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# Qualitative Approach for the Design Stage of a Performance Measurement System to Increase Gross Profit in Restaurants. Case Study: Hard Rock Cafe Mexico Restaurants

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## Abstract

Performance measurement systems have proven to be a useful management tool to achieve the objectives and strategic goals established by the stakeholders of an organization; the evolution in these systems' theoretical foundations has allowed the designing models to focus on the size and specific business of each company. The life cycles of a performance measurement system and the Balanced Scorecard models, Performance Prism, and Kanji's Business Excellence Measurement System were considered to establish the methodology. This research had a qualitative approach, using the collective case study's approximation with eight restaurants of the Hard Rock Café brand franchise in Mexico. The result obtained was a performance measurement system integrated with 17 indicators (results and performance) to evaluate the existing variation between the goals established in the strategy against the results obtained in the gross profit through the execution of the activities carried out in the sales process.

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**Keywords:** Restaurant management, restaurant performance measurement systems, restaurant indicators, performance measurement

## 1. Introduction

The sales strategy of a Theme Restaurant (TRs) is to attract a customer by providing service through an experience. The experience offered by them is unique and can not be replicated, and therefore, it carves a position in the minds of customers. Their strategy's basics consist of integrating a unique experience combining food and beverages that the diner will consume and creating a unique visual and sound experience event during the client stay that cannot be duplicated anywhere in the world (Heizer & Render, 2019).

Upon analyzing the financial achievements of these TRs, it has been observed that they have high revenue, and could exceed $17 million dollars/year (mdd); on average, they obtain an annual income of around $4 mdd. Besides, several TRs earn approximately 50% of their revenue by selling their store's souvenirs -an income not generated by other types of restaurants.

Maintaining the relationship between the strategy's objectives and the financial results in the TRs is a difficult one, mainly due to the high volumes of income, the number of units that a franchise can count on, the complexity of the activities, and the functions and initiatives that integrate the sales process. Additionally, it is necessary to consider the location between them since they are established exclusively in tourist destinations.

To have greater control over the revenue performance of a TR, the stakeholders of these businesses seek to understand how the activities, functions, initiatives, job roles, production skills, and the setting of strategic goals related to the sales process are executed. They understand that the data obtained permits describing, explaining, reporting, analyzing, and making informed decisions on the actions to be executed to improve the sales process and, at the same time, enhance the revenue.

### 1.1. Characteristics of theme restaurants sales process

The sales process in the TRs has particular characteristics in its execution, so it is impossible to measure it through the generic indicators that most restaurants use. Additionally, it must be considered that the sales in-store generate a substantial part of the income. In this sales process, it is necessary to make adjustments to each indicator or generate new ones to allow assertive measurement. Essentially, it is because an innovative organization requires data to increase sales, identify future opportunities, outperform forecasting, and, identify areas of improvement (Olszak et al., 2021).

Indicators to measure each of the sales process activities in a TR already exist; however, these indicators can produce an independent measurement of each activity, function, process, or initiative measured,

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limiting their analysis to executed efforts without relating them. On the other side, when including the performance measurement (PM) to evaluate the TR strategic results, indicators must be focused on the same objectives and goals to make this happen. Therefore, PM's ideal tool is the performance measurement systems (PMSs).

The main benefit of using a PMS is to obtain the most accurate possible relationship between strategy, performance, indicators, and the measurement process. Implementing a PMS in a TR makes all sales process activities possible to be oriented towards the same goal. A PMS can have different scopes during the PM process; it is even recommended that organizations that implement it for the first time do so in parts; that is, one process at a time. It usually starts with the PM in the sales process. However, the activities that are part of this process are closely related to the cost of sales, which is one of the most meaningful expenditures in restaurants and directly affects gross profit. Therefore, a restaurant's gross profit should be considered an essential financial indicator for the restaurant industry since it reflects management's ability to increase sales and keep sales costs down (Davis et al., 2000).

### 1.2. Reasons for choosing the brand Hard Rock Café

The brand Hard Rock Cafe (HRC) was selected as a case study, since for more than four decades, it has been the most representative brand of the TRs worldwide, having both its restaurants and franchises. The franchise in Mexico has eight restaurants, and acquired more franchised restaurants in the early twenty-first century, realizing revenues exceeding $ 97.5 million dollars, with a gross profit of over $ 75.9 million dollars in four years.

This franchise used different indicators as a PM tool, which misrepresented its strategic plan's execution measurement. These indicators were indistinctly called Key Performance Indicators (KPIs), when they, in fact, were additionally using Performance Indicators (PIs), Results Indicators (RIs), and Key Results Indicators (KRIs). The KPIs are the core and indicate what needs to be done to improve performance radically; these indicators focus on the aspects of performance most critical to the organization; the PIs, indicate what needs to be done and help align activities with the organization's strategy, but are not business-critical, are non-financial, and complement the KPIs; the RIs, indicate what has been done; they are a sum of activities, this group has only financial measures; they show their increases or decreases; and the KRIs, present that has been done concerning the critical success factors with financial measures, these indicators result from many critical actions in the organization and indicate whether it is leading in the right direction but cannot say what should be done. Additionally, their cover periods are long, from a month to a quarter, semester, or year (Parmenter, 2019).

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A PMS must comply with different stages in the life cycle; these five stages are: (a) evaluation or audit, (b) design, (c) implementation, (d) operation or use, and (e) actualization or update (Bourne et al., 2000; Nudurupati et al., 2011; Taticchi et al., 2012). The scope of the research is focused on the stage of design. Therefore, this research aimed to design a PMS that allowed measuring the performance of the process in the HRC brand TRs but focused on the benefit of gross profit without changing the process. This focus on the gross profit is the second innovative contribution. The PMS design and the indicators' design are the third and fourth innovative contributions.

This article presents specifically the qualitative method's results of the design phase of a PMS, which consisted of six steps. The product obtained to evaluate the variation of the actual results from those established in the strategy as a goal in the gross profit in the TRs, was named PMS-BEREST.

## 2. Literature Review

### 2.1. The design stage of the life cycle of the performance measurement systems

A survey of the literature indicates that there is concern about the best way to measure and report the different activities that can improve a company's performance in business, which generates great interest in organizations to develop and deploy an effective PMS (Choong, 2013). Each PMS consists of an individual number of performance measures (Milanović, 2011), which are the vital signs that quantify how well an organization is achieving its specific goals (Seokjin & Behnam, 2008). Therefore, PM is critical for the growth and development of the companies; that is why businesses should implement a suitable PMS to assess the performance of the business (Papulová et al., 2021).

The strategic plan is designed to meet the needs of the key stakeholders (owners, clients, suppliers, personnel, and the community). Therefore, the organization's strategic goals and objectives align with those needs. Consequently, metrics building and construction are necessary to verify the performance achieved, which is one of the activities related to the design of the PMS (Elg & Kollberg, 2009).

The PMS must reflect its company's business, so it must have a specific architecture with relevant measures. Several theoretical frameworks and models with a wide range of solutions for this design are proposed in the literature, but among the most critical elements to be fulfilled are: (a) relate the strategy to the operations, (b) consider the different perspectives of the stakeholders, (c) use financial and non-financial indicators, (d) integrate external and internal parameters (Taticchi et al., 2012), (e) establish the scope of the measurement, (f) define the size of the measurement and (g) establish the range of the measures (Brem et al., 2008).

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Few PMSs do not need adjustments in their operation or are free of design flaws (Nomm & Randma-Liiv, 2012). It is mainly because many organizations select their measures from the more accessible information to obtain rather than the most helpful information (Sližytė & Bakanauskienė, 2007). Not to mention that there are also substantial difficulties for an organization to decide what to measure (Sousa & Aspinwall, 2010). On the other hand, if harmony is achieved between the measures and the established objectives in the design stage, a successful PMS will be obtained (Stančić et al., 2012).

The selection of a PM tool should be an individual process of each organization, which implies that it should be designed according to its peculiarities (Sližytė & Bakanauskienė, 2007). In a dynamic environment where rapid changes occur, it is expected that the measures of an organization will be different from those of others (Sousa & Aspinwall, 2010). Thus, the design of PMSs based exclusively on one sector has a significant acceptance gaining (Yildiz et al., 2011).

Indicators are an essential part of a PMS; as a result, the success of PMS operation depends on the design (Strecker et al., 2012). Their design should represent the organizational goal, resources, processes, and organizational roles (Bourne et al., 2000). For this reason, the result of its design must contribute to directly measuring a particular aspect of the organization's performance concerning a specific reference object (Strecker et al., 2012).

A PMS design also includes visual elements and analyzed constructs (performance measures or indicators) that permit performance measuring (Elg & Kollberg, 2009) and its variations dynamically and continuously, ensuring a reaction against internal and external changes. It will enable the company to be systematically evaluated and favor continuous improvement (Balachandran et al., 2007).

The primary purpose of dashboards and scorecards is to show several indicators in a synthesized way (Franceschini et al., 2007). This representation allows stakeholders to focus on what is most important since they represent the most relevant indicators of the organization's performance in a graphic way (Parmenter, 2019), and valuable information to make supported decisions (Kerzner, 2017). According to Parmenter (2019), for the dashboard or scorecard to achieve its objective, it must be considered that the type of graphic chosen conveys the appropriate message that the indicator is trying to inform.

Several theoretical frameworks and models for designing a PMS have been published, contributing to the existing scientific knowledge. However, non of the universal PMS can solve PM problems in an organization, as they also have limitations (Berumen M. et al., 2019).

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The following models were used as the basis of the methodology of the research presented in this article to design the PMS-BEREST: Balanced Scorecard (BSC), Performance Prism (PRISM), and Kanji's Business Excellence Measurement System (KBEMS).

The BSC, a model designed by Kaplan and Norton (1992) was the most relevant PMS of the 90s (Mirela-Oana, 2012), considered the most influential and dominant tool in the field of PM of that period (Marr & Schiuma, 2003). This theoretical framework has been the most cited study and has received the most attention in this field since its publication, being successfully applied in various industries (Taticchi et al., 2012).

