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A behavioural perspective on the effects of using performance measurement systems in the companies: Evidence from a case study

Uma perspectiva comportamental dos efeitos do uso de sistemas de medição de performance nas empresas: Evidência de um caso de estudo

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Abstract

The effects of Performance Measurement Systems (PMS) on people's behaviour are relevant for an organization performance and success. Yet motivational and behavioural consequences of PMS are far from being understood. This study aims to go further regarding the consequences on people's behaviour of using PMS in organizations. In order to collect data researchers conducted a case study in a Portuguese multi-national company. Evidence shows that the way in which managers understand a PMS influences in a significant way how they behave. The data also lends support to the claim that PMS influence motivation, perceptions, participation and job-related stress of managers.

Keywords: performance measurement systems; KPIs; consequences of PMS; people's behaviour

Resumo

Os efeitos dos sistemas de medição de performance (PMS) no comportamento das pessoas são importantes para o desempenho e sucesso de uma organização. Ainda assim, as consequências motivacionais e comportamentais das medições de performance estão longe de serem compreendidas. Este trabalho pretende ir mais longe sobre as consequências que os PMS têm sobre as pessoas nas organizações. De forma a recolher a evidência os investigadores conduziram um estudo de caso numa empresa multinacional portuguesa. Os resultados obtidos mostram que a maneira como os gestores entendem um PMS influencia de forma significativa a forma como estes se comportam. Os dados também evidenciam que os PMS influenciam a motivação, as percepções, a participação e o stress relacionado com trabalho dos gestores.

Palavras-chave: sistemas de medição de performance; KPIs; consequências dos PMS; comportamento das pessoas.

1. Introduction

This study aims at contributing to a better comprehension of the consequences and effects on people's behaviour of using performance measurement systems (PMS) in organizations. By PMS it is meant systems comprised of financial and also non-financial performance measures that translate and operationalize the organization's business strategy (Franco-

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Santos, Lucianetti & Bourne, 2012). The Balanced Scorecard (BSC) approach and Key Performance Indicators (KPIs) are some of the most adopted PMS in organizations. In the past, performance measurements and management have attracted a great deal of interest (Neely, Gregory & Platts, 2005). Since the early 1990s, the increase in competition and new challenges posed by the business environment have led managers to look more intensively for gains in productivity and efficiency (Harrington, Boyson, Corsi & Guadalupe, 2012). This has triggered interest, not only among practitioners, but also among consultants and academics in the development of processes and systems that could measure internal processes and performance. Authors such as Davis and Albright (2004) and Kennerley and Neely (2003) claim that the use of PMS may provide integrative information for better decision-making, facilitating strategy implementation and the enhancement of organizational performance.

Despite the interest in PMS, there are few studies approaching the topic and a lack of consensus about the consequences for companies of using PMS. Furthermore, motivational and behavioural consequences of performance measurements are inadequately understood (Franco-Santos *et al.,* 2012), which motivates researchers to embrace this area of research.

Regarding methodology, a case study was adopted as the research method. Evidence was mainly gathered through interviews conducted with managers of a Portuguese multinational company. The study attempted to answer the following research question: How do managers understand KPIs and PMS and behave towards them?

The structure of this paper proceeds as follows. Section 2 presents the literature review on PMS and three categories of PMS' effects according to Franco-Santos *et al*. (2012). Section 3 explains the methodology followed in this study. Section 4 describes the case study and discusses the main findings. Finally, in section 5 the main conclusions, limitations and contributions of this investigation are presented.

2. Literature review

Franco-Santos *et al*. (2012: 80) clarify the definition of a PMS by arguing that it "exists if financial and non-financial performance measures are used to operationalize strategic objectives". In fact, PMS are increasingly being used in companies to provide integrated information for better decision-making and enhancing the communication of strategic goals (Lee & Yang, 2011). Moreover, information that a PMS provides to managers may be used to remove uncertainties in the decision-making processes, evaluate processes and the consequences of past decisions as well as possibly suggesting corrective measures and improvements in organizational learning (Grafton, Lilis & Widener, 2010; Pavlov & Bourne, 2011). Several researchers, such as Chenhall (2005), Ittner, Larcker and Randall (2003), and Kaplan and Norton (1996; 2001) state that an integrative PMS helps organizations to achieve strategic competitiveness, not only by aligning internal processes with the long-term strategic goals, linking them to short-term actions, but also by developing organizational learning. For instance, the BSC (Kaplan & Norton, 1992; 1996; 2001) provides a framework for managing the implementation of strategies, containing a wide set of performance measures (KPIs), customer relations, internal business processes, and an organization's learning and growth activities that allow, at the same time, to deal with changes in the company's competitive market and technological environments.

