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# **Sustaining Performance in Turbulent Times: Identifying, Developing, and Expanding Core Activities**

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## **The International Council for Small Business (ICSB) 9th annual GW October Conference, Washington DC, USA “Entrepreneurship and Economic Development: A Winning Combination” 23-24 October 2018**

### **Central thesis**

Based on the assumption that it is quite impossible to manage what we do not know and cannot measure, this paper develops meaningful metrics, helping drive organizational performance, so as to make informed decisions. The analytical framework described hereafter allows the measurement of both the positioning and sustainability of different units within the same organization, as illustrated in our case study, but can also be implemented to assess the competitive advantage of a company over its competitors. The concept of positioning focuses on measuring unit performance and benchmarking it, so as to rank units as best, good, or low performers. The concept of sustainability considers the dynamic of performance over time and ranks it as eroded, improved, or maintained. Based on these two measures, it is then possible to provide specific recommendations for each unit regarding the improvement of its performance.

Using data to support decision making and foster development is valuable only if the primary purpose of such analytics remains the improvement of the way organizations do business (Luoma, 2016), by providing quantitative techniques that help solve business problems correctly and achieve business impact. To do this, analytics has to be built upon business priorities and more explicitly business rules. For Basu (2013), it is the most effective and timely way to provide relevant prescriptions based on available data regarding the course of action that aims at improving organization's performance. Working with business rules means the adoption of a process orientation to better understand the tasks that comprise a business model and investigates the performance of the overall process and its components (Liberatore and Luo, 2010). Having a process approach facilitates the presentation of organizational priorities by identifying core business activities and developing and expanding those that contribute the most to the positioning and sustainability of each unit. The use of quantitative analytics helps in identifying the areas that are or are not performing well and focusing on those that sustain performance, especially in difficult times. Indeed, if each unit is profitable in its main activities, a business impact can be expected that benefits the organization as well.

## **Methodology**

The methodology is based on 3 main steps.

1. The characterization of the process and sub-processes that define business activities. This step is implemented based on a synthesis of information available in the literature and the perception of managers regarding their activity.
2. The measurement of unit performance is implemented using an Operational Research technique called Data Envelopment Analysis or DEA (Charnes et al., 1978). DEA enables the organization to objectively benchmark and locate best practices within the organization

in a multi-dimensional setting (see Exhibit 1); best practices that are often not visible with other commonly used management methodology (Sherman and Zhu, 2013).

3. Based on DEA scores evaluated for the overall business process and each sub-process, positioning and sustainability measures are calculated for each unit (see Exhibit 2 for more detail) and recommendations are made at the organizational and unit level to help them improve and sustain performance over time.

The case study focuses on a microfinance institution located in Africa that has more than 70 units operating in remote rural areas and provides financial services to poor populations excluded from the conventional financial system. Data have been obtained at the corporate headquarters. They come from the bookkeeping of organizational units and have been audited by headquarters' staff. Thus, these data are reliable information on the inputs and outputs of each unit. The sample comprises 51 units (73% of all organizational units) having more than four years of activity in 2008. The period under investigation spans from 2008 until 2012 and thus covers the impact of the global financial crisis on the organization's activity. This period was particularly challenging with an increased in the number of clients by 36%, on average, and the number of poor clients by 66% over the period.

The description of the business activity based on a process approach considers that inputs are transformed into outputs. Inputs are assets (material capital), equities (financial capital), personnel costs, and other operating expenses. The organization is a social enterprise (Seelos and Mair, 2005) that works with an objective of financial sustainability and outreach to the poor. Thus, two types of outputs are considered for covering both goals: financial and social outputs. Financial outputs are savings collected by each unit and loans granted to their clients (Berger and DeYoung, 1997). Social outputs are described by the number of clients, the number of the poor within the client portfolio, and the number of women served by each unit (Schreiner, 2002). As poverty is a

subjective and relative concept, the number of the poor is calculated by using the Poverty indicator of Gutiérrez-Nieto et al. (2009), so as to work with the same evaluation of poverty at the unit level. It is then possible to define an overall business process that describes the transformation of all inputs into both types of outputs and two main sub-processes: a financial one that is the transformation of assets, equities, and personnel costs into savings and loans and a social one that transforms loans into the social outputs considered above. Finally, the financial sub-process is split into two components that are the transformation of all inputs into savings, also called the production sub-process, and the transformation of savings into loans that is called the intermediation sub-process (Piot-Lepetit and Nzongang, 2014).

