

# Can internal strategic alignment influence performance? An empirical research applying structural equation modelling

Can ISA influence performance?

585

Received 5 December 2016  
Revised 9 April 2017  
26 June 2017  
16 November 2017  
Accepted 7 May 2018

## O alinhamento estratégico interno pode influenciar o desempenho organizacional? Uma pesquisa empírica aplicando modelagem de equações estruturais

Vanderli Correia Prieto  
*Universidade Federal do ABC, São Paulo, Brazil, and*  
Marly M. de Carvalho  
*Universidade de São Paulo, São Paulo, Brazil*

### Abstract

**Purpose** – The purpose of this paper is to investigate the impact of internal strategic alignment (ISA) on business performance. A model is developed in which internal alignment is explained by the covariance between vertical and horizontal alignment. The perspective of business strategy implementation is adopted in order to support the theoretical relationship between the variables.

**Design/methodology/approach** – The partial least squares method, a structural equation modeling technique, is applied to estimate the model.

**Findings** – The results provide empirical validation for the model and confirm the positive relationship between internal alignment and business performance.

**Practical implications** – The ISA model is an essential aid for executives when implementing strategies and the validated research instrument can be applied for firms as a diagnosis of internal alignment in the organization.

**Originality/value** – The research contributed to meet the need for studies involving strategy implementation, as its formulation has already been emphasized, as well as to the need for models of strategic internal alignment that include activities relevant to the successful execution of the strategy, and to the need for alignment studies based on a holistic perspective.

**Keywords** Business performance, Strategic alignment, Structural equation modelling, Strategy implementation, Partial least squares (PLS)

**Paper type** Research paper

### Resumen

**Objetivo** – O estudo foi conduzido com o objetivo de avaliar o impacto do alinhamento estratégico interno sobre o desempenho do negócio. Foi desenvolvido um modelo em que o alinhamento interno é explicado

### JEL Classification — M1

This paper is part of the project on Strategic Alignment and Performance registered at Federal University of ABC.



Academia Revista  
Latinoamericana de  
Administración  
Vol. 31 No. 3, 2018  
pp. 585-604

© Emerald Publishing Limited  
1012-8255  
DOI 10.1108/ARLA-09-2016-0235

pela covariância entre o alinhamento vertical e o alinhamento horizontal. É adotada a perspectiva da implementação da estratégia de negócios para apoiar a relação teórica entre as variáveis.

**Diseño/metodología/enfoque** – Os dados foram processados e validados por meio da técnica de Modelagem de Equações Estruturais com estimação pelo método Partial Least Squares (PLS).

**Resultados** – Os resultados dão validação ao modelo e confirmam a relação positiva entre o alinhamento estratégico interno e o desempenho organizacional.

**Implicações práticas** – O Modelo de Alinhamento Estratégico Interno define um conjunto de ações que podem servir de guia para os executivos quando da implementação da estratégia. Os instrumentos validados podem ser aplicados pelas organizações para realizar um diagnóstico do alinhamento interno.

**Originalidad/valor** – Esta pesquisa traz contribuições quanto à necessidade de estudos envolvendo a implementação da estratégia, uma vez que ênfase tem sido dada à formulação; quanto à escassez de modelos de alinhamento estratégico interno que integrem atividades relevantes para a execução bem sucedida da estratégia e à necessidade de estudos de alinhamento empregando a perspectiva holística.

**Palabras clave** desempenho organizacional, alinhamento estratégico, ajuste estratégico, implementação da estratégia, modelagem de equações estruturais

**Tipo de papel** Trabajo de investigación

## 1. Introduction

Alignment is a central theme in operations management research (Cao *et al.*, 2012; Kathuria *et al.*, 2007; Schniederjans and Cao, 2009) and is present, for example, in the seminal works of Andrews (1971) in terms of alignment of strategy to the external environment, and Chandler (1962) in terms of alignment between structure and strategy.

The theoretical bases outlined and the main constructs and variables for internal and external alignment are distinct (Schniederjans and Cao, 2009; Venkatraman and Camillus, 1984). External alignment considers the perspective of strategy formulation and, above all, the adjustment of strategy to environmental variables. In contrast, internal alignment focuses on the implementation and adjustment of strategy to internal variables. However, researchers and managers prioritize strategy formulation in detriment of implementation (Brown *et al.*, 2010; Hrebiniak and Joyce, 2001; Zajac *et al.*, 2000). This paper focuses on the context of strategy implementation and, thus, on internal strategic alignment (ISA).

Vertical alignment has received considerably more attention in the literature (Kathuria *et al.*, 2007), seeking to determine whether or not there is vertical alignment between business strategy and a specific functional area (manufacturing, operations, marketing and information systems). Less attention has been given to horizontal alignment, and the operational definition of the concept of internal alignment that crosses functions has become critical (Kathuria *et al.*, 2007).

The problem is that few strategic alignment models exist (Hrebiniak and Joyce, 2001; Prieto *et al.*, 2009), lacking empirical studies that analyze how internal alignment, from a holistic viewpoint, influences business performance, transforming strategy into action.

Some frameworks include the classic McKinsey 7-S model (Waterman *et al.*, 1980) and more recently the “environment, strategy, core competencies and organization” model places emphasis on the external alignment of the organization supported by appropriate core competencies, which can be delivered through suitable organizational configurations, including culture, structure, processes and people (Heracleous and Werres, 2016).

In Latin America, there is barely any research into the impact of ISA on organizational performance. A search in the ISI Web Knowledge databases was performed and only the research conducted by Prieto and Carvalho (2011) was identified. The authors diagnosed and analyzed the strategic alignment profile of Brazilian companies in the medical diagnostics sector by applying a specific framework. The impact on organizational performance was also analyzed.

To help fill the gaps, an ISA model was formulated and tested, based on the perspective of covariance, which assumes that internal alignment is the result of interaction between vertical and horizontal alignment. A survey-based research, applying structural equation modeling, was performed to validate the research model.

## 2. Literature review and research model

### 2.1 Internal alignment

Alignment is considered both a process and a result (Miles and Snow, 1984). As a result, alignment should lead the organization to a stage of strategy control and the literature proposes tools to measure the degree of alignment (Fuchs *et al.*, 2000; Prieto and Carvalho, 2011).

The concept of alignment as a process refers to the practical execution of a set of structured activities aimed at achieving strategic alignment (Prieto *et al.*, 2009).

The internal alignment construct comprises the fit between the organization's strategy and its internal variables (Venkatraman and Camillus, 1984). Skinner (1974) defines internal fit as the consistency between tasks, policies and practices.

Internal adjustment involves the vertical and horizontal alignment dimensions, and the concept is tied to the operationalization of the strategy at different organizational levels (Hofer and Schendel, 1978).

Vertical alignment refers to the configuration of strategies, goals, action plans and decisions through the various levels of the organization (Kathuria *et al.*, 2007). Implementation of the strategy is essentially top-down, aiming to make the lower hierarchical levels establish strategies, objectives and plans that enable the implementation of a strategy developed at a higher level. When this coherence is reached, it is considered that vertical alignment has been achieved.

Horizontal alignment occurs between different areas, functions and operations of the organization. The integration of functions denotes the coherence of strategic decisions and activities in the areas of marketing, operations and human resources, among others, and how they complement and support each other (Kathuria *et al.* 2007).

In recent research, the concept of alignment has been considered in different contexts and also encompassing other theories, e.g., service organizations (Hill and Cuthbertson, 2011; Prieto and Carvalho, 2011), decentralized organizations (Çaker and Siverbo, 2014), Innovation Strategy (Ryu *et al.*, 2015) and system dynamics (Zakery *et al.*, 2017).

*2.1.1 Factors involved in vertical strategic alignment.* Comprehensiveness of strategy formulation. The formal planning process, middle management involvement in the formulation and consensus about the strategy are part of the same process, herein called the comprehensiveness of strategy formulation, which comprises aspects of the formulation that will affect the success of the implementation process.