When analysing the implementation of performance measurements and their effectiveness, it is important to consider in the discussion organizational factors such as top management support, training, interaction of employees, and the connection between

performance and rewards. Also, moderating factors[1] such as organizational culture can influence the effectiveness of the performance measurements implemented (e.g. Domanovic, 2013). The effectiveness of these systems exists if they provide clear information for decision-making, and help managers to increase employees' commitment and motivation and boost the overall efficiency of the organization.

It is clear that PMS are designed and implemented in companies with an ultimate goal and focus, that is to increase organizations' performance. However, as mentioned earlier, their effects are far from being fully understood. Having said that, Franco-Santos *et al*. (2012) are among the most recent authors studying and presenting in detail the consequences of the PMS.

Franco-Santos *et al*. (2012) analyse the consequences of using PMS and classify them into three categories: performance, organizational capabilities and people's behaviour (see Table 1).

Table 1. Classification of the consequences of PMS

CLASSIFICATION OF THE CONSEQUENCES OF PMS	EXAMPLES	
PERFORMANCE	Effects of PMS on financial and non-financial results	- Managerial performance - Market performance - Financial performance
ORGANIZATIONAL CAPABILITIES	Processes, activities or competences affected by PMS and that are linked to changes in competitive advantage.	- Organizational learning - Innovativeness
PEOPLES' BEHAVIOUR	Cognitive mechanisms, actions and reactions of people when facing a PMS.	- Motivation - Perceptions - Participation - Cooperation

Source: *Adapted from Franco-Santos et al.* (2012: 83).

The investigation of the effects on performance is the category which is most studied in the literature on the effects of PMS. In fact, there is a significant number of studies supporting the beneficial effects of PMS in the business performance, whether being financial or non-financial performance (e.g. Davis & Albright, 2004; Hoque & James, 2000; Ittner *et al*., 2003), as well as the beneficial effects on the managers' perceptions of performance (e.g. Chenhall, 2005; Hoque & James, 2000; Lee & Yang, 2011). Besides financial performance measures, researchers suggest that companies are increasingly adopting a growing set of non-financial performance measures. These help managers to have a higher measurement system satisfaction and thus to improve performance. However, Kraus and Lind's (2010) research points to the fact that managers still focus too much on financial performance information due to the need for simplicity and internal comparability and to capital market pressures.

[1] Some researchers have indicated a set of factors, external to PMS, which moderates the effect of PMS. Sharma, Durand and Gur-Arie (1981: 292) define a moderator as "one which specifies the form and/or magnitude of the relationship between a predictor and a criterion variable". Franco-Santos *et al.* (2012) cite strategic orientation, organizational structure and competition, perceived environmental change and environmental uncertainty, organizational culture and management style, and quality of information systems as examples of moderating factors of PMS' effects. However, the strength these factors have on influencing the effects of PMS clearly lacks research.

Regarding the effects on team performance, Scott and Tiessen (1999) contend that team members' participation in the process of setting performance targets enhances performance results. Studies from Cousins, Lawson and Squire (2008) and Mahama (2006) found evidence that PMS improve cooperation and socialization among firms from different geographical contexts, consequently enhancing perceived inter-firm financial and non-financial performance. However, on the other hand, evidence suggests that control systems could make processes more formal and complex, thus bringing rigid action plans, targets and information gathering. Several of these practices are associated with bad performance (e.g. Griffith & Neely, 2009; Said, HassabElnaby & Wier, 2003). Therefore, it is fair to say that PMS do not automatically improve organizational performance. Furthermore, there are factors that moderate the effect of PMS on performance. This seems to be the case of organizational culture or management style.

The second category listed in Table 1 explores the consequences of PMS on organizational capabilities. Franco-Santos *et al*. (2012) argue that PMS help managers engage in the strategic formulation and review processes. It will also help them align actions with the strategy adopted by organization.

Communication is another effect of a PMS. In fact, most authors that have studied this effect agree on the direct and beneficial effect that PMS have on communication by favouring the alignment of strategy to manager's actions (Franco-Santos *et al*., 2012). For instance, management must communicate to employees the attributes of the PMS in order to increase their perception towards PMS' technical appropriateness and to improve employees' view that PMS is embedded in the organization's value chain.

PMS also affect management practices, depending on factors such as the maturity of the systems, the organization's culture and the characteristics of the systems' users (Ukko, Tenhunen & Rantanen, 2007). Ukko (2009) concludes that under appropriate circumstances, a performance measurement positively affects different aspects of management, leadership, and the quality of work-life balance. He also emphasizes that employees and organizational performance improve if KPIs are linked to rewards, and if managers understand the connection between the individual's and the organization's targets. Face-to-face communication between managers and employees is a determinant factor to enhance the understanding of such a link, providing as a consequence a more solid base for decision-making.

