Original Papers

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Strategic thinking: The construction and validation of an instrument

Abstract: The lack of instruments that evaluate strategic thinking and the fact that it is positively related to high levels of professional performance has led us to the development and validation of a questionnaire that allows us to measure it in an organizational context. This was done through three studies. First an exploratory study, in which 272 Human Resources (HR) professionals participated, allowed us to develop its items and analyze its psychometric properties. From it three factors were extracted: (1) systemic thinking, (2) vision towards the future and, (3) identification of new opportunities. Also, the results indicated the existence of a latent overall model of strategic thinking. Secondly, a confirmatory study, where 352 Human Resources professionals participated, intended to validate the results of the previous study. The same three factors, and a latent factor were replicated revealing that the model presented had an excellent adjustment. Furthermore, a third study was carried out in order to study the perceived relationship between strategic thinking, satisfaction, trust and customers' retention. This study counted with the participation of 273 professionals who held positions of middle and upper management, key employees regarding the use of ST in organizations. The results of the three studies allow us to conclude that the Strategic Thinking Questionnaire is a valid instrument to analyze strategic thinking.

Keywords: *Strategic thinking, psychological evaluation, construction and validation, human resources.*

INTRODUCTION

The labor market is changing. Its even more globalized world is making it increasingly challenging and, as a consequence, organizations need to be able to lead changes that allow them to achieve competitive advantage and, professionals who are able to respond to them in a positive manner (Breznik & Lahovnik, 2016). Thus, it is essential to develop the right set of skills amongst these professionals. These will make it possible to distinguish organizations by their sustainability and not only by their quality or productivity levels (Kopnina, 2017).

Currently, organizations are recognized as part of a global system (society) with many subsystems (functional areas or work teams) and parts (collaborators) that seek to meet their own goals. However, the constant changes in the organizational context require new ways of thinking; ways that allow for a better understanding of this increasingly complex reality. Particularly, it is essential that individuals have skills and beliefs that are based on integration and rely on strategic thinking (ST; Brătianu, 2015). Particularly, ST is of an added value in any

organization, as it contributes greatly to the anticipation of the environmental conditions and to delineate a promising and significantly different future from the present, through the definition and visualization of results that add value (Haycock et al., 2012). By thinking strategically, employees enable the construction of social practices that consolidate and solidify the organization's identity and reputation in the market (Dushkov, 2018). George et al. (2019) adds that when this type of thinking is understood as a continuous, dynamic and interactive process, the organization becomes more creative, it becomes able to spot the future and identify new strategies that allow it to manage change.

Although interest in ST has grown in recent decades, studies regarding it are still scarce, especially those that often associate it with the planning and implementation of organizational strategies (Bouhali et al., 2015; Goldman et al., 2017; Srivastava & D'Souza, 2021).

Given this, this research aims to bridge this gap by constructing and validating a questionnaire that assesses ST.

Below, the key constructs of this study are defined and the rationale for the development of the instrument is

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presented. Next, the procedures relating to the construction and development of the ST instrument and, the results resulting from its exploratory factor analysis (EFA) and its confirmatory factor analysis (CFA) are presented. Finally, a third study is added, where we study the relationship between ST, customer satisfaction, trust and retention with their organization.

Strategic thinking

Transformations are a challenge that traditional approaches can no longer solve, because managers are not always prepared to face new situations effectively (Moon, 2013). In effect, economic and technological development has led to strong competition between organizations. In order for them to survive and compete in today's markets they have to review their management methods and models. Thus, they are encouraged to invest in innovative products, services and new ways of working (Lee & Benza, 2015). When faced with these challenges, ST emerges as a solution for these organizations (Pang & Pisapia, 2012).

According to Benito-Ostolaza and Sanchis-Llopis (2014) the ability to think strategically is an extremely important skill in any organizational context. However, it is not always recognized as such and, in many cases, employees who own it are not valued. In practice, this results in the formulation of identical business plans and the systematic implementation of the same strategic measures in the hope of obtaining different results. Hunitie (2018) also states that ST is used in an isolated manner and only in extreme situations, instead of being a decisive element in responding to changes that occur daily in an organizational context.

The term ST has been used in such dissimilar ways that it becomes difficult to find a consensual definition (Goldman et al., 2017; Srivastava & D'Sousa, 2021). Nevertheless, most authors agree that it refers to the ability to glimpse into the future and create strategies that make it possible for an organization to gain competitive advantage (e.g., Brătianu, 2015; Dragoni et al., 2014; Srivastava & D'Sousa, 2021). That said, we can say that ST is a fundamental skill that allows organizational employees "to develop the appropriate means to achieve the goals of the organization" (Bouhali et al., 2015, p. 73).