Formal planning process. The existence of a formal planning process is also associated with the knowledge shared among executives about the strategy (Rodríguez Bolívar *et al.*, 2010; Chan *et al.*, 2006), as well as the subsequent process of communication with those responsible for implementing and monitoring its progress.

Factors related to the definition of the strategy affect dimensions of organizational commitment, which, in turn, affect individual performance and the successful implementation of strategies. These factors include the strategy's adjustment to the vision, which occurs when the strategy to be implemented is perceived as being aligned with a broader strategic direction of the organization (Noble and Mokwa, 1999).

Middle management involvement in the formulation. The contemporary theory about strategic decision considers that the role of middle management goes beyond the traditional provision of input information and overseeing of the implementation process, since it also includes regular influencing of the strategy and providing the impetus for new initiatives (Burgelman, 1988; Floyd and Wooldridge, 1992a; Mintzberg and Waters, 1985). Although middle managers do not necessarily have the profile required of a strategist, their knowledge about daily operations and their frontline management of the business are important sources for strategic innovation, and the likelihood of these ideas emerging is greater in the creative process of strategy formulation (Campbell and Alexander, 1997). Other arguments concern the need to plan and analyze the adjustments necessary for the

implementation already in the formulation phase to ensure that the strategy is viable (Hambrick and Cannella, 1989).

With regard to the activities involved in implementing the strategy, the role of middle management is to align the organization's actions with strategic intentions, through intervention in the structure, people and systems (Floyd and Wooldridge, 1992b).

Strategic consensus. Consensus improves coordination and cooperation and can be defined as the agreement between top management, middle and operational managers regarding the organization's priorities (Floyd and Wooldridge, 1992b).

It enables more efficient strategy implementation and, hence, is positively associated with organizational performance (Camelo *et al.*, 2010; Gonzalez-Benito *et al.*, 2012; Walter *et al.*, 2013).

Commitment to the strategy depends on how managers perceive that the strategy is aligned with the organization's interests and how they perceive it is aligned with their own interests (Floyd and Wooldridge, 1992b; Noble and Mokwa, 1999).

Management capabilities to implement the strategy. The ability to effectively implement the strategy may be, in and of itself, a source of competitive advantage, since it is considered valid, rare and difficult to imitate and thus able to improve business performance (Barney and Mackey, 2005; Powell, 1992). Managers responsible for implementation must have the skills to identify the main obstacles to the implementation of the strategy, and ask themselves if the strategy can be operationalized before actually implementing it – hence, while it is still in the formulation phase (Hambrick and Cannella, 1989).

Managers also have the role of building and maintaining the necessary support for the implementation of the strategy amid the resistance that naturally arises due to the interest of certain parties in upholding the old strategy, or because they do not understand a new proposal (Hambrick and Cannella, 1989). The superiority of a team of implementers requires a high capacity for coordination and integration of decisions and actions among all the functions (Govindarajan, 1989; Hitt *et al.*, 1982) and, in this case, adequate communication with management levels has been identified as the key to achieving a shared understanding about strategic priorities (Noble, 1999; Rapert *et al.*, 2002; Reich and Benbasat, 2000).

People's involvement with the strategy. People committed to the strategy are predisposed to engage in behaviors that support the strategy, as well as to assist in the necessary strategic changes (Gagnon *et al.*, 2008). People's involvement encompasses the conditions necessary to promote behavior aimed at the achievement of objectives and goals. Employees' attitudes are influenced when they understand what is expected of them and feel that they can contribute (Boswell and Boudreau, 2001; Biggs *et al.*, 2014). In this regard, the role of a system of performance measurements is to objectively communicate the expected contribution. To this end, these measurements must make sense to people, they should be presented as being related with the core purpose of the business, and they must be linked to a rewards and recognition system (Hrebiniak, 2005).

*2.1.2 Factors involved in strategic horizontal alignment.* Process orientation. Process-oriented thinking became popular in the 1980s as a core element of the total quality management movement, based on the premise that obtaining the desired quality in products and services depends, above all, on the processes in which they are planned and produced (Davenport and Short, 1990; Hackman and Wageman, 1995).

The process concept has expanded to the strategic level through policy deployment, which emphasizes interfunctional cooperation for the achievement of organizational objectives that are geared towards the market, the customer and his or her needs (Cole, 1998).

Today, "execution" is one of the practices employed by the most successful companies. Companies recognize that they cannot have high performance in all their processes, so they focus on the processes that are essential to meeting the needs of their customers, concentrating their energy and resources on these processes to make them as efficient as possible (Jayaram and Xu, 2013; Nohria *et al.*, 2003).

Customer orientation. It is understood as the extent to which departments and functions follow a single direction, strategically established to meet and anticipate customer needs. This requires the company to have identified strategic customers before doing anything to improve customer satisfaction. It also requires a direct relationship between customer needs, process configuration and organizational infrastructure.

Customer orientation can lead to gains in competitive advantage by placing a high priority on value creation and maintenance for the customer, which, in turn, will result in the addition of new capabilities to deliver products and services that add value (Berry *et al.*, 1999; Olson *et al.*, 2005).

Recent studies demonstrate that operations' strategic alignment to the firm's objectives allied to responsiveness to the market need for customization, contributes to firm performance (Sardana *et al.*, 2016)

## 2.2 Alignment and performance

The concept of strategic alignment follows two main directions, the descriptive and the normative (Venkatraman, 1989b). The descriptive orientation specifies the relationship between a set of theoretically related variables without, however, relating them with performance. In contrast, the normative orientation explicitly incorporates the relationship between alignment and business performance.

The relationship between alignment and performance is discussed by authors such as Galbraith and Kazanjian (1986), Ginsberg and Venkatraman (1985), Miles and Snow (1984), Powell (1992) and Zajac *et al.* (2000). It is expected that an organization that shows a high degree of adjustment or congruence among its components is a relatively more effective organization (Miles and Snow, 1984).

According to these authors, successful organizations make strategic adjustments to their competitive environment and support the strategies with suitable management structures and processes. Less successful organizations typically display poor external and internal adjustment.

Due to changes in the organizational environment, perfect alignment is usually a condition to be strived for rather than accomplished. On the other hand, minimal alignment is required for organizational survival (Fuchs *et al.*, 2000; Miles and Snow, 1984, Prieto and Carvalho, 2011).

Alignment is seen as a dynamic process in which the manager will simultaneously consider environmental variables and organizational resources (Nadler and Tushman, 2001; Zajac *et al.*, 2000). There is the challenge of foreseeing which changes in the organizational environment are relevant and require changes in strategy. Changes in exogenous variables, such as consumer preferences, government policies, competitors' actions, etc., may create new demands, opportunities or restrictions to the current position. Moreover, the quality of existing resources or their value in facing current or future competition, as well as organizational competencies may render the successful implementation of a particular strategy unfeasible, requiring a change in the strategic option.

An inappropriate strategy for the external environment or a poor operationalization of the strategy can result in strategic misalignment (Prieto and Carvalho, 2011).

The purpose of this paper is to investigate the relationship between internal strategic fit and business performance. Given the complexity this involves, the purpose of a strategic alignment model is to ensure that the activities required are specified.

The organization's performance is dependent on both internal and external alignment and the process of achieving alignment is dynamic and needs to be monitored and adjusted continually (Prieto and Carvalho, 2011; Siggelkow, 2001). However, the effect of external alignment on performance has received more attention from the researches. To fill the gap in understanding the impact of internal alignment on performance, the following hypothesis is proposed:

H1. The ISA is positively related to business performance.