## **Findings**

The first set of results focuses on the positioning of each unit within the organization. Findings show that, at the beginning of the period (2008), 38 units (75%) are identified as efficient or best performers by DEA, based on the overall business process. However, they remain only 27 (53%) at the end of the period (2012); showing huge movements in their positioning over the period. Indeed, no change is observed for only 21 units (41%), improvement for 11 of them (22%), and degradation for 19 units (37%). When considering changes in unit positioning (see Exhibit 3), the sub-process that is implied in the deterioration of this positioning is the production one, followed by the social one. The sub-process having the lowest impact on unit positioning is intermediation.

The second set of results deals with the sustainability of performance over time. Findings show that 16 units (31%) have maintained their performance, 27 of them (53%) have improved their performance over the period at a rate of 3.52% per year with a range that spans between 0.18% to 8.81%, and 8 units (16%) have eroded their performance between 2008 and 2012 at a rate of 3.47% per year with a minimum of 0.70% and a maximum of 7.48%. When considering changes in unit sustainability per sub-process (see Exhibit 3), intermediation appears as an activity that has helped

maintain and improve performance over the period. At the opposite, an erosion of performance regarding the sub-process production is the main explanation of the observed negative impact on the financial sub-process and the overall performance at the unit level.

For those having increased performance over the period, it appears that an improvement in both components of the financial sub-process was necessary to provide higher performance level. However, these improvements were not associated with the highest level of performance for the intermediation sub-process, but rather with a high level in connection with the highest level of performance for the production sub-process. Indeed, when intermediation reaches its highest performance level, and the performance of the production sub-process is just at a high level, a weak financial performance is observed, and units have just maintained their performance, and not improved it, over the period. Thus, results, as illustrated in Exhibit 3, show that intermediation is an activity able to maintain performance over time, even in turbulent times. Besides, they also show that an increase in the performance of the production sub-process to a larger extent and of the intermediation sub-process to a lower extent allows units to improve their performance over time. Thus, developing and expanding both sub-processes with the right balance is what has made a business impact on units over the period.

### **Implications for theory and/or practice and How findings can be implemented**

This paper illustrates how the synergistic use of both business rules and DEA provides effective and timely prescriptions based on available data. By providing a comprehensive overview of the business model and assessing performance by sub-processes, the methodology allows the characterization of the positioning and sustainability of each unit within an organization and the identification of sub-processes that are the main determinants of a sustained performance over a difficult time period. These findings lead me to my main conclusion that is that focusing on the cores, i.e., identifying, developing, and expanding core business activities first, before anything

else, help sustain performance and make a business impact on units, and consequently the organization as a whole, even in a difficult time period.

Even though our case study focuses on a multi-unit organization, the analytical framework described herein can be used for assessing the positioning and sustainability of a company over its competitors as well. It can also be implemented in quieter periods, even though implementing it during hard time periods allows a deeper capture of core activities that sustain performance.

## References

- Basu, A. (2013). Five pillars of prescriptive analytics success. *Analytics-magazine.org*, March-April, 8-12.
- Berger, A.N., & DeYoung, R. (1997) Problem loans and cost efficiency in commercial banks. *Journal of Banking and Finance*, 21, 849-870
- Charnes, A., Cooper, W.W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research*, 2, 429-444.
- Cooper W.W, Seiford, L.M., & Tone, K. (2007), *Data Envelopment Analysis, A comprehensive Text with Models, Application, Reference and DEA-solver Software*, 2<sup>nd</sup> ed., Springer.
- Daraio C., & Simar, L (2007) *Advanced Robust and Nonparametric Methods in Efficiency Analysis: Methodology and Applications*, Springer, Berlin.
- Gutiérrez-Nieto, B., Serrano-Cinca, C., & Mar-Molinero, C. (2009). Social efficiency in microfinance institutions. *Journal of Operational Research Society*, 60, 104-119.
- Liberatore, M.J., & Luo, W. (2010). The analytics movement: Implication for operations research. *Interfaces*, 40(4), July-August, 313-324.
- Luoma, J. (2016). Model-based organizational decision making: A behavioral lens. *European Journal of Operational Research*, 249, 816-826.
- Piot-Lepetit, I., & Nzongang, J. (2014). Financial sustainability and poverty outreach within a network of village banks in Cameroon: A multi-DEA approach. *European Journal of Operational Research*, 234, 319-330.
- Schreiner, M. (2002). Aspects of outreach: A framework for discussion of the social benefits of microfinance. *Journal of International Development*, 14, 591-603.

