different centres of the same company) is offered than the gyms in which this possibility is not an option.

First of all, it has to be said that the control group is formed by centres of this company in which this new *pass* is not applied. However, these gyms had the same characteristics that the treatment group ones before the pandemic occurred. Therefore, the test units of the experiment will be 3 different fitness clubs.

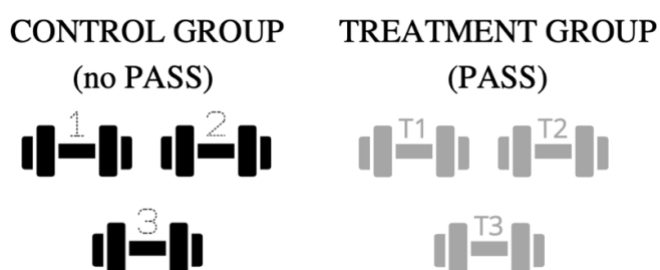


Figure 5. Control and treatment groups - 6 different gyms

Control group:

C1: Polideportivo Malilla

C2: Polideportivo Torreliel

C3: Escuelas de San Ant3n

Treatment group:

T1: CEM Bac de Roda

T2: CEM Júpiter

T3: CEM Maresme

A brief description of each center will be done in order to contextualize them.

Polideportivo Malilla (C1)



Figure 6. Malilla gym picture

It is a sport center with more than 6.000m² of sports facilities in the Valencian neighborhood of Malilla: it is a large space dedicated to fitness, wellness and well-being, as well as facilities with plenty of natural light.

Polideportivo Torrefiel (C2)



Figure 7. Torrefiel gym picture

It is a center with more than 3.000m² of sports facilities. Located in the Valencian neighborhood of Torrefiel, it has several areas for fitness and wellness with extensive facilities.

Escuelas de San Ant3n (C3)



Figure 8. San Ant3n gym picture

CDM Escuelas de San Ant3n is a specialist center in the aquatic environment located in Madrid, the capital of Spain. From the centre, the views of the city can be enjoyed.

CEM Bac de Roda (T1)



Figure 9. Bac De Roda gym picture

This center features the last generation installations and equipment and a large aquatic area. CEM Bac de Roda is located in the district Sant Martí of Barcelona.

CEM Júpiter (T2)

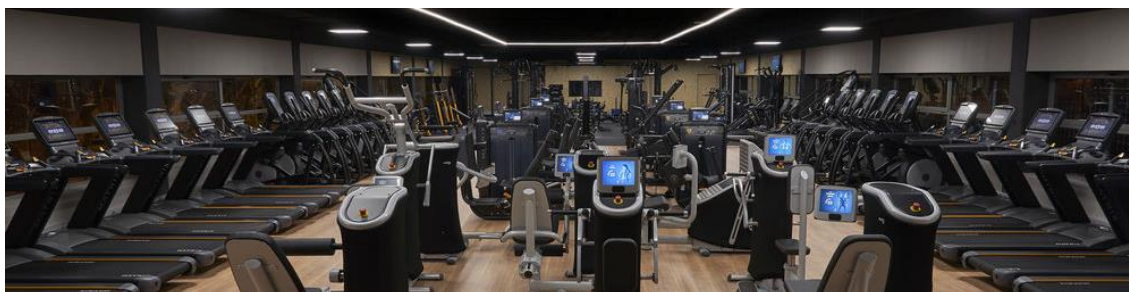


Figure 10. Júpiter gym picture

The facilities of the CEM Jupiter are characterized by the spaciousness of the areas, the latest equipment and the natural light that is present throughout the building. It is also located in the district Sant Martí of Barcelona.

CEM Maresme (T3)



Figure 11. Maresme gym picture

The center CEM Maresme has more than 3.500m² of sports facilities. Located 5 minutes far from the Diagonal Mar shopping center, it has a large space with lots of natural light. Also, it is located in the district Sant Martí of Barcelona.

