A Model of Representation and Evaluation of the Global Performance

Proposition d’un modèle de représentation et de mesure de la performance globale

Abstract

Our paper aims to improve the understanding of the links between the social, economic and environmental performance by mobilizing a joint theoretical framework (the stakeholder theory and the resources based view theory). Also, we develop a measurement model of the performance clarifying simultaneously the structural relations between the three dimensions (economic, social, and environmental). This conceptual model is validated on worker cooperatives data, then we examine the theoretical and managerial implications.

Résumé

Notre article vise à améliorer la compréhension des liens entre les dimensions économique, sociale, et sociétale (incluant l’environnement) de la performance globale, en mobilisant un cadre théorique mixte (la théorie des parties prenantes et la théorie des ressources). Dans ce cadre, nous développons un modèle de représentation et de mesure de la performance globale explicitant simultanément les relations structurelles entre ses différentes dimensions. Ce modèle conceptuel est validé sur des données collectées auprès des sociétés coopératives et participatives (SCOP) et ses implications sont discutées.

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Introduction

Originally understood in a strictly financial way, performance has been progressively enhanced over the course of the 20th century to take into consideration the “social responsibility” of the organization towards its different shareholders or “stakeholders” (Zenisek 1979). This view of an enhanced performance including social, economic, societal, and environmental dimensions makes reference to the notion of “global performance,” which aims to go beyond the segmented definitions of economic and social performances in organizations whose object is to deliver social and environmental advantages (Elkington 1997; Paton 2003). Thus, Baret (2006) defines global performance as “an aggregation of economic and social and environmental performances,” where Reynaud (2003) defines it as a combination of the financial performance, the social performance, and the societal performance. This conceptualization of performance is the one supported by the theory of the stakeholders (TPP). In effect, the term global performance emerged to take into account published strategies of sustainable development (Capron and Quairel-Lanoizelee 2010) and of social and societal responsibilities (CSR), even if the concept accepts a variety of interpretations depending on whether one subscribes to the European or the American vision of CSR. Thus, this view of performance contradicts a hierarchical performance among the economic, social, and societal dimensions (Brignall and Modell 2000; Weaver et al. 1999).

In addition, the place of societal and environmental performance (we will use the two terms side by side for the rest) in global performance can include two perspectives (Wolff et al. 2009): a normative approach with work related to the ethics of the business (Business Ethics) and a pragmatic approach concerned with the role of the business in society (Business and Society). According to the first approach, the behavior of the actors and activities of the business are subject to the moral judgment of
the stakeholders (Evan and Freemen 1988), and the fact of acting in a responsible manner is justified by consideration of the moral and ethical order. In the second view, the organization cannot disconnect from its social environment (Donalson 1982) and the societal-environmental dimension across sustainable development and the societal responsibility represent a lever likely to create value (Sharma 2001). This approach revisits the idea of a concept enhanced by responsibility and performance; however, the progressive consideration of economic, social, and environmental preoccupations by the business presumes an interest in internalizing. Yet the results of empirical works on the sense and intensity of the relations among financial performance, social performance, and societal performance are in contrast (Allouche and Laroche 2005; Orlitzky et al. 2003; Margolis and Walsh 2003; Mackey et al. 2007; Surroca et al. 2010). Thus the hypothesis of a performance model based on the notion of entirety is questionable. Yet these empirical works contain theoretical and methodological weaknesses: a) the contents of the definitions of performance are often ambiguous and subject to criticisms (Griffin and Mahon 1997; Dohou and Berland 2007), b) the dimensions of performance remain segmented, sometimes hierarchical (these works juxtapose elements of global performance as well as researches based on the adaptation of the balanced scorecards), and move away from the definition of global performance, c) the statistical methods used (methods of events, bivalent statistical analyses) are insufficient to understand the complexities of the interactions among the different elements of performance. This article then is a part of the continuum of works that aim to better clarify the contents of global performance and to understand the causal relations among the different dimensions.

The objective of this research, then, is to bring clarity to the representation and measure of global performance. To do so, we present a conceptual model that simultaneously accounts for the interactions among the different elements. At the methodological level, we specify a model of structural equations that explicate the causal relations among the different dimensions of performance and practices of management, both social and societal. Its validation resides in the facts collected from cooperative societies (called SCOP), whose dual identities lead them to research a performance at once economical and social (Chédotel and Pujol 2012).

This paper is organized in two parts. In the first we present the theoretical bases of a model of the measure of global performance, then the procedure for its validation. In the second part we outline the results of the empirical analyses with a discussion of the study’s major findings and the implications.

1. Theoretical Bases of the Research: The Operationalization of Global Performance

We have recalled the enhancement of the dimensions considered in the concept of performance, which can have several meanings (Bourguignon 1995; Lorino 2003). Our concept thus is that the appreciation of global performance is measurable, and that it can be defined as a multidimensional construct, a result of interactions among its economic, social and societal determinants (Reynaud 2003; Dohou and Berland 2007). It is from this perspective that we develop a model of measurement of global performance.
1.1. Determinants of Global Performance

We reveal the emergence of the notion of global performance then the difficulties of its evaluation, bringing us to propose a model of the representation of global performance.

1.1.1. FROM ECONOMIC AND SOCIAL PERFORMANCE TO GLOBAL PERFORMANCE

The concept of global performance emerged over several years with the appearance of sustainable development, but its premises are found in older concepts than that of social responsibility, developed in the United States by Carroll (1979). He clarified it in 1999 as being the capacity of a firm to respond to social pressures, and caused to emerge the notion of societal performance by considering it as a crossroads of three dimensions: the principles of societal responsibility (economic, legal, ethical and discretionary), the response philosophies brought to societal problems that present themselves (going from denial to anticipation) and the societal domains within which the business is implicated. This definition clarifies what Clarkson (1995) proposed to understand the capacity to manage and to satisfy the stakeholders.