The model increased its relevance under the idea that no single indicator can capture the complexity of an organization's performance (Watts & McNair-Connolly, 2012). It was designed to be a holistic model used at different levels and across the entire organization, team, or working group (Vouldis & Kokkinaki, 2012).

The BSC looks at the organization from four perspectives: (a) financial, (b) customer, (c) internal processes, and (d) learning and innovation (Watts & McNair-Connolly, 2012). Initially, the authors identified the need to guarantee performance in their model's four perspectives, giving equal weight to all of them and relating them explicitly to the strategy's vision (Neely, 2004; Watts & McNair-Connolly, 2012); this demonstrated balance. It means having equality between short and long-term goals, between data inputs and outputs, between internal and external performance factors, and between the use of financial and non-financial indicators. Thus, they achieved a flexible system within the established strategy (Striteska & Spickova, 2012).

Another significant contribution of the BSC was introducing strategic maps to establish cause-effect relationships between strategic objectives (Quezada et al., 2007, Bo et al., 2017). To develop a strategic map for the BSC, first, metrics for each objective are selected to establish the causal relationships between objectives and measures (Kaplan, 2010).

The PRISM model was proposed by Neely and Adams (2001), who would be joined a year later by Mike Kennerley (Neeley et al., 2002a). The authors unified the most relevant models and theoretical frameworks exposed to date to develop the model, taking their strengths and overcoming their weaknesses (Liu et al., 2018).

The main difference between the other models and the PRISM is that it begins by considering the satisfaction of the stakeholders' interests (Sližytė & Bakanauskienė, 2007) regarding the shareholders' needs (Neely, 2004). For this reason, the strategy implementation exclusively relates to the moment in which the needs of consumers are sought (Sližytė & Bakanauskienė, 2007). From this, PM starts throughout the organization with a model that considers

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five interrelated perspectives (Neely et al., 2002a): (a) stakeholders, (b) strategies, (c) processes, (d) capacities, and (e) stakeholder contribution.

The PRISM model stands out because it incorporates a theoretical framework to design performance measurement and management systems structures (Taticchi et al., 2008). The model's architecture is presented graphically by a three-dimensional prism, where each face corresponds to a perspective (Neely et al., 2002a). Different additional levels of detail are obtained for each face and the relationships between them; the strategy is deployed from top to bottom, considering the stakeholders previously. One interesting point about PRISM is that it is not a recipe for designing a PMS. Its development is based on forming groups of measures using strategic maps to identify the objectives and performance drivers of the prism's five perspectives (Vouldis & Kokkinaki, 2012).

At last, KBEMS, the model designed by Kanji (2002), explains PM's importance in organizations and reveals what he considers to be the drawbacks of the PMSs used up to that time, which is why he proposed the KBEMS.

KBEMS is designed to demonstrate whether the organization is measuring performance from an internal perspective and the stakeholders' point of view (Kanji, 2002), focusing on measuring all critical success factors' excellence. As a result, the organizational excellence performance index is obtained (Striteska & Spickova, 2012; Metaxas & Koulouriotis, 2019).

This system is made up of two parts: A and B, which must always be applied simultaneously to easily visualize the organization's global performance (Striteska & Spickova, 2012). According to Kanji (2002), part A is made up of elements that, to be successful, require the commitment of the organization's leaders, who must be the driving force behind quality improvement and business excellence. Part B is also integrated by critical success factors, where organizational values become central to achieving excellent performance. Process excellence, organizational learning, and stakeholder delight must be accomplished to reach the desired performance.

Each element in parts A and B represents a latent variable, which is measured individually by the group of variables they represent (Sousa & Aspinwall, 2010). A maximum value of 10 is assigned to each critical success factor in parts A and B. A sum of each part should be done and after an average of both parts. This final average of the PM is multiplied by 10 to generate the score that will place the organization in three performance certification schemes: (a) premier certification, between 500 and 651 points, (b) preferment certification, between 651 and 800 points, (c) paramount certification, which is the highest level that can be achieved; its minimum score is 801 points (Kanji, 2002).

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## 2.2. Performance measurement in the sales process of restaurants

Performance measurement has the objective of quantifying the performance achieved; it shows whether it is above or below the strategic goal established by the organization, describes the deviations, allows assertive correction, and maintains continuous improvement (Striteska & Spickova, 2012). For the performance measurement to achieve its purpose requires the use of indicators (key performance indicators, performance indicators, key result indicators, and result indicators), group of indicators (GIs), and performance measurement systems (PMSs). However, the more indicators are integrated, the broader the scope of the performance measurement will be, which means the results can be assured using a PMS by the organization (Mirela-Oana, 2012).

In the restaurant industry, the performance measurement of the sales process predominates through the use of indicators individually; likewise, most articles and books' explanations in the literature and theory on restaurant management, not by PMS or GIs; likewise, most articles and books explanations in the literature and theory on restaurant management, not by PMS or groups of indicators. Among the most commonly used indicators to measure the sales process are: (a) number of diners, customers, or guests (Gallego, 2008), (b) number of covers, (c) average expenditure per cover (Dittmer & Keefe III, 2009), (d) number of transactions, (e) average check or amount per dinner, (f) sales volume, (g) net income, (h) installed capacity (Cousins et al., 2019), (i) average spend per diner or average sale per customer, (j) sales mix, (k) seat turnover per shift, (l) sale per available seat in the period (Davis et al., 2012), (m) sale per hour of operation, (n) sale per employee, (o) number of diners per waiter, (p) sale per table (KPI Institute, 2012c), (q) ratio of food or beverage to total sales (Schmidgail, Hayes, & Ninemeir, 2002), and (r) discount level (Jin et al., 2010).

Some organizations do not manage to implement a PMS, but they can align different indicators to form GIs with which they seek to represent and regulate the specific functions of a process (Franceschini et al., 2007). In the case of the restaurant industry, the Revenue Per Available Seat Hour (RevPASH) can be considered a GIs, since it is integrated by four indicators to measure the restaurant's revenue (KPI Institute, 2012c), the indicators used are: (a) available seats per hour, (b) volume of available seats per hour, (c) number of hours of operation, and (d) average spend per diner (Kimes et al., 2012).

Following one of the trends of the last decade in the design of PMSs, there is a need to use specific indicators related to the performance of each specific industry sector to meet their information needs, so the KPI Institute designed the Restaurant Performance Management System Toolkit as a PMS for restaurants (KPI Institute, 2021). This system was formed at its base to run

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the performance measurement by the indicators proposed by this institute in its publication "Top 25 restaurant KPI´s of 2011-2012" (KPI Institute, 2012c). This PMS was designed based on the four perspectives proposed by the BSC model. The system explains the processes and connections between them; and, at the same time, it also presents the graphic visualization of the results obtained by the indicators in a scorecard.

## 3. Case study: The Hard Rock Cafe Mexico restaurant franchise

In Mexico, the brands of the most representative TRs in the United States were legally owned by a single company for 24 years, Grupo ECE S.A. de C.V. (being the exclusive franchisee in Mexico of HRC, PH, RFC, and Official All-Star Café) (Bolsa Mexicana de Valores [BMV], 2007). The HRC brand opened restaurants in different cities in Mexico: Acapulco was the first (1989), followed by Puerto Vallarta (1990), Tijuana (1992), Cancun (1992), Mexico City (1993), Cozumel (1994), Cabo San Lucas (1995) and Guadalajara (1998).

In the period from 20XA to 20XD -the following nomenclature was assigned to the years studied: 20XA, 20XB, 20XC, and 20XD to maintain data confidentiality without sacrificing scientific accuracy (American Psychological Association, 2019); 20XA is the first year, and 20XD is the last-, Grupo ECE obtained $97.5 million dollars in revenue generated by its eight restaurants. Just two units generated over 40.00% of this revenue: HRC Cancun and HRC Cabo San Lucas. Concerning the gross profit reported in the same period (20XA-20XD), the most significant contribution was obtained in HRC Cancun, the only unit that exceeded $19.1 million dollars, followed by HRC Cabo San Lucas, with $12.9 million dollars, refer to Table 1.

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**Table 1.** *Hard Rock Cafe Mexico theme restaurants revenues and gross profit in four years*

| Unit | | | 20XD | 20XC | 20XB | 20XA | Global 20XD-20XA | % |
|---|---|---|---|---|---|---|---|---|
| HRC Acapulco | HRC ACA | Revenues | $3,850 | $3,425 | $2,748 | $2,689 | $12,712 | 13.03% |
| | | *Gross profit* | *$3,034* | *$2,675* | *$2,052* | *$2,001* | *$9,763* | *12.85%* |
| HRC Cabo San Lucas | HRC CAB | Revenues | $5,608 | $4,847 | $3,537 | $2,613 | $16,605 | 17.02% |
| | | *Gross profit* | *$4,475* | *$3,820* | *$2,677* | *$1,975* | *$12,947* | *17.05%* |
| HRC Cancun | HRC CAN | Revenues | $6,572 | $5,529 | $6,210 | $6,286 | $24,598 | 25.22% |
| | | *Gross profit* | *$5,242* | *$4,350* | *$4,777* | *$4,787* | *$19,156* | *25.22%* |
| HRC Cozumel | HRC COZ | Revenues | $2,794 | $2,739 | $2,207 | $2,407 | $10,147 | 10.40% |
| | | *Gross profit* | *$2,201* | *$2,139* | *$1,679* | *$1,841* | *$7,860* | *10.35%* |
| HRC Guadalajara | HRC GDL | Revenues | $1,392 | $1,453 | $1,238 | $1,280 | $5,363 | 5.50% |
| | | *Gross profit* | *$1,118* | *$1,158* | *$950* | *$985* | *$4,212* | *5.55%* |
| HRC Distrito Federal | HRC CDMX | Revenues | $3,876 | $3,619 | $2,985 | $2,887 | $13,367 | 13.70% |
| | | *Gross profit* | *$3,127* | *$2,905* | *$2,288* | *$2,218* | *$10,538* | *13.87%* |
| HRC Tijuana | HRC TIJ | Revenues | $803 | $957 | $932 | $984 | $3,675 | 3.77% |
| | | *Gross profit* | *$646* | *$767* | *$733* | *$767* | *$2,913* | *3.83%* |
| HRC Vallarta | HRC VALL | Revenues | $3,207 | $3,315 | $2,433 | $2,122 | $11,077 | 11.36% |
| | | *Gross profit* | *$2,508* | *$2,593* | *$1,852* | *$1,610* | *$8,563* | *11.27%* |
| **Global HRC Mexico** | **HRC MEX** | **Revenues** | **$28,102** | **$25,884** | **$22,289** | **$21,268** | **$97,543** | **100.00%** |
| | | ***Gross profit*** | ***$22,351*** | ***$20,407*** | ***$17,008*** | ***$16,185*** | ***$75,951*** | ***100%*** |

Note: amounts presented in millions of dollars/1000. The results of each restaurant's revenues and gross profit were calculated with the data of the next sources: Micros software system financial report information (point-of-sale software), the annual budgets, and the evaluating results of the *Grupo ECE* budget (elaborated in Excel), and the Covers report (summary report presented in Excel).