There are several experts (e.g., Kalali et al., 2015; Ketkar & Sett, 2010; Liedtka, 2014) who, over the past decade, have been advocating that the paradigm of ST should involve all employees of an organization. For example, Bonn (2005) adds that this particular form of thought should include systemic thinking, vision towards the future and creativity.

Systemic thinking seeks to understand the organization as a whole. It is based on the interdependence between internal and external factors and, on monitoring organizational results to ensure the proper functioning of the organization. In this way, it is the starting point for transforming information into ideas and, consequently, learning and growth opportunities for the organization. Vision towards the future, in turn, seeks to understand the factors that affect the organization, its ecosystem and the external environment both in the short and long term. Finally, creativity aims at developing innovative solutions that allow solving unexpected problems and identifying new opportunities that allow the organization to achieve a competitive advantage (Binnewies & Gromer, 2012; Tuan & Shaw, 2016).

According to Liedtka (2015) in order for ST to be put into practice it is necessary to constantly challenge the assumptions of our mental models. Particularly, with regard to two types of thoughts: analytical thinking and creative thinking (Haycock et al., 2012).

When analytically thinking people address problems sequentially and justify all the steps taken. It is considered the most traditional way to think regarding the use and development of cognitive maps. This approach postulates that the assumptions are only formulated after the validation of a consecutive set of ground rules, thus preventing emotional aspects from skewing the results (Kalali et al., 2015). Creative thinking, in turn, challenges traditional assumptions and fully restructures existing cognitive maps. The approach is no longer sequential and becomes diverse, because instead of proceeding with validated steps, imagination is used to move forward, and there is no concern about the verification of propositions. Neglecting tradition and interpreting and solving problems appealing to imagination often stimulates the creation of innovative solutions that contribute significantly to the success of the organization (Chakravarty, 2010).

Epstein and Phan (2012) add that creativity is influenced by personality traits, working climate and variables that are typically controlled by managers and leaders (e.g., accountability, appreciation). In this way, they identified four fundamental skills that leaders need to stimulate in order to promote the creativity of their employees, namely: (1) maintenance and acceptance of new ideas, (2) attribution of challenging tasks, (3) skills development and (4) knowledge outside the area of training and regular modification of physical and social environments (Capozza et al., 2017).

From Liedka's perspective (2008) ST is associated with five determinants – a system's perspective, a focus on goals, a sense of opportunity, thinking about time, and an orientation for the development of hypotheses – which condition the results of an individual's strategic thought. According to the author, the system perspective requires the development of a cognitive model that integrates the organization in the environment, around it, and amongst its internal interdependencies. This approach should cover all members of the organization and not just its top managers.

Following this, the organization must be perceived as a broad ecosystem, a single entity and not as a collection of functional parts, but as it develops there is a tendency for the specialization and structuring of the various areas, which results in an increase of its functional staff. This situation favors the appearance of systemic thinking, and the whole begins to be seen as a set of interrelations and patterns of change over time (Atwater et al., 2008). Following this, Bertalanffy (2015) advocates the need to

study systems globally, involving all their interdependencies, because the aggregation of all elements constitutes a larger functional unit that has characteristics not found in its components when perceived in isolation. Consequently, the parts are understood throughout the whole, and it is not the whole that is understood through the parts. When a system is disaggregated it loses some of its essential properties, so the interaction between the parts is crucial to understanding the whole.

The second element concerns the focus on the goal and refers to the creation of a vision towards the future that involves all employees of an organization. It is from the shared view that conditions are created so that new strategies can emerge, and only then can it be used to take advantage of the transformations from the external environment. This approach intent is to enable a greater concentration and determination in the pursuit of the organizational vision, and implies less distractions when it comes to strategically less relevant subjects (Ketkar & Sett, 2010).

The sense of opportunity, in turn, allows the identification of situations that enable a better and faster adaptation by the organization to changes regarding its surrounding environment. According to Liedka (2008), ST uses the experience and knowledge acquired in the past to define the present and future guidelines, because considering time increases the quality of decisions and the speed of implementation of new ideas. Finally, the orientation towards the development of hypotheses concerns a sequential process that, through the creation of ideas, combines creative thinking with analytical thinking (Haycock et al., 2012).