Yet this social performance is only one part of the concept of global performance, which is defined as “the aggregation of economic, social, and environmental performances” (Baré 2006:2; Reynaud 2003) where it is formed “by the reunion of the financial performance, social performance and societal performance” (Germain and Trebucq 2004). In this sense, global performance aims to integrate different performances (the triptych of definitions below) in a synthetic approach, and “this integration could imply a coherence among the three dimensions with the models of causality relying on different factors coming from different dimensions” (Capron and Quaire-Lanoizelee 2010:17). Even if the debates illustrate different concepts between the organizations (NGO and companies) and among the Anglo-Saxon and European approaches (Acquier and Aggeri 2007) rendering the concept a bit blurred (Pesqueux 2004), one can suggest that global performance relies on a theoretical sub-base postulating social responsibility towards the stakeholders, consideration of participants with strategic resources, and legitimate research of the environment. These factors form the theoretical base of our propositions, which are detailed below.

The notion of social and/or societal responsibility (CSR) introduced in the concept of global performance relates back to representation of the nature and the role of the organization. If the neoclassical theories (Friedman 1962) challenge all ideas of social responsibility, those of the current ethic (Business ethics) affirm this responsibility with regard to society when the organization wishes to perpetuate its legitimacy and the power which that confers on it (Davis 1973), or for questions of public relations (reputation).

In a parallel vein, this approach by the stakeholders implies that the identification and consideration of the stakeholders contribute to the ability to create value and activity (Freeman 1984). In addition, by studying the business-stakeholder relations it is necessary to define these last: if Freeman has a large view of stakeholders, Carroll (op.cit.) gives a more precise list. We will hold, in our conception of social practices influencing global performance, Carroll’s view, which was operationalized to identify responsibility towards the stakeholders.
In addition, consideration of social, societal, and environmental practices can be explained by the theory of management by resources (Barney 1991). This theory depends on the organization of the participants of its environment, notably the ability to manage the demands of different groups, in particular, those whose resources and support are determinants of its survival (Pfeffer and Salancik 1978). The recommendations in terms of identification of social groups on which the organization depends, of adjustments of actions to their demands, and of influence in order to reduce uncertainties lend “social legitimacy” to a strategic resource on which the organization depends for its survival. Nevertheless, the theory of dependence on resources includes social responsibility in the traditional economic vision of the aims of the enterprise (Capron and Quairel-Lanoizelee 2010): organizations engage in societal responsibility when they are constrained to assume it in order to respond to pressure and attention from their resource suppliers. Also, we call on this approach for consideration of the internal practices of the organization at the level of performance. The term global is thus a balanced enlargement of the domains covered by performance.

These theories of stakeholders and resources allow us to consider global performance as a multidimensional construct joining together economic, financial, social, and societal-environmental aspects (Figure 1, infra) that will make up global performance as defined by the preceding authors.

If the two theories complement each other in order to explain consideration of global performance from internal and external environments, they suppose an integration of dimensions. Some works have shown positive connections existing among these elements of global performance and certain of them evoke interrelations among these determinants (Brammaer and Millington, 2008; Margolis and Walsh 2003; Mackey et al. 2007; McWilliam and Siegel 2000; Orlitzky et al. 2003). We are aware that some authors (Capron and Quairel-Lanoizelee op.cit., Brignall and Modell op. cit.) suppose that dissociation of the dimensions is preferable in order to consider and measure performance better, which makes reference to a logic of the territory of different managers, or even that a segmented measure of performance is easier (Weaver et al. 1999). However, we seek to bypass works representing global performance as a juxtaposition of intermediate performances – economic, social, and environmental – in order to propose an integrated vision of performance. This last is a part of the current system where the totality of an object corresponds more than the sum of its parts. In other words, the theoretical interrelations among the dimensions of global performance imply an evaluation of the concept at an aggregate level more than a dissociated measure outshining their interrelationships.

### 1.1.2. THE QUESTION OF REPRESENTATION AND EVALUATION OF GLOBAL PERFORMANCE

In order to evaluate global performance, authors often make reference to the exercise of responsibility and propose a list of stakeholders or of identified processes; also, global performance covers the impacts of the activities of the organization compared with the collection of its stakeholders and the necessity to connect different factors coming from different dimensions. However, the existing representations often dissociate these dimensions.
In this sense, Reynaud (2003) proposed to simplify global performance into three elements, which are economic performance, social performance (assessed on equality of treatment, working conditions, and respect for the Human rights), and environmental performance (including decreasing pollution and resources, product security and installations security), but the items were not tested, nor the supposed relations.

Another representation allowing for an evaluation of global performance is proposed by works dealing with the expansion of the Balanced Scorecard (BSC) where the term “environmental” is considered as specific criteria in the four axes of BSC, or even in a particular axis (Bieker 2002). Thus we have the Sustainability BSC (which concerns a BSC specific to societal responsibility, implementing social and environmental objectives, Hockerts 2001) and the Total BSC (a model based on a series of six causal relations among the stakeholders, Supizet 2002). However, these representations segment the performance dimensions and hierarchize them (Germain and Trebuck 2004) and, besides, the causal connections have never been analyzed (Ittner and Larcker 2004). An evaluation could equally be made across the Anglo-Saxon approach of the concept of Triple Bottom Line (Elkington 1997). In pointing out a “social value added” or an impact on society, the Triple Bottom Line is a path for global measure comprising a triple contribution to economic prosperity, environmental quality, and the amelioration of social cohesion. But the balance sheet remains segmented into three distinct parts presented together without causality; the same as the approach held by global reporting (Global Reporting Initiative – GRI) even though it is cited for evaluation of global performance (Dohou and Berland 2007).

From these different theoretical approaches, whose explicative vision is one of performance going beyond the economic and financial dimension, the external and internal dimensions have been extracted in order to propose a conceptualization integrating the interactions among the different dimensions (Figure 1, infra). Based on the principle of a system that stipulates that the totality is more than the sum of the constituent parts, it goes beyond the segmented vision of global performance. This model of performance thus allows for calculating a score that aggregates the different dimensions of performance. Once standardized across a representative sample of a population of target organizations, this indicator of performance can be used for longitudinal and transverse comparisons.