Grupo ECE had to give up the rights to use the HRC brand in 2013, after losing a series of lawsuits against HRI. In 2015, a new company acquired the HRC franchise's rights and opened two new units in Cozumel and Cancun; and acquired HRC Playa del Carmen in 2019.

## 4. Methodology

This research was designed with a qualitative approach so that it was possible to obtain greater depth in the data. It also allows an interpretation and contextualization of the environment enriched with details of the lived experiences of organizations or units of analysis. The research is based on logic and inductive process (through exploration and description that allow theoretical perspectives) until an explanatory scope is defined, which would support the understanding of the meaning that organizations are giving to the phenomenon of interest (Crowe et al., 2011; Hernández et al., 2014).

This qualitative research's interpretative framework (or typology) was the collective case study that involved multiple cases analyzed simultaneously to generate a greater appreciation of the phenomenon: the PM (Crowe et al., 2011). Essentially, it is an instrumental study, extended to several cases that manifest some common characteristics, since a better understanding, and

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perhaps formulation, of the theory is expected (Denzin & Lincoln, 2013). That could be more extensive based on the form the selected units fit into broad constructs; actually, this theory supports them (Yin, 2009).

The sample is purpose-oriented, intending to formulate analytical generalizations derived from the study of data obtained from key informants and the documents, i.e., a case-by-case information transfer (Collins, 2010, cited by Hernández et al., 2014). For this reason, TRs of the HRC Mexico brand was chosen, a franchise that was considered an outstanding object for understanding the construct under study. The different analysis units were the eight restaurants in different parts of the Mexican Country: Acapulco, Puerto Vallarta, Tijuana, Cancun, Mexico City, Cozumel, Cabo San Lucas, and Guadalajara.

A process that was undoubtedly progressive based on the descriptive information that contributed to the inductive analysis would allow its association with the theoretical reference models (Hernández et al., 2014), BSC, PRISM, KBEMS.

To design the PMS-BEREST, a method composed of six steps was determined: (*S.1.*) Modeling the sales process in the TRs, (*S.2.*) Preparation of the strategic map of the sales process in the TRs, (*S.3.*) The base architecture was designed with the indicators, (*S.4.*) Design of the indicators, (*S.5.*) Definition of reference points, and (*S.6.*) Design of indicators life sheet.

## 5. Results

*Result S.1.* HRC TRs used six operating manuals to train staff working in their branded restaurants: busser (Hard Rock International, 2008a), kitchen (Hard Rock International, 2008b), host (Hard Rock International, 2008c), bartender (Hard Rock International, 2008d), retail (Hard Rock International, 2008e), and server (Hard Rock International, 2008f). The last four manuals contain staff activities directly related to the sales process, which affect financial results. The sales process is achieved by executing several related functions from various positions in different restaurant areas. After identifying the functions, they are assigned a code, refer to Figure 1.

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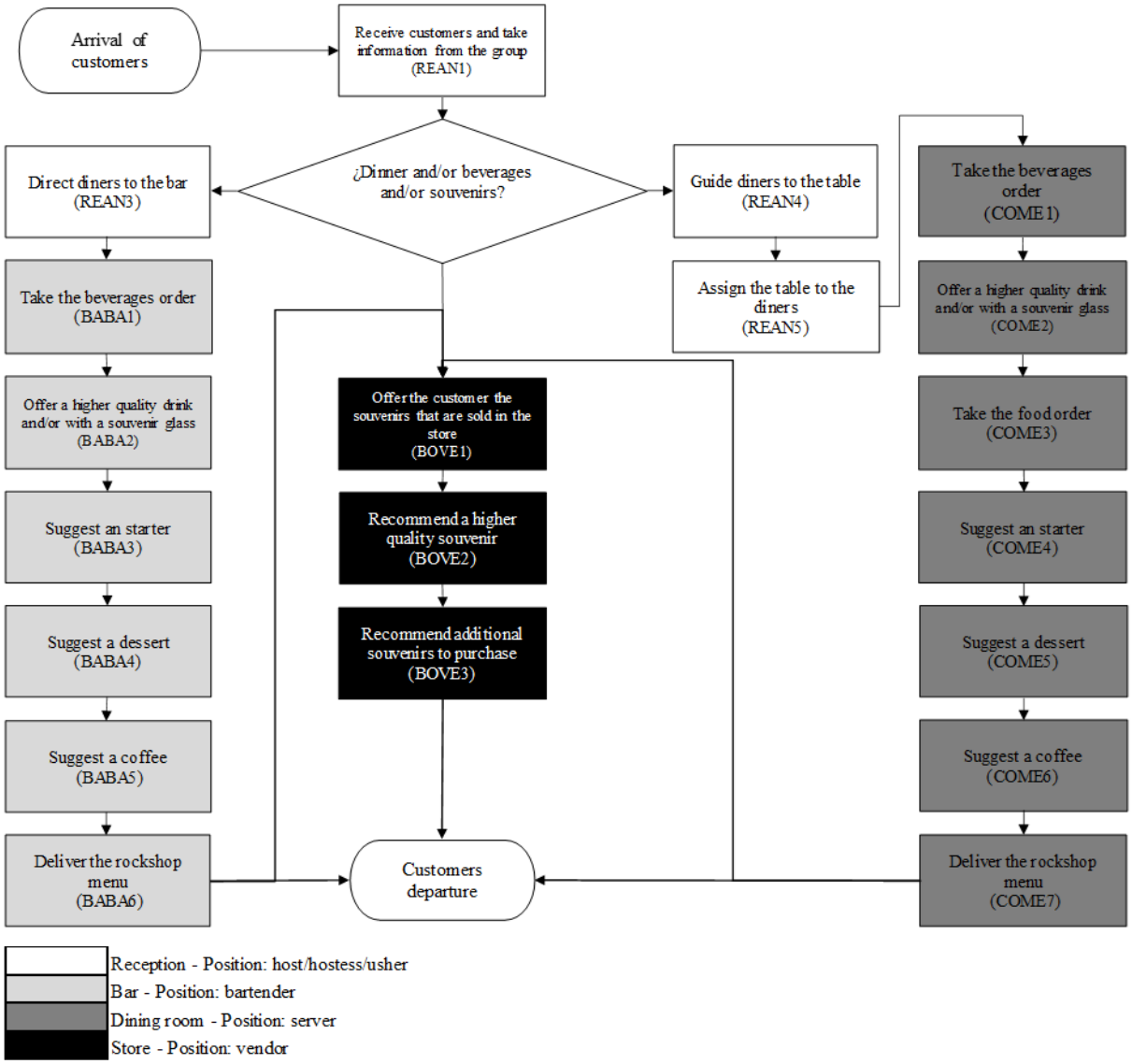


**Figure 1.** Coded flow chart of sales process activities in restaurants Hard Rock Cafe. The shades of white, gray, and black represent the areas where the various activities of the sales process are executed that have an effect on the financial results.

*Result S.2.* According to their performance perspective (finance, customers, and processes), specific strategic objectives were displayed on the strategic map. These objectives were assigned a code, refer to Figure 2.

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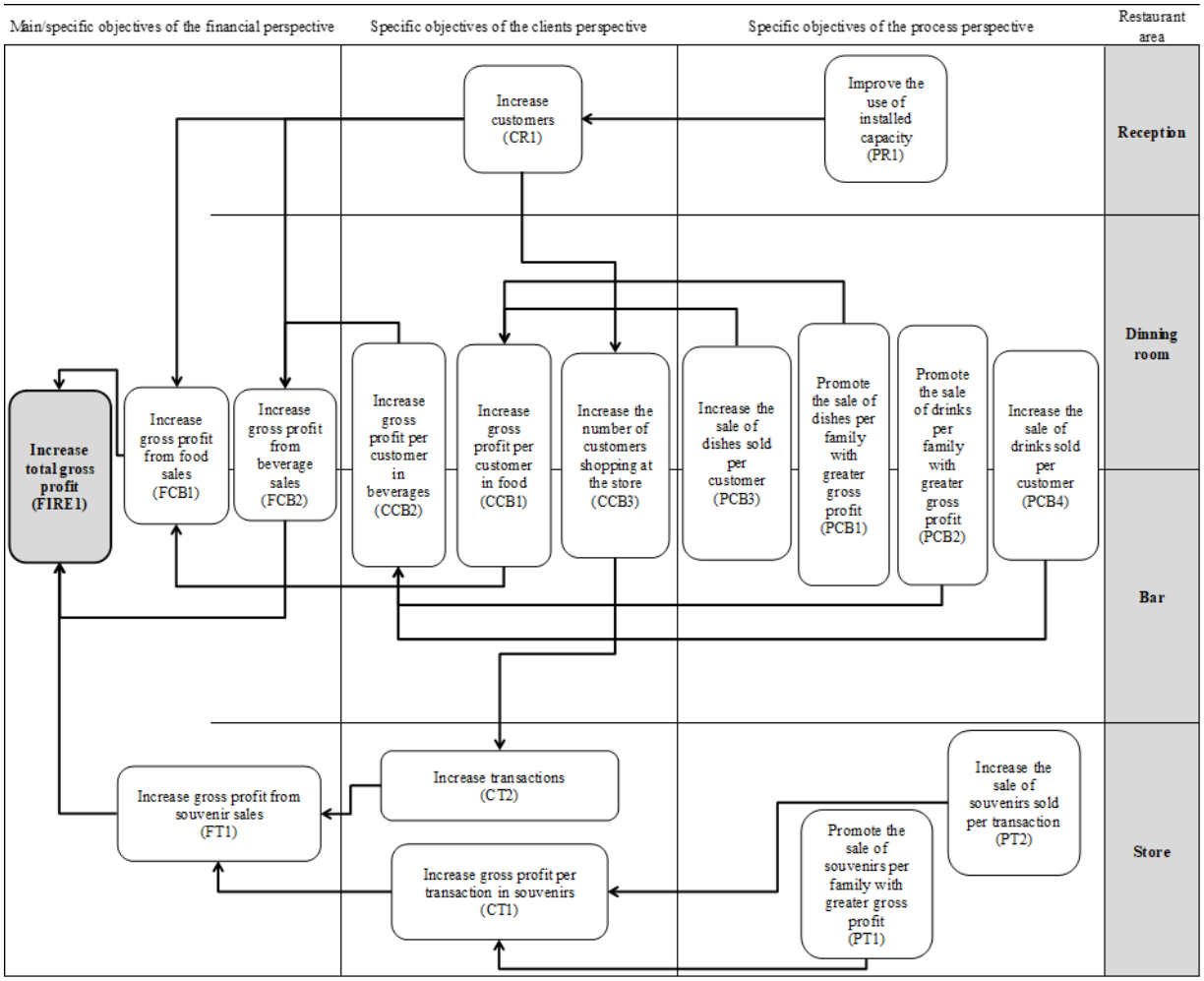