Kalali et al. (2015) report that ST is fundamental to develop and look for alternatives to conventional approaches, so it is important to verify whether employees have the personal attributes and the skills necessary to define a direction that meets organizational goals. Particularly, Bouhali et al. (2015) report that successful organizations are those that can stimulate and engage employees, of all hierarchical levels, in pursuing the organizational vision. In view of this situation, Mellon and Kroth (2013) affirm that in order for ST to emerge, it is essential to foster employees with the following skills: (1) strong skills of interpersonal relationship, (2) ease in dealing with ambiguity, (3) ability to lead others to a particular vision, (4) make important decisions, (5) enthusiasm and commitment, (6) believe in the skills and vulnerabilities of followers, (7) the ability to build and lead teams, (8) contact network management, (9) high levels of energy and motivation, (10) and a deep knowledge of the industry, organization and its operations in general.

ST allows the organization to be more agile, enhances the ability to achieve better results and also increases the ability to respond to the transformations of the surrounding environment. This happens because ST is directly related to analysis, planning, organization, leadership and decision-making. However, it is not an innate competence, but something that can be learned, developed, practiced and applied in everyday life (Kazmi & Naaranoja, 2015).

In view of the foregoing, we can assume that effective management is fundamental to the strategic positioning of any organization. As such, the practices implemented in this area must coincide with its objectives and expectations, because only in this way they are able to get the desired results (Tavitiyamana et al., 2011). However, it turns out that the constant pressure to rapidly implement new ideas that correspond to the organizational interests ends up motivating the use of models without methodological and scientific rigor, particularly regarding the management of ST (García-Sáiz, 2011).

Given this, the purpose of this study is to develop an instrument that evaluates ST with an organizational impact, because despite being a concept often used in the organizational context, there are still few studies on it (e.g., Dhir et al., 2018; Goleman et al., 2017; Srivastava & D'Souza, 2021), particularly with regard to its operationalization and measurement. Specifically, they valuate behaviors and not results.

The construction and validation of the Strategic Thinking Questionnaire (STQ)

The construction and validation of the Strategic Thinking Questionnaire (STQ) was operationalized through three studies. The first study, of an exploratory nature, aimed at a selection of items and the analysis of their psychometric properties that enabled us to build a first version of the instrument. The second study, a confirmatory analysis, intended to validate the results resulting from the EFA, and further to confirm whether the measured variables adequately represent the number of constructs obtained and whether the latent factors are responsible for the behavior of the manifest variables (Hair et al., 2018). Finally, the third study, intended to study more than just the psychometric properties of the STQ, and was set to empirically study the relation between ST and customer satisfaction, trust and retention with an organization.

The development of the questionnaire began by defining the constructs that integrate ST, namely: (1) systemic thinking, which is based on the interdependence and holistic perception of an organization (Bonn, 2005), (2) vision towards the future, through which it is possible for an individual to identify the internal and external factors that influence the organization both in the short, medium, and long term (Liedtka, 2014), (3) and the identification of new opportunities that allows an individual to aid his organization in achieving competitive advantage (Tuan & Shaw, 2016).

Following this, 30 items were developed, ten for each of the aforementioned dimensions. Regarding the participants' responses to the items presented, they should be answered according to a 10-point Likert scale that ranged from 1 = Nothing suitable to 10 = Very adequate. According to Lozano et al. (2008) the optimum number of response alternative is between four and seven. Nevertheless, it is important to reinforce that in line with the authors from seven response alternatives onwards the gains are scarce from a psychometric point of view, in

particularly regarding reliability which hardly further increases.

Before its application, the questionnaire was analyzed by two HR experts so that they could evaluate the suitability of the items. As recommended by Howell (2012) if ¾ of the answers were evaluated as suitable this would correspond to an adequacy level of 75.0%. In this study all items had a score equal to or greater than 15 which exceeded the required three quarters, meaning that all of them were suitable for the application.

In order to further confirm the suitability of the items, the STQ was also applied to a group of ten professionals, aged between 35 and 54 years old (M = 45.4; SD = 6.8), who had been working as HR Directors and Consultants for more than five years (M = 15.1; SD = 6.9). According to these professionals all items were again adequate to evaluate ST.

In view of the above, all items were included in the validation study of the instrument. For each statement there are ten possibilities of response, presented on a Likert scale that ranges from 1 – I totally disagree to 10 – I totally agree. The results of each dimension are determined by the sum of the score of the items that are part of it.

METHOD

Study 1: Exploratory factor analysis

A factor analysis was used to study the variability and correlation between the variables observed and to reduce their number, grouping them into factors. The process consisted of reducing a set of variables and reducing them to an appropriate number of factors without disturbing the explained variance. The items were classified by size and loadings. Items loading below 0.32 should be discarded (Yong & Pearce, 2013). In addition, items that loaded on more than one item were dropped to avoid any discrepancies. The remaining items were then subjected to further factor analysis. The iterations continued until no other items could be dropped (Dhir et al., 2018).