The effects of PMS on people's behaviour represent a high degree of relevance in an organization's success. The reason why the behaviour of people is so determinant in an organization's success relates to the fact that there are people who, besides designing and implementing PMS, are also those who use these systems. PMS shape processes and the way in which decisions are taken towards the achievement of an organization's strategy and goals (Flamholtz, 1996). PMS also promote interactions among managers and employees, and perform an active role in influencing managers' attitudes and psychological processes and their psychological empowerment[2] (Hall, 2008). Therefore, the interaction among employees is complex and can be influenced by factors external to the systems (Franco-Santos *et al*., 2012).

Franco-Santos *et al*. (2012) summarize the consequences of PMS on people's behaviour as: cooperation, socialization, participation, motivation, psychological empowerment, goal commitment, organizational citizenship behaviours, role conflict, goal conflict, role

[2] According to Conger and Kanungo (1988: 474), empowerment refers to a "process of enhancing feelings of self-efficacy among organizational members through the identification of conditions that foster powerlessness and through their removal by both formal organizational practices and informal techniques of providing efficacy information".

ambiguity, job relevant information, job satisfaction, managerial decision-making, organizational culture, perceptions of justice, and conflicts and tensions.

Regarding cooperation, coordination and participation, Mahama (2006) finds a direct relationship between PMS and cooperation in aspects such as information sharing, problem solving and willingness to adapt to changes. Moreover, Papalexandris, Ioannou and Prastacos (2004) find that PMS are useful for coordinating activities within and among departments while Butler, Letza and Neale (1997) conclude that the participation is enhanced through iterative and consultative processes for the development and implementation of such systems. Because employees feel part of the organization's decisions and they are meaningful, participation enhances employees' trust, sense of control, fairness and commitment (Lau & Sholihin, 2005). In this case, the positive effect that PMS may have on organizational commitment leads to less absenteeism, which explains why costs associated with it are avoided (Rasit & Isa, 2014). Evidence also supports the claim that PMS simplifies socialization processes because of the need for cooperation as well as promoting employee involvement in the organization's performance measures and management processes (Mahama, 2006).

Moreover, PMS influence the motivation of managers through the role of clarity and psychological empowerment (Hall, 2008). According to Marginson and Ogden (2005), PMS provide managers with clearer, concise and objective information, avoiding ambiguity and reinforcing psychological empowerment. Well-defined performance measures, in particular, non-financial ones, are positively associated with perceptions of organizational justice, increasing the sense of fairness and thus decreasing subjectivity and consequently reinforcing commitment (Lau & Sholihin, 2005).

Other authors, such as Webb (2004), argue that a PMS must include both financial and non-financial performance measures in order to increase the manager's perceptions of self-efficacy and goal achievement, which consequently increase motivation. On the other hand, ineffective communication and ineffective management control causes conflict and poor motivation, especially when PMS are used for performance reward purposes (Malina & Selto, 2001). Therefore, these systems must be supported by effective mechanisms of communication that could encourage feedback, dialogue and participation among employees and managers.

Another consequence of PMS on people's behaviours that the literature emphasizes is the goal conflict and consequently tensions that this may create (Cheng, Luckett & Mahama 2007). For instance, the levels of goal conflict and tension increase in cases where performance is visible to everyone, workload is higher and multiple tasks are perceived as difficult. However, little consensus in the literature exists about the impact of the systems on conflicts and tension.

The last consequence of a PMS to be mentioned in this study is people's stress. Franco-Santos *et al*. (2012) argue that there is no objective research about how PMS increase people's stress levels and negatively affect their performance. Nonetheless, PMS affect, at least indirectly, people's stress. Some authors have concluded that besides the influence of the systems on role clarity, factors such as environmental turbulence, cross boundary activities, innovative processes, poor work relationships, poor communication between superior and subordinate lead to role ambiguity and managerial failure (Longenecker, Neubert & Fink, 2007). The consequence for individuals is an increase in psychological stress and health injuries. In addition, the recent research of Rasit and Isa (2014) reinforces that, under those circumstances, employees suffer dysfunctional stress and non-optimal performance, which in return increases turnover of personnel.

3. Methodology

Taking as references Ryan, Scapens and Theobald (2002), Silverman (2013) and Yin (2009), a single case study in a Portuguese multinational company was carried out to address the research question of this study: How do managers understand multi-criteria KPIs and PMS and behave towards them?

This research method has been depicted as the method that should be adopted when: (i) the object of study is a contemporary phenomenon; (ii) the researcher has no control over the phenomenon that is the object of the investigation; and (iii) the objective of the research is to get a deeper understanding of the phenomenon within its context (Yin, 2009; 2014). This research meets these three conditions. Mixed sources of evidence are used to enable data triangulation. These sources include semi-structured interviews with managers of the company and observation (the first author of the paper was enrolled in a nine-month internship as a controller in the Managerial Control department of the company under investigation - thus, his role in the investigation can be described as 'actor researcher' (Ryan *et al.*, 2002).