From a methodological point of view, this conceptualization of global performance can be represented by a measurement model of the second order composing two levels of abstraction: global performance (superfactor h) and its economic, social, and societal determinants (superfactor xi). This is why we are adopting the developmental procedure of a measurement model already known in the literature (Jarvis et al. 2003). Even though we favor this conceptualization of performance (the European approach), we have also specified a measurement model whose social, economic, and societal dimensions are taken in isolation (the Business Ethics approach). The objective is to determine which of these two conceptualizations better fit data.
Note: Economic Performance (PERFECO), Social Performance (PERFSOC), Societal/Environmental Performance (PERFENV), Global Performance (PERFGLOB) – and the error term ξ.

1.2. Conceptual Framework and Theoretical Hypotheses of Research

1.2.1. Conceptual Model

The measurement model of global performance (figure 1) clarifies the interactions between economic and financial performance, social and societal performance. Formally, this model itself is under-identified and requires other structural relations in order to estimate its parameters. In the case of global performance, these concern the practices associated with different dimensions of global performance. They are called business or management practices, social and societal-environmental practices, and they reveal economic performance and social performance as intermediary performances in rapport with a global performance objective.

The articulation of different accepted variables rests in the paradigm SCP (Structure – Conduct (behavior) – Performance) (Durand 2000). Nevertheless, our conceptual model differs in several ways from the SCP model, not only in the content of the variables but also in the articulation of the three components of SCP analysis. Thus, in our model, the structural factors are control variables (activity sectors, size, sales figures) and behavioral factors relating to social, societal, and economic practices of the organizations.

For a sense of the relations among the different variables, the theory of stakeholders (an instrumental perspective) predicts a positive causal relation between societal-environmental practices and economic performance. With regard to resources approach, it predicts that business practices and social practices (Côté’s qualifications 2009) positively influence economic and social performances."
These two performances, associated with social-environmental practices, will explain global performance as the models issued by CSR suggest (Reynaud 2003).

Regarding these different contributions, our conceptual model of global performance measurement is represented in figure 2.

**Figure 2**

*Conceptual model*

<table>
<thead>
<tr>
<th>Practices</th>
<th>Dimensions of performance</th>
<th>Awaited performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm practices</td>
<td>Economic and Financial Performance</td>
<td>+</td>
</tr>
<tr>
<td>Societal Practices</td>
<td>Environmental performance</td>
<td>+</td>
</tr>
<tr>
<td>Social practices</td>
<td>Social performance</td>
<td>+</td>
</tr>
</tbody>
</table>

Control variables: industry, size.

As shown in Figure 2, the attendant causality lines are all positive – except for those between “social and environmental practices” with “economic and financial performance” and “business practices” where the literature admits positive and negative relations: in that way, Berman et al. 1999, or Hillman and Keim 2001, attesting to a positive relation between financial performance and societal norms including salaried employees and civil society; but the environmental norm seems not to have an influence or a negative relationship with financial performance according to Trebuch and d’Arcimoles (2003). It is also suggested that societal-environmental practices influence both economic performance (reduction of risks, of costs through reutilization of losses, and amelioration of commercial image) and environmental performance, in the same way that social practices influence societal practices (Savall and Zardet 2001) and economic performance (Martory 2009). The sense (the signs) and the direction of structural relations expected among the variables of the conceptual model are enhanced in the presentation of the content of the constructs and their measures.

**1.2.2. DEFINITION OF THE CONSTRUCTS**

This essential phase of outlining the contents of the different constructs of the conceptual rests both in the literature (items from Côté’s model (2009) and items from the national standard SD21000<sup>4</sup>) and the advice of experts (methodology details infra and in the annex 2).
Business practices
In using items from Côté’s model of cooperative equilibrium (2009), we have selected three variables characterizing a business for “business practices” in order to understand a system of objectives and of measure of the results, a financial follow up, and insertion into its competitive environment.

Social practices
To operationalize the “social practices,” we have used Côté’s four dimensions (2009), including information practices (of the principal members), formation and education practices, consultation practices, and decision practices. Following that, in considering the items in the standard SD21000 which proposes an operational approach to these dimensions, we have retained the following six variables: the welcome for employees (explanations about operations, values, tutoring, handbook, information meetings), the internal communication, the investment into staff training, the importance of internal promotion, the percentage of participation in the meetings and their representation.

Societal and environmental practices
With the importance of this issue, there exist numerous instruments making it possible to translate and to communicate “the citizen consideration”, but to categorize these tools is not easy as Capron and Quairel-Lanoizelee emphasized (2010). In order to state the different facets of societal practices, we have rallied those enumerated by Reynaud (2003) and Carroll (1999), rounded out by the operationalization proposed by the national standard SD21000. Following that, we presented the list to some experts (methodological details, infra) and kept the variables the most often cited. Also, variables were rallied in reference to the environment (notably, the reduction of pollutants) to local development (for example, territorial economic development), to communication with stakeholders (relations with external structures) and the concerns towards citizen initiatives and public priorities.

Economic and financial performance
This is measured by three types of return because the literature presents a large diversity of definitions and several kinds of indicators are used (Brammer and Millington 2008). We have used “accounting” measures of performance to facilitate comparisons based on profitability (Berman et al. 1999). To that end, we are mobilizing three ratios generally used to evaluate performance (Hart and Ahuja 1996) and looking to obtain a comparable measure: economic return measured by ROA (Return on Assets), financial return measured by ROE (Return on Equity), and commercial return by way of the result in conjunction with sales figures.

Social performance
This concept includes different variables in equal measure: according to Savall and Zardet (2001), “social performance is defined by the degree of satisfaction of the participants,” and according to Reynaud’s schematic (2003), it refers to equal treatment, good working conditions, and respect for the Human rights. We retain these ideas in measuring social performance with three variables: heightened participation in meetings, management of wage scales6, and the presence of working conditions favoring involvement. The respect of these elements can be found just as well in the social dimension in the national standard SD21000.
This concept became operational with the list of items proposed in the national standard SD21000, completed by two items specific to SCOP proposed by the experts. We have thus kept the variables referring to the dimensions of the referent, and more precisely, to the social responsibility (such as consideration of the social impact attached to products/services), sustainable development (such as the presence of an environmental and eco-conceptual strategy), and transparency toward the stakeholders (for example, client information and sustainable cooperation with suppliers).