Participants

Participants in the study included 272 portuguese professionals in the area of HR, namely HR Consultants (12.9%) and HR Directors (87.1%) who work full time in consulting companies. Ages ranged from 25 to 59 years old (M = 41.1; SD = 9.1), and were 40.1% males. Most participants (49.6%) hold a bachelor's degree, 29.8% a master's degree, 17.3% a graduate degree and 3.3% had PhDs. Regarding their academic background, 79.8% of the respondents have a Human Resources Management (HRM) degree, 12.5% a management degree, and 7.7% have a Psychology degree.

It was also possible to verify that 28.3% of the participants had more than 25 years of professional experience working in HR, 31.3% had between 15 and 24 years of experience, 27.9% between six and 14 years of experience and 12.5% less than five years. When asked about their seniority in their current organization, 33.8% reported that they've had been working there for less than five years, 29.4% had been working with them from 6 to 14 years, 24.6% have been with there employer for 15 to 24 years, and 12.1% haven been working for over 25 years.

Procedures

The questionnaires were introduced on an on-line platform (www.qualtrics.com) and the link was sent by e-mail to the HR Directors and Consultants of several companies referenced by the Portuguese Association for People's Management (APG). The e-mail contained an explanation regarding the study goals and an anonymity and confidentiality guarantee regarding their results. After data collection, they were analyzed using IBM-SPSS (version 27) and AMOS (version 22).

RESULTS

Construct validity

In its initial version, the instrument included 30 items. Initially, in order to test the construct validity an EFA was carried out. This EFA followed a Maximum Likelihood method, considering as an extraction criterion an Eigenvalue greater than one, and further carrying out an oblimin rotation (Fabrigar et al., 1999). Furthermore, the *a priori* criterion, of forcing items to run on three factors as recommended in the literature (Pisapia et al., 2011) was considered.

Before continuing, it should be noted that, because we are analyzing a mental skill (Fabrigar et al., 1999), any dimension/ construct that may arise from our analyses may be correlated with one another, as such, an oblique rotation provides a more accurate and realistic representation of the relation that exists between dimensions and or constructs. Per se, this rotation provides more information than an orthogonal one, as the existence of substantial correlations among factors may suggest that a higher order factor may exist. Nevertheless, a varimax rotation was conducted in order to verify that similar results would be obtained.

Said that, construct validity was studied through the analysis of the main components that were obtained through the oblimin rotation. The Kaiser-Meyer-Olkin indicator (KMO = 0.85) and Bartlett's sphericity test [$\chi^2_{(45)}$ = 1202.008, p < 0.001] revealed the absence of identity problems in the data and that the correlations between the items are appropriate. The percentage of variance explained for the three dimensions was 59.36%, a value that was considered satisfactory (Hair et al., 2018).

The selection of the items for the final questionnaire had to meet the following criteria: (1) an item-factor correlation value equal to or greater than 0.32, (2) the difference between correlations had to be greater than 0.20, and (3) each factor had to have at least three associated items (Tabachnick & Fidell, 2019). After the reordering of the items, they were distributed as follows: items 1, 2, 3, and 4 measure systemic thinking; items 5, 6, and 7 measure the identification of new opportunities, and finally, items 8, 9, and 10 regard aspects that relate to the vision towards the future (Table 1).

Table 1. Factorial scale matrix after oblimin rotation

Itens	Factor 1	Factor 2	Factor 3
1. I perceive the organization as a whole and not as a set of functional parts.	0.812		
2. I consider and perceive the organization as a broad ecosystem.	0.777		
3. I actively engage in pursuing the organization's vision.	0.710		
4. In general, I have a deep knowledge of the industry, the organization and its operations.	0.710		
5. I am an expert in looking for alternatives to conventional approaches.		0.862	
6. I think holistically and creatively		0.763	
7. I like to question traditional paradigms and challenge the status quo.		0.731	
8. I like to anticipate the changes so that I can prepare future alternatives			- 0.930
9. The experience and knowledge I have acquired in the past help me define the present and future line of guidance.			- 0.679
10. I develop plans in advance to maximize results.			- 0.632
Eigenvalue	4.741	1.308	1.018
% variance explained	42.13	9.79	7.43
Cronbach Alpha	0.83	0.82	0.78

Note: Factor 1 = Systemic thinking; Factor 2 = Identification of new opportunities; Factor 3 = Vision towards the future

Reliability

Cronbach's Alpha coefficient was used to assess reliability. A high internal consistency was obtained for all dimensions: 0.83 for the dimension of systemic thinking, 0.82 for the identification of new opportunities dimension, and 0.76 for the dimension that referred to an individual's vision towards the future. It should also be noted that the global scale, composed by all 10 items, presented a 0.87 coefficient.

