

Management Control Decisions in Gym Services in Portugal and Brazil During Pandemic Confinement COVID-19

Accounting Information Systems Approach

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Abstract — The present research aimed to identify similarities and differences in management control decisions implemented in gyms in Portugal and Brazil in reaction to the pandemic confinement COVID-19. The theoretical approach was in the context of Information Systems (ISs). The cases of one gym in Portugal and one in Brazil were studied through a qualitative methodology using the holistic multiple case study method. Data collection was made through a content analysis and interviews with managers of both gyms. The results allow the conclusion that the global and sudden pandemic confinement COVID-19 affected management control decisions in gym services, especially the budget control which showed abnormally unfavorable deviations in income, expenses and investments. Although the studied gyms were located in different continents (Portugal and Brazil), the managers' control decisions were similar, evidencing an immediate damage containment response and short-term resilience. As for the ISs, the results showed that the instrumental usefulness of these systems implemented in both gyms was never questioned as a support to operation and decision making. But the temporary and drastic reduction in the activity of the gyms, in response to an unexpected confinement context, meant a consequent and natural reduction in their use. As for the extent of the theoretical framework, the study reinforces the weaknesses of the budgeting process in an unexpected pandemic context, on the one hand, and the interdependence between ISs and management control decisions in the gym services sector. Additionally, without questioning that interdependence relationship, it can also be interpreted that ISs have an instrumental character because they are more dependent on managers' decisions and critical junctures.

Keywords – Management accounting; gym services; Information Systems (ISs); pandemic confinement COVID-19; Portugal; Brazil; case study.

I. INTRODUCTION

The growing demand for gym services for health maintenance or body aesthetics fits into the search for increasingly healthy lifestyles. This increase in demand generates more and more supply of these services, also increasing competition in the sector [1]. In Portugal, the growth of new companies in the gyms sector was 10% in the year 2019 [2]. Brazil is among the four countries in the world with the highest number of gym users, and it is a sector that provides a strong source of income [3].

Regardless of size or market value, modern companies need control practices that assist business management through sophisticated Information Systems (ISs). Management control decisions presuppose the existence of a prior planning system so that the control function can compare execution measures with planning measures [4] [5]. A management planning and control system integrates all areas of a company, identifying goals, expected results and deviations, providing necessary information so that managers can make corrections or prove the efficiency or not of the implemented system [6].

An integrated management planning and control system is composed of different tools that work through information

technology [7] [8]. Progress in technology has made it possible to make available increasing volumes of information which is the critical resource generated by ISs, questioning the cognitive limits of managers to make decisions in light of so much information [9]. The volume of information made available by ISs influences decision performance, but this effect can be moderated by computer self-efficacy. Additionally, the ability of managers to make decisions in a given context not only moderates that influence relationship but also impacts on the performance of decisions made.

A management planning and control system identifies processes or areas of the company that need to be improved and adaptations to be made, in order to promote organizational development [6]. But, as much as the planning phase is able to anticipate scenarios, some factors are impossible to predict, requiring care in the modifications and adjustments to be made [10]. The COVID-19 pandemic is an example of an external factor that changed much of the world economy [7].

In the year 2020, a drastic reduction in turnover occurred in many business sectors, including the gym services sector worldwide. The high probability of COVID-19 contagion has forced the governments of several countries to close down nonessential business activities. The gym sector in Brazil began to suffer the direct impact of the consequences of restrictive anti-contamination measures on March 15, 2020 [11]. In Portugal, the Directorate General for Health (*Direção Geral de Saúde* – DGS), on March 14, 2020, recommended the closure of gyms throughout the country [12].

Decision-making in the socioeconomic area was negatively affected by the context of pandemic confinement by COVID-19 [13]. Due to the restrictive measures and the recommendation for social isolation, several companies saw their revenues drop and consequently debts multiply. Such a factor required managers to make abrupt corrective decisions in their planning and control systems, altering planned results and preparing for more pessimistic scenarios [14]. External factors can generate significant impacts on the entire planning and control system, forcing managers to adapt.

Under COVID-19 pandemic confinement circumstances, management decisions are more vulnerable, involve more risk, and information is more subject to processing errors. The COVID-19 pandemic created an unprecedented strain on organizational systems and managers had to make critical decisions in response [14]. Overcoming shortcomings in the timeliness of external information and the integration of data sources were organizational challenges that the COVID-19 pandemic laid most bare. Continued standardization and integration of data is essential for decision making in pandemic situations or other emergencies with similar effects.

The closure of the gyms in the pandemic caused changes in the management of companies and in the behavior of customers, with such impacts being reflected in management control indicators, as a result of the reduction in demand and the new online business models offered (video classes and virtual trainings), thus increasing competition [15]. Faced with such a disconcerting external factor, as was the case of the pandemic by COVID-19, it is important to assess its possible impacts in several domains. This context motivated the following research

question: What were the similarities and differences in management control decisions implemented in gyms in Portugal and Brazil during the COVID-19 pandemic confinement? It was considered that two cases, on different continents, would be likely to provide a broader identification of decisions.