2.3 Research model

The theoretical scope that characterizes the two constructs, strategy formulation and management capabilities to implement the strategy, in fact, presents very tenuous boundaries. Although the implementation process as a whole requires the involvement of the executive (Hambrick and Cannella, 1989), among the variables specified in the theoretical model, comprehensiveness of strategy formulation and management capabilities are the two that place a greater emphasis on the responsibilities directly assigned to them. In this regard, the comprehensiveness of strategy construct represents the activities related to the formulation of the strategic plan, while the management capabilities construct represents the executives' abilities required to put the strategy into practice.

Moreover, these constructs overlap within the strategic process, and the activities involved in strategy definition and strategy implementation may affect one another at any time (Hrebiniak, 2005).

The decision to keep them separate in the model is due mainly to the need to measure the management capabilities to put the strategy into practice. Although the literature indicates that implementation ability can become a competitive advantage, on the other hand, it also points out that even well-formulated strategies have not been implemented because little attention is given to intangible organizational aspects, including coordination capabilities, commitment and interpersonal skills (Beer and Eisenstat, 1996; Bourne *et al.*, 2003).

Based on the literature review performed, an ISA model was formulated, based on the perspective of covariance, which assumes that internal alignment is the result of interaction between vertical and horizontal alignment, as shown in Figure 1.

Vertical alignment is conceived as a set of actions required to implement the strategy, from the formulated strategy up to its deployment at all the levels of the organization. It is posited that the factors involved in vertical alignment are the comprehensiveness of strategy formulation, management capabilities for strategy implementation, and people's involvement with the strategy. The comprehensiveness of strategy formulation construct is

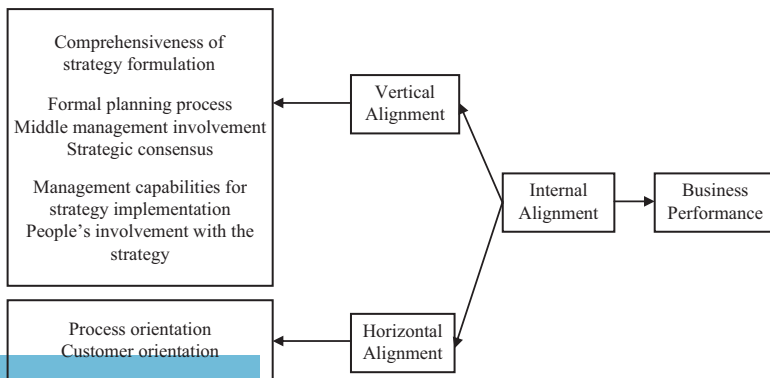


Figure 1. Overall model underpinning this paper

defined as multidimensional, composed of the variables of formal planning process, middle management involvement in the formulation and strategic consensus.

Horizontal alignment involves understanding customer needs and aligning processes (cross-functional) able to deliver what the customer needs. The factors involved in horizontal alignment are process orientation and customer orientation. The model also represents the normative perspective of alignment (Venkatraman, 1989b), expressed by the dependency relationship between alignment and business performance that was presented in *H1*.

### 3. Research methods

This study aims to propose and to validate an ISA model and investigate its relation with performance. Thus, the research methods adopted were the systematic literature review to develop the conceptual model and a survey-based research applying structural equation modeling (SEM) for validation.

The literature review searching process was performed using the Web of Science database, using the keywords “strategic fit,” “strategic alignment” and “strategic consensus” in the paper title and in the abstract. A filter was applied according to the areas of interest (management, business and industrial engineering), and they had all been published between 1987 (the first occurrence) and 2015. After the abstracts were read, the sample included 153 articles directly related to strategic alignment in the context of business strategy.

#### 3.1 Sample and data collection instrument

The research included a non-probabilistic sample. The survey respondents were defined as directors, middle management and executives that support the top management team. It is understood that professionals in these hierarchical level are the best qualified to deal with matters related to the implementation of business strategies.

The requirements for calculating the minimum sample size were met for the multivariate analysis test applied using G\*Power 3.0 software (Faul *et al.*, 2007). Chin and Newsted (1999) recommend the use of statistical power analysis for determining the sample size. Following the recommendation of Hair *et al.* (2005), a 5 percent level of statistical significance, which is the power level required for 95% confidence and an effect size of 15 percent, were considered to calculate the size of the sample, resulting in an expected sample of 73 respondents.

The executives received an e-mail explaining the scope of the research and a link to answer the questionnaire online. We collected 129 responses from executives of different companies, four of which were discarded, one due to incorrect reporting of data and the other three due to the inadequate profile of the respondents, and thus ended up with 125 valid questionnaires.

The data collection was performed in Brazil. The sample was predominantly composed of large companies (63.2 percent), followed by medium-sized companies (25.6 percent). The sampling was considered appropriate for the research, since there is a tendency that larger companies have more formalized management tools, like formal strategic planning. The respondents are from a variety of industries and include both manufacturing (46.0 percent) and services (54.0 percent) sectors.

#### 3.2 Research instrument measures

The definition of the research instrument started after the definition of the theoretical model. The use of validated scales available in the articles gathered in the literature review was prioritized.

The questionnaire was improved by means of content validation (Netemeyer *et al.*, 2003; Venkatraman and Grant, 1986). Seven professors specializing in the area of this study were given a document detailing the research objectives, the theoretical model and the research instrument and rated each of the items of the questionnaire in terms of its clarity and representativeness to measure the construct (Netemeyer *et al.*, 2003, p. 103). The improved version of the questionnaire was then submitted for validation by executives, in order to verify its adequacy from the respondents' point of view. Four executives participated in this process.

*3.2.1 Dependent variable operationalization.* Business performance was designed as a first-order latent variable (LV), applying multiple criteria to measure performance (Chakravarthy, 1986), and was previously tested (Sabherwal and Chan, 2001) for the dimensionality of its indicators (see the recommendations of Combs *et al.*, 2005; Venkatraman and Ramanujam, 1986). The questionnaire was originally proposed by Venkatraman (1989a) and its dimensions were later expanded by Chan *et al.* (1997) to include market growth, profitability, product and service innovation and corporate reputation, which are measured through a total of eight items. Perceptual measures of performance were applied, due to their effectiveness when compared with traditional objective measures (Venkatraman and Ramanujam, 1986). The respondents were asked to compare the performance of their companies with the average performance of competitors in the industry, applying a five-point Likert scale: (1) much worse than the competition, to (5) much better than the competition.

*3.2.2 Independent variables.* The ISA model was designed as multidimensional and reflective second-order LV that is represented by a system of two interrelated and complementary first-order LV: vertical alignment and horizontal alignment. In the reflective measurement model the direction of causality (represented by arrows) is from the latent construct to its indicators, in which changes in the specified latent constructs cause changes in all their indicators, as our assumption in the covariate ISA Model. The core variables applied in the ISA model and its literature traceability is presented in Tables I and II. The questions and descriptive statistics are given in Table AI.

Construct	Average variance extracted	Composite reliability	Cronbach's $\alpha$
<i>Comprehensiveness of strategy formulation constructs</i>			
Formal planning process (FORPLAN)	0.586	0.857	0.777
Middle management involvement (MIDMANAG)	0.622	0.899	0.860
Strategic consensus (STRCONS)	0.711	0.908	0.865
<i>Vertical alignment constructs</i>			
Comprehensiveness of strategy formulation (COMPSTR)	0.646	0.845	0.726
Management capabilities (MANCAPABI)	0.607	0.902	0.869
People involvement (PEOPLINV)	0.575	0.904	0.875
Vertical alignment (VERTALIG)	0.781	0.914	
<i>Horizontal alignment constructs</i>			
Process orientation (PROCORI)	0.726	0.914	0.873
Customer orientation (CUSTORI)	0.731	0.916	0.876
Horizontal alignment (HORALIG)	0.819	0.901	
<i>Structural model constructs</i>			
Internal alignment (INTALIG)	0.830	0.907	0.650
Business performance (BUSPERF)	0.559	0.910	0.887

**Table I.**  
Convergent validity and reliability of the alignment model



Measures of vertical alignment. The “comprehensiveness of strategy formulation” comprises aspects of the formulation that will influence the implementation process. The construct was defined as multidimensional, comprising the variables of formal planning process, middle management involvement in the formulation and consensus regarding the strategy.