Normality Test

The total values of the three dimensions were obtained through the mean of the participants' responses for all items that made up each of them. The higher the score, the greater the competence of the participants in these dimensions. The normality of the distribution was verified through the Kolmogorov-Smirnov test and the Central Limit Theorem which revealed that the values were skewed to the right (negative skewness). These results were expected due to the fact that the participants were middle and top managers for whom strategic thinking is an essential competence (O*Net, 2020). For this reason, it can be assumed that the constraints associated with social desirability, the tendency to respond in the same way, or to always respond to each item considering the midpoint of the scale, were not substantiated (Gittelman et al., 2015).

There were also significant correlations between the three dimensions of ST, and between them and the global scale, with values ranging from 0.41 to 0.88. These results indicate a lack of redundancy in the variance explained between them. Furthermore, these results suggest that these dimensions allow to adequately evaluate ST, a fundamental requirement to make organizations more efficient and able to respond to the constant transformations of the surrounding environment (Muriithi et al., 2018).

STUDY 2: CONFIRMATORY FACTOR ANALYSIS

Participants

The data were obtained from 352 Portuguese professionals who work full time in consulting companies, who perform the functions of HR consultants (10.8%) and top HR managers (89.2%). Their ages ranged between 26 and 56 years old (M = 38.7; SD = 9.5), and 51% of them were women. Regarding their academic level 62.8% of the participants had a degree and 37.2% had a postgraduate qualification (Postgraduate:13.9%; Master's degree: 21.6%; PhD:1.7%). As far as the training area concerns, it was possible to see that 82.1% of the respondents came from the HRM area, 11.1% from the management and 6.8% from the psychology fields. It was also found that the participants' professional experience ranged between 1 and 26 years (M = 13.6; SD = 7.8), 23.0% of which had less than five years of experience, 26.1% between six and 14 years, 42.6% between 15 and 24 years, and 8.2%, 25 years or more. Regarding seniority in the organization, where they at the time performed functions, 45.5% of the participants mentioned being there for less than five years, 26.4% between six and 14, 26.1% between 15 and 24 years, and 2% had been there for 25 years or more.

Procedure

Study 2 followed the same procedures as in Study 1.

Results

In order to confirm the results obtained in the exploratory study, CFA's using the Maximum Likelihood method were performed. These tested whether the measured variables adequately represented the number of constructs obtained and whether latent factors were responsible for the behavior of the variables (Marôco, 2014b). Hence, four models were tested: (1) a first-order

unifactorial model (Model 1: global scale), (2) a second-order model considering the existence of two factors (Model 2); a first order model that considered the existence of three-factors (Model 3), and a second-order model that considered the existence of three-factors (Model 4). These models were tested considering the factors that resulted from the first study EFA. It should be noted that the second order model, consisting of two factors, was tested because the third factor extracted from initial EFA had an eigenvalue of one.

The adjustment of each model was performed using the following measures: the Chi-Square (χ^2), the Comparative Fit Index (CFI), the Goodness of Fit Index (GFI), the Root Mean Square Residual (RMSR), the Root Mean Square Error of Approximation (RMSEA), the Akaike Information Criterion (AIC), the Expected Cross-Validation Index (ECVI), and the BIC (Bayes Information Criterion). Regarding the analysis of the obtained values the cut-off points suggested by the literature were considered. Also, the chi-square differences between the different models were computed and reported.

The results obtained demonstrated that the second-order three-factor model solution (Model 4), considering the covariation of errors suggested by the AMOS modification indexes, and chi square comparisons, is the one that revealed the best adjustment [$\chi^2_{(31)}$ = 1.67, p < 0.001, CFI = 0.98, GFI = 0.96, RMSR = 0.03, RMSEA = 0.05] (Figure 1).

Table 2 summarizes the adjustment statistics for each model that was tested. According to the table, it becomes evident that the solution made up of a single factor (Model 1) is the less adjusted, even after considering the covariation of errors that is suggested by the AMOS software modification indices (Marôco, 2014b). Model 2, which admits three first-order factors, has more favourable adjustment rates, but even less adequate than those of Model 3 (Hoyle & Panter, 1995).These results were also corroborated by the AIC (99.83) and ECVI (0.36) indexes, which revealed that the lowest values actually belong to the second-order three-factor model, composed by the factors resulting from the EFA. Furthermore, because of the mild difference between the values regarding the AIC amongst the three and one factor models (Burnham et al., 2011), the BIC was also considered in order to confirm that Model 4 was the one that most suited the data.