Interviews enabled the researchers to focus directly on the research topic and understand in depth the internal processes and systems of the company (Yin, 2011; 2015); eleven semi-structured interviews with company managers were conducted between May 2015 and January 2016. The time duration planned for each interview was 60 minutes. However, some interviews took longer and others were shorter (see details on interviews in Table 2).

Table 2. Interview details

Interviewee	Category	Channel	Duration (minutes)	Date
1	Top manager	Orally (recorded)	60	07/04/2015
2	Top manager	Orally (recorded)	60	22/04/2015
3	Middle manager	Orally + email	75	28/04/2015
4	Middle manager	Orally (not recorded)	40	10/07/2015
5	Top manager	Orally (recorded)	70	02/10/2015
6	Top manager	Orally (recorded)	90	09/10/2015
7	Top manager	Orally (recorded)	90	12/10/2015
8	Top manager	Orally (recorded) Orally (not recorded)	45 + 30	21/10/2015 26/11/2015
9	Middle manager	Orally (recorded)	75	23/10/2015
10	Middle manager	Orally (not recorded)	90	05/12/2015
11	Middle manager	Orally (not recorded)	45	16/12/2015

In this study, top managers are considered to be those who have either a high degree of responsibility in the company such as business directors and executive board members or are high up in the hierarchy of the company's structure. Those who have a middle-high degree of responsibility, such as senior managers or those who report their work to top managers, were considered to be middle managers.

The guidelines for the interviews followed a general to particular approach which starts with general and open questions about PMS in the company, their characteristics and the role of the manager when dealing with such systems. More personal and objective questions about the managers' behaviour when dealing with a PMS were asked in the second part of

the interview. Finally, a situational case was presented in order to address the different responses of managers when facing similar challenges and problems.

Direct and participative observations were also employed as they enabled us to cover events in real time, understand the context of the event and obtain an insight into interpersonal behaviour and motives (Yin, 2009; 2014). During the internship, the first author of the paper performed an active role in the company as a controller, having the possibility to deal directly with the different business areas, their managers and several KPIs of the organization. To collect data, the approach was to listen carefully to interviewees, record quotations on paper, question interviewees and gather information about their perceptions, behaviour and emotions in the work place when facing a PMS, keeping at the same time some distance from the phenomenon.

The main findings and conclusions on this research were produced taking into account the patterns verified across the several sources of evidence (Ryan et al., 2002; Silverman, 2013; Yin, 2009; 2014). For that, in order to easily identify the patterns, a diagram was prepared based on the answers obtained in the interviews (Ryan *et al*., 2002) (see appendix A).

4. The case study

The organization, where the study took place, is a Portuguese multinational company employing more than 2,000 people with offices in Angola, Brazil, Poland and Spain. The company results from a merge of two national companies that took place in 2008; at the time of the research, the company object of the study was quoted in Euronext Lisbon. It operates in several businesses areas, namely in the development of healthcare software, services to pharmacies and IT consulting.

The development of PMS in the company has not been significant across time; however, the most important progress took place in the last two years. Before the merge happened, one of the two companies was using jet report and "cubos" (a financial BI tool) as the systems to monitor performance, comparing it to the budget and producing some KPIs. In the case of the other company, PMS simply did not exist. Right after the merger, "cubos" disappeared, something that some of the current managers do not understand. A manager in the workplace observes:

> *I've never understood why after the merge, a system that used to work well, such as "cubos", disappeared. Nobody has explained to us why they have put aside "cubos".*

Currently, there are several tools in the company working as PMS, but none of them are actually considered to be formal. This means that the existing systems do not integrate a strategic plan with the respective actions to achieve targets. Table 3 describes the current PMS in use in the company.

Table 3. Description of the main PMS of the company where research took place

PMS	Description	Implementation	Positive side	Negative side
CRM	Customer Relation-ship Management software that currently works in the company to store business proposals as well as present their estimative of revenues and costs. It also works as a tool to manage the approvals flows of each business proposal.	2013	Storage of all business proposals in one single application. Huge potential once it has the capacity to manage better the customer relationship.	Underdeveloped application in this company. Does not provide justification to an invalid proposal. Not designed to the post-project.
G-track	Financial tool used to manage and monitor projects.	2nd semester, 2013	Provides the timeline of a project, helps to foresee revenues and costs across the time, and manage the time of people allocated to a certain project based on their cost rate (chargeability).	Designed exclusively to the consultancy area. It has been forced to be implemented in all business areas of the company. It does not provide automatic alerts to managers.
Jet Report	Feature in excel used to provide KPIs and organized data from a database called NAV (an ERP from Microsoft).	Before the merge (2008), it was already used in one of the previous companies.	On time data to produce updated maps in excel.	Not very flexible feature because it is necessary a high degree of knowledge to program it.
QlikView	Main system to monitor performance. It has been customized to provide data and information from the several business areas of the organization and offers several filters capable to personalize information that is extracted. All data in QlikView is integrated from NAV and from HR Portal (a platform used by employees to register working hours per project/ task).	2013	Quick way to organize data and information. Integrates data from several sources. Possibility of comparing real data with the budget	Integration of data from NAV occurs once a day, which leads to a temporal gap and may induce to error analysis if this detail is not taken into account. It lacks further development to provide directly pre-defined KPIs and graphs.