The present study is divided into three main points. A literature review on management control in times of pandemic COVID-19 with a framework on ISs. Then, a brief exposition of the research method suitable for the two case studies. Finally, the results obtained on the management control decisions in gym services in Portugal and Brazil, during pandemic confinement COVID-19, are the support for the final theoretical discussion and the conclusion of this research.

II. LITERATURE REVIEW

Management planning and control systems can be divided into three different phases, which are planning, execution, and control [6]. There must be a well-defined connection between planning and control, so that the actions pre-established in the planning phase are feasible in the control phase. A management planning and control system assists in coordinating activities to manage resources and achieve output goals in an efficient and competitive manner. It is not possible to coordinate activities without criteria that make it possible to foresee limitations and risks, on the one hand, and to identify opportunities, on the other.

Budgets are fundamental elements for the functioning of the planning and management control system [16]. The knowledge of budget management allows managers to become more aware about the limits of the company and promotes a vision of the relationships between likely decisions, future scenarios, resources and expected final results. Budgets translate the company's strategy for one or several periods and are considered fundamental tools for the accountability of a company [6].

Planning through a budgetary process is fundamental for managers to foresee scenarios of indicators that allow, at the time of execution, to control the performance of an organization [4] [5]. Such a tool makes it possible to know how much and when it is possible to make investments and disinvestments, avoiding financial disasters and ensuring the economic health of the company [6]. Managers need to know the capacity of the resources (materials, information, and people) they manage in order to thus develop a plan that makes management feasible. Companies view a master budget of income and expenses as short-term planning, but it must also be strategic, which means aiming for long-term results. Managers' investment in ISs is associated with the effect of that investment on long-term value creation [17].

Budgets provide preconditions for subsequent control based on the goals to be achieved as planned [16]. Budgets serve as guides in the control phase, since they make it possible to evaluate the performance of the plan, ensure organizational learning, assist in decision making, foresee possible problems, provide information and improve communication in the company. The complexity of ISs poses requirements on managers when making decisions about management planning and control [18]. Working memory, inhibition, and change are dimensions of executive function that affect ISs learning.

Decisions about implementing competitive business strategies depend on the ability of available digital resources (ISs) to create economic value [19]. Digital resources are essential elements for strategic initiatives. Information technology is critical to business management, not only for alignment with the business, but also for security and privacy issues for operators [7]. Given the increasing importance in data analytics, the security of accounting ISs positively affects the financial performance of companies.

Corporate culture, in terms of use of technology-based accounting auditing tools, as well as commitment to budget planning, are inducers that drive institutional work and affect decisions about organizational change [8]. Accounting information, particularly transaction control, involving the recording of inputs and outputs, can benefit from an IS based on more graphical topologies provided by new technologies, beyond the simple presentation of numbers and accounts in financial documents [20]. Software is a key element in ISs to support managers' decision making [13].

III. RESEARCH METHODOLOGY

Given the research question, the aim of the present study is to identify similarities and differences in management control decisions implemented in gyms in Portugal and Brazil during the COVID-19 pandemic confinement. The research method adopted was the holistic multiple case study [21]. This method is typical in qualitative research and is able to describe a logical reasoning as an answer to specific research questions about contemporary social phenomena [22].

A case study is a subjective representation of the social system under study, and may reach different conclusions if conducted by different researchers [22]. The case study method produces easy-to-understand information, facilitating the understanding of the information gathered and the communication of the parties involved [21]. This method allows the researcher to delve into aspects that might be overlooked in quantitative methods, for example, as the researcher focuses on a specific case, or a small number of cases, but presents a holistic perspective.

Qualitative research is more common in the social and business sciences and less so in information technology, but there are multiple qualitative techniques and methods that can and should be encouraged to research the increasing complexity of ISs [23]. Qualitative methods have a unique ability to generate theoretical concepts that may be transferable, and eventually generalizable, to similar scenarios [8] [14] [23].

Data collection was carried out through a content analysis (websites and social networks of the gyms) and two interviews conducted in November 2020 with each of the managers of both gyms, one from Portugal and the other from Brazil. Each interview, recorded with the interviewees' permission, was conducted online via the Zoom app. The criterion for choosing the two gyms in the study was the level of availability and proximity to one of the researchers. The final wording of the recorded interviews was validated only after agreement from the interviewees, contributing to reliability and validity of the evidence [24]. The use of multiple data sources (interviews and content analysis) and the contribution of several co-authoring

researchers promotes a triangulation that enhances the research process [21] [22].