The experiment will be analysed from the moment the *pass* was implemented, and the objective of it is comparing the entrances in the clubs of both groups. Taking into account that the new *pass* is offered in the treatment group and not on the other one, the results will be clear and relevant.

Specifically, the *pass* is being implemented in *Bac de Roda*, one of the gyms of the company. Therefore, the potential customers have the possibility to go to 2 more fitness clubs of the same Barcelona district (CEM Maresme and CEM Júpiter) with only this *pass*.

The dependent variable to be analyzed will be the following one:

- *The number of entrances in the centres per ID per month (gym attendance)*

It has to be said that it will be studied in all the centres mentioned previously.

Therefore, it will be essential to differentiate the people using the new *pass* from the people who does not have it.

A document Excel will be the most visual and efficient way to dump the data collected. It is the suitable tool since charts can be done easily and the results can be shown in columns (0 for the people without the *pass* and 1 for the people with it).

It will be approached like this because a natural experiment analysis is the best way when it comes to measuring causality and stablishing the cause-effect. Therefore, this tool is suitable to address the research questions. Finally, it has to be highlighted that this approach is inductovesly since there will be an assumption from a single one case.

4.2. Data collection

With the aim of accomplishing the research question, a quantitative method will be applied in order to collect the data.

As it has been explained, the company Cet10 directly provided the data. In order to have the adequate one, different meetings with the company responsible of Cet10 data base were done. At first, we presented the objectives of the paper to contextualize him. In this way, he was able to help us and be as efficient as possible. In this case, we needed the data base of 6 different centres. Moreover, the data had to be presented in the same format for all the gyms in order to be able to compare it. For this reason, different meetings had to be conducted in order to specify all the details.

Once we had it, we had to organize it, since we had to dump all the information in the same document. For this reason, we had to invest time sorting the information given.

The structure of the organized Excel document is defined below.

Columns	Variable	Variable exposure
Column 1	Centre	Name of the center
Column 2	People	ID of the person
Column 3	Date	Year (2019, 2020, 2021)
Column 4	Date	Month (1-12)
Column 5	Gym attendance	Number of times per person per month
Column 6	Subscription type	0 = CET10 <i>pass no</i> 1 = CET10 <i>pass yes</i>

Table 1. Explanation of the Excel document

Thanks to the organization of the respective document, we have been able to compare both groups and to accept or reject the hypothesis related to the number of entrances, which states that a sales strategy that offers flexibility is effective to re-engage customers.

It has to be pointed out that the created document Excel has 251.050 rows in total, which means a large amount of information.

A part from that, the company provided us a document with year-by-year information presented in different tables according to each center (see tables 10-15 in Annex). Therefore, we were able to understand the general context of each center and a simplification of the tables has been done in order to display this data. Thus, just the necessary information is shown and it can be analyzed in a clearer way.

For all the arguments exposed, a document screening analysis was conducted, since this tool was the sourcing numerical data from reports or counting occurrences.

4.3. Data analysis

Once the data is collected, it is time to run a statistical method of analysis. For the purpose of this study, the method which will be used is a panel data study.

Panel data is a group of quantities obtained across multiple individuals which are gathered over even intervals in time and organized chronologically.

We decided that it would be the most efficient way because the data that we are going to analyze contains observations about several cross sections across time.

In our case, the dependent variable of the study refers to the number of times that each person accesses to the gym per month and center. Thus, the data is collected at a regular frequency, chronologically, and it owns observations over a collection of people.

From doing a deep study, we will be able to analyze and compare the user's behaviors by groups and individuals.