Thereby, these PMS are capable of producing some KPIs and monitoring performance. The company also elaborates the annual budget[3] (a way of establishing targets), which together with the information provided by the IT systems, allows comparisons to be made and gaps to be evaluated. Interviewee 1 mentions:

> *The implementation of PMS has been a big step forward for the company. They allow us to monitor performance and compare it to the budget established. This makes managers easily aware of their performance as well as the companies' performance.*

[3] Even before the merger, the companies had elaborated an annual budget in order to establish annual targets. Actually, this is the only instrument that the current company uses to communicate strategic goals, making them reflect on targets. The annual budget involves the more active participation of top managers, who set the main targets, and less actively of business area directors with the controllers' support.

However, most of the interviewees state that PMS are, undoubtedly, underdeveloped and perhaps not well designed. For example, interviewee 6 states:

> *We still have a long path ahead of us to achieve full potential of our systems. Before that is the challenge to gather accurate information and not wrong or biased information.*

At the time of the research, one of the most important tools for the majority of the company's workers - G-track - is constantly undergoing corrective modifications in the attempt to minimize errors, and putting them according to the initial objectives established for their implementation. Also QlikView still does not provide pre-defined maps.

It is possible to observe, through the way in which processes happen, that the PMS in the company focuses mainly on three dimensions (Table 4).

Table 4. The three dimensions of PMS in the company

Dimension	Description	PMS measures
Overall Financial Performance	Special focus to sales revenue (customer perspective analysis) and purchases (supplier perspective analysis) leading to production of KPIs of the overall performance of the company. The system integrates the annual budget, leading to the production of information based on comparisons.	- Sales - Gross Profit - Direct Costs - Indirect Costs - Subcontracted - Accounts Receivables - Accounts Payables - Stocks turnover
Business Areas	The pace of the business is monitored per business area and per type of project. It is also used a measure to address the time that an employee is allocated to a project based on his/her cost rate – chargeability. Little non-financial measures are used.	- Revenue per project - Chargeability - Number of technical assistances per client - Time spent on a phone call per client - Time spent to solve a technical problem
Employees	Indicators that measure the ability of sales force translate their work into sales with the objective of giving sale commissions. Non-financial measures are used in the Human Resource department such as employee turnover, headcount (number of active employees) and absenteeism.	- Key Account's sales - Employee turnover - Headcount (number of active employees) - Absenteeism

The main objectives of the company when producing KPIs is to have a picture of the company's behaviour over the years, to justify not only the performance of the year but also future decisions. Finally, KPIs work as an instrument to provide bonus to employees.

For the last few years, the decision about the development of new KPIs and PMS, and which of them should be adopted, has been exclusively the responsibility of the executive board, with the CEO having the final approval decision. It is, in fact, the CEO who has the initiative, for example, to implement the new system of allocating costs in the company (G-track), but it is important to mention that the development of systems is always supported by the DSI department (i.e. Information Technology Department of the company) and the Director of the Managerial Control Department. Moreover, the development of new PMS and indicators over time, in this company, happens mainly due to the need to access the market trends, comparison to competitors, allocation and awareness of costs or due to external impositions. For instance, the company's internationalization forced the development of new systems and indicators that could follow subsidiaries performance in countries outside Portugal. Also, due to the fact that the company has been listed on the

Euronext Lisbon since 2008, the Stock Market Authority (CMVM) requires that the company produces additional indicators for investors.

However, on a daily basis it is the Managerial Control Department that deals directly with the PMS. The team of seven controllers helps to implement PMS, producing information and calculating the KPIs to the company's top managers and business directors. Based on this, it is expected that managers play a role in the development of PMS; however, in practice this does not happen. Although the company has a management control team, the way in which the organization's structure[4] is designed does not motivate individuals from this department to take an active role in finding solutions and new managerial forms of running the business. Interviewee 10 observed:

> *If I have an idea or if I am aware of a structural problem, I actually do not know to whom I should talk to in order to be sure the problem will be solved or even if someone understands my point of view.*

Therefore, observations and interviews suggest that middle managers or even some top managers do not feel comfortable to suggest and implement new KPIs as well as new ideas to their superiors. Besides the current systems not promoting directly human behaviour initiatives, organizational culture[5] and the management style in the company may be factors moderating it. According to interviewee 6:

> *For sure, the organizational culture has an important role in influencing people's behaviour. A good PMS is that one capable of promoting and supporting managers' actions but also shape their behaviours. In our case, as PMS are not designed to directly influence employees' behaviour, I act according with my perception of how culture in the company is.*

During the research, it became evident that the way in which managers understand the current PMS determines the way they behave. A middle-manager from a non-consultancy area (interviewee 9) states the following:

> *I don't even know if we can consider that we have [formal] PMS. I can't see any strategy on them. However, about what exists, I don't understand their goals, especially when forcing customized systems to be implemented in different business areas. For instance, G-track is one of them. What can you expect of my behaviour? Of course I feel a little bit frustrated because it does not provide us accurate information.*

The lack of consensus towards the existing PMS in the company is visible, since each person has his/her own view and opinion about them. In this context, an environment where subjectivity exists is favourable. In order to overcome subjectivity, managers are constantly spending time talking between each other in an attempt to find consensus or enhancing the degree of their confidence based on second opinions. As interviewee 7 explains:

> *When I look to the systems we have, I see many problems. For instance, there are cases that they provide us wrong information, making employees spending more time performing their tasks.*

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[4] The organization's structure is designed in such a way that decisions at the top management level are privileged and where there is not frequent dialogue between directors and subordinates about the current decisions of the company.

[5] Schein (2004) defines organizational culture as being a "dynamic phenomenon that surrounds us at all times, being constantly enacted and created by our interactions with others and shaped by leadership behaviour, and a set of structures , routines, rules, and norms that guide and constrain behaviour".

> *Also, I can't see any system, or at least perceive that there is a system, indicating me which direction the overall company wants to go.*

The understanding of the role of a system is critical for the majority of employees. This is due to the fact that their personal strategy may not be aligned with the company's strategy. As the above quote mentions, some managers and most of the employees cannot identify clearly the current targets of the company, simply because they do not know how to do it or even have easy access to it.

Despite it being possible for some people to have access to the budget through the systems, where, in fact, the annual targets of the company are established, the lack of training in the PMS usage penalize their wide benefits. Poor communication can cause serious misunderstandings. Observations in the field demonstrate the need for a wide communication plan. In fact, employees claim for guidelines to understand the company's choices and strategies, and convey the need to be more confident when performing their tasks. According to them, it is very important that the company communicates to employees its values and principles and what the company expects from its employees. Observation shows that business areas where communication works best are those that least criticize the current systems. These types of perceptions translate into more individualism and less cooperativism among business areas.

Managers state that understanding a PMS comes from training, others explain how they work and why they are necessary, but also the way in which they are communicated or even if they are intuitive in their utilization. Most of the interviewees agree that understanding is essential for people to accept the adoption of new processes. In this respect interviewee 8 argues that:

> *Looking at the systems with a positive attitude makes the acceptance of new processes easier. A positive attitude makes people more pro-active to understand a system (…). A positive attitude is something that belongs to person's personality. Not everyone is capable to have a very positive attitude towards the implementation of new methods. However, positive communication influences a lot managers' commitment.*

Advantages in adopting PMS should be demonstrated to employees. For example, PMS help to achieve positive results. That is why a communication plan becomes necessary, which keeps consistency, decreases biased understandings and finally increases engagement. Some managers mention that an interesting communication plan requires a pro-active and dynamic approach in order to capture employees' attention. One of the middle-managers (interviewee 9) insists:

> *Periodic and creative events with managers would be good to promote and show the advantages of using PMS.*

On the other hand, there is a group of managers emphasizing the need fro clear and consistent PMS in order to avoid different interpretations of the information that they provide. Interviewee 5 contends:

> *Communication by many sources lead to different interpretations (…). It seems to be what currently happens.*

The researcher observed, as the consequence of the inconsistent way of communication, a low level of credibility in the institution, on the top management and on the PMS.

Most of the interviewees describe bad systems as being too many, too complex (integrating information from several sources), difficult to use and understand, not accurate and do not even satisfy the needs of the business. As interviewee 6 notes:

> *I see our PMS as complexes but simple [and vice versa] at the same time. On one hand, complex because they are so many but at the same time underdeveloped (…). However, simple because the systems only provide us simple and basic KPIs, not combining the different KPIs into more complex ones. In this last perspective it could be very useful to get better and more interesting information.*

This quotation confirms the idea that managers want to see PMS as simple instruments of getting complex information.

During the period of study in the company, the behaviour of managers towards PMS are addressed in five perspectives: motivation, participation, perception, job-related stress and tensions.