The “formal planning process” measures an established strategic planning process based on the assertions adapted from the attributes developed by Miller (1987) and identified in the work of Powell (1992).

“Middle management involvement in strategy formulation” aims to measure the extent to which middle managers participate in the strategy formulation process and consists of five items based on attributes developed by Noble and Mokwa (1999).

“Strategic consensus” involves determining how middle management understands and supports the company’s strategy, measured by the instruments proposed by Noble and Mokwa (1999) in the constructs of “perceived importance of strategy” and “strategic commitment,” which were adapted to this research. A scale of four items was submitted to the respondents.

“Management capabilities to implement the strategy” are measured based on attributes developed by Hitt and Ireland (1985) and employed by Carmeli and Tishler (2004), and Noble and Mokwa (1999). There are six statements that measure the existence of skills required of executives to promote strategic alignment.

“People’s involvement with the strategy” encompasses the conditions necessary to promote a behavior geared at achieving goals, applying the instrument created by Carmeli and Tishler (2004) and Labovitz and Rosansky (1997).

Measures of horizontal alignment. Horizontal alignment involves understanding customer needs and aligning processes (functional) that can deliver what the customer needs.

“Process orientation measures” how previous departments and functions are in terms of allowing strategic objectives to be followed. This instrument consists of four items proposed by Labovitz and Rosansky (1997), and applied by Collins (2002) and Prieto and Carvalho (2011).

Customer orientation measures how much departments and functions follow a single direction, established strategically in order to meet and anticipate the customer’s needs. The respondents evaluated four statements originating from the work of Narver *et al.* (2004) and adapted by Olson *et al.* (2005).

### 3.3 Data analysis

The SEM technique was used for the empirical analysis, because it estimates the multiple and interrelated dependence in a single analysis. SEM allows the examination of relationships among multiple predictor and response variables that can be observable (directly measured) or unobservable.

SEM enables the definition of alignment from the holistic perspective or from that of covariance (Venkatraman, 1989b, p. 435; Venkatraman and Prescott, 1990), rather than from the bivariate perspective, due to the possibility it offers of testing the relationship among multiple LVs and thus fits the objectives of this research well.

Construct	FORPLAN	MIDMANAG	STRCONS
Formal planning process (FORPLAN)	<i>0.766</i>		
Middle management involvement (MIDMANAG)	0.505	<i>0.789</i>	
Strategic consensus (STRCONS)	0.463	0.460	<i>0.833</i>

**Note:** Diagonal elements in italics are square roots of average variance extracted (Hulland, 1999)

**Table II.**  
Correlations among  
the variables of the  
construct  
comprehensiveness of  
strategy formulation

The partial least squares (PLS) method was applied, which is particularly recommended for small size samples and does not depend on the normality of the variables or the normality of the residuals, since the probability of significance is estimated by bootstrapping (Chin and Newsted, 1999; Falk and Miller, 1992; Tenenhaus *et al.*, 2005).

**4. Results**

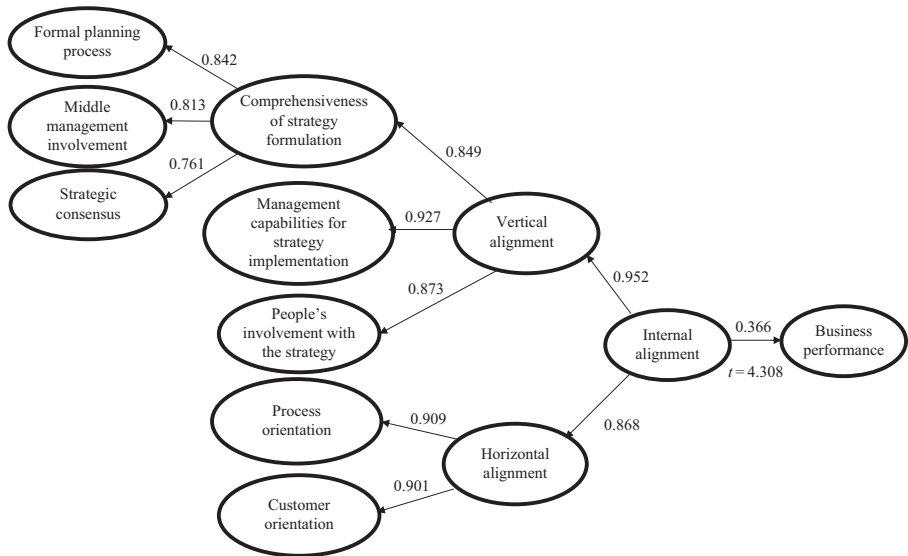
SEM requires the definition of two models, the measurement model (i.e. construct validity) and the structural model (i.e. hypothesis testing). Both were estimated using SmartPLS 2.0 M3 software (Ringle *et al.*, 2005) and the results are presented in Figure 2.

The measurement model was analyzed according to convergent and discriminant validity (Hulland, 1999; Netemeyer *et al.*, 2003; Venkatraman and Grant, 1986).

Firstly were analyzed the factor loadings of the indicators as shown in Table AI. After two rounds and the exclusion of one indicator, all the loadings were above 0.7, as recommended by Fornell and Larcker (1981), except for the indicators 3 (0.630) from the formal process planning. It was decided to keep indicator 3 because the average variance extracted (AVE) from the construct (Table III) presents a value of 0.650, which is above the specified value, and also because it is an acceptable value for the development of new scales (Hulland, 1999).

Table I presents the results of the reliability and convergent validity tests for all the LVs of the alignment model.

The validity of each construct was measured separately, as recommended in PLS analysis. Due to the multidimensionality of the comprehensiveness of strategy formulation construct, the alignment model shows the latent constructs of horizontal and vertical alignment at different levels (Figure 2), preventing the calculation of the complete model using SmartPLS software. To place the variables on the same level, we adopted the solution of first analyzing this construct to generate the scores of the first-order LVs (formal planning process, middle management involvement and strategic consensus). The scores of these LVs for the 125 cases were saved for use in the next revised model, now



**Figure 2.**  
Effect of internal alignment on business performance – partial least squares analysis

Notes: R<sup>2</sup> = 13.4%; GoF = 0.34

**Table III.**  
Correlations among  
the first-order latent  
variables

Construct	COMPSTR	MANAGABIL	BUSPERF	PEOPLINV	CUSTORI	PROCORI
Comprehensiveness of strategy formulation (COMPSTR)	<i>0.810</i>					
Management capabilities for strategy implementation (MANCAPABI)	0.811	<i>0.779</i>				
Business performance (BUSPERF)	0.437	0.329	<i>0.748</i>			
People's involvement with the strategy (PEOPLINV)	0.575	0.656	0.261	<i>0.756</i>		
Customer orientation (CUSTORI)	0.438	0.497	0.305	0.438	<i>0.855</i>	
Process orientation (PROCORI)	0.542	0.667	0.231	0.602	0.639	<i>0.852</i>

**Note:** Diagonal elements in italics are square roots of average variance extracted (Hulland, 1999)

containing all the LVs at the same level. They were entered as indicators of the construct comprehensiveness of strategy formulation.

The traditional criterion to measure the internal consistency among the items of the scale is Cronbach's  $\alpha$ , developed by Cronbach and Meehl (1955), which estimates reliability based on the indicators jointly. This measure tends to underestimate the reliability of the internal consistency of the LVs, so the PLS recommends the use of the composite reliability (CR) indicator of the construct, which, like Cronbach's  $\alpha$ , should also have a value equal to or higher than 0.7 (Henseler *et al.*, 2009, p. 299). The composite reliabilities of all the constructs are well above 0.7, signifying a strong internal reliability (Henseler *et al.*, 2009, p. 299).