**Figure 2.** Main objective related to specific objectives by performance perspective and operating area.

As a next step, the specific objectives were aligned with the sales process activities; an indicator and its corresponding type were assigned to each relationship, refer to Figure 3.

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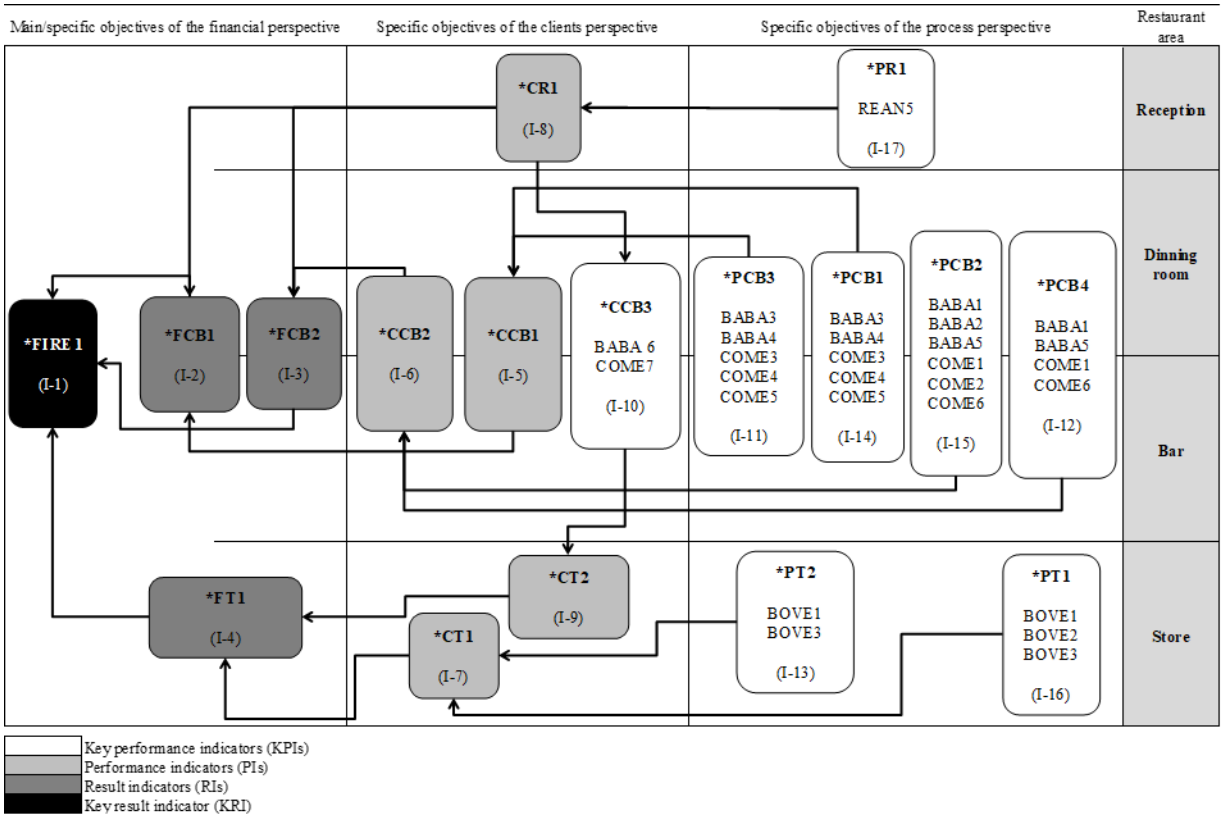


**Figure 3.** Codification of the specific and main objectives, activities of the sales process, and indicators that will measure their performance. The codes in bold with * refer to the specific objectives and the main objective. The codes without * and parentheses refer to the activities carried out by the staff during the sales process (some activities can contribute to meeting two objectives). The acronyms of the indicators proposed to integrate the PMS are: (I-1) % var TGP, Total Gross Profit Variation; (I-2) % var FGP, Variation of Gross Profit in Food; (I-3) % var BGP, Variation of Gross Profit in Beverages; (I-4) % var SGP, Variation of Gross Profit in Souvenirs; (I-5) $ diff PCF, Gross Profit Difference per Cover in Food; (I-6) $ diff PCB, Difference of Gross Profit per Cover in Beverages; (I-7) $ diff PT, Difference of Gross Profit per Transaction; (I-8) # diff C, Covers Difference; (I-9) # diff T, Difference of Transactions; (I-10) # diff RTC, Difference in the Transactions/Covers Ratio; (I-11) # diff FPC, Difference in Food Perfect Cover; (I-12) # diff BPC, Difference in Beverages Perfect Cover; (I-13) # diff ST, Difference of Souvenir per Transacion; (I-14) % var MPF, Variation of Maximization of Profit in Food; (I-15) % var MPB, Variation of Maximization of Profit in Beverages; (I-16) % var MPS, Variation of Maximization of Profit in Souvenirs; (I-17) % diff UC, Difference in Used Capacity.

*Result S.3.* Using the strategic map allowed the design of the PMS-BEREST architecture to be obtained; it also made it possible to distinguish which indicators make it up, refer to Figure 4.

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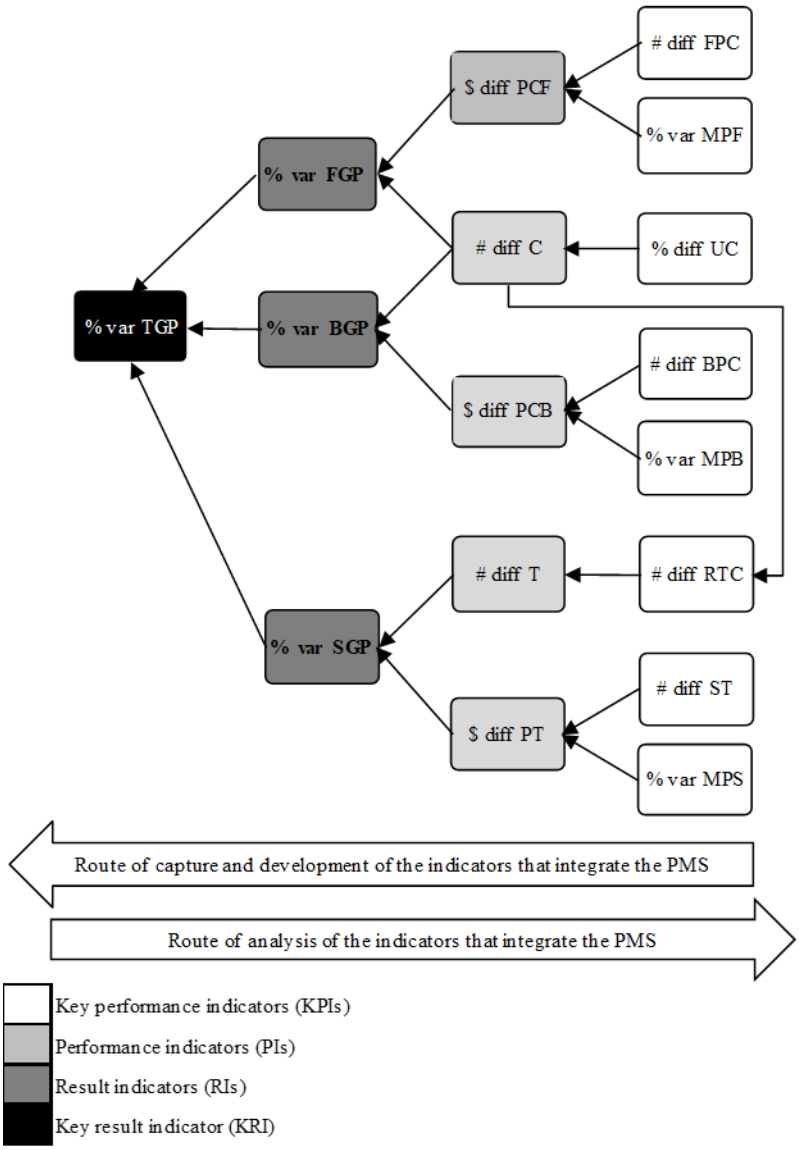


**Figure 4.** Structure of the PMS-BEREST. % var TGP, Total Gross Profit Variation; % var FGP, Variation of Gross Profit in Food; % var BGP, Variation of Gross Profit in Beverages; % var SGP, Variation of Gross Profit in Souvenirs; $ diff PCF, Gross Profit Difference per Cover in Food; # diff C, Covers Difference; $ diff PCB, Difference of Gross Profit per Cover in Beverages; # diff T, Difference of Transactions; $ diff PT, Difference of Gross Profit per Transaction; # diff FPC, Difference in Food Perfect Cover; % var MPF, Variation of Maximization of Profit in Food; % diff UC, Difference in Used Capacity; # diff BPC, Difference in Beverages Perfect Cover; % var MPB, Variation of Maximization of Profit in Beverages; # diff RTC, Difference in the Transactions/Covers Ratio; # diff ST, Difference of Souvenir per Transaction; % var MPS, Variation of Maximization of Profit in Souvenirs.