Motivation: Motivation can be the positive stress that performance measures creates on people. It makes people move forward, not only in the good moments but also in the bad moments. Interviewee 8 emphasizes:

> *I would say that the strongest effect of a PMS is on motivation. Whether as being positive or negative motivation.*

In a case where a KPI result is bad, if the manager feels that he/she has a resourceful and effective team, positive stress occurs. Clear systems can make people believe that targets are achievable. Interviewee 7 confirms:

> *When targets are clear and achievable, I am always motivated.*

Perception: In this perspective, perceptions about the effectiveness of a PMS are taken into account. Employees that see PMS as being clear and well-designed tend to be motivated to achieve their goals. Interviewee 5 argues:

> *PMS are enhancers of people performance, however right now they are not clear and not well-implemented. In some employees their perspective is that the PMS implemented in the company are not well-designed and so nobody meets the goals.*

People's perceptions of self-achievement and goal-achievement are strongly dependent on the effectiveness/quality of PMS however, the way internal processes are established in the organization also influences managers' perceptions. The internal processes refer to the set of actions that managers take to be aware of the position of the business and as a result they take decisions. These processes can include either a more pro-active or a less pro-active approach by managers, but essentially, the organizational culture might have a significant role here. It is observed that PMS increase perception of self-achievement and goal-achievement. Although here there is a time gap of on average one month. This is due to the way how systems and processes in the company are designed.

Finally, an apparent relationship between perception of unfairness and disappointment with the use of PMS are found. Some managers emphasize their disappointment when perceiving a system as not being fair. This happens in this company, in

systems that are perceived as providing higher quality and more accurate information to some business areas and not to the other ones, are not clear and cause subjectivity.

Participation: it is evident that PMS in the company promote interaction among employees. Long discussions and debates among managers and their subordinates about the business performance are, for instance, one of the effects. Others are the discussions about how to interpret a system and the validity of information that they provide.

On the other hand, middle managers ask for more dialogue and opportunity to participate in the conception of the PMS. Interviewee 9 suggests:

> *A culture of participation would enable an easier process of how people could understand and accept the systems.*

Working as a moderating factor, organizational culture influences participation. Low effective PMS make managers act according to, firstly, what they think the company wants them to act upon, and secondly, the judgment of others that will limit their actions.

Job-related stress: most of the interviewees agree on the positive stress that a PMS incites. On the positive side, people can be more excited and feel more energized to perform their best. KPIs offer comfort to managers in decision-making processes. Thus, they feel more confident because they can support their thoughts and decisions on metrics, having the positive endorsement of their partners what it respects to the judgement of the decisions. Interviewee 6 states:

> *I feel if I need to take difficult decisions, people will understand my point of view if I justify them with KPIs provided by PMS.*

At this stage, people tend to be more pro-active on being updated about the current metrics of the department where they work, going directly to meet, if necessary, the person capable of providing the accurate information. On the negative side, people may feel frustrated or even anxious. These negative effects appear essentially due to the lack of clarity and errors of the systems that create uncertainty for employees and hence, this is reflected in how they perform their tasks. Moreover, "bad" systems lead to wrong decision-making, which decreases the level of managers' confidence. Under these circumstances, people tend to be more reactive than pro-active because they wait for others to provide them with accurate information. Furthermore, managers may understand that the system works in one way, creating expectations which do not correspond to the actual reality, leading to frustration, especially when time is short.

A top manager (interviewee 2) suggests the following methods to overcome the negative pressure of a PMS:

> *The negative pressure of a PMS can be avoided with mentoring and coaching initiatives.*

Tensions: managers state that, on the one hand, PMS may clarify biased perceptions but, on the other, may create tensions between people because they feel more controlled. It was also found tensions in situations where targets were not well-defined, causing feelings of unfairness and incompetence. Tensions in the formulation of budgets (budget gaming)

and conflicts of interest in the monthly results of some business areas were perceived during the investigation.

5. Conclusion

The aim of this study is to contribute to a deeper insight regarding the consequences and effects on people's behaviour when using PMS in the companies by answering the following research question: How do managers understand KPIs and PMS and behave towards them?

The results suggest that managers' perceptions towards PMS determines significantly the way they behave. Findings support the claim that PMS influences in several ways motivation, perceptions, participation and job-related stress of managers. There is consensus on the comfort that a PMS provides in managers' decision-making processes. Furthermore, PMS promote pro-activity, although lack of clarity and errors of the systems favour reactivity among managers.

The understanding of a PMS depends on the effectiveness and quality of it, which in other words means a well-designed, clear (Domanovic, 2013), intuitive and accurate system. Communication is also a crucial element in facilitating managers' understandings of a system, diminishing subjectivity and engaging them in the companies' values and targets.

Moreover, findings suggest that complex and not well-designed PMS promote team discussions, and do not help to enhance team performance because decisions take more time to be reached. Simple and integrative systems that can produce functional KPIs are better than complex systems that are badly-designed and implemented. "Bad" systems make managers' decisions too dependent on others, which is a factor that prevents the autonomy of the manager. This leads to demotivation and passiveness of employees.