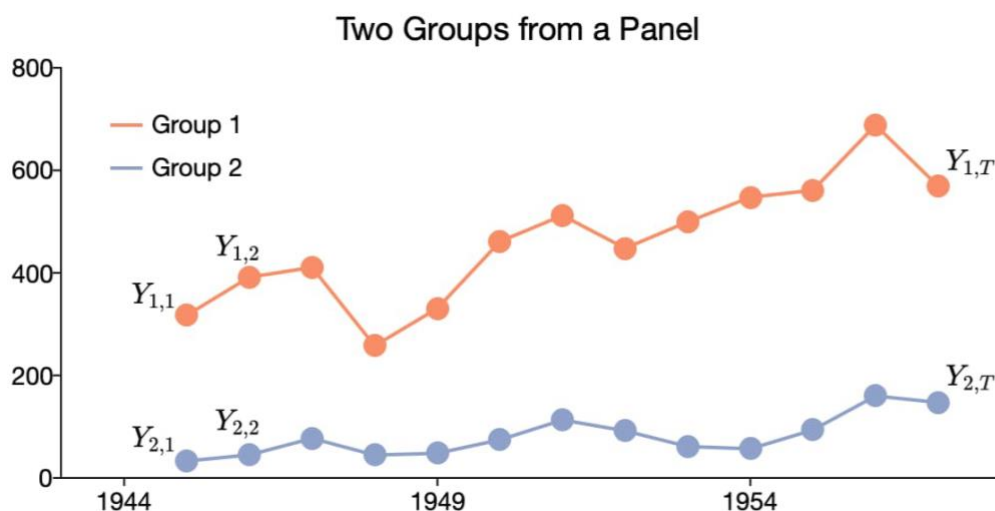


Figure 12. Example of panel data graph

The subscript i refers to groups and the subscript t is the time.

In our case, we would have 6 different lines which will represent the centers. Thereby, we will be able to compare their customers' behavior easily.

In the following table we can see how this method works more specifically.

Group	Time Period	Notation
1	1	Y_{11}
1	2	Y_{12}
1	T	Y_{1T}
⋮	⋮	⋮
N	1	Y_{N1}
N	2	Y_{N2}
N	T	Y_{NT}

Table 2. Description of the graph's notation

Regarding the method, we will use a homogeneous panel data model since the parameters are common across individuals.

$$y_{it} = \alpha + \beta x_{it} + \epsilon_{it}$$

Y is the dependent variable (*gym attendance*); α is the constant (same across groups and time), the coefficient β is also constant across groups and time. And the ϵ is the error term in case there are any differences across groups.

4.4. Data interpretation

As it has been mentioned, self-made tables have been done in order to analyze the data referred to the new subscribers and dropouts.

In the first and the second row, we can see the average of new subscribers and dropouts, while in the third row there is the total of subscribers' average.

Using the data base of each gym provided by the company, the same table has been done for each center.

Escuelas de San Antón

	2019	2020	2021
New subscribers	277	164	236
Dropouts	224	249	210
Total of subscribers	2.240	2.063	1.953

Table 3. San Antón averages

Torrefiel

	2019	2020	2021
New subscribers	123	71	99
Dropouts	131	135	85
Total of subscribers	1.580	1.291	909

Table 4. Torrefiel averages

Malilla

	2019	2020	2021
New subscribers	253	144	221
Dropouts	219	364	141
Total of subscribers	4.480	3.427	2.464

Table 5. Malilla averages

CEM Maresme

	2019	2020	2021
New subscribers	188	99	130
Dropouts	163	211	128
Total of subscribers	3.781	3.054	2.093

Table 6. Maresme averages

CEM Júpiter

	2019	2020	2021
New subscribers	214	104	164
Dropouts	188	233	134
Total of subscribers	4.219	3.497	2.512

Table 7. Júpiter averages

CEM Bac de Roda

	2019	2020	2021
New subscribers	440	196	370
Dropouts	443	551	328
Total of subscribers	11.203	9.043	6.780

Table 8. Bac De Roda averages

As we can see in the tables above, the tendency of all the variables is acting in the same way in all the centers.

According to the new subscribers, there is a decrease everywhere from 2019 to 2020, while from 2020 to 2021 there is an increase that, in any case, is achieving the number of new memberships of 2019.