The AVE from the LVs evaluated here is higher than the specified value of 0.5 (Fornell and Larcker, 1981), indicating that each construct is able to explain more than half of the variance of its indicators.

A LV should share greater variance with its indicators than with any other LV (Fornell and Larcker, 1981); thus, for reflective LVs, the square root of AVE (coefficients in bold in Tables II–IV) is greater than the correlations between the remaining LVs, indicating discriminant validity of the comprehensiveness of the strategy formulation construct (Table II) and among the second-order LVs (Table IV).

Another step taken was to evaluate the discriminant validity by analyzing the matrix of cross-loadings. Based on this criterion, it is expected for an indicator to present a greater correlation with its LV than with others (Chin, 1998). The indicators of comprehensives of strategy formulation present an average correlation of 0.80 with their latent variables, and of 0.65 with management capabilities. Based on this criterion there is discriminant validity.

The hypothesis analysis in the structural model was performed by evaluating the coefficient of determination  $R^2$  and the model's goodness-of-fit index (Henseler *et al.*, 2009). The interpretation of  $R^2$  was performed as proposed by Cohen (1977), in which 0.02, 0.15 and 0.35 have been interpreted as small, medium and large effect size, respectively.

Construct	HORALIG	VERTALIG
Horizontal alignment (HORALIG)	<i>0.953</i>	
Vertical alignment (VERTALIG)	0.674	<i>0.884</i>

**Note:** Diagonal elements in italics are square roots of average variance extracted (Hulland, 1999)

**Table IV.**  
Correlation between  
the second-order  
latent variables

The bootstrapping method of sampling with replacement was applied on the basis of 1,000 bootstrapping runs. Tenenhaus *et al.* (2005) recommend a minimum of 200 resamplings. The results indicate that the  $R^2$  of the model is 0.134 (Figure 2), which represents a medium effect size of the model (Cohen, 1977). The Student's  $t$ -value (4.308) is statically significant at 0.05. The relationship between internal alignment and business performance is highly significant, with a  $p$ -value = 0.000018; therefore,  $p < 0.0001$ .

The goodness-of-fit (GoF) applies to both the measurement model and the structural model. It is calculated from the geometric mean of the average  $R^2$  (adequacy of the structural model) and average AVE (adequacy of the measurement model). There is no recommendation for the GoF, but using AVE = 50 percent and  $R^2$  according to Cohen's classification, the following values were found: GoF small = 0.1, GoF medium = 0.25, and GoF large = 0.36 (Wetzels *et al.*, 2009, p. 187).

The GoF of the model was 0.34 (Figure 2), indicating the excellent fit of the model.

## 5. Discussion and conclusions

This study makes important contributions for both managerial practitioners and researchers. It proposes a conceptual ISA model from the holistic perspective, also commonly known in the literature as the systemic or covariance perspective, in which the vertical alignment and horizontal alignment represent the variables to be aligned, and the idea is that separately, they do not suffice to produce internal alignment. The ISA measurement model was empirically validated through a survey-based research analyzed through SEM, demonstrating a high degree of internal consistency.

Moreover, the structural model defends the hypothesis that the ISA model has a positive impact on business performance. The results show a medium impact of the ISA model, which was expected as the external alignment is also relevant and was not addressed in this research as mentioned before.

Thus, this study helped to increase understanding regarding the determinants of business performance and to explain how managers can achieve superior performance (Meyer, 1991).

The proposed model is more complex, but more representative of the set of variables to be adjusted for strategy implementation toward jointly assessing the impact of vertical alignment and horizontal alignment on performance. It is an important contribution since there are few studies involving the two alignment perspectives, particularly horizontal alignment (Kathuria *et al.*, 2007).

Moreover, emphasis has already been placed on its formulation (Brown *et al.*, 2010; Hrebiniak and Joyce, 2001; Zajac *et al.*, 2000), and on the need for alignment studies based on a holistic perspective (Venkatraman and Prescott, 1990; Kathuria *et al.*, 2007) as the proposed model.

The validated research instruments are also an important contribution to measure the component constructs of vertical and horizontal alignment, which can be used for the development of research in new contexts.

These results provide empirical validation of the specified model from both the theoretical and empirical standpoints. This, therefore, confirms the importance of vertical alignment, which is conceived as a set of actions required to implement the strategy, involving the existence of a formal plan, management capabilities to implement it and people's involvement with the strategy, as well as the importance of horizontal alignment involving an understanding of customer needs, and process alignment (interfunctional) that can deliver what the customer needs.

The ISA model also adds contributions when compared to other fit models. In prior research, Prieto and Carvalho (2011) apply the model proposed by Labovitz and Rosansky (1997) to research the degree of strategic alignment in organizations operating in the medical

diagnostics sector. The model also considers the fit in both dimensions: vertical and horizontal. Performance was measured from business operational results and the analysis of the use of competitive advantages based on the determining factors for success in the scenario of the company's industry. The findings indicated that the relationship between a high degree of alignment and good performance could be established. The better-aligned company has built competitive advantages, among them, the ability to align itself (Powell, 1992) in order to deal with market turbulence.

The ISA model incorporates a higher level of elaboration than the model proposed by Labovitz and Rosansky (1997), mainly in relation to the vertical alignment dimension. It is important to highlight the conceptualization of the construct "comprehensiveness of strategy formulation" as multidimensional and composed with the variables: "formal planning process," "middle management involvement" and "strategic consensus." Several studies consider these variables to assess their impact on organizational performance, e.g., Chan *et al.* (2006), Homburg *et al.* (1999) and Wooldridge and Floyd (1990). However, no studies have been found that jointly operationalize them. The literature, however, points out that the non-treatment of these variables from the strategy formulation process can lead to failure in their implementation (Beer and Eisenstat, 2000; Hambrick and Cannella, 1989; Malina and Selto, 2001).

The ISA model received the influence of the theoretical model proposed by Hambrick and Cannella (1989). See analysis in Prieto *et al.*, 2009. One of the dimensions of the model, called "selling," concerns the role of the executive in convincing the stakeholders of the importance of the strategy and of removing obstacles to its implementation. The ISA model operationalized this idea in the assertives proposed in the "management capabilities for implementation of the strategy" construct.

There are managerial implications of this study. First, many companies have spent significant amounts of resources on operational alignment and business strategy and executives seek evidence that their organizational efforts have borne fruit (Joshi *et al.*, 2003; Prieto and Carvalho, 2011), and the results show that these efforts can lead to better performance. Second, frameworks and methodologies are an essential aid for executives when formulating and implementing operational strategies (Berry *et al.*, 1999; Prieto *et al.*, 2009) and this study presents the ISA model that include activities relevant to the successful execution of the strategy and the validated research instrument can be applied for firms as a diagnosis of internal alignment in the organization.

Notwithstanding the aforementioned contributions, all research studies have their limitations related to the methodological choices as non-probabilistic samples and the sole use of the quantitative technique, which does not allow for the individual exploration of cases.

This study provides insights for future studies. First, the ISA model can be tested in different organizational contexts. The lack of stratification in the sample did not allow us to explore control variables such as firm size and sectors, and it would be interesting for future studies to research the impact of these variables. Previous studies have shown that size can influence alignment, depending on the business segment in which the company operates (Chan *et al.*, 2006). Second, it would be interesting to test the influence of moderator variables on the relationship between internal alignment and business performance, e.g., intangible organizational issues such as company culture and organizational reputation (Carmeli and Tishler, 2004) and factors that detect changes in the competitive environment, such as environmental uncertainty and strategy (Heracleous and Werres, 2016; Prieto and Carvalho, 2011).