IV. FINDINGS: MANAGEMENT CONTROL DECISIONS IN GYM SERVICES IN PORTUGAL AND BRAZIL DURING PANDEMIC CONFINEMENT COVID-19

A. Brief contextualization and characterization of the gyms as case studies

In Portugal, in the year 2018, the number of people who enrolled in some type of gym represented only 6.5% of the population [25]. But the gyms sector has shown a growing trend [26]. The turnover of gyms in Portugal in the year 2019 obtained an increase of about 10% over the previous year [2]. It was expected that 85% of Portuguese gyms expected for the year 2020 a growth equal or higher than 2.5%, but the pandemic of the new coronavirus contradicted the forecasts, forcing severe adjustments in the annual planning of the companies, in an attempt to minimize the damage caused [2] [15].

Gym A (identification omitted), a franchise of a small chain of gyms, is located on the outskirts of a large Portuguese city and advertises that it provides services in various modalities of gymnastics and physical maintenance. The planning and control of sales, purchases, expenses, investments, receipts and payments is done via a master budget plan prepared at the end of each year. This operation is integrated into a common Enterprise Resource Planning (ERP) system for all the units in the gym chain, integrating all the management areas. The main threat identified was the uncertainty that the COVID-19 pandemic brought to the sector, promoting organizational instability and difficulty in predicting scenarios.

Brazil is the fourth largest country in number of students attending any licensed physical exercise facility, representing a total of 8 million customers [3]. The revenue generated by the physical activity industry in Brazil is the largest in Latin America and the third largest in the American continent, moving a total of \$2.5 billion in Brazil [3].

Gym B (identification omitted), with family-type management, is located on the outskirts of a large Brazilian city and advertises an offer of bodybuilding and aerobic activities in groups and/or individuals with differentiated support from personal trainers. In the last month of each year, this gym prepares budgets for the following year, with projections of sales, costs, expenses, payments, and receipts. For this budget planning and for general administration and control, the company has implemented an Enterprise Resource Planning system (ERP) that integrates all functional areas, including a customer management with control of entries and exits by biometric registration. The COVID-19 pandemic confinement has become the main threat identified as the biggest constraint on the company's activity.

B. Management control decisions in gyms during pandemic confinement COVID-19: main similarities and differences in managers' reactions

The unexpected COVID-19 pandemic confinement context was generalized worldwide, but the reactions of managers in terms of management control were likely to show some similarities and differences. This is because not all sectors of

activity have been affected in the same way nor in all geographical areas of the world. Gym services, as well as other activities in enclosed spaces, with many users at the same time and with a high risk of contagion, were places where management control required decisions to be made. Table 1 refers to the reactions of the manager of gym A (in Portugal) regarding management control decisions.

TABLE I. REACTIONS OF THE MANAGER OF GYM A

Perspectives	Excerpts from the interview
Financial	<ul style="list-style-type: none"> - "As income decreased, we had to reduce spending on staff (...) laying off some staff"; - "We increased spending on disinfection/cleaning to reduce clients' fear of returning to the gym. (...) there was a big reduction in spending on group classes"; - "We have postponed planned investment in the modernization of the bodybuilding equipment".
Non-financial	<ul style="list-style-type: none"> - "We prioritized social media communication with a focus on people who are at home without being able to return to the gym"; - "We conducted customer satisfaction surveys via cell phone. We also decided to reduce the annual loyalty period to half-yearly"; - "We reduced the periods of operation of the gym which before the pandemic was 24h/day because customers, fearful of COVID-19 contagion, chose to stay less time at the gym, reduce the frequency and physical exercise outdoors. (...) The dropout of customers in gym was 35%"; - "There were gym employees who were laid off, but we have made it a priority to rehire them as soon as possible, providing them with the necessary ongoing training"; - "The software we used provides statistics, spending/income projections, evaluations and performance indicators that we analyzed quarterly to assess needs".

The evidence presented in Table 1 shows decisions to contain damage and no prospects for any expansion. In financial terms, the reduction of expenses and the cancellation of investments was the answer to the drastic reduction in demand for services and income. In non-financial terms, the reduced demand for gyms services meant that managers decided to adjust by reducing supply and the underlying resources allocated.

As a way of gathering evidence to compare manager's reactions in the COVID-19 pandemic confinement context, Table 2 refers to the reactions of the manager of gym B (in Brazil).