**Global performance**

This construct is by definition multi-dimensional (figure 1). Given its complexity, we have kept in one section the social, economic, societal, and environmental (causes) determinants as referenced in Reynaud’s model (2003), and as referenced in the *triple bottom line* (economic and social performance and social legitimacy), and in another section its manifestations (reflective indicators) assessed with the help of criteria established by Belucci et al. (2012), to understand the growth of sales figures (economic dimension), research of the exchanges of information and absence of conflict (social dimension), research of ethical placement, management of pollution risks, participation in the general interest (societal-environmental dimension for legitimacy). These elements (formative and reflective indicators) have been proposed by the same experts as those for assessing societal practices and retained according to their hierarchy. Thus, the measurement model of global performance is represented by a MIMIC (Several-Indicators/Several-Causes) type model.

We will now discuss our research hypotheses.

**Research hypotheses**

We are using a general hypothesis (HG) which stipulates that global performance is a multidimensional construct (figure 1): it is determined simultaneously by economic, social, and environmental performances (level II) and, indirectly, by business practices, social practices, and societal-environmental practices (level I). A postulate and three hypotheses corresponding to HG are worded to validate the representative sub-models of the general determinism of this research:

– Postulate: the organizations in the study researching economic and social performance have a dual identity represented by the qualified practices of both the businesses and the associative (Chédotel and Pujol 2012; Côté 2009).

H1: “associative” or “social” practices significantly and positively influence social performance (Côté 2009; Martory 2009).

H2: “business practices” significantly and positively influence economic performance (Côté 2005; 2009; CGSCOP web site).

H3: “societal-environmental practices” significantly influence economic performance and environmental performance (Capron and Quairel-Lanoizelee 2010; Margolis and Walsh 2003; Mackey et al. 2007; Reynaud 2003).

The following section presents the validation process of these hypotheses.
2. Results of Empirical Analyses

2.1. Research Methodology

The empirical study depends on specification of a model of structural equations made up of a measurement model (scale of measure of constructs) and a structural model: causal relations between global performance and its dimensions, and the interactions among the different dimensions (figure 2). The validation phase is based on collected information in relation to specific businesses that are the SCOP (cooperative and participatory societies), because these organizations are particularly concerned with both economic and social performance, or even performance enlarged to several dimensions (Defourny and Nyssens 2008; Côté 2009).

As a reminder, contrary to public or private businesses, the money of the cooperatives is comprised of the contribution of the salaried employees. This pooling of capital allows the members of the cooperative, thanks to their status as owner-clients, to be participants and beneficiaries of their own net: thus it is the cooperation of the salaried employees that allows assurance of economic and social performance. In this way, SCOP continues the habitual cooperative principles, with one specific: the salaried employees there are in the majority associate members and thus are both members and owners of the business or “co-entrepreneurs.”

The Confederation of SCOP’s inquiries (CGSCOP 2001, available on the website) demonstrate that this form of organization promotes the investments of salaried workers in the Society’s favor, notably within the associations and municipal councils. Cooperatives thus can be considered like a bridge between traditional business, cooperatives, and the associative world in which they combine certain traits and are directly concerned with global performance. This characteristic will naturally influence the results obtained as well as the research terrain and in doing so suggest an integrated measure. Also we need the organizations most sensitive to the notion of global performance. On the other hand, this characteristic limits external validity of our results.

2.1.1. DATA

The Confederation of the SCOP (CGSCOP) put at our disposal the national file of 360 SCOP whose staff is strictly greater than 15 people, in order to include an established management system, to respond to our questionnaire bearing on the dimensions of performance. Indeed, among the 1920 SCOP in France, we have addressed a file of 360 and gotten 140 responses including 121 usable (the responses were removed in order not to bias the statistical results). The scope of this sample is appreciable because it came from a limited population. Table 1 describes the characteristics of this sample.

The over-representation of large SCOP (staffs and sales figures) in the sample is due to the choice of a single level of staffs during the administration of our questionnaire. Nevertheless, the sector characteristics of our sample are close enough to the population. Consequently, the generalization of our empirical results to the population of SCOP with more than 15 employees is not a problem for external validity.
The process of development and purification of these items was completed in two steps. First, the operational definitions of the different constructs and the often partial measures proposed in the literature allowed us to generate a collection of items for each scale. Face (and content) validity of these scales was examined using a semi-directive interviews with the directors of five workers cooperatives and management board members of the CGSCOP. After having judged that the content validity was satisfactory, a questionnaire including the different scales was sent to SCOP. This questionnaire was structured based on the conceptual model presented and includes a specification sheet of the business, practices in evaluation methods and performance measure, social practices, and societal-environmental practices. The items in the measurement scales of different constructs are given in annex 1.

Finally, we have developed measurement models for each of the theoretical constructs: annex 2 reviews the principal stages of validation. Our procedure relies on recent works on the development of a measure (Jarvis et al. 2003): construct validity was examined with exploratory and confirmatory analyses (annex 2).

### STRUCTURAL EQUATION MODEL

In order to examine the relations structural model postulated by hypotheses (figure 2), we have initially specified a model of structural equations (figure 3, infra):

\[ \eta = \beta \eta + \Gamma \xi + \zeta \]  

(1)

with the following notation: \( \eta \) (PerfECO, PerfSOC, PerfENV, PerfGLOB) and \( \xi \) (PratENT, PratSOC, PratSOCIET), \( \zeta \) the term of error.