The analysis of the internal consistency for the three dimensions of the STQ and for the global scale was assessed using the Cronbach's Alpha index, whose values proved to be quite adequate [systemic thinking = 0.81; identification of new opportunities = 0.82; vision towards the future = 0.77; ST (global scale) = 0.88].

Although it is a concept often used in an organizational context, there are still few studies about it, particularly with regard to its operationalization and measure, as such, the results highlight the suitability of the instrument to assess the intended construct.
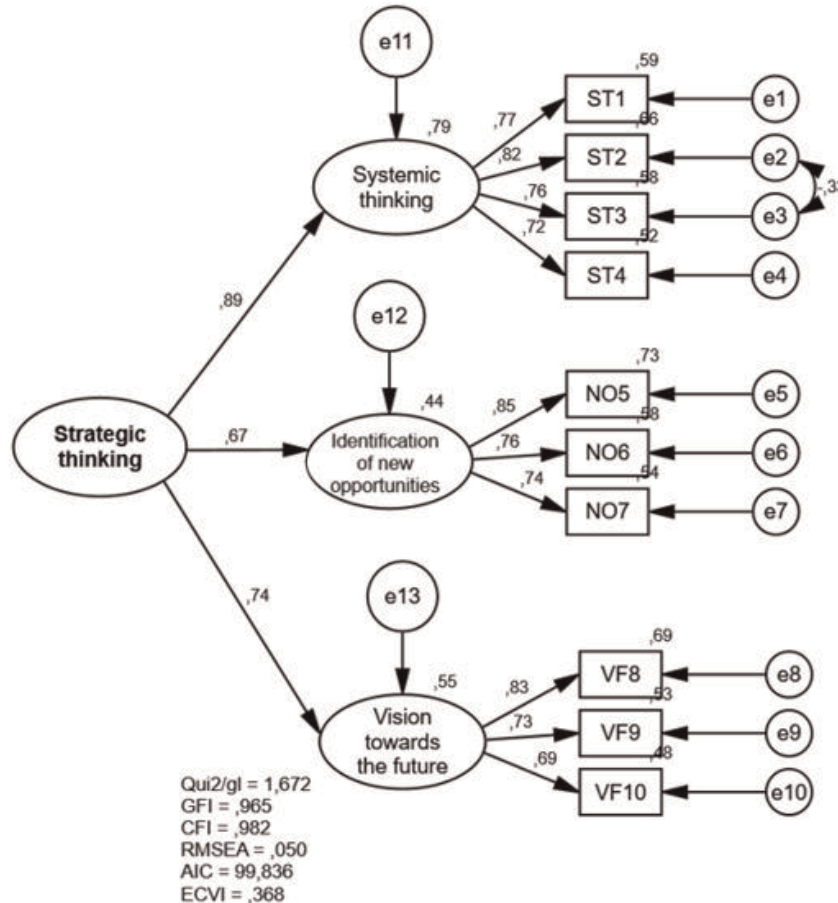

Figure 1. Confirmatory model

Table 2. Measures to adjust strategic thinking models with the covariation of errors suggested by the AMOS modification indices

	χ^2/df	CFI	GFI	RMSR	RMSE-A	AIC	ECVI	BIC	Difference	$\Delta\chi^2$/df
Model 1 (M1)	4.86	0.89	0.90	0.67	0.11	200.73	0.74	284.66	M1 − M2	2.27**
Model 2 (M2)	2.59	0.93	0.90	0.04	0.07	254.48	0.93	258.09	M1 − M3	2.89**
Model 3 (M3)	1.97	0.97	0.95	0.03	0.06	108.95	0.40	191.88	M1 − M4	3.19**
Model 4 (M4)	1.67	0.98	0.96	0.03	0.05	99.83	0.36	186.37	M2 − M3 M2 − M4 M3 − M4	0.62** 0.92** 0.30**

Note: Model 1: first-order unifactorial model (Model 1: global scale); Model 2: second-order two factor model; Model 3: first order three-factor model; Model 4: second-order three-factor model; **p < 0.001