One of the consequences of the PMS found in this study is the tension that they might create on people. Even though PMS help to clarify managers' perceptions, they also call for the attention of people's performance to others. This creates a sense of "public control".

Finally, despite not being the aim of this research, evidence suggests that organizational culture and management styles influence managers and employees' behaviour. Therefore, a topic for further research might be the extension of the relationship between PMS, organizational culture and management styles.

There were several limitations faced during the research. Firstly, one of the researchers participated actively in the company, ending up as being part of its internal processes and a user of the PMS. However, in order to prevent biased interpretations and judgements of the systems, researcher triangulation was followed (Ryan *et al*., 2002). Secondly, the case study presented does not allow (statistical) generalizations. As Ryan *et al*. (2002) state, case study research applies a logic of replication and extension rather than a sampling logic; therefore the explanations drawn from this study need to be tested in other situations in order to evaluate their ability to explain the phenomenon investigated, and hence generate theoretical (analytical) generalizations.

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Appendix A. Diagram of the key ideas from the interviews

Interviewees	Key ideas from the interviews
1, 4, 6, 7, 8, 9 10, 11	➢ The current systems of the company are underdeveloped
4, 5, 6, 7, 8, 10, 11	➢ Big margin for improvements of the current PMSs
3, 5, 6, 8, 9, 10, 11	➢ Organizational culture influences people's behaviour
8, 9, 10, 11	➢ Culture shapes behaviour
6, 7, 8, 9, 10, 11	➢ The current PMS do not totally provide accurate information
	➢ Strategy is not visible through the systems
5, 6, 7, 8, 9, 10, 11	➢ Discussion more frequently among people about how to
6, 9, 10	understand the PMS
	➢ Lack of communication on the systems
5, 6, 7, 9,10, 11	➢ Lack of training about how to use and understand the PMS
9, 10, 11	➢ Importance of company in communicating its values and principles
	➢ PMS should communicate clearly what is expected from
1, 2, 6, 8, 9	employees
	➢ Understanding a PMS comes from training , the way how it is
1, 2, 5, 6, 9, 10	communicated and if it has an intuitive utilization
	➢ Understanding favours people to accept the adoption of new
2, 9, 10	processes
	➢ Need of a positive approach to make everybody embrace the PMS
6, 7, 8, 9, 10, 11	of the company
	➢ Interesting communication plan requires a pro-active and dynamic
2, 6, 9, 10	approach.
	➢ Inconsistent communication makes people not to trust completely
2, 9, 10	on top management
	➢ Bad systems are those that are:
1, 5, 8, 9	I. Too many
	II. Perceived as complexes
5, 9, 10, 11	III. Difficult to use and comprehend
6, 9	IV. Not accurate
9, 10, 11	V. Not satisfying the needs of the business
6, 8, 9, 10	➢ Need of simple but smart PMS
6, 7, 9	
	MOTIVATION
6, 7, 9	➢ Motivation makes people move forward in the good moments and in the bad moments
	➢ Motivation can be the positive stress that PMS provoke
5, 6, 7, 8, 9	➢ Competent teams and right resources help managers to be motivated to overcome bad KPI results
5, 6, 7, 8, 9	➢ Clear PMS make people to believe that targets are achievable
6, 8, 9	➢ Clear PMS make people to be motivated
1, 2, 5, 6, 7, 8, 9	**PERCEPTION**
	➢ Managers show disappointment and deception with systems
1, 2, 3, 5, 6, 7, 8, 9, 10	perceived as unfair
	➢ People do not make effort to achieve targets when goals are perceived as unfair
6, 9, 10, 11	➢ High temporal gap in the information provided by the PMS to the managers

5, 6, 8, 9, 10, 11	
	PARTICIPATION
6, 7, 8, 9, 10, 11	➢ PMS promote discussion among managers and employees about business performance
	➢ Middle managers ask for more dialogue and opportunity to participate in the conception of the PMS
5, 6, 7, 8, 9, 10, 11	➢ The culture of the company influences participation
	➢ Actions are limited according with what other people think
9	
	JOB-RELATED STRESS
6, 7, 8, 9, 10, 11	➢ PMS cause positive stress
6, 9	➢ People fell more energized
	➢ KPIs offer comfort to managers' decision-making
	➢ Complex and confused PMS make mangers feel anxiety and frustration
5, 6, 7, 8	
6, 7, 8	➢ Systems that lead to wrong decisions decrease the confidence level of managers
1, 5, 6, 7, 8, 9	
6, 7, 9	➢ "Bad" systems lead managers wait for accurate information from other people
5, 6, 7, 9	
6, 7, 9	
	TENSIONS
5, 7, 9, 10	➢ PMS are ways of giving to everyone the same information and messages
8, 10, 11	➢ People feel controlled through the PMS
5, 6, 7, 8, 9, 10, 11	➢ Not well-defined targets cause tensions and sense of unfairness