Table 1
Descriptive statistics of the sample

<table>
<thead>
<tr>
<th></th>
<th>National (survey 31/12/2011)</th>
<th>Our Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of worker cooperatives</td>
<td>1918</td>
<td>121 respondents</td>
</tr>
<tr>
<td>Mean of employees</td>
<td>21</td>
<td>28.5</td>
</tr>
<tr>
<td>Average annual revenues (millions €)</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>% construction activity sector</td>
<td>27</td>
<td>27.1</td>
</tr>
<tr>
<td>% metalworking and electricity sector</td>
<td>19</td>
<td>14.5</td>
</tr>
<tr>
<td>% publishing, wood, and glass sector</td>
<td>4</td>
<td>7.4</td>
</tr>
<tr>
<td>% food and agriculture sector</td>
<td>5</td>
<td>9.5</td>
</tr>
<tr>
<td>% physical services sector</td>
<td>15</td>
<td>9.5</td>
</tr>
<tr>
<td>% intellectual services sector</td>
<td>18</td>
<td>16.5</td>
</tr>
<tr>
<td>% others sectors (health, education, sports...)</td>
<td>13.5</td>
<td>15.5</td>
</tr>
</tbody>
</table>
We have also specified a rival structural model in which global performance is segmented (figure 1b), to understand:

\[
PERF_{GLOB} = \phi_1 PERFSOC + \phi_2 PERFECO + \phi_3 PERFENV + \zeta
\]

(2)

With \(PERF_{CECO} = \sum \alpha_i Indeco_i\); \(PERFSOC = \sum \beta_i Indsoc_i\); \(PERFENV = \sum \gamma_i Indev_i\); \(Indeco, Indsoc, Indev\) are respectively the indicators of measure of economic, social, and environmental performance (the items of the measure scales) and the coefficients \(\phi, \alpha, \beta, \) and \(\gamma\) represent the weight of each of the indicators. In order to evaluate the validity of a model, we used several Gof (Kline 2011). Table 2 shows that the Gof of model I are satisfactory. It shows that relative to accepted thresholds, model I cannot be rejected. In addition, the rival model\(^1\) (equation 2) is rejected relative to model I. Thus we can suggest that a conceptual model of global performance joining these different dimensions has a superior explicative power to a model disassociating the different dimensions of performance\(^2\).

### Table 2

Fits indices of model I

<table>
<thead>
<tr>
<th>post adjustment indices</th>
<th>acceptance threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\chi^2 (ddl = 108) = 170.6)</td>
<td>(P &gt; 0.05)</td>
</tr>
<tr>
<td>(p = 0.00179)</td>
<td>(&lt; 4)</td>
</tr>
<tr>
<td>(\chi^2) normé ((\chi^2/ddl)) = 1.62</td>
<td>(&gt; 0.9)</td>
</tr>
<tr>
<td>NFI = 0.91</td>
<td>(&lt; 0.08)</td>
</tr>
<tr>
<td>RMSEA = 0.064</td>
<td>(&gt; 0.9)</td>
</tr>
<tr>
<td>AGFI = 0.92</td>
<td></td>
</tr>
</tbody>
</table>

In addition, the multiple determinant coefficients of the constructs are satisfactory (\(R^2\) greater than 0.5) except for global performance in which the variance explained by the three performance dimensions (\(Perf_{ECO}, Perf_{SOC}, Perf_{ENV}\)) is 39.2%. This encouraging result indicates nevertheless that the content of the construct is relatively difficult to outline and thus to explain in spite of pre-tests (cf. further research).

We will now discuss in detail the principle results before concluding with managerial implications.

### 2.2. Results and Interpretation

To appreciate the relative importance of each of the performance dimensions, we are reporting the standardized estimated parameters (figure 3). Then we will supply the non-standardized parameters that will serve to create counter-factual experimentations (table 5).

Figure 3 does not show the relations among the practices (business practices with social practices, business practices with societal practices, and social practices with economic performance) because they are statistically non-significant within our sample.

At first the structure factors (size, activity sector) were not taken into account. The principle results are summarized in table 3. The results of the estimated model of structural equations (Model I, equation 1) are reported in figure 3.
The results show that hypotheses HG, H1, H2, and H3 are confirmed (for H3, $\alpha = 0.10$).

We also contend that social performance impacts global performance twice as much as the economic and financial element. This result is interesting and supports the idea of enlarging the notion of economic and financial performance to take into account the social aspects of performance. Nevertheless, the role of the societal and environmental dimension (PratSOC-ENVT) discussed at length in the literature is marginal and has small effects on economic and global performance. In this way, its direct effect on global performance is only 0.09, less than one tenth of its variance, and the indirect effect mediated by economic performance is only 0.028; that is, a relatively weak total effect ($0.028 + 0.09 = 0.118$).

### Table 3

**Empirical validation of hypotheses on structural relations**

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>HG</td>
<td>Confirmed**</td>
</tr>
<tr>
<td>H1</td>
<td>Confirmed**</td>
</tr>
<tr>
<td>H2</td>
<td>Confirmed**</td>
</tr>
<tr>
<td>H3</td>
<td>Confirmed*</td>
</tr>
</tbody>
</table>

** p value ($\alpha = 0.05$), * p value ($\alpha = 0.10$)
Before now, we estimated the structural model under the hypothesis of homogeneous behaviors of SCOP. We have underlined that this strong hypothesis would return to the off to take into account their specifics with regard to their sizes (staffs, sales figures) and their sector of activity. These control variables have already been discussed in the literature on business strategies and we hope here to examine their impacts on the principal causal relations among the different performances. Consequently, we are retaining a general hypothesis that does not specify exactly the meaning of the impact of moderating factors.

HG1: The intensity of causal relations among the practices and performances on global performance depends on contingency factors (size, activity sector, sales figures). This hypothesis postulates heterogeneity in the SCOP behaviors. To test this hypothesis, we specified two overlapping models. In model I, contingency factors are presented as staggering variables (control variables), that is, causes common to economic performance and to social performance (figure 4). In model II (equation 3), we have added a variable that represents the term of interaction that measures the moderating effects of the contingency factors.

Model II: With the control variable Size of firm

\[ \eta = \beta \eta + \Gamma \xi + \Pi \eta \xi + \zeta \]

(3)

Figure 4

Model II – Firm size as a control variable

Legend: *α at 5%, **α at 10%

This model does not present the non-significant relations as much as the connections among business practices and social practices, or business practices and societal-environmental practices.
The results of the estimations of model I and model II indicate that the effects of interaction are negligible and only the variables of size and activity sector (especially the building sector) have significant positive impacts on the performances of SCOP.