Seelos, C., & Mair, J. (2005). Social entrepreneurship: Creating new business models to serve the poor. *Business Horizons*, 48, 241-246.

Sherman, H.D., & Zhu, J. (2013). Analyzing Performance in Service Organizations. *MIT Sloan Management Review*, Summer.

### **Exhibit 1: Data Envelopment Analysis (DEA)**

DEA is an approach based on linear programming models that allows to measure efficiency of decision-making units (DMUs). DEA provides each DMU with an efficiency score that has to be viewed as its relative efficiency in regards to all DMUs involved in the assessment. DEA divides the sample of DMUs under evaluation into two groups: efficient and inefficient. Efficient DMUs are those that receive a score of unity, and other DMUs that receive a score below unity are called inefficient by comparison to the former group. The group of efficient DMUs comprises best performers or leaders that can be emulated by other DMUs. For each inefficient DMU, DEA produces a specific set of efficient DMUs that can be used as benchmarks and role models for efficiency improvements. Depending on its size and scope, each DMU receives a different set of benchmarks (Cooper et al., 2007).

Thus, DEA provides managers with a robust mechanism by which to assess and manage performance. DEA enables companies to benchmark and locate best practices that are not visible through other commonly used methodology, especially ratio analysis (Sherman and Zhu, 2013). Indeed, DEA looks at how different inputs have been used to produce outputs. By combing these data, DEA allows decision makers to compare performance of different DMUs by looking at how they are in converting inputs into outputs. In doing so, DEA provides unique insights about opportunities to improve performance (Luoma, 2016). In this paper, an output-augmenting or output-oriented approach has been used, which looks at how much outputs can be expanded while maintaining the current level of inputs unchanged (Daraio and Simar, 2007).



## Exhibit 2: Positioning and Sustainability Measures

### Positioning

The measure of positioning of a unit  $j$  ( $j=1, \dots, J$ ) in a period  $t$  ( $t=1, \dots, T$ ) is defined by its DEA efficiency score ( $eff_{it}$ ), that is:  $P_{it} = eff_{it}$ , and the change in the positioning of the unit between the beginning and the end of the period is evaluated as follows:  $P_i = eff_{iT} - eff_{i1}$ .

If  $P_i > 0$ , the positioning of  $DMU_i$  has increased and  $DMU_i$  is considered as a best performer. If  $P_i = 0$ ,  $DMU_i$  has maintained its positioning all over the period and is considered as a good performer. Finally, if  $P_i < 0$ , the positioning of  $DMU_i$  has decreased and  $DMU_i$  is called a low performer.

### Sustainability

The measure of sustainability of a unit  $j$  ( $j=1, \dots, J$ ) in a period  $t$  ( $t=1, \dots, T$ ) is defined by a change between the DEA efficiency score in  $t$  ( $eff_{it}$ ) and the DEA efficiency score in  $t-1$  ( $eff_{it-1}$ ), that is:  $S_i(t, t-1) = eff_{it} - eff_{it-1}$ , and the change in the sustainability of the unit over the period is measured by the mean value of changes in DEA efficiency score ( $eff_{it}$ ) over the period evaluated as follows:  $S_i(1, T) = \frac{1}{T-1} \sum_{t=2}^T (eff_{it} - eff_{it-1})$ .

If  $S_i = 0$ ,  $DMU_i$  has maintained its performance all over the period. If  $S_i > 0$ ,  $DMU_i$  has improved and thus sustained its performance. If  $S_i < 0$ ,  $DMU_i$  has eroded its performance over the period.

**Exhibit 3: Changes in unit positioning and sustainability between 2008 and 2012**