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*Result S.4.* Design of the indicators. The results obtained from the indicators' design with the components that would apply in the same way during the PM equally for each indicator were integrated into the generic information record sheet, refer to Table 2.

**Table 2.** *Generic information for the indicator record sheet*

| | | | |
|---|---|---|---|
| **Indicator general information** | | | |
| Industry | Restaurant | | |
| Subcategory | Casual restaurants / Theme restaurants | | |
| Type of data | Quantitative | | |
| Period of validity | Anual | | |
| Periodicity | Register: Diary<br>Report: Diary | | |
| Responsible for measurement | Strategic: Manager of Corporate Financial Analysis<br>Operative: Assistant General Manager of each HRC restaurant | | |
| **Performance measurement at the corporate / divisional strategic level** | | | |
| Owner of the corporate indicator | Grupo ECE Chief Executive Officer | Inside stakeholders | Grupo ECE: (a) Chief Financial Officer, (b) Chief Operational Officer, and (c) Chief Strategy Officer |
| Owner of the divisional indicator | Grupo ECE Chief Operating Officer | Outside stakeholders | HRI: (a) Vicepresident of Operations, and (b) Director of Latin America Operations |
| **Performance measurement at a functional / operational strategic level** | | | |
| Owner of the functional indicator | Operations Manager of the HRC Mexico brand | Inside stakeholders | Restaurants HRC Mexico: (a) Area Operational Managers, y (b) Operating staff |
| Owner of the operating indicator | General Manager of each restaurant in the HRC Mexico franchise | Outside stakeholders | HRI: Director of Latin America Operations |
| **General variables in the goal of the indicators** | | | |
| *% LR = % of low outstanding range limit* | % LR = The policy of the strategy in which it is declared in what percentage of 100% of the budget result from the maximum range of the low outstanding range will be established | | |
| *% MR = % of moderate outstanding range limit* | % MR = The policy of the strategy in which it is declared in what percentage of 100% of the budget result from the maximum range of the moderate outstanding range will be established | | |

The results corresponding to each indicator were integrated into their specific record sheet. The % var TGP (Total Gross Profit Variation) indicator measures the result of the total gross profit account obtained by the execution of the activities of the sales process in the reception, dining room, bar, and boutique areas of the restaurant; it calculates the variation that exists between the actual total gross profit against the total budgeted gross profit, and against the maximum possible total gross profit, refers Table 3.

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**Table 3.** *Specific information for the indicator record sheet % var TGP*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Total Gross Profit Variation | Relationship with other indicators in other perspectives: | Financial: % var FGP, % var BGP and % var SGP |
| Abbreviation: | % var TGP | | Clients: - |
| Functional area: | Restaurant | | Processes: - |
| Indicator type: | KRI | Graphics Type: | Stacked bars |
| Performance perspective: | Financial | | Arrow icons with chart |
| Measurement focus: | Money | Result in: | Percentage |

**Calculation**

**Result formula**

*% var TGP = (TGP actual / TGP budget) - 1*

**Output formula**

$TGP\ actual = \sum FGP\ actual + \sum BGP\ actual + \sum SGP\ actual$

$TGP\ budget = \sum FGP\ budget + \sum BGP\ budget + \sum SGP\ budget$

| **Variables** | **Data source** |
|---|---|
| *Σ FGP actual, Σ BGP actual and Σ SGP actual* | Profit and Loss Statement of each HRC restaurant |
| *Σ FGP budget, Σ BGP budget and Σ SGP budget* | Annual budget of each HRC restaurant |

Note: TGP, Total Gross Profit; KRI, Key Result Indicator; FGP, Food Gross Profit; BGP, Beverages Gross Profit; SGP, Souvenirs Gross Profit; var, variation.

The % var FGP (Variation of Gross Profit in Food) indicator measures the result of the food gross profit account obtained by the execution of the sales process activities in the dining room and bar areas of the restaurant; it calculates the variation between the actual gross profit in food versus the budgeted gross profit in food, and against the maximum possible gross profit in food, refer Table 4.

**Table 4.** *Specific information for the indicator record sheet % var FGP*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Variation of Gross Profit in Food | Relationship with other indicators in other perspectives: | Financial: % var TGP |
| Abbreviation: | % var FGP | | Clients: # diff C and $ diff PCF |
| Functional area: | Restaurant | | Processes: - |
| Indicator type: | RI | Graphics Type: | Stacked bars |
| Performance perspective: | Financial | | Arrow icons with chart |
| Measurement focus: | Money | Result in: | Percentage |

**Calculation**

**Result formula**

*% var FGP = (FGP actual / FGP budget) - 1*

**Output formula**

$FGP\ actual = \sum (PCF\ actual * C\ actual)$

$FGP\ budget = \sum (PCF\ budget * C\ budget)$

| **Variables** | **Data source** |
|---|---|
| *FGP actual* | Profit and Loss Statement of each HRC restaurant |
| *PCF actual and C actual* | System financial report of each HRC restaurant |
| *FGP budget, PCF budget and C budget* | Annual budget of each HRC restaurant |

Note: FGP, Food Gross Profit; RI, Result Indicator; TGP, Total Gross Profit; C, Covers; PCF, Gross Profit per Cover in Food; var, variation; diff, difference.

The % var BGP (Variation of Gross Profit in Beverages) indicator measures the result of the beverages gross profit account obtained by the

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execution of the sales process activities in the dining room and bar areas of the restaurant; it calculates the variation between the actual gross profit in beverages versus the budgeted gross profit in beverages, and against the maximum possible gross profit in beverages, refer Table 5.

**Table 5.** *Specific information for the indicator record sheet % var BGP*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Variation of Gross Profit in Beverages | Relationship with other indicators in other perspectives: | Financial: % var TGP<br>Clients: # diff C and $ diff PCB<br>Processes: - |
| Abbreviation: | % var BGP | | |
| Functional area: | Restaurant | | |
| Indicator type: | RI | Graphics Type: | Stacked bars<br>Arrow icons with chart |
| Performance perspective: | Financial | | |
| Measurement focus: | Money | Result in: | Percentage |

| **Calculation** | |
|---|---|
| **Result formula** | |
| *% var BGP = (BGP actual / BGP budget) - 1* | |
| **Output formula** | |
| *BGP actual = ∑ (PCB actual * C actual)* | |
| *BGP budget = ∑ (PCB budget * C budget)* | |
| **Variables** | **Data source** |
| *BGP actual* | Profit and Loss Statement of each HRC restaurant |
| *PCB actual and C actual* | System financial report of each HRC restaurant |
| *BGP budget, PCB budget and C budget* | Annual budget of each HRC restaurant |

Note: BGP, Beverages Gross Profit; RI, Result Indicator; TGP, Total Gross Profit; C, Covers; PCB, Gross Profit per Cover in Beverages; var, variation; diff, difference.

The % var SGP (Variation of Gross Profit in Souvenirs) indicator measures the result of the souvenirs gross profit account obtained by the execution of the sales process activities in the store of the restaurant; it calculates the variation between the actual gross profit in souvenir versus the budgeted gross profit in souvenirs and against the maximum possible gross profit in souvenirs, refer Table 6.

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**Table 6.** *Specific information for the indicator record sheet % var SGP*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Variation of Gross Profit in Souvenirs | Relationship with other indicators in other perspectives: | Financial: % var TGP<br>Clients: # diff T and $ diff PT<br>Processes: - |
| Abbreviation: | % var SGP | | |
| Functional area: | Store of the restaurant | | |
| Indicator type: | RI | Graphics Type: | Stacked bars<br>Arrow icons with chart |
| Performance perspective: | Financial | | |
| Measurement focus: | Money | Result in: | Percentage |

**Calculation**

**Result formula**

*% var SGP = (SGP actual / SGP budget) - 1*

**Output formula**

*SGP actual = ∑ (PT actual * T actual)*

*SGP budget = ∑ (PT budget * T budget)*

| **Variables** | **Data source** |
|---|---|
| *SGP actual* | Profit and Loss Statement of each HRC restaurant |
| *PT actual and T actual* | System financial report of each HRC restaurant |
| *SGP budget, PT budget and T budget* | Annual budget of each HRC restaurant |

Note: SGP, Souvenirs Gross Profit; RI, Result Indicator; TGP, Total Gross Profit; T, Transactions; PT, Gross Profit per Transaction; var, variation; diff, difference.

The $ diff PCF (Gross Profit Difference per Cover in Food) indicator measures the resulting gross profit in food for each restaurant cover, generated by the sales activity focused on offering the products with the highest gross profit margin of each food family; It calculates the difference between the actual profit per cover in food versus the profit per cover in budgeted food and against the maximum possible profit per cover in food, refers Table 7.