According to figure 4, we can emphasize that size positively impacts economic performance and weakly social performance. With regard to the impact of sector activity, economic performances are relatively superior in the BTP sector, which represents a third of the population of SCOP and of the individuals in our sample.

Table 4 is a review of the indices of adjustment, which are satisfactory.

<table>
<thead>
<tr>
<th>Post adjustment indices</th>
<th>Acceptance threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$ ($\text{ddl} = 105$) = 166.5</td>
<td>$P &gt; 0.05$</td>
</tr>
<tr>
<td>$p = 0.00114$</td>
<td></td>
</tr>
<tr>
<td>$\chi^2$ normé ($\chi^2/\text{ddl}$) = 1.58</td>
<td>$&lt; 4$</td>
</tr>
<tr>
<td>NFI = 0.91</td>
<td>$&gt; 0.9$</td>
</tr>
<tr>
<td>RMSEA = 0.061</td>
<td>$&lt; 0.08$</td>
</tr>
<tr>
<td>AGFI = 0.94</td>
<td>$&gt; 0.9$</td>
</tr>
</tbody>
</table>

Globally, few changes have been seen relative to the indices of the first model (table 2). Nevertheless, the principal results are i) that with an increase in staff, economic and social performance is superior, ii) that the industrial sector (construction, electricity...) has a superior economic performance than the services sector but does not modify the global performance, and iii) the societal-environmental practices have a relatively weak impact (statistically significant only to the threshold at 10%) on economic performance and on global performance when control variables are introduced. This result, mitigated by the role of societal-environmental practices, is discussed next.

THE IMPACT OF PRACTICES

Figures 3 and 4 illustrate a positive impact of “business practices” on economic and financial performance, just as for the “social practices” on social performance and societal practices on environmental performance. These results confirm and extend those of Côté (2009) who presumed a positive effect of these practices on economic and social performances. Yet social practices play a central role in societal practices and economic performance. This result is interesting because it demonstrates that societal practices related to CSR are the result of social practices and that its role as a determinant of the observed performances is far from being decisive.

Our results come to demonstrate the positive impact of the economic and social practices and performances on global performance and support the idea that organizations that integrate business practices with social and environmental practices will see their global performance increase.
These relations, tested on cooperative societies, confirm the preceding theoretical elements (TPP and resource theory) and underline the impact of social practices on societal-environmental practices and the weakness of the latter on economic performance. This result argues for a global approach to practices of an organization in order to increase performance in its different dimensions.

Nevertheless, the differences with certain later studies show a strong effect of societal-environmental practices and suggest investments in CSR, which requires an explanation. In effect, relative to hypotheses bearing on the positive influence of economic, social and environmental performance on global performance, our results appear conclusive, except for the impact of societal-environmental practices on global performance where the relation is weak. While the terrain involved was favorable to validation of the hypotheses across a statistically significant level up to a threshold of 10%, we are revisiting the debates on the difficult relations that support investments in CSR and economic and financial performance (Allouche and Laroche 2005; Berman et al. 1991; Trebeck and d’Arcimoles 2003).

One explanation could lie in the long-term horizon of societal-environmental practices that could be out of step with the short-term character of the measure of the performance under consideration (profitability measure). This difference between our results and promoters of a positive vision of the connection between “societal-environmental practices” and economic performance could also be explained by a chance circumstance of the connection (the history of the organization and its stakeholders), or better explained by the opportunistic behaviors on the part of certain respondents (an inequitable takeover of resources, which destroys the beneficial issues of environmental practices and lessens influence on economic performance).

2.3. Discussion of Results

In the framework of SCOP, the results of our statistical analyses indicate that an integrated representation of the economic, social, and societal-environmental dimensions of performance (equations 1 and 3) has a better explicative power than a segmented representation (equation 2). This indicates that the empirical analyses involving time after time two performance dimensions are not satisfactory because they ignore the complexity of the mechanisms of interaction between the practices and the dimensions of global performance. Based on these results, with or without consideration of control variables, we can envisage the theoretical and managerial implications and suggest the paths of research on the evaluation of global performance.

2.3.1. THEORETICAL IMPLICATIONS

Our results confirm the multi-dimensional nature of performance and, with the aid of the first model tested on organizations, this research enhances the works dealing with global performance. Involving two theoretical frameworks (theory of stakeholders and theory of resources) for their instrumental complimentary aspects permitted us to obtain an integrated model of global performance, taking into account the interactions among the three dimensions put into evidence in the review of the literature. Precisely, we confirm the principal predictions of TPP and of the resources based view with regard to the positive connections among the three components of global performance, and interest in the
concept of global performance itself when it is integrated. Reflective works (Pesqueux 2004, Capron and Quairel 2006) are thus clarified by a formalized approach that shows the results often considered in early researches (the hypotheses of Capron and Quairel 2006) and qualify some works on the impact of environmental performance, all the while increasing the importance of social performance in global performance.

Thus the results indicate that it is also necessary to qualify some TPP predictions. In observing the structural parameters of MES, it appears that the social dimension more strongly impacts global performance than the two other dimensions: economic and environmental. Even though they are aligned, we could consider a hierarchy of the effects of the three dimensions of global performance at the heart of our sample. At the same time, if the theory of resource dependence appears to be valid with regard to the positive relations between the intermediary practices and performances, the results modify TPP: the connections between societal-environmental practices and global performance are weak (but statistically significant to the threshold of 10%). It is yet possible that a delay will be necessary between the inventory of practices and the measure of effects on global performance since the approaches are recent in the SCOP studied and require some time to produce impacts.

Finally, validation of the model of measure of global performance speaks to other theoretical and empirical works. It will be interesting, for example, to examine the effects of global performance on the behaviors of stakeholders and to identify the mechanisms of influence (i.e. reputation).

### 2.3.2. MANAGERIAL IMPLICATIONS

Relative to SCOP, which makes up the field of study of the theoretical model, the result could help the evaluation of the practices of these cooperative societies on their economic and social results and, ultimately, on their global performance. In effect, the SCOP structures are audited each year, or every five years according to their status, from a listed company to a limited liability or not, by the intermediaries of government-controlled auditors in the framework of a cooperative audit. The Decree of 1984 presented the audit as “a balance sheet of judicial, social, and economic activities.”