Meanwhile, the number of dropouts is inversely proportional, since there is a clear increase from the first year to the second one, and a decrease from the second to the third (being the lowest number of dropouts during the 3 years).

Finally, the total of subscribers has a clear tendency of decreasing year by year in all the centers studied.

It has to be highlighted that a deeper analysis will be done later at a more individual and specific level.

5. Analysis

In order to carry out the proper analyses, we will use two different models, difference in differences (DID) and a panel study.

On one hand, the DID model will be used in order to compare the sport centers.

On the other hand, the control panel study will be used by individual (ID of the person).

5.1. Difference in differences

The statistical model that will be used is the DID, which means Difference-In-Difference. It is used to calculate the result of a treatment through dependent and independent variables; and it takes into account the time in order to analyze the different changes that a particular issue causes in different groups.

We consider that this type of method is the adequate since it is used to assess the effect of a treatment measured over time. In our case, the behavior of the gym's users according to the gym attendance from 2019 to 2021, and a new treatment implemented in 2020. In this case, the treatment would be the new flexible strategy.

Moreover, the difference-in-difference technique will allow us to compare two differences: the differences on the user's behavior before and after the pass option, and the difference between those differences in both groups, the centers that are offering the *pass* and the centers that not.

It should be also mentioned that this method uses panel data in order to calculate the differences (multi-dimensional data including measurements over time in which the observations are for the same subjects).

5.2. Control panel study

As we have mentioned before, we have the opportunity to study and analyze the behavior by individual, since the data base was provided by user and it is chronologically organized.

For this reason, we consider that the most adequate analysis to carry out is a panel study, which provides longitudinal data on a group of people about whom information is gathered over a period of time.

6. Results

First of all, it has to be said that we used Stata to carry out all our following analysis.

6.1. Description of the results

To start with, our main objective was to observe if there is any relationship between the variable “gym attendance”, which is the number of times that each individual has been to the sport center per month, and the variable “PASS”, which represents the fact of taking or not this option (1=yes, 0=no). In order to do it, we used a regression model in which these two variables were analyzed, and we focused in all the different centers that are taking part of the analysis (which are 6 in total).

It has to be mentioned that we added a fixed effect which is the center in order to see if there were some differences in the results.

Number of observations = 156			
Pass / gym attendance	Coefficient	Positive relation	Probability value
Without a fixed effect	-17.641,54		***
With a fixed effect (center)	9,79	X	***

Figure 13. Results of the regression with and without a fixed effect

As we can see in the previous table, our data base has 156 observations, and the P-values are less than 5% (specifically 0,000) in both cases, which determines that these results are statistically significant.

When it comes to the coefficients, we can clearly see that the fact of adding the fixed effect of the center makes the relationship between the gym attendance and the PASS positive. So, the fact of having the PASS seems that it does not imply a positive effect in regards to the gym attendance but, when the fixed effect is applied, it radically changes.

Now, in order to run a deeper statistical analysis, we will do the regression model in a panel study data for considering all the observations. However, it was not possible to gather the individual information in the center of Madrid, and that is why we will omit it from now on.

Number of observations: 251.039			
Gym attendance	Coefficient	Positive relation	Probability value
PASS	2,75	X	***
PASS with Id Person	2,82	X	***

Figure 14. Results of the regression between the variables "Asistencia" and "PASS"

As we can see in the previous table, our data base has now 251.039 observations, and the P-values are less than 5% (specifically 0,000), which determines that these results are statistically significant.

If we observe the coefficient that relates the variables "Asistencia" and "PASS", the value is positive, specifically 2,75. Therefore, we can affirm that there is a positive relationship between both variables. In other words, the fact of attending the gym is 2,75 points greater if the PASS is used.

Once we knew that the connection we had in mind (PASS and gym attendance) really exists, we did a deeper analysis in order to extract clearer conclusions.