TABLE II. REACTIONS OF THE MANAGER OF GYM B

Perspectives	Excerpts from the interview
Financial	<ul style="list-style-type: none"> - "With reduced revenue, the gym closed the 2020 results at a loss, due to the closure of much of the activity and reduction of students for fear of contagion in the gym";

Perspectives	Excerpts from the interview
	<ul style="list-style-type: none"> - "Bodybuilding equipment purchases were postponed"; - "We reduced staffing during 2020 to contain expenses"; - "We had to increase spending on disinfection"; - "We postponed investment in new class modalities (besides weight training which is our focus), new equipment and closed collective exercise rooms".
Non-financial	<ul style="list-style-type: none"> - "It was necessary to reduce spending on large sponsorships, opting for communication through email or social networks. (...) we chose to communicate through social networks, appealing to the anti-COVID-19 vaccine for a quick return of customers to the gym safely"; - "We bet on the concept of customer loyalty and conducted customer satisfaction surveys"; - "We reduced the gym's opening hours"; - "We rehired qualified staff upon the gym's return to business as the number of customers grew again and the restrictions by COVID-19 were overcome"; - "Our management software is used to prepare the master budget, held in the month of December each year, to control invoicing, purchases, expenses and investments through management software".

Interpreting Table 2, it can be seen that the manager of Gym B, similarly to the manager of Gym A, adopted a resilience response to resist in the short term and in expectation of a resumption of normal activity in the medium term. This position cancelled and postponed decisions on investment expansion projects. Financially, spending reductions sought to accompany the sudden reduction in income. Non-financially, decisions to reduce the supply of gyms and their resources were a consequence of the unexpected reduction in demand.

Since there were no significant differences, according to the evidence mentioned in the previous paragraphs, Table 3 summarizes the main similarities in the management control decisions of the two gyms studied, as managers' reactions to the COVID-19 pandemic confinement. This synthesis distinguishes information from financial and non-financial perspectives.

TABLE III. SYNTHESIS OF SIMILAR MANAGEMENT CONTROL DECISIONS IN THE STUDIED GYMS

Perspectives	Management control decisions in gyms as a response to pandemic confinement COVID-19
Financial	<ul style="list-style-type: none"> - Reduced revenue; - Increased spending on disinfection/cleaning; - Reduced operating expenses and staff salaries; - Postponement of investments in equipment and services.
Non-financial	<ul style="list-style-type: none"> - Reduction of more expensive advertising/promotions and greater use of cheaper communication via social networks (informational marketing); - Dismissal and subsequent rehiring of employees; - Reduction of service hours; - Continuity of customer satisfaction surveys; - Continued use of management software.

The results show that the sudden pandemic confinement COVID-19 affected management control decisions, particularly budget control that showed unexpected critical deviations from planning prior to the confinement. Expenditure restraint and deferral of investments reflected the reduction of gyms' activities in response to a reduction in demand. Although the study included management control decisions in reaction to the COVID-19 pandemic confinement in two gyms on two different continents, there were no significant differences. An unequivocal willingness to maintain some communication with customers (satisfaction surveys) was noted. In terms of ISs, the use of management software implemented was never questioned, but it was reduced as a function of the reduction in activity, which could be interpreted as reinforcing the instrumental nature of information technology at the service of managers' decisions and the economic and social conjunctures.

V. DISCUSSION AND CONCLUSIONS

A sudden and very significant change in environment, namely a global pandemic confinement that implies significant adjustments in the supply and demand of services, is necessarily reflected in management control decisions [5] [13]. Consequently, the use of accounting and non-accounting tools influences decision-making in the face of a budget control that presents abnormally unfavorable deviations in income, expenditures, and investments [8]. Managers' responses at critical junctures tend toward immediate damage containment and short-term resilience [7] and strategies for expansion and long-term value creation lag behind [17] [19].

The instrumental utility of ISs implemented in companies, despite always being dependent on the viability of a business, is never questioned by conjunctural changes [7]. The reduction in the use of ISs results from the decrease in activity associated with a given business. It can be interpreted that these ISs, despite their interdependence in relation to decision making [7] [19], have a strongly instrumental character because they are dependent on the decisions of managers, the viability of a business and more critical conjunctures [9]. The confinement caused by pandemics or other events with similar effects create greater stress on organizational systems, forcing managers to make critical decisions based on information that is necessarily continuously updated and integrated [13] [14].

Since this is a case study of only one company in each country, the results do not allow a standardization of management control decisions in gyms, neither in Brazil nor in Portugal. Furthermore, the companies studied represent only one segment of the sports, limiting such conclusions only to the management of that gyms. The difference in organizational culture, human behavior, legislation in each country and the amount of resources available could be factors to alter the results of this study.

It is possible to make suggestions for future scientific research about the theme addressed in this study. It is suggested the study of more gyms and/or in other countries to try to extrapolate the results obtained for this sector of activity. In addition, COVID-19 pandemic post-confinement studies may also clarify the trajectories and priorities of management control in the return of companies to normal non-pandemic contexts.

ACKNOWLEDGMENT

This work was financially supported by the Research Unit on Governance, Competitiveness and Public Policies (UIDB/04058/2020) + (UIDP/04058/2020), funded by national funds through FCT – Fundação para a Ciência e Tecnologia.

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