In practice, the auditors belonging to one of five regional member unions of CGSCOP rely on a document adapted by the regional unions whose differentiated practices, even though far from the decree and oriented towards the collection of easy information – for instance, respect for the legal cooperative rules, economic aspects with the income statement and the balance sheet, and sometimes social aspects as well as the formation, the remuneration policy – because the auditors only allow one day to meet with the managers and deal with the information. With the variables presented in the model, it is possible to identify the key indicators to make a judgment. In effect, these organizations research an economic and social performance, and if possible enlarge on the societal and environmental aspects to legitimize their actions. The retained variables in the model could constitute the key elements of success of a performance qualified as global and accomplish the collection of information during the audit.

In addition, one of the principal lessons of our work is the relatively weak role of societal-environmental practices in the global performance of the cooperatives societies. According to the results of our structural model, it seems as if the practices might be more a consequence of the social practices of
SCOP. The expectations in terms of economic and financial consequences thus appear weak and the question is raised about a substantial investment in the CSR-type approaches to improve profitability.

In addition, the structural model (figure 2) can be used to elaborate, for example, the good practices within SCOP. In order to appreciate the value of this conceptualization relative to the composite indices, we have created several simulations summarized in table 5. The construction of this table lies in the following process. In the first place, we have calculated the scores of different variables of model I without standardizing the parameters. This step is usual with the linear regression $Y = aX + b = e$ in which the parameter of an explicative variable $X$ is interpreted as the causal effect of $X$ on $Y$. We are aware our model is more elaborate because it allows for estimating at once the direct effect, the indirect effect, and then the total of one variable on another. In the second place, we have calculated the size and the effect of each of the practices on the different dimensions of performance.

### Table 5
**Size of the effects of practices on performances**

<table>
<thead>
<tr>
<th>Practices</th>
<th>Performances</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PERFSOC</td>
</tr>
<tr>
<td>Social Practices</td>
<td>7.1%</td>
</tr>
<tr>
<td>Management Practices</td>
<td>-</td>
</tr>
<tr>
<td>Societal Practices</td>
<td>-</td>
</tr>
</tbody>
</table>

The interpretation of the coefficients in the table is simple. For example, an increase of 1% of the score of social practices produces an increase in the global performance score of 3.3%, of 7.1% for the social performance score, and of 2.1% for the economic performance score. In addition, this estimated model can allow for comparative analyses among cooperatives in different countries.

### 2.3.3. RESEARCH METHODS

Our structural model completes the case studies of global performance and the qualitative surveys in the field of cooperatives (Côté 2005; Daudigeos and Valiorgue 2010), in clarifying the importance of each variable in the numerological network. In this framework, we have shown that societal and environmental practices have a relatively weak impact on SCOP’s results. This result then completes the indecision of the results issues in reviews of the literature (Griffin and Mahon (op. cit.), where there appears an impact, whether it be strong, or weak or absent; and this result is obtained in a sample of organizations primarily aware of the social, societal, and environmental elements. Yet the absence of a statistically significant connection between societal-environmental practices and economic-financial performance exists in the framework of French cooperatives societies. This result could give rise to several conceptual and methodological extensions. Primarily, the validity of our items could be improved, notably the global performance items whose Cronbach alpha is relatively weak. Secondly, the impact of societal-environmental practices is dynamic and thus necessitates work on longitudinal information over a long period. Finally, in spite of consideration of the interrelations among practices and performances, our model is relatively linear across the method of structural equations. Yet the results
show that an organization conducting itself as a “citizen business” will favorably influence its global performance, and this in a relatively general manner on the considered sample. Also we enhance the research bearing on qualification of global performance in proposing a stable model and a collection of constructs for the concepts of economic performance, social performance, and global performance. These results complete the initial research having a qualitative approach on global performance.

Conclusion

This research relies on a combined theoretical framework (the theory of stakeholders and resource based view) to clarify comprehension of the connections among the social, economic, and societal-environmental dimensions of global performance. Face to the achieved divergent results, most often by heterogeneous studies, the objective was to propose a model based on the method of structural equations to test simultaneously the relations among the dimensions of global performance in relation to organization primarily favorable to the concept. At once, our results show that recourse to an “integrated” management with social and societal business practices positively influences global performance. In addition, our results demonstrate the positive effect of social performance on global performance and social practices on societal-environmental practices. However, the model obtained runs into a certain hierarchization of the three dimensions of global performance which calls into question the notion of integrated management of performance notably in the organizations studied which were primarily favorable to these practices. In addition, the results must be interpreted taking into account a certain number of limits attached to this first model of global performance, notably the choice of variables to operationalize the societal-environmental practices and global performance. Also, to increase the external validity of performance measure model and to extend the research to organizational contexts, other empirical studies are desirable.

If the variables used for the evaluation of global performance seem again to increase, they constitute a first step toward a measure or estimation of this concept naturally inclusive. In effect, if the most currently used means is, for ease, to dissociate the dimensions of performance, an integrative approach seems preferable to the juxtaposition of performances to appreciate the global nature. In this sense, the proposed variables could create an apprenticeship dynamic and enlarge the options for decisions.
Notes

1 That is to say, a stakeholders or “an individual or group of individuals who can affect or be affected by the realization of the organizational objectives” (Carroll and Buchholtz 2000, p. 66).

2 The appropriation of these resources is a source of competitive, steady advantages for the business. The models form in this way causal relations among a level of resources, competitive advantages, and a level of performance (Fahy 2002; Bharadwaj and al. 1993).

3 As we are interested in organizations following bigger objectives than a single financial performance, we are using a framework of the cooperative equilibrium model proposed by Coté (2009), distinguishing in the organizations the managerial practices relative to the business, called practical statements of the business, and managerial practices related to social aspects, called social practices. This segmentation leans on recognition of a dual identity at the base of the studied organizations, which corresponds to our sample.