STUDY 3: THE RELATION BETWEEN ST AND CUSTOMER SATISFACTION, TRUST AND RETENTION PERCEPTION WITH THE ORGANIZATION

A company would not need a strategy if it did not have to compete with other organizations, because of such competition, ST emerges as an important part of a manager's job. The challenge in thinking strategically is in finding innovative ways to create value to the customer's needs, and also be able to increase their satisfaction with the organization (Abraham, 2005). Specifically, customer satisfaction is a growing concern to many prominent companies all over the world. More and more firms use satisfaction ratings as an indicator of the performance regarding their products and services, and also as an indicator of the company's future success. In fact, several consulting firms are now encouraging the development of strategies that could have an impact on customer satisfaction instead of only focusing in some form of market share strategy. The shift concerning ST is based on the assumption that customer satisfaction is the best indicator regarding the company's future when we take in consideration that a high level of customer satisfaction leads to a high level of customer loyalty (Al-Hawary & Hadad, 2016).

Furthermore, ST helps to realize potentially significant opportunities for the future of organizations. It is an essential process to understand the global vision of the organization, and to develop relations between various stakeholders based on mutual trust (Muriithi et al., 2018).

Finally, applying ST comes down to building human connections and truly listening to others. When organizations take the time to listen to their customers, peers, direct reports and leaders, they feel they have a voice and are seen. This authenticates the relations the organization wants to build. As such ST becomes about helping set each other up for success, the essence of what drives true purpose for the retention of customers and further it fuels the will to achieve a competitive advantage for the organization (Dushkov, 2018). Therefore, the creation of competitive capabilities by the organization depends on the products offered which allow it to achieve customer satisfaction, increase their loyalty, and then their ability to survive in this globalized market (Al-Hawary & Hadad, 2016).

Participants

The third study counted with the participation of 273 portuguese professionals who occupy middle and senior management positions (CEO = 25.6%; Financial Director = 26.7%; HR Director = 19.4%; Commercial Director = 19.0%; Director Marketing = 9.2%) in consulting companies; 51.5% were female and were between 30 and 64 years old (M = 40.2; SD = 7.6). It should be noted that 61.2% of the participants had only a degree and 38.8% had qualifications higher than a degree in Management (30.4%), Economics (28.2%), Marketing (21.2%) and HRM (20.1%).

Regarding their professional experience, it was found that it varied between 6 and 40 years (*M* = 15.5; *SD* = 7.8). Also, it was possible to verify that the seniority of the respondents in the company where they at the time worked work, ranged from 5 to 40 years (*M* = 11.2; *SD* = 7.7). Additionally, the companies were classified according to the Recommendation 2003/361 / EC of the European Commission of May 6, 2003 (European Commission, 2003), with 42.5% of the employees being classified as working in large companies.

Procedure

A link with the STQ and a set of questions related to sociodemographic characterization (e.g., gender, age, educational qualifications, role he / she performs, type of manager), was sent by e-mail and shared on LinkedIn amongst professionals in middle and top management positions in several organizations. The confidentiality of the results was ensured, in addition, it was further guaranteed that they were only intended for scientific purposes.

After the data collection they were statistically analysed using the IBM-SPSS software (version 26).

RESULTS

In line with Dushkov (2018), in order to evaluate possible future behaviors and help in decision making, this study sought to analyze the relation between ST and customer satisfaction, trust and retention perceptions regarding the organization they were analyzing. The respondents' perception of these success indicators took into account the results the organization obtained in the previous year.

Despite the consensus that measures with several items have better psychometric properties than measures of a single item, it turns out that there are in fact situations in which individual items can be useful, allowing for the collection of practical information that otherwise would not be measured (Diamantopoulos et al., 2012).

Furthermore, single item measures are more suitable when constructs are concrete and one-dimensional, as they permit for a holistic test of the relation between variables used in an organizational context (Fisher et al., 2015).

Hereupon, answers were given using a three-point scale (1 = Worse; 2 = Equal; 3 = Better) and the results showed that 7.7% of the managers considered that the customers were less satisfied, 37.4% believed that they were equally satisfied and 54.9% that they were more satisfied. In relation to trust, it was possible to verify that 11.0% of the respondents perceived that customers trust decreased, 20.1% that it remained the same, and 68.9% that it improved. Regarding customer retention, it was found that 14.5% of the participants thought it was worse, 53.1% that it was the same and 32.5% that it was better.

Based on these considerations, it was sought to ascertain whether ST, both on its global scale and through its subdimensions – systemic thinking, identification of new opportunities and vision towards the future – correlated with the success indicators previously mentioned. For this purpose, the degree of association between the variables was assessed, analyzing their magnitude and direction, taking into account the various ways in which the constructs were operationalized.