**Table 7.** *Specific information for the indicator record sheet $ diff PCF*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Gross Profit Difference per Cover in Food | Relationship with other indicators in other perspectives: | Financial: % var FGP<br>Clients: -<br>Processes: # diff FPC and % var MPF |
| Abbreviation: | $ diff PCF | | |
| Functional area: | Dining room and bar | | |
| Indicator type: | PI | Graphics Type: | Lines<br>Arrow icons with chart |
| Performance perspective: | Clients | | |
| Measurement focus: | Money | Result in: | Number |

**Calculation**

**Result formula**

*$ diff PCF = PCF actual - PCF budget*

**Output formula**

*PCF actual = Σ FGP actual / Σ C actual*

*PCF budget = Σ FGP budget / Σ C budget*

| **Variables** | **Data source** |
|---|---|
| *Σ FGP actual and Σ C actual* | System financial report of each HRC restaurant |
| *Σ FGP budget and Σ C budget* | Annual budget of each HRC restaurant |

Note: PCF, Gross Profit per Cover in Food; PI, Performance Indicator; FGP, Food Gross Profit; FPC, Food Perfect Cover; MPF, Maximization of Profit in Food; C, Covers; var, variation; diff, difference.

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The # diff C (Covers Difference) indicator measures the number of diners who consumed a main dish in the restaurant; it calculates the difference between the real covers against the budgeted covers and the maximum possible cover, refer to Table 8.

**Table 8**. *Specific information for the indicator record sheet # diff C*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Covers difference | Relationship with other indicators in other perspectives: | Financial: % var FGP and % var BGP |
| Abbreviation: | # diff C | | Clients: - |
| Functional area: | Reception | | Processes: % diff UC and # diff RTC |
| Indicator type: | PI | Graphics Type: | Stacked bars |
| Performance perspective: | Clients | | Arrow icons with chart |
| Measurement focus: | Volume | Result in: | Number |

| **Calculation** | |
|---|---|
| **Result formula** | |
| *# diff C = C actual - C budget* | |
| **Output formula** | |
| *C rea l= Σ C actual* | |
| *C budget = Σ C budget* | |
| **Variables** | **Data source** |
| *Σ C actual* | System financial report of each HRC restaurant |
| *Σ C budget* | Annual budget of each HRC restaurant |

Note: C, Cover; PI, Performance Indicator; FGP, Food Gross Profit; BGP, Beverages Gross Profit; UC, Used Capacity; RTC, Transactions/Covers Ratio; var, variation; diff, difference.

The $ diff PCB (Difference of Gross Profit per Cover in Beverages) indicator measures the resulting gross profit in beverages for each restaurant cover, generated by the sales activity focused on offering the products with the highest gross profit margin of each beverage family; it calculates the difference between the actual profit per cover on beverages versus the profit per cover on budgeted beverages and against the maximum possible profit per cover on beverages, refers Table 9.

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**Table 9.** *Specific information for the indicator record sheet $ diff PCB*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Difference of Gross Profit per Cover in Beverages | Relationship with other indicators in other perspectives: | Financial: % var BGP |
| Abbreviation: | $ diff PCB | | Clients: - |
| Functional area: | Dining room and bar | | Processes: # diff BPC and % var MPB |
| Indicator type: | PI | Graphics Type: | Lines |
| Performance perspective: | Clients | | Arrow icons with chart |
| Measurement focus: | Money | Result in: | Number |
| **Calculation** | | | |
| **Result formula** | | | |
| *$ diff PCB = PCB actual - PCB budget* | | | |
| **Output formula** | | | |
| *PCB actual = Σ BGP actual / Σ C actual* | | | |
| *PCB budget = Σ BGP budget / Σ C budget* | | | |
| **Variables** | | **Data source** | |
| *Σ BGP actual and Σ C actual* | | System financial report of each HRC restaurant | |
| *Σ BGP budget and Σ C budget* | | Annual budget of each HRC restaurant | |

Note: PCB, Gross Profit per Cover in Beverages; PI, Performance Indicator; BGP, Beverages Gross Profit; BPC, Beverages Perfect Cover; MPB, Maximization of Profit in Beverages; C, Covers; var, variation; diff, difference.

The # diff T (Difference of Transactions) indicator measures the number of transactions that were made in the restaurant store; it calculates the difference between the actual transactions versus the budgeted transactions and against the maximum possible transactions, refers to Table 10.

**Table 10.** *Specific information for the indicator record sheet # diff T*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Difference of Transactions | Relationship with other indicators in other perspectives: | Financial: % var SGP |
| Abbreviation: | # diff T | | Clients: - |
| Functional area: | Store of the restaurant | | Processes: # diff RTC |
| Indicator type: | PI | Graphics Type: | Stacked bars |
| Performance perspective: | Clients | | Arrow icons with chart |
| Measurement focus: | Volume | Result in: | Number |
| **Calculation** | | | |
| **Result formula** | | | |
| *# diff T = T actual - T budget* | | | |
| **Output formula** | | | |
| *T actual = Σ T actual* | | | |
| *T budget = Σ T budget* | | | |
| **Variables** | | **Data source** | |
| *Σ T actual* | | System financial report of each HRC restaurant | |
| *Σ T budget* | | Annual budget of each HRC restaurant | |

Note: T, Transactions; PI, Performance Indicator; SGP, Food Gross Profit; RTC, Transactions/Cover Ratio; diff, difference; var, variation.

The $ diff PT (Difference of Gross Profit per Transaction) indicator measures the resulting gross profit in souvenirs for each transaction carried out in the restaurant's store, generated by the sales activity focused on offering the products with the highest gross profit margin of each family in the store; it

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calculates the difference between the actual profit per transaction versus the budgeted profit per transaction and against the maximum possible profit per transaction, refer Table 11.

**Table 11**. *Specific information for the indicator record sheet $ diff PT*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Difference of Gross Profit per Transaction | Relationship with other indicators in other perspectives: | Financial: % var SGP<br>Clients: -<br>Processes: # diff ST and % var MPS |
| Abbreviation: | $ diff PT | | |
| Functional area: | Store of the restaurant | | |
| Indicator type: | PI | Graphics Type: | Lines<br>Arrow icons with chart |
| Performance perspective: | Clients | | |
| Measurement focus: | Money | Result in: | Number |
| **Calculation** | | | |
| **Result formula** | | | |
| *$ diff PT = PT actual - PT budget* | | | |
| **Output formula** | | | |
| *PT actual = Σ SGP actual / Σ T actual* | | | |
| *PT budget = Σ SGP budget / Σ T budget* | | | |
| **Variables** | | **Data source** | |
| *Σ SGP actual and Σ T actual* | | System financial report of each HRC restaurant | |
| *Σ SGP budget and Σ T budget* | | Annual budget of each HRC restaurant | |

Note: PT, Gross Profit per Transaction; PI, Performance Indicator; SGP, Souvenirs Gross Profit; ST, Souvenirs per Transaction; MPS, Maximization of Profit in Souvenirs; T, Transactions; var, variation; diff, difference.

The # diff FPC (Difference in Food Perfect Cover) indicator measures the number of starters, desserts, and extras sold in addition to the main course to the diner; it calculates the difference between the actual perfect cover in food versus the budgeted perfect cover in food and against the perfect cover in food maximum possible, refers Table 12.

**Table 12.** *Specific information for the indicator record sheet # diff FPC*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Difference in Food Perfect Cover | Relationship with other indicators in other perspectives: | Financial: -<br>Clients: $ diff PCF<br>Processes: - |
| Abbreviation: | # diff FPC | | |
| Functional area: | Dinning room and bar | | |
| Indicator type: | KPI | Graphics Type: | Lines<br>Arrow icons with chart |
| Performance perspective: | Processes | | |
| Measurement focus: | Volume | Result in: | Number |
| **Calculation** | | | |
| **Result formula** | | | |
| *# diff FPC = FPC actual - FPC budget* | | | |
| **Output formula** | | | |
| *FPC actual = (Σ starters sold actual / Σ C actual) + (Σ desserts sold actual / Σ C actual) + (Σ extras sold actual / Σ C actual)* | | | |
| *FPC budget = (Σ starters sold budget / Σ C budget) + (Σ desserts sold budget / Σ C budget) + (Σ extras sold budget / Σ C budget)* | | | |
| **Variables** | | **Data source** | |
| *Σ starters sold actual, Σ desserts sold actual, Σ extras sold actual and Σ C actual* | | System financial report of each HRC restaurant | |
| *Σ starters sold budget, Σ desserts sold budget, Σ extras sold budget and Σ C budget* | | Annual budget of each HRC restaurant | |

Note: FPC, Food Perfect Cover; KPI, Key Performance Indicator; PCF, Gross Profit per Cover in Food; C, Cover; diff, difference.

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The % var MPF (Variation of Maximization of Profit in Food) indicator measures how the sale of the dishes that generate the highest profit in each food family is promoted; it calculates the percentage variation between the actual maximum profit per dish against the budgeted maximum profit per dish and the maximum profit possible per dish, refer Table 13.

**Table 13.** *Specific information for the indicator record sheet % var MPF*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Variation of Maximization of Profit in Food | Relationship with other indicators in other perspectives: | Financial: - |
| Abbreviation: | % var MPF | | Clients: $ diff PCF |
| Functional area: | Dinning room and bar | | Processes: - |
| Indicator type: | KPI | Graphics Type: | Stacked bars and lines |
| Performance perspective: | Processes | | Arrow icons with chart |
| Measurement focus: | Money | Result in: | Percentage |
| **Calculation** | | | |
| **Result formula** | | | |
| *% var MPF = (MPF actual / MPF budget) - 1* | | | |
| **Output formula** | | | |
| *MPF actual = Σ FGP actual / Σ # of dishes sold actual* | | | |
| *MPF budget = Σ FGP budget / Σ # of dishes sold budget* | | | |
| **Variables** | | **Data source** | |
| *Σ FGP actual* | | Profit and Loss Statement of each HRC restaurant | |
| *Σ # of dishes sold actual* | | System financial report of each HRC restaurant | |
| *Σ FGP budget and Σ # of dishes sold budget* | | Annual budget of each HRC restaurant | |

Note: MPF, Maximization of Profit in Food; KPI, Key Performance Indicator; PCF, Gross Profit per Cover in Food; FGP, Food Gross Profit; var, variation; diff, difference.

The % diff UC (Difference in Used Capacity) indicator measures the percentage of seats used by the diners against the seats available during the restaurant's busiest operating hours; it calculates the difference between the actual used capacity versus the budgeted used capacity and against the maximum possible used capacity, refer Table 14.