4 French standard for business management and sustainable development published by AFNOR in May, 2003, in which editing follows a practice guide model. Its advantage is to have been tested on different structures and to contain an operational approach facilitating its goal.

5 The responses to this question were compared with the accounting information and studies on the basis of the definition of “the liable business” given in the Labour Code: “the average remuneration of the five managers or directors who are the best paid cannot exceed five times the SMIC.”

6 The SCOP rule requires that at least 51% of social capital be held by salaried associates and at least 65% of the voting rights, always on the principal “one person, one voice,” all salaried employees having the goal of becoming associates at the end of a certain period set by the business. This voting right allows, notably, the salaried employees to elect their director. This consideration shows up [manifests itself] in the form of financial recognition (with a differential of moderated salaries and recognition “on behalf of the work” of all the salaried employees in the case of benefits) but is expressed also through the notions of democratic government and information transparency.

7 The margin of error of this sample is calculated on the base of a limited related population. In accounting for the size of our population, our sample is actually equivalent to 300 individuals in the case of a draw [if the draw were] from a bigger-sized population.

8 The “experts” correspond to five directors of cooperatives and four cooperative auditors; that is, professionals agreeable to the government to effect the cooperative revision according to the first article of the Decree 84-1027.

9 Only the extracts of the questionnaire are given because the important number of items does not allow for an exhaustive inclusion; however, the listed items correspond to those keeping watch over the issue of refining items and the Alpha coefficients indicate a good internal coherence of the measure scales.

10 The estimation of the parameters was done with Lisrel 8.80 software.

11 This model is nested within model I. Statistical tests of comparison were done with the aid of the following metrics: CFI, BIC, AIC.

12 In addition, the correlations seen (i.e. the coefficients of the structural model) between the different dimensions are confirmed by the factorial analyses (cf. methodology, annex n°2).

13 This test was done with this variable encoded: construction activity = 1; other sectors = 0. It is difficult to account for the different sectors of activity in our sample because the number of SCOP present in each is weak.

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### Annex 1: Extract of the items of measurement scales

<table>
<thead>
<tr>
<th><strong>Firm Practices</strong> (Cronbach’s α = 0.88)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The strategy is declined in operational objectives for all activities</td>
<td></td>
</tr>
<tr>
<td>The activities are the subject of the measures in terms of cost, quality and time</td>
<td></td>
</tr>
<tr>
<td>Your SCOP undergoes the legal rules of your business sector</td>
<td></td>
</tr>
<tr>
<td>Your SCOP undergoes the competitive rules of your business sector</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Social Practices</strong> (Cronbach’s α = 0.86)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you say that in your SCOP new employees are well welcomed (tutoring, handbook, information meetings, trainings)?</td>
<td></td>
</tr>
<tr>
<td>Would you say that in your SCOP share of employees receiving training is higher than the industry average?</td>
<td></td>
</tr>
<tr>
<td>Would you say that in your SCOP evolution of employees is privileged in-house compared to external recruitment?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Societal – environmental Practices</strong> (Cronbach’s α = 0.81)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In your SCOP participation / representation of employees has representativeness criterion</td>
<td></td>
</tr>
<tr>
<td>In your SCOP there are many relationships with local elected officials, trade unions (labor union)</td>
<td></td>
</tr>
<tr>
<td>Your SCOP aims to reduce consumption of polluting materials</td>
<td></td>
</tr>
<tr>
<td>In your SCOP there is a control of impacts associated with the use and disposal of the product or service</td>
<td></td>
</tr>
<tr>
<td>Your SCOP participates in local events to promote the economic development of the territory</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Social Performance</strong> (Cronbach’s α = 0.85)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In your SCOP average participation rate at meetings is important (&gt; 90%)</td>
<td></td>
</tr>
<tr>
<td>In your SCOP there is a search for exchange of knowledge between employees</td>
<td></td>
</tr>
<tr>
<td>In your SCOP there is no social conflicts</td>
<td></td>
</tr>
<tr>
<td>In your SCOP there is a limitation in the wage hierarchy</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Global Performance</strong> (Cronbach’s α = 0.61)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>When there are choices about financial investments in your SCOP, a certain ethic is sought in investments</td>
<td></td>
</tr>
<tr>
<td>In your SCOP there a research for deletion / limitation of litigation</td>
<td></td>
</tr>
<tr>
<td>In your SCOP there is support for citizen initiatives for employees (eg. time for volunteering)</td>
<td></td>
</tr>
<tr>
<td>Your SCOP is involved in the general interest of the community</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Environmental Performance</strong> (Cronbach’s α = 0.75)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you say your SCOP undergoes environmental and legal rules of your industry</td>
<td></td>
</tr>
<tr>
<td>Your SCOP is subject to certification or score by an environmental rating agency</td>
<td></td>
</tr>
<tr>
<td>In your SCOP there is an environmental strategy and eco-design</td>
<td></td>
</tr>
<tr>
<td>In your SCOP there is an integration of environmental factors in the supply chain, production, and marketing</td>
<td></td>
</tr>
<tr>
<td>In your SCOP there is accurate information given to customers and sustainable cooperation with suppliers</td>
<td></td>
</tr>
</tbody>
</table>
Annex 2: Development and validation process

<table>
<thead>
<tr>
<th>Stages</th>
<th>Validation Process</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptual Construct</td>
<td>A) Facial Validity</td>
<td>Jarvis et al. (2003)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mackenzie et al. (2005)</td>
</tr>
<tr>
<td>Items generation</td>
<td>B) Content Validity</td>
<td>MacKenzie et al. (2005)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jarvis et al. (2003)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Borsboom et al. (2003)</td>
</tr>
<tr>
<td>Items Purification</td>
<td>C) Convergent validity</td>
<td>Bollen (1989)</td>
</tr>
<tr>
<td></td>
<td>D) Discriminant validity</td>
<td>Hair et al. (2006)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bollen (1989)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kline (2011)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hair et al. (2006)</td>
</tr>
<tr>
<td>Confirmatory analysis</td>
<td>E) Construct validity</td>
<td>Kline (2011)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MacKenzie et al. (2005)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hipp et al. (2005)</td>
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</tbody>
</table>