One can acknowledge, by looking at Table 3, that all variables are strongly associated, which suggests that ST, as a global scale and all its sub-dimensions, constitute a strong predictor of organizational success, with regard to customer satisfaction, trust and retention. It was also found that the highest correlation is that between ST (global scale) and customer satisfaction ($\rho = 0.83$). The positive values of the correlations indicate that the variables tend in the same direction, so that whenever levels of ST increase, customer satisfaction, trust and retention also increase.

In view of the above, it can be concluded that the developed instrument has a high relation with external criteria, which establishes it as being quite relevant for an organizational context.

CONCLUSIONS

ST contributes greatly to the anticipation of environmental conditions and it allows organizations to delineate a more promising and significantly different future from the present, by defining and visualizing results that add value (Haycock et al., 2012). However, it turns out that although interest in it has grown in recent decades, studies are still scarce, specifically those that try to associate ST with the planning and implementation of organizational strategies (George et al., 2019; Srivastava & D'Souza, 2021).

The literature also suggests that ST is positively related to high levels of professional performance so it would be pertinent for organizations to include it in their selection processes (Bouhali et al., 2015). Thus, new instruments that intent to measure such construct on the market must be designed valuing their validity and precision (Alonso et al., 2015). Thus, the present study aimed to develop an instrument that allows the evaluation of the ST skills of HR professionals.

The results obtained from an EFA are consistent with what is proposed in the literature, according to which ST encompasses systemic thinking (Liedtka, 2008), vision towards the future (Kalali et al., 2015) and the identification of new opportunities (Haycock et al., 2012). It is also verified that the internal consistency indexes for the three dimensions extracted and for the global scale have Cronbach Alpha coefficients greater than 0.70, both in Study 1 and Study 2, which suggests that regarding its reliability the questionnaire shows to be appropriate.

Table 3. Correlation between global scale and sub-dimensions of ST and the customer satisfaction, trust and retention perception with the organization

	1	2	3	4	5	6
1. ST (global scale)	–					
2. Systemic thinking	0.886**	–				
3. Identification of new opportunities	0.873**	0.625**	–			
4. Vision towards the future	0.844**	0.598**	0.719**	–		
5. Customer satisfaction	0.833**	0.731**	0.710**	0.724**	–	
6. Customer trust	0.737**	0.679**	0.648**	0.617**	0.730**	–
7. Customer retention	0.792**	0.714**	0.677**	0.693**	0.612**	0.642**

Note: **$p < 0.001$

The value obtained in the Kaiser-Meyer-Olkin test (0.85) reflects an adequate variance of the factors (Marôco, 2014a) and the CFA demonstrates a lack of multi-collinearities and the absence of redundant items, which reveals a good adjustment of the model (Hoyle & Panter, 1995; MacCallum & Austin, 2000).

Study 3, allowed us to corroborate that the STQ permits the assessment of organizational success, namely throughout customer satisfaction, trust and retention, thus reinforcing what Dushkov (2018) argues that it might contribute to the consolidation and solidification of the organization's identity and reputation in the market.

In general, the results suggest that ST is a key element for higher-level professional performance, so it is essential to develop tools that rigorously evaluate it. And although the instrument presents good metric characteristics, it is suggested that future studies use other techniques to analyze the overall validity of the scale, namely: con-current and predictive validity. We also consider it to be pertinent to replicate the study with a sample that brings together professionals from different areas and different hierarchical levels.

As limitations of the present study, we report the fact that no data was collected regarding the performance evaluation of the participants, its level of competitiveness, and the development of the organization, when analyzing their relations with ST. It is also important to mention that this study, like others (e.g., Dhir et al., 2018; Goleman et al., 2017; Srivastava & D'Souza, 2021), fails to assess levels of strategic thinking and its relationship with sociodemographic variables (e.g., gender, age, profes-sional experience, seniority in the organization). As such, the development of new research in order to overcome these needs is required.

LIST OF ABBREVIATIONS

AIC – Akaike Information Criterion
APG – Association for People's Management
BIC – Bayes Information Criterion
CFA – Confirmatory Factor Analysis
CFI – Comparative Fit Index
ECVI – Expected Cross-Validation Index
EFA – Exploratory Factor Analysis
GFI – Goodness of Fit Index
HR – Human Resources
M – Mean
RMSEA – Root Mean Square Error of Approximation
RMSR – Root Mean Square Residual
SD – Standard Deviation
ST – Strategic Thinking
STQ – Strategic Thinking Questionnaire
$\chi 2$ – Chi-Square

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