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**Table 14**. *Specific information for the indicator record sheet % diff UC*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Difference in Used Capacity | Relationship with other indicators in other perspectives: | Financial: -<br>Clients: # diff C<br>Processes: - |
| Abbreviation: | % diff UC | | |
| Functional area: | Reception | | |
| Indicator type: | KPI | Graphics Type: | Stacked bars and lines<br>Arrow icons with chart |
| Performance perspective: | Processes | | |
| Measurement focus: | Volume | Result in: | Percentage |
| **Calculation** | | | |
| **Result formula** | | | |
| *% diff UC = % UC actual - % UC budget* | | | |
| **Output formula** | | | |
| *% UC actual = (Σ C actual during peak operating shifts) / (Σ peak operating shifts actual * Σ available seats actual)* | | | |
| *% UC budget = (Σ C budget during peak operating shifts) / (Σ peak operating shifts budget * Σ available seats budget)* | | | |
| **Variables** | | **Data source** | |
| *Σ C actual during peak operating shifts* | | Profit and Loss Statement of each HRC restaurant | |
| *Σ peak operating shifts actual and Σ available seats actual* | | System financial report of each HRC restaurant | |
| *Σ C budget during peak operating shifts, Σ peak operating shifts budget and Σ available seats budget* | | Annual budget of each HRC restaurant | |

Note: UC, Used Capacity; KPI, Key Performance Indicator; C, Covers; diff, difference.

The # diff BPC (Difference in Beverages Perfect Cover) indicator measures the number of additional drinks sold to a diner; it calculates the difference between the actual perfect cover in beverages versus the budgeted perfect cover in beverages and against the perfect cover in beverages maximum possible, refers Table 15.

**Table 15.** *Specific information for the indicator record sheet # diff BPC*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Difference in Beverages Perfect Cover | Relationship with other indicators in other perspectives: | Financial: -<br>Clients: $ diff PCB<br>Processes: - |
| Abbreviation: | # diff BPC | | |
| Functional area: | Dinning room and bar | | |
| Indicator type: | KPI | Graphics Type: | Lines<br>Arrow icons with chart |
| Performance perspective: | Processes | | |
| Measurement focus: | Volume | Result in: | Number |
| **Calculation** | | | |
| **Result formula** | | | |
| *# diff BPC = BPC actual - BPC budget* | | | |
| **Output formula** | | | |
| *BPC actual = Σ drinks sold actual / Σ C actual* | | | |
| *BPC budget = Σ drinks sold budget / Σ C budget* | | | |
| **Variables** | | **Data source** | |
| *Σ drinks sold actual and Σ C actual* | | System financial report of each HRC restaurant | |
| *Σ drinks sold budget and Σ C budget* | | Annual budget of each HRC restaurant | |

Note: BPC, Beverages Perfect Cover; KPI, Key Performance Indicator; PCB, Gross Profit per Cover in Beverages; C, Cover; diff, difference.

The % var MPB (Variation of Maximization of Profit in Beverages) indicator measures how the sale of the drinks that generate the highest profit in each beverage family is promoted; it calculates the percentage variation that exists between the actual maximum profit per drink against the budgeted

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maximum profit per drink and the maximum profit possible per drink, refers Table 16.

**Table 16**. *Specific information for the indicator record sheet % var MPB*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Variation of Maximization of Profit in Beverages | Relationship with other indicators in other perspectives: | Financial: - |
| Abbreviation: | % var MPB | | Clients: $ diff PCB |
| Functional area: | Dinning room and bar | | Processes: - |
| Indicator type: | KPI | Graphics Type: | Stacked bars and lines |
| Performance perspective: | Processes | | Arrow icons with chart |
| Measurement focus: | Money | Result in: | Percentage |

**Calculation**

**Result formula**

*% var MPB = (MPB actual / MPB budget) - 1*

**Output formula**

*MPB actual = Σ BGP actual / Σ # of drinks sold actual*

*MPB budget = Σ BGP budget / Σ # of drinks sold budget*

| **Variables** | **Data source** |
|---|---|
| *Σ BGP actual* | Profit and Loss Statement of each HRC restaurant |
| *Σ # of drinks sold actual* | System financial report of each HRC restaurant |
| *Σ BGP budget and Σ # of drinks sold budget* | Annual budget of each HRC restaurant |

Note: MPB, Maximization of Profit in Beverages; KPI, Key Performance Indicator; PCB, Gross Profit per Cover in Beverages; BGP, Beverages Gross Profit; var, variation; diff, difference.

The # diff RTC (Difference in the Transactions/Covers Ratio) indicator measures the ratio of covers who consumed in the restaurant and then made a purchase in the store; it calculates the difference between the ratio of actual transactions with covers against the ratio of transactions with covers budgeted and against the ratio of transactions with covers maximum possible, refers Table 17.

**Table 17.** *Specific information for the indicator record sheet # diff RTC*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Difference in the Transactions/Covers Ratio | Relationship with other indicators in other perspectives: | Financial: - |
| Abbreviation: | # diff RTC | | Clients: # diff C and # diff T |
| Functional area: | Dinning room, bar and store of the restauran | | Processes: - |
| Indicator type: | KPI | Graphics Type: | Stacked bars and lines |
| Performance perspective: | Clients | | Arrow icons with chart |
| Measurement focus: | Volume | Result in: | Number |

**Calculation**

**Result formula**

*# diff RTC = RTC actual - RTC budget*

**Output formula**

*RTC actual = Σ T actual / Σ C actual*

*RTC budget = Σ T budget / Σ C budget*

| **Variables** | **Data source** |
|---|---|
| *Σ T actual and Σ C actual* | System financial report of each HRC restaurant |
| *Σ T budget and Σ C budget* | Annual budget of each HRC restaurant |

Note: RTC, Transactions/Covers Ratio; KPI, Key Performance Indicator; C, Covers; T, Transactions; diff, difference.

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The # diff ST (Difference of Souvenir per Transaction) indicator measures the number of souvenirs that were purchased in a transaction; it calculates the difference between the actual souvenirs sold per transaction versus the budgeted souvenirs sold per transaction and against the maximum possible souvenirs sold per transaction, refer Table 18.

**Table 18.** *Specific information for the indicator record sheet # diff ST*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Difference of Souvenirs per Transaction | Relationship with other indicators in other perspectives: | Financial: - |
| Abbreviation: | # diff ST | | Clients: $ diff PT |
| Functional area: | Store of the restaurant | | Processes: - |
| Indicator type: | KPI | Graphics Type: | Lines |
| Performance perspective: | Processes | | Arrow icons with chart |
| Measurement focus: | Volume | Result in: | Number |

**Calculation**

**Result formula**

*# diff ST = ST actual - ST budget*

**Output formula**

*ST actual = Σ souvenirs sold actual / Σ T actual*

*ST budget = Σ souvenirs sold budget / Σ T budget*

| **Variables** | **Data source** |
|---|---|
| *Σ souvenirs sold actual and Σ T actual* | System financial report of each HRC restaurant |
| *Σ souvenirs sold budget and Σ T budget* | Annual budget of each HRC restaurant |

Note: ST, Souvenirs per Transaction; KPI, Key Performance Indicator; PT, Gross Profit per Transaction; T, Transactions; diff, difference.

The % var MPS (Variation of Maximization of Profit in Souvenirs) indicator measures how the sale of souvenirs that generate the highest profit in each beverage family is promoted; it calculates the percentage variation between the actual maximum profit per souvenir against the budgeted maximum profit per souvenir and the maximum profit possible per souvenir, refer Table 19.

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**Table 19.** *Specific information for the indicator record sheet % var MPS*

| **Indicator control information** | | | |
|---|---|---|---|
| Indicator name: | Variation of Maximization of Profit in Souvenirs | Relationship with other indicators in other perspectives: | Financial: -<br>Clients: $ diff PT<br>Processes: - |
| Abbreviation: | % var MPS | | |
| Functional area: | Store of the restaurant | | |
| Indicator type: | KPI | Graphics Type: | Stacked bars and lines<br>Arrow icons with chart |
| Performance perspective: | Processes | | |
| Measurement focus: | Money | Result in: | Percentage |
| **Calculation** | | | |
| **Result formula** | | | |
| *% var MPS = (MPS actual / MPS budget) - 1* | | | |
| **Output formula** | | | |
| *MPS actual = Σ SGP actual / Σ # of souvenirs sold actual* | | | |
| *MPS budget = Σ SGP budget / Σ # of souvenirs sold budget* | | | |
| **Variables** | | **Data source** | |
| *Σ SGP actual* | | Profit and Loss Statement of each HRC restaurant | |
| *Σ # of souvenirs sold actual* | | System financial report of each HRC restaurant | |
| *Σ SGP budget and Σ # of souvenirs sold budget* | | Annual budget of each HRC restaurant | |

Note: MPS, Maximization of Profit in Souvenirs; KPI, Key Performance Indicator; PT, Gross Profit per Transaction; SGP, Souvenirs Gross Profit; var, variation; diff, difference.

*Result S.5.* The formulas for the reference points to evaluate the operations' actual performance (not acceptable, acceptable, low outstanding, moderate outstanding, and high outstanding) are also part of the PMS-BEREST and are presented in Figure 5.