For this reason, we took advantage of having individual observations which enabled us to do a complete panel study.

Therefore, we ran an individual study in order to conclude if the people were a factor that influences the fact of taking or not the PASS.

And, indeed, if we add the variable "IdPerson" in our previous analysis and do it again, we can see that the relation between the PASS consumption and the gym attendance is now greater. Therefore, we can affirm that the variable "IdPerson" really influences the result of attending more to the gym when the PASS is taken. Specifically, the coefficient is now 2,82 positive points.

Now it is time to disaggregate more the results. In this case, we want to see the effect that the variable center had, since our hypotheses are constructed having in mind the differences between offering the PASS option or not.

Therefore, we grouped together the Barcelona centers (which will be named “1”) and, on the other side, Torrefiel and Malilla (which will be named “0”) that are the ones not offering the PASS.

We generated 2 new groups in order to separate the centers that offer the PASS to the ones not offering it. In this way, the analysis was easier.

Now, if we add the new variable created, we can see which effect has on the fact of attending more for having the PASS option.

Number of observations: 251.039			
Gym attendance	Coefficient	Positive relation	Probability value
PASS	9,99	X	***
Empresa	5,93	X	***

Figure 15. Results of the analysis with the variable center added

As we can see in the table above, the new variable generated is really a big influence on the first result that determines that the variable PASS implies a higher number of attendances. Specifically, it increases 5,93 points. Moreover, it has to be mentioned that this result is statistically significant since the P-values are all greater than 5% (0,000).

Finally, the last variable that we wanted to observe in detail was the time. In this case, we created 2 different groups that determines when the PASS option is offered or not. We called the new variable “after”, being a 1 when the years are 2020, 2021 and 2022 and, if the variable after is “0” refers the year 2019, since the PASS was not offered yet. In this way, we have both moments separated, which is essential in our study.

Moreover, we generated a new variable called “delta” in order to link the variable of time (*after*) and the center (*empresa*). In this way, we were ready to run the next step.

Number of observations: 251.039			
Gym attendance	Coefficient	Positive relation	Probability value
PASS	9,99	X	***
Empresa	6,2	X	***
After	-0,33		***

Figure 16. Regression model with the variable "after" added

As we can observe on the table, the variable of time has a negative effect on the main result. We can see that the fact of being 2020, 2021 and 2022 makes the number of attendances decreases on 0,33 points. However, this change makes the variable "empresa" increase 1 point (from 5 to 6 points). Moreover, it should be pointed out that the p-value is less than 5%, which means that the results are statistically significant.

Finally, we generated the variable "time" in order to see the reason why it had a negative effect. So, the variables "Year" and "Month" were linked.

Number of observations: 251.039			
Gym attendance	Coefficient	Positive relation	Probability value
PASS	1,03	X	***
Empresa	5,87	X	***
Time	-0,00		***
PASS with "time"	-17.641,54		***

Figure 17. Regression model with the variable "time" added

As we can observe on the results given, the variable "after" was capturing a downward temporal trend, which means that the later it is, the lower will be the number of attendances per month, but this fact does not depend on the fact of taking the PASS or not. And that is why we will omit it and we will not have it into consideration.

6.2. Interpretation of the results

In order to interpret our results, we should focus on our main hypothesis, which is the following one: *“The presence of a more flexible fee in sport centres will imply a higher number of entrances in the respective gyms.”*

As we have exposed on the previous section, we can corroborate that the variables “PASS” and “gym attendance” are related. Specifically, the fact of having the PASS increases the gym attendance 2,82 points. In other words, the percentage rises 0,0282.

However, if we disaggregate the results in other variables, we should point out that the important variables are the centre and the people.

Regarding the centre, it means that being the one that offers the PASS or not, really matters on the relationship between the gym attendance and the PASS, which makes perfectly sense.

In the case of the people, it also makes sense that doing the analysis by individual makes a difference when it comes to the main relation studied, since the fact of taking the PASS option or not is made by each gym user.