Finally, we suggest that the distinction between operational performance and business performance should be considered (Combs *et al.*, 2005; Ray *et al.*, 2004; Venkatraman and Ramanujam, 1986).

**References**

- Andrews, K.R. (1971), *The Concept of Corporate Strategy*, Dow Jones-Irwin, Homewood, IL.
- Barney, J.B. and Mackey, T.B. (2005), "Testing resource-based theory", in Ketchen, D.J. and Bergh, D.D. (Eds), *Research Methodology in Strategy and Management*, Vol. 2, Elsevier, New York, NY, pp. 1-13.
- Beer, M. and Eisenstat, R.A. (1996), "Developing an organization capable of implementing strategy and learning", *Human Relations*, Vol. 49 No. 5, pp. 597-619.
- Beer, M. and Eisenstat, R.A. (2000), "The silent killers of strategy implementation and learning", *Sloan Management Review*, Vol. 41 No. 4, pp. 29-40.
- Berry, W.L., Hill, T. and Klompmaker, J.E. (1999), "Aligning marketing and manufacturing strategies with the market", *International Journal of Production Research*, Vol. 37 No. 16, pp. 3599-3618.
- Biggs, A., Paula, B. and Jennifer, P.B. (2014), "Strategic alignment with organizational priorities and work engagement: a multi-wave analysis", *Journal of Organizational Behavior*, Vol. 35 No. 3, pp. 301-317.
- Boswell, W.R. and Boudreau, J.W. (2001), "How leading companies create, measure and achieve strategic results through 'line of sight' ", *Management Decision*, Vol. 39 No. 10, pp. 851-859.
- Bourne, M., Neely, A., Mills, J. and Platts, K. (2003), "Why some performance measurement initiatives fail: lessons from the change management literature", *International Journal of Business Performance Management*, Vol. 5 Nos 2/3, pp. 245-269.
- Brown, S., Squire, B. and Lewis, M. (2010), "The impact of inclusive and fragmented operations strategy processes on operational performance", *International Journal of Production Research*, Vol. 48 No. 14, pp. 4179-4198.
- Burgelman, R.A. (1988), "Strategy making as a social learning process: the case of internal corporate venturing", *Interfaces*, Vol. 18 No. 3, pp. 74-85.
- Cäker, M. and Siverbo, S. (2014), "Strategic alignment in decentralized organizations – the case of Svenska Handelsbanken", *Scandinavian Journal of Management*, Vol. 30 No. 2, pp. 149-162.
- Camelo, C., Fernandez-Alles, M. and Hernandez, A.B. (2010), "Strategic consensus, top management teams, and innovation performance", *International Journal of Manpower*, Vol. 31 No. 6, pp. 678-695.
- Campbell, A. and Alexander, M. (1997), "What's wrong with strategy?", *Harvard Business Review*, Vol. 75 No. 6, pp. 42-51.
- Cao, Q., Baker, J. and Hoffman, J.J. (2012), "The role of the competitive environment in studies of strategic alignment: a meta-analysis", *International Journal of Production Research*, Vol. 50 No. 2, pp. 567-580.
- Carmeli, A. and Tishler, A. (2004), "The relationships between intangible organizational elements and organizational performance", *Strategic Management Journal*, Vol. 25 No. 13, pp. 1257-1278.
- Chakravarthy, B. (1986), "Measuring strategic performance", *Strategic Management Journal*, Vol. 7 No. 5, pp. 437-458.
- Chan, Y.E., Sabherwal, R. and Thatcher, J.B. (2006), "Antecedents and outcomes of strategic IS alignment: an empirical investigation", *IEEE Transactions on Engineering Management*, Vol. 53 No. 1, pp. 27-47.
- Chan, Y.E., Huff, S.L., Barclay, D.W. and Copeland, D.G. (1997), "Business strategic orientation, information systems strategic orientation, and strategic alignment", *Information Systems Research*, Vol. 8 No. 2, pp. 125-150.
- Chandler, A.D. (1962), *Strategy and Structure: Chapters in the History of the Industrial Enterprise*, MIT Press, Cambridge.
- Chin, W.W. (1998), "The partial least squares approach to structural equation modeling", in Marcoulides, G.A. (Ed.), *Modern Methods for Business Research*, Erlbaum, Mahwah, NJ, pp. 295-336.

- Chin, W.W. and Newsted, P.R. (1999), "Structural equation modeling analysis with small samples using partial least squares", in Hoyle, R.H. (Ed.), *Statistical Strategies for Small Sample Research*, Sage Publications, Thousand Oaks, CA, pp. 307-341.
- Cohen, J. (1977), *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed., Academic Press, New York, NY.
- Cole, R.E. (1998), "Learning from the quality movement: what did and didn't happen and why?", *California Management Review*, Vol. 41 No. 1, pp. 43-73.
- Collins, P.A. (2002), "Measuring public sector alignment: a pre requisite for obtaining greater organizational efficiency and effectiveness", doctoral dissertation, Public Administration Program, School of Public Affairs and Administration, retrieved from ProQuest Dissertations and Theses (UMI No. 3057841), Western Michigan University, Kalamazoo, MI.
- Combs, J.G., Crook, T.R. and Shook, C.L. (2005), "The dimension of organizational performance and its implications for strategic management research", in Ketchen, D.J. and Bergh, D.D. (Eds), *Research Methodology in Strategy and Management*, Elsevier, San Diego, CA, pp. 259-286.
- Cronbach, L.J. and Meehl, P.E. (1955), "Construct validity in psychological tests", *Psychological Bulletin*, Vol. 52 No. 4, pp. 281-302.
- Davenport, T.H. and Short, J.E. (1990), "The new industrial engineering: information technology and business process redesign", *Sloan Management Review*, Vol. 31 No. 4, pp. 11-27.
- Falk, R.F. and Miller, N.B. (1992), *A Primer for Soft Modeling*, The University of Akron Press, Akron, OH.
- Faul, F., Erdfelder, E., Lang, A.G. and Buchner, A. (2007), "G\*power3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences", *Behavior Research Methods*, Vol. 39 No. 2, pp. 175-191.
- Floyd, S.W. and Wooldridge, B. (1992a), "Middle management involvement in strategy and its association with strategic type: a research note", *Strategic Management Journal*, Vol. 13 No. 8, pp. 153-167.
- Floyd, S.W. and Wooldridge, B. (1992b), "Managing strategic consensus: the foundation of effective implementation", *Academy of Management Executive*, Vol. 6 No. 4, pp. 27-39.
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Fuchs, P.H., Mifflin, K.E., Miller, D. and Whitney, J.O. (2000), "Strategic integration: competing in the age of capabilities", *California Management Review*, Vol. 42 No. 3, pp. 118-147.
- Gagnon, M., Jansen, K. and Michael, J. (2008), "Employee alignment with strategic change: a study of strategy-supportive behavior among blue-collar employees", *Journal of Managerial Issues*, Vol. 20 No. 4, pp. 425-443.
- Galbraith, J.R. and Kazanjian, R.K. (1986), *Strategy Implementation: Structure, Systems and Process*, West Publishing, St Paul, MN.
- Ginsberg, A. and Venkatraman, N. (1985), "Contingency perspectives of organizational strategy: a critical review of the empirical research", *The Academy of Management Review*, Vol. 10 No. 3, pp. 421-434.
- Gonzalez-Benito, J., Aguinis, H., Boyd, B.K. and Suárez-González, I. (2012), "Coming to consensus on strategic consensus: a mediated moderation model of consensus and performance", *Journal of Management*, Vol. 38 No. 6, pp. 1685-1714.
- Govindarajan, V. (1989), "Implementing competitive strategies at the business unit level: implications of matching managers to strategies", *Strategic Management Journal*, Vol. 10 No. 3, pp. 251-269.
- Hackman, R.J. and Wageman, R. (1995), "Total quality management: empirical conceptual and practical issues", *Administrative Science Quarterly*, Vol. 40 No. 2, pp. 309-342.
- Hair, J.F. Jr, Anderson, R.E., Tatham, R.L. and Black, W.C. (2005), *Análise multivariada de dados*, 5th ed., Bookman, Porto Alegre.