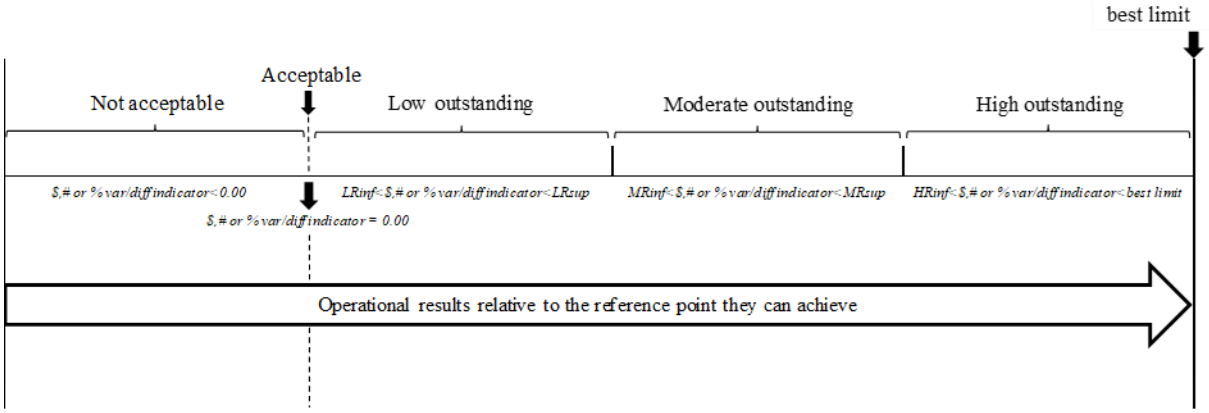


**Figure 5.** Reference points to measure the quality of the performance obtained. Var, variation; diff, difference; $LR_{inf}$, Low outstanding inferior Range; $LR_{sup}$, Low outstanding superior Range; $MR_{inf}$, Moderate outstanding inferior Range; $MR_{sup}$, Moderate outstanding superior Range; $HR_{inf}$, High outstanding inferior Range.

*Result S.6.* The indicator's life sheet was integrated with: (a) Name of the indicator, (b) period evaluated, (c) result of the PM (not acceptable, acceptable, low outstanding, moderate outstanding, and high outstanding), and (d) qualitative aspects related to the performance of that indicator, refer Table 20.

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**Table 20.** *Indicator life sheet for the registration of qualitative aspects*

| Indicator: | Indicator result | | |
|---|---|---|---|
| Period evaluated | Quality level | % or $ or # | Qualitative aspects |
| **Daily**<br>Day 1<br>…<br>Day n | | | |
| **Week to date**<br>Week 1<br>…<br>Week n | | | |
| **Month to date**<br>January<br>…<br>Month n | | | |
| **Year to date**<br>Year 1<br>…<br>Year n | | | |

## Discussion

## Conclusion

As there is no theoretical framework or model of PMS that all organizations could implement, there was a need to design them with the approach of organization measurement according to its size and the economic sector in which it develops or competes. Since 2000, the design of PMSs took more strength, which allowed research in three areas: (a) the conditions in which the PMS is used, (b) the benefits provided by IT to facilitate its use, and (c) the development of PMSs tailored to each industrial sector (design of the PMS).

This research is focused on the second stage of a PMS life cycle, the design. The first three steps of the method made it possible to obtain the PMS-BEREST architecture, which is aligned with the strategy, the TRs' sales process, and the stakeholders' requirements. The PMS-BEREST is balanced: it uses results indicators (financial or retroactive) and performance indicators (non-financial or predictive) in different performance perspectives oriented to managing the TRs' sales process.

The following fourth step allowed the design of each of the indicators to be integrated into the PMS to evaluate the sales process's financial result at a strategic level in the total gross profit account of a TR. As a result were obtained ten new indicators ($ diff PCF, $ diff PCB, $ diff PT, # diff FPC, % var MPF, % var UC, # diff BPC, % var MPB, # diff ST and % var MPS) with the purpose to increase gross profit instead of net income, which generates more benefit for the restaurant. Seventeen indicators integrated the PMS-

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BEREST; the HRC brand was already using seven (one KPI, three RIs, two PIs, and one KPI), and ten were newly constructed (three PIs and seven KPIs).

Regarding the reference point definition for each indicator, PMS-BEREST proposes five instead of the three that are regularly included in any PMS. These are: not accepted, accepted, and three levels of results range when exceeding the budget limit (low outstanding, moderate outstanding, and high outstanding) to stimulate performance when strategy and stakeholder expectations have been exceeded. These three outstanding limits were obtained by establishing a limit with the maximum possible results for restaurants to achieve in operation (best limit).

The indicators' life sheet enables the recording of qualitative events and how they influenced the quantitative results, an element not customarily considered in the PMS design process.

The sales process in the TRs has particular characteristics in its execution, so it is impossible to measure it using the generic indicators customary in most restaurants. Hence, it is necessary to adjust each indicator to assertively measure each of the activities, functions, and initiatives part of the sales process in this type of restaurant. It is also necessary to consider that the sales made in their store generate a substantial part of the income and to measure this, other types of indicators are required. The gap of knowledge that closes this research in the design stage of a PMS for a TR can be evidenced by comparing the results obtained in PMS-BEREST against the options of existing models and theoretical frameworks for the individual indicators, GIs, and PMSs for the sales process assessment in restaurants.

First, it is necessary to compare the PMS-BEREST against the use of the indicators individually to measure the performance in the sales process in a TR; using them individually does not allow for relating the strategic objectives of the organization with the expected performance; this happens because when the indicators are not aligned using a strategic map, only the indicators that are known or used only by the experience of each decision-maker are used since they consider that they are adequate, this usually does not allow to connect one indicator with another, which compromises the expected results. Another relevant point is that in the restaurant management literature when the use of individual indicators is proposed, there is no way to visualize them graphically; the graphic proposal to visualize the indicators used for PM in restaurants has only been made by the KPI Institute (KPI Institute, 2012c).

Regarding the differences that exist between the PMS-BEREST and RevPASH in the measurement of the sales process of a TR, it should be noted that RevPash focuses on using the seats as the available inventory in a restaurant, so its objective is to increase the use of these seats in periods of hours, that is, to increase the use of the installed capacity of the seats that exist

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in the business during the hours in which the restaurant is open to the public. PMS-BEREST, on the other hand, focuses on measuring performance in a broader process (sales), which includes the relationship between sales and costs to obtain a higher gross profit.

Concerning the PMS proposed by The KPI Institute, the Restaurant Performance Management System Toolkit, one of the differences with the PMS-BEREST is that the latter is designed in its architecture to close the relationship between the sales process and the cost of sales in its measurement. The difference between the indicators that integrate the Restaurant Performance Management System architecture and the PMS-BEREST architecture can be seen in the following: the KRIs and RIs of $ sales volume, $ food sales and beverages sales are not the main focus of performance measurement for PMS-BEREST, so are used % var TGP, % var BGP, and % var SGP (exclusive indicator for the TRs); the KPIs and PIs of $ RevPash, $ sales per labor hour, $ Revenue per available square meter, $ Restaurant revenue per employee, $ Revenue per table, are not related to the main measurement objective of the PMS-BEREST (gross profit), so $ diff PCF, $ diff PCB and $ diff PT (exclusive indicator for the TRs) are used; These other indicators measure how many products a server, a bartender and a vendor must sell to achieve their gross profit goal in relation to the number of products they must sell to each client (# diff FPC, # diff BPC and # diff ST), which in turn are multiplied by the dishes, beverages and merchandise sold that generate the highest profit for each family (% var MPF, % var MPB and % var MPS).

The contribution that the PMS-BEREST makes to knowledge is that it aligns, through the use of strategic maps, the sales strategy of the TRs, making evident the connections between indicators, which makes it possible to distinguish how the change in a KPI is immediately reflected in the subsequent PIs, RIs, and KRIs. Also, the PMS and each indicator are designed following the indications of the theoretical frameworks of the BSC, PRISM, and KBEMS. The following was taken as a base: from the BSC, applying its proposal of performance dimensions for the elaboration of strategic maps; from the PRISM, for the evaluation of the requirements of the PMSs, the requirements of the indicators, its proposal in the scope of the PM and in the indicator registry sheets (which include the elements that must meet each indicator individually and within a PMS); while from the KBEMS, was generated the idea of being able to measure the results superior to an acceptable PM in three outstanding ranges (low, moderate and high). The aforementioned is evident in the indicator record sheet format, showing: the name of the indicator, its code, functional area, type of indicator, performance perspective, measurement focus, relationship to the indicators with those of other performance perspectives, type of graphs, how to reflect the result, and the formulas for its calculation.

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## Future research

From the results obtained in this study, the following possible future lines of research emerged:

To apply the PMS-BEREST to non-theme restaurants but with table service (even if they do not have a store), the objective is to establish the indicators used in the dining room as generic indicators of the restaurant industry.

To analyze the PMS-BEREST functionality in stages of the life cycle not covered here (implementation, operation, or use and updating) to qualitatively assess the effects (positive or negative) that it could generate in the TRs operation.

To adjust the indicators that measure the performance of transactions and souvenirs to use them in restaurants that do not have a store and have a high volume of wines or cigars. It would extend the scope of the PMS-BEREST to other types of restaurants.

To continue this research, the quantitative approach to be published will disseminate the results obtained with the PMS-BEREST during implementation, a stage of the life cycle after the design of PMS. Some software had to be chosen to implement the PM. The correlations of these results were statistically validated.

## Practical implications

As a practical effect in a restaurant, it would imply a series of changes in its sales process; the first should be set as a new objective for servers and bartenders to offer as the first alternative the products that generate the highest profit of each family of food and beverages, in the same way, they should do it for the vendors in the store, which implies training the staff to achieve this purpose. Second, the food and beverage menu and the visual elements in the store should be reinforced with photographs that only show the images of the dishes, beverages, and merchandise that generate the highest gross profit; in addition, in the food and beverage menu and the price list in the store, the first products to be presented will be those that generate the highest gross profit.

## Limitations

PMS proposed in this study has as a limit in its scope the measurement of the effect of performance of sales process activities and its effect on the gross profit account of a TR, so it will not serve to measure the processes related to the expenses of the restaurant. Due to the system's flexibility, these processes could be integrated into the model with the proper investigations and tests' exemption.

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In contrast to the existing models, the PMS-BEREST is based on different life stages (evaluation, design, implementation, daily use, and updating) for which a PMS has to be tested to be considered functional. Each of these stages implies a challenge for the organization to put into practice. There are risks in each step since if they are not correctly performed, they could cause the PMS to generate more problems than benefits.

Lastly, data in other types of restaurants may not be as easy to obtain as in the TRs, which generally use specialized and standardized software and hardware. The lack of assertive data could make the PMS more of a problem than a restaurant's benefit.

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