On the other hand, the time is not a variable that influences the link between the PASS consumption and the gym attendance, since we have seen that there is a general downward trend independently to the PASS.

7. Conclusions

To the best of our knowledge, this paper provides the first empirical evidence regarding the effect of a flexible strategy in sports centers.

Looking back to our main objective, the main purpose of this study was to determine whether a positive causal relation exists between a system that makes the feeling of obligation more flexible in a time where there are already many restrictions and the gym attendance.

Once a deep analysis has been finished thanks to the data base of a real Spanish company, we can determine that the fact of offering an special Pass that allows the user to go to 3 different centers and, therefore, be able to choose between a larger range of activities, helps to increase the customers' loyalty.

As we have exposed on the previous section, after carrying out a deep analysis, we can clearly corroborate that the variables "pass" and "gym attendance" are related. Therefore, the new strategy applied by the company analysed has a positive effect when it comes to gym attendance. Specifically, the fact of taking the option *pass* increases the gym attendance 2,82%.

Moreover, since we disaggregate the results in other variables, we should point out that the important factors that also influence the fact of attending to the gym are the centre and the people.

According to the centre, it refers that being the one that offers the flexible strategy or not really matters on the relationship between the gym attendance and the PASS, which makes sense.

On the other hand, having had into account the variable "people" has had also a positive impact on the relationship between the gym attendance and the flexible strategy, since the fact of taking the PASS option or not is made by each gym user.

Thereby, as it was firstly stated, having more availability to organize the time of each private life is a very appreciated factor by human resources, and not only is it working for the labor flexibility but also for the customers of a service.

After having finished the study, we can corroborate that the customers mentality works in the same way that the employees one when it comes to the freedom of choosing. In this case: the individual choice of the place.

Thus, the fact of giving the customers the choice of the activity type they can do and in which center they can go (paying the same amount of money), increases their commitment since it empowers them.

In conclusion, what can be extracted from this project is that offering a fee which implies flexibility is an efficient option for sport centers.

Nowadays, after having lived the Covid-19 pandemic with a lot of restrictions and insecurities, we can affirm that people are giving priority to flexibility and security in this field.

And, to finish with, after having proved that flexibility is a possible solution for problems of loyalty and engagement, it should also be considered in other sectors. If it works on the fitness industry, why should not it work in others?

In the end, people's behaviour after the Covid-19 pandemic's restrictions has made a radical change and having less limitations is nowadays really appreciated.

8. Recommendations

Looking back to our main goal, we were wondering if the fact of increasing the possibilities could be a solution for having more sales and engaging the customers in a service.

After having finished the study, we can now confirm that a flexible strategy really makes a difference when it comes to the customers' loyalty of sports centres.

Therefore, we suggest to use the flexible strategy in other areas of the sports centres. Since it is really working on the fitness industry, we think that using this concept in other sections would also be a good alternative. At the end, we refer to open the range of possibilities as much as possible, so giving the customer the maximum power of decision when it comes to the sport centre. For instance, having the possibility to choose within a bigger range of monthly fees, the specific activities the user wants to do, etc.

Another suggestion would be to use a flexible strategy in other sports. Since it has been proved that a flexible strategy works on the fitness industry, we think that applying a similar strategy in other sports companies could also be interesting.

Finally, for future extensions of the present paper or other related studies, we consider that using a similar flexible strategy could also work in the shopping industry. Nowadays, in some shops of Vallès Occidental region, a strategy that allows the person to buy in different shops of the area through the same ticket is being used. Therefore, we suggest to extend this strategy and bring it to other services and sectors.