- Hambrick, D.C. and Cannella, A.A. Jr (1989), "Strategy implementation as substance and selling", *Academy of Management Executive*, Vol. 3 No. 4, pp. 278-285.
- Henseler, J., Ringle, C.M. and Sinkovics, R.R. (2009), "The use of partial least squares path modeling in international marketing", *Advances in International Marketing*, Vol. 20, pp. 277-319, doi: 10.1108/S1474-7979(2009)0000020014.
- Heracleous, L. and Werres, K. (2016), "On the road to disaster: strategic misalignments and corporate failure", *Long Range Planning*, Vol. 49 No. 4, pp. 491-506.
- Hill, A. and Cuthbertson, R. (2011), "Fitness map: a classification of internal strategic fit in service organisations", *International Journal of Operations & Production Management*, Vol. 31 No. 9, pp. 991-1021.
- Hitt, M.A. and Ireland, R.D. (1985), "Corporate distinctive competence, strategy, industry and performance", *Strategic Management Journal*, Vol. 6 No. 3, pp. 273-293.
- Hitt, M.A., Ireland, R.D. and Palia, K.A. (1982), "Industrial firms' grand strategy and functional importance: moderating effects of technology and uncertainty", *Academy of Management Journal*, Vol. 25 No. 2, pp. 265-298.
- Hofer, C.W. and Schendel, D. (1978), *Strategy Formulation: Analytical Concepts*, West Publishing, St Paul, MN.
- Homburg, C., Krohmer, H. and Workman, J.P. Jr (1999), "Strategic consensus and performance: the role of strategy type and market-related dynamism", *Strategic Management Journal*, Vol. 20 No. 4, pp. 339-357.
- Hrebiniak, L.G. (2005), *Making Strategy Work: Leading Effective Execution*, Upper Saddle River, NJ.
- Hrebiniak, L.G. and Joyce, W.F. (2001), "Implementing strategy: an appraisal and agenda for future research", in Hitt, M., Freeman, R.E. and Harrison, J. (Eds), *Handbook of Strategic Management*, Blackwell Business, Oxford, pp. 602-626.
- Hulland, J. (1999), "Use of partial least squares (PLS) in strategic management research: a review of four recent studies", *Strategic Management Journal*, Vol. 20 No. 2, pp. 195-204.
- Jayaram, J. and Xu, K. (2013), "The relative influence of external versus internal integration on plant performance in China", *International Journal of Production Economics*, Vol. 146 No. 1, pp. 59-69.
- Joshi, M.P., Kathuria, R. and Porth, S.J. (2003), "Alignment of strategic priorities and performance: an integration of operations and strategic management perspectives", *Journal of Operations Management*, Vol. 21 No. 3, pp. 353-369.
- Kathuria, R., Joshi, M.P. and Porth, S.J. (2007), "Organizational alignment and performance: past, present and future", *Management Decision*, Vol. 45 No. 3, pp. 503-517.
- Labovitz, G. and Rosansky, V. (1997), *The Power of Alignment: How Great Companies Stay Centered and Accomplish Extraordinary Things*, John Wiley e Sons, Inc., New York, NY.
- Malina, M.A. and Selto, F.H. (2001), "Communicating and controlling strategy: an empirical study of the effectiveness of the balanced scorecard", *Journal of Management Accounting Research*, Vol. 13 No. 1, pp. 47-90.
- Meyer, A.D. (1991), "Visual data in organizational research", *Organization Science*, Vol. 2 No. 2, pp. 218-236.
- Miles, R.E. and Snow, C.C. (1984), "Fit, failure and the hall of fame", *California Management Review*, Vol. 26 No. 3, pp. 10-28.
- Miller, D. (1987), "The structural and environmental correlates of business strategy", *Strategic Management Journal*, Vol. 8 No. 1, pp. 55-76.
- Mintzberg, H. and Waters, J.A. (1985), "Of strategies, deliberate and emergent", *Strategic Management Journal*, Vol. 6, July-September, pp. 257-272.
- Nadler, D. and Tushman, M.L. (2001), "Designing organizations that have good fit. A framework for understanding new architectures", in Nadler, D.A., Gerstein, M.S. and Shaw, R.B. (Eds), *Organizational Architecture: Designs for Changing Organizations*, Jossey-Bass Publishers, San Francisco, CA, pp. 39-56.



- Narver, J.C., Slater, S.F. and MacLachlan, D.L. (2004), "Responsive and proactive market orientation and new product success", *Journal of Product Innovation Management*, Vol. 21 No. 5, pp. 334-347.
- Netemeyer, R.G., Bearden, W.O. and Sharma, S. (2003), *Scaling Procedures: Issues and Applications*, Sage Publications, Thousand Oaks, CA.
- Noble, C.H. (1999), "The eclectic roots of strategy implementation", *Journal of Business Research*, Vol. 45 No. 2, pp. 119-134.
- Noble, C.H. and Mokwa, M.P. (1999), "Implementing marketing strategies: developing and testing a managerial theory", *Journal of Marketing*, Vol. 63 No. 4, pp. 57-73.
- Nohria, N., Joyce, W. and Roberson, B. (2003), "What really works", *Harvard Business Review*, Vol. 81 No. 7, pp. 42-52.
- Olson, E.M., Slater, S.F. and Hult, G.T.M. (2005), "The performance implications of fit among business strategy, marketing organization structure, and strategic behavior", *Journal of Marketing*, Vol. 69 No. 3, pp. 49-65.
- Powell, T.C. (1992), "Organizational alignment as competitive advantage", *Strategic Management Journal*, Vol. 13 No. 2, pp. 119-134.
- Prieto, V.C. and Carvalho, M.M. (2011), "Strategic alignment and performance: Brazilian companies in the medical diagnostics sector", *The Service Industries Journal*, Vol. 31 No. 9, pp. 1405-1427.
- Prieto, V.C., Carvalho, M.M. and Fischmann, A.A. (2009), "Comparative analysis of strategic alignment models", *Produção*, Vol. 19 No. 2, pp. 317-331.
- Rapert, M.I., Velliquette, A. and Garretson, J.A. (2002), "The strategic implementation process – Evoking strategic consensus through communication", *Journal of Business Research*, Vol. 55 No. 4, pp. 301-310.
- Ray, G., Barney, J.B. and Muhanna, W.A. (2004), "Capabilities, business processes, and competitive advantage: choosing the dependent variable in empirical tests of the resource-based view", *Strategic Management Journal*, Vol. 25 No. 1, pp. 23-37.
- Reich, B.H. and Benbasat, I. (2000), "Factors that influence the social dimension of alignment between business and information technology objectives", *MIS Quarterly*, Vol. 24 No. 1, pp. 81-113.
- Ringle, C.M., Wende, S. and Will, A. (2005), *SmartPLS 2.0 M3 (beta)*, University of Hamburg, Hamburg, available at: [www.smartpls.de](http://www.smartpls.de) (accessed August 10, 2014).
- Rodríguez Bolívar, M.P., López Hernández, A.M. and Ortiz Rodríguez, D. (2010), "Implementing the balanced scorecard in public sector agencies: an experience in municipal sport services", *Academia Revista Latinoamericana de Administración*, Vol. 45, Sin mes, pp. 116-139.
- Ryu, H.-S., Lee, J.-N. and Choi, B. (2015), "Alignment between service innovation strategy and business strategy and its effect on firm performance: an empirical investigation", *IEEE Transactions on Engineering Management*, Vol. 62 No. 1, pp. 100-113.
- Sabherwal, R. and Chan, Y.E. (2001), "Alignment between business and IS strategies: a study of prospectors, analyzers, and defenders", *Information Systems Research*, Vol. 12 No. 1, pp. 11-33.
- Sardana, D., Terziovski, M. and Gupta, N. (2016), "The impact of strategic alignment and responsiveness to market on manufacturing firm's performance", *International Journal of Production Economics*, Vol. 177 No. 1, pp. 131-138.
- Schniederjans, M. and Cao, Q. (2009), "Alignment of operations strategy, information strategic orientation, and performance: an empirical study", *International Journal of Production Research*, Vol. 47 No. 10, pp. 2535-2563.
- Siggelkow, N. (2001), "Change in the presence of fit: the rise, the fall, and the Renaissance of Liz Claiborne", *Academy of Management Journal*, Vol. 44 No. 4, pp. 838-857.
- Skinner, W. (1974), "The focused factory", *Harvard Business Review*, Vol. 52 No. 3, pp. 113-119.
- Tenenhaus, M., Vinzi, V.E., Chatelin, Y. and Lauro, C. (2005), "PLS path modeling", *Computational Statistics & Data Analysis*, Vol. 48 No. 1, pp. 159-205.

- Venkatraman, N. (1989a), "Strategic orientation of business enterprises: the construct, dimensionality, and measurement", *Management Science*, Vol. 35 No. 8, pp. 942-962.
- Venkatraman, N. (1989b), "The concept of fit in strategy research: toward verbal and statistical correspondence", *The Academy of Management Review*, Vol. 14 No. 3, pp. 423-444.
- Venkatraman, N. and Camillus, J.C. (1984), "Exploring the concept of 'fit' in strategic management", *Academy of Management Review*, Vol. 9 No. 3, pp. 513-525.
- Venkatraman, N. and Grant, J.H. (1986), "Construct measurement in organizational strategy research: a critique and proposal", *Academy of Management Review*, Vol. 11 No. 1, pp. 71-87.
- Venkatraman, N. and Prescott, J.E. (1990), "Environment-strategy coalignment: an empirical test of its performance implications", *Strategic Management Journal*, Vol. 11 No. 1, pp. 1-23.
- Venkatraman, N. and Ramanujam, V. (1986), "Measurement of business performance in strategy research: a comparison of approaches", *The Academy of Management Review*, Vol. 11 No. 4, pp. 801-814.
- Walter, J., Kellermanns, F.W., Floyd, S.W., Veiga, J.F. and Matherne, C. (2013), "Strategic alignment: a missing link in the relationship between strategic consensus and organizational performance", *Strategic Organization*, Vol. 11 No. 3, pp. 304-328.
- Waterman, R. Jr, Thomas, J.P. and Julien, R.P. (1980), "Structure is not organization", *Business Horizons*, Vol. 23 No. 3, pp. 14-26.
- Wetzels, M., Odekerken-Schröder, G. and Van Oppen, C. (2009), "Using PLS path modeling for assessing hierarchical construct models: guidelines and empirical illustration", *MIS Quarterly*, Vol. 33 No. 1, pp. 177-195.
- Zajac, E.J., Kraatz, M.S. and Bresser, R.K. (2000), "Modeling the dynamics of strategic fit: a normative approach to strategic change", *Strategic Management Journal*, Vol. 21 No. 4, pp. 429-453.
- Zakery, A., Afrazeh, A. and Dumay, J. (2017), "Analysing and improving the strategic alignment of firms' resource dynamics", *Journal of Intellectual Capital*, Vol. 18 No. 1, pp. 217-240.

Appendix

Five-point Likert scale (1 = I agree entirely; 5 = I disagree completely)

*Factors involved in vertical alignment*

Formal planning process	SFL
1. Our company's actions are based on more formal plans than on intuition	0.593
2. We have formal long-term goals that are known by all our managers	0.806
3. We have specific formal short-term goals that are known by all our managers	0.630
4. We have a broader strategic planning system for the development of the organization as a whole	0.812
5. We have a formal strategic plan for the next fiscal period	0.753
6. We have an executive or team in charge of preparing a formal strategic plan	0.751
7. We hold regular management meetings to discuss the strategy as a whole	0.777
Middle management involvement in strategy formulation	SFL
1. Middle and top management work together to decide what will be done by middle management to implement the strategy	0.744
2. Middle management becomes acquainted with the strategy in advance, before being called upon to implement it	0.810
3. During the implementation of the strategy, middle managers feel they can seek out their superiors to suggest changes in the implementation activities	0.789
4. The responsibilities of middle management in the implementation are significant	0.834
5. Middle management is the key to the implementation of the strategy	0.763
Strategic consensus	SFL
1. The strategy in action is relevant for the achievement of the company's mission	0.862
2. It is expected that the success of the strategy in action affects the company's future positively	0.842
3. I believe that the strategy in action is in line with the company's most relevant interests	0.803
4. I personally feel that the objectives of the strategy in action are suitable	0.824
Management capabilities for implementation of the strategy	SFL
1. Top management develops and communicates as single direction to be shared among all the members of the organization.	0.740
2. Our key executives seek consensus, among themselves, between conflicting opinions, improved coordination and effective collaboration	0.850
3. We engage in shared decision-making between top and middle management	0.689
4. Our executives promote the adjustment of the resources that are needed for the implementation of the strategy	0.800
5. Our executives try to identify obstacles to the implementation of the strategy before putting it into action	0.802
6. Top management demonstrates that it cares about the strategy in action	0.783
People involvement with the strategy	SFL
1. There is strong employee involvement in the processes and their implementation	0.584
2. Our employees are committed and maintain a high sense of responsibility toward the organization	0.698
3. The goals of the organization are understood by all its members	0.783
4. The organization as a whole focuses its efforts on achieving its goals	0.736
5. The departments or work groups are rewarded for their performance	0.806
6. The organization rewards the individual performance of its employees	0.751
7. The leaders reward the good performance of their employees	0.799
8. The knowledge and skills that people need are defined based on the strategy of the organization	0.671

*Factors Involved in horizontal alignment*

Process orientation	SFL
1. Our managers oversee how the work is done, as well as its results	0.769
2. We review our work processes regularly to see how they are working	0.882
3. When something goes wrong, we correct the identified causes to prevent the problem from occurring again	0.859

(continued)

**Table A1.**  
Key measures of the  
survey and  
standardized factor  
loading (SFL)

4. The processes are reviewed to ensure that they contribute to achieve the strategic goals	0.892
Customer orientation – CO	SFL
1. We continually seek to discover additional needs of our consumers which they themselves have not yet perceived	0.872
2. We incorporate solutions into our products and services for unmet consumer needs	0.921
3. We seek to influence how our customers use our products or services	0.849
4. We work closely with key people in the market, aiming to recognize customer needs in advance, months or even years before most of the market can recognize them	0.771
Business performance	SFL
Overall performance of the company in the last three years compared with the average performance of the competitors in the sector	
Five-point Likert scale (1 = much worse than the competition; 5 = much better than the competition)	
1. Reputation with the largest consumer segments	0.720
2. Frequency in launching new products or services	0.745
3. Return on investment	0.778
4. Profitability	0.747
5. Technological developments and/or other innovations in operations	0.696
6. Product quality	0.686
7. Gains in market share	0.766
8. Revenue growth	0.833

Table AI.

**Corresponding author**

Vanderli Correia Prieto can be contacted at: [vanderli.prieto@ufabc.edu.br](mailto:vanderli.prieto@ufabc.edu.br)

For instructions on how to order reprints of this article, please visit our website:

[www.emeraldgroupublishing.com/licensing/reprints.htm](http://www.emeraldgroupublishing.com/licensing/reprints.htm)

Or contact us for further details: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.