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11. Annex

Table 9. Schedule of the thesis work

TASK	November	December	January	February	March	April	May	June
Meeting with tutor								
Literature review								
Structure of the thesis								
Theoretical framework								
Methodology								
Scientific relevance								
Research questions								
Delivery of report 1		30						
Methodology extension								
Data collection								
Data organisation								
Delivery of intermediate report to the tutor					2			
Data analysis								
Interpretation of the data								
Hypothesis explanation								
Final buffer delivery					16			
Presentation preparation								
Monitoring court					23,24,25			
Conclusions								
Delivery of final report to the tutor								6
Respective changes								
Final review								
Fine memory delivery								20
Presentation preparation								
Final courts								28,29,30

Table 10. San Antón data

	2019			2020			vs 2019	2021			vs 2020
	New	Dropouts	Total subscribers	New	Dropouts	Total subscribers		New	Dropouts	Total subscribers	
January	221	205	2.301	203	233	2.212	96%	260	227	1.721	78%
February	203	233	2.350	298	249	2.261	96%	293	162	1.852	82%
March	266	247	2.369	150	0	2.411	102%	304	170	1.986	82%
April	201	233	2.337	0	27	2.384	102%	287	191	2.082	87%
May	209	242	2.304	0	80	2.304	100%	238	243	2.077	90%
June	198	410	2.092	0	645	1.659	79%	243	341	1.979	119%
July	196	295	1.993	225	333	1.551	78%	147	314	1.812	117%
August	219	247	1.965	205	95	1.661	85%	253	176	1.889	114%
September	396	139	2.222	323	200	1.784	80%	615	210	2.294	129%
October	367	221	2.368	258	259	1.783	75%	316	231	2.379	133%
November	228	258	2.338	174	220	1.737	74%	240	259	2.360	136%
December	126	257	2.242	130	179	1.688	75%	131	168	2.323	138%
Averages	236	249	2.240	164	210	1.953		277	224	2.063	

Table 11. Torrefiel data

	2019			2020			vs 2019	2021			vs 2020
	New	Dropouts	Total subscribers	New	Dropouts	Total subscribers		New	Dropouts	Total subscribers	
January	122	71	1.749	115	97	1.459	83%	46	90	756	52%
February	91	47	1.637	137	140	1.632	100%	0	7	749	46%
March	84	74	1.647	61	136	1.557	95%	68	49	768	49%
April	96	93	1.650	0	11	1.562	95%	81	33	816	52%
May	139	180	1.609	0	15	1.551	96%	91	52	855	55%
June	115	214	1.510	42	283	1.328	88%	110	82	883	66%
July	175	134	1.551	84	175	1.195	77%	142	98	927	78%
August	142	167	1.526	76	174	1.126	74%	129	125	931	83%
September	211	190	1.547	187	151	1.162	75%	261	104	1.088	94%
October	179	131	1.595	90	183	1.069	67%	123	139	1.072	100%
November	65	160	1.500	43	136	979	65%	103	82	1.093	112%
December	52	111	1.441	17	122	879	61%	39	161	971	111%
Averages	123	131	1.580	71	135	1.291		99	85	909	

Table 12. Malilla data

	2019			2020			vs 2019	2021			vs 2020
	New	Dropouts	Total subscribers	New	Dropouts	Total subscribers		New	Dropouts	Total subscribers	
January	281	179	4.397	398	259	4.887	111%	65	223	1.949	40%
February	212	254	4.355	248	309	4.826	111%	1	41	1.909	40%
March	233	170	4.418	42	324	4.544	103%	180	55	2.034	45%
April	181	204	4.393	1	55	4.490	102%	162	134	2.062	46%
May	272	237	4.428	0	196	4.294	97%	234	122	2.174	51%
June	186	313	4.297	44	1.148	3.190	74%	169	157	2.186	69%
July	192	187	4.302	124	581	2.733	64%	153	132	2.207	81%
August	210	198	4.314	166	279	2.620	61%	293	89	2.411	92%
September	508	205	4.617	362	355	2.627	57%	831	164	3.078	117%
October	347	237	4.727	189	296	2.520	53%	253	130	3.201	127%
November	284	250	4.761	98	335	2.283	48%	242	157	3.286	144%
December	129	194	4.748	56	232	2.107	44%	68	285	3.069	146%
Averages	253	219	4.480	144	364	3.427		221	141	2.464	

Table 13. Júpter data

	2019			2020			vs 2019	2021			vs 2020
	New	Dropouts	Total subscribers	New	Dropouts	Total subscribers		New	Dropouts	Total subscribers	
January	255	182	4.186	323	156	4.602	110%	51	342	2.190	48%
February	130	222	4.094	155	175	4.420	108%	121	141	2.170	49%
March	196	201	4.089	53	224	4.238	104%	162	100	2.232	53%
April	194	222	4.061	0	20	4.221	104%	158	110	2.280	54%
May	143	181	4.025	0	100	4.003	99%	141	103	2.318	58%
June	194	234	3.992	22	604	3.497	88%	133	100	2.351	67%
July	243	163	4.072	97	423	3.376	83%	175	96	2.430	72%
August	245	146	4.171	140	171	2.937	70%	193	121	2.502	85%
September	480	192	4.459	268	285	2.933	66%	493	96	2.899	99%
October	249	173	4.535	103	332	2.704	60%	182	93	2.988	111%
November	143	167	4.511	22	175	2.551	57%	101	154	2.935	115%
December	98	174	4.435	62	132	2.481	56%	57	149	2.843	115%
Averages	214	188	4.219	104	233	3.497		164	134	2.512	

Table 14. Maresme data

	2019			2020			vs 2019	2021			vs 2020
	New	Dropouts	Total subscribers	New	Dropouts	Total subscribers		New	Dropouts	Total subscribers	
January	220	140	3.704	331	147	3.704	100%	45	264	1.958	53%
February	156	165	3.695	192	163	3.774	102%	78	113	1.923	51%
March	181	147	3.729	90	178	3.686	99%	145	88	1.980	54%
April	167	167	3.728	0	27	3.659	98%	121	95	2.006	55%
May	126	197	3.657	0	29	3.630	99%	134	107	2.033	56%
June	136	178	3.615	27	482	3.175	88%	151	119	2.065	65%
July	192	142	3.664	60	470	2.765	75%	98	98	2.065	75%
August	170	126	3.709	97	260	2.602	70%	125	91	2.099	81%
September	410	165	3.954	215	240	2.577	65%	296	128	2.267	88%
October	207	157	4.002	90	234	2.433	61%	170	169	2.268	93%
November	178	193	3.987	26	151	2.308	58%	133	146	2.255	98%
December	111	175	3.923	60	152	2.334	59%	58	120	2.193	94%
Averages	188	163	3.781	99	211	3.054		130	128	2.093	

Table 15. Bac De Roda data

	2019			2020			vs 2019	2021			vs 2020
	New	Dropouts	Total subscribers	New	Dropouts	Total subscribers		New	Dropouts	Total subscribers	
January	439	510	10.943	490	391	11.105	101%	103	623	6.075	55%
February	292	444	10.792	352	445	11.012	102%	210	282	6.003	55%
March	424	348	10.868	119	432	10.699	98%	292	257	6.038	56%
April	375	322	10.925	0	72	10.627	97%	413	196	6.255	59%
May	681	320	11.281	2	294	10.332	92%	358	199	6.414	62%
June	600	416	11.467	79	1.208	9.204	80%	670	198	6.886	75%
July	468	355	11.566	211	1.034	8.381	72%	498	260	7.124	85%
August	314	387	11.493	324	493	8.212	71%	455	371	7.208	88%
September	772	689	11.592	475	743	7.944	69%	733	455	7.486	94%
October	320	511	11.401	153	709	7.388	65%	321	342	7.465	101%
November	244	556	11.107	51	422	7.017	63%	253	415	7.303	104%
December	351	461	11.004	94	368	6.595	60%	134	336	7.101	108%
Averages	440	443	11.203	196	551	9.043		370	328	6.780	