Strategic alignment and its impact on decision effectiveness: a comprehensive model

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Abstract

Purpose – In recent decades, the concept of strategic alignment has been a center of concern for researchers and practitioners. This alignment is associated with the process of strategic planning to achieve high strategic performance and competitiveness. This study aims to investigate the impact of strategic alignment on decision effectiveness.

Design/methodology/approach – Primary data were collected from 383 employees of the Directorate of Health Affairs in the Dakahlia Governorate in Egypt, through a self-administered questionnaire. The PLS-SEM approach was used to analyze the collected data.

Findings – The results revealed that strategic alignment significantly and positively affects decision effectiveness and its dimensions, emphasizing the importance of considering all four dimensions of strategic alignment in an integrated model to achieve the greatest impact on the decision effectiveness.

Research limitations/implications – This study is applied to a developing country, so a comparative study between both developing and developed countries may be needed. Second, the study was restricted to the nonprofit organization, so further research may examine the profit organizations.

Originality/value – Despite the existence of several studies on the relationship between strategic alignment and decision effectiveness in developed countries, studies conducted in the developing countries are still few. This is one of the earliest studies that adopt the multidimensional approach of strategic alignment in the public sector in emerging economies, which could help directors understand the interdependencies and different roles of strategic alignment dimensions in a novel comprehensive model.

Keywords Strategic alignment, Decision effectiveness, Information technology, Public organizations, SEM

Paper type Research paper

1. Introduction

In recent decades, the concept of strategic alignment (SA) has attracted the attention of many researchers and practitioners (McAdam *et al.*, 2019; Street *et al.*, 2018; Sardana *et al.*, 2016; Yousaf and Majid, 2016). It has become more difficult and complicated with an increase in change dynamics (Sharma and Behl, 2020). Organizations of all sizes and structures are searching for strategies to improve performance without sacrificing quality (Bhardwaj and Deshmukh, 2013). Skinner (1974) developed the first conceptualization of organizations' need for SA in industrial organizations (Sardana *et al.*, 2016). Now, the SA is at the heart of the strategic management literature, because keeping this fit with the priorities of the organization enhances its response to environmental pressures and moves toward a higher level of performance by integrating the main thrusts of the organization's goals and objectives (Chi *et al.*, 2020; Andrews and Beynon, 2011). On the other hand, the absence of such a fit is an indicator of the lack of strategy (Barth, 2003).

In general, strategic objectives are the starting point for SA (McAdam *et al.*, 2019). However, once strategic priorities are identified, disseminated and implemented, there is often no real measure to verify that actual work is carried out following those priorities (Thornley, 2012). Therefore, the concept of SA involves the idea of achieving a degree of compatibility and harmony among a range of organizational elements, which ensures the achievement of the strategic priorities of the organization.

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There is no doubt that the main focus of management is decision-making (Djilali and Atika, 2017; Haesevoets *et al.*, 2016; Visinescu *et al.*, 2017). Management as a complex process relies primarily on human activity and is expressed by a mix of actions for the development and implementation of decision-making. Business objectives represent the endpoint that directs the management decisions (Harrison and Pelletier, 1998), hence, it is logical to link strategy success with business decisions. At the strategic management level, the main concern is whether a balanced and holistic view enables organizations to make better decisions. Most of the research in this regard tends to test the effects of the overall view on the organization's performance (Forbes, 2007).

Based on the earlier discussion, the current study captures the idea of SA by turning toward a thorough study to investigate the organizational elements or dimensions, which are incorporated in the concept of SA; moreover, investigating the effect of that alignment on decision effectiveness. This investigation is rationale through the premise of contingency theory, which imposes organizations to develop their internal operations by developing their various resources, such as individuals, informational, technological and financial resources (Al Khalifa, 2016), and improving the dynamics of its operational capabilities in the sake of raising its responses to rapidly changing market conditions (Sardana *et al.*, 2016); given that the literature highlights the contextual factors surrounding organizational strategies and managerial practices (Chi *et al.*, 2020). In turn, the holistic nature of the decision-making process could be consistent with the SA orientation, which integrates into all other management functions (Papulovaa and Gazovaa, 2016), and then this SA could improve decision effectiveness to support the strategic objectives of the work. Hence, the question that arises in this study is: *"Does strategic alignment (a comprehensive model) affect decision effectiveness?"*

In addition, most strategic management work has been conducted in developed countries. While studies in emerging economies have appeared in recent years, the results left unnoticed (Wilkins and Emik, 2019). Also, most of the researches about SA had picked certain dimensions in separate, as well as focusing on private organizations and mainly in developed countries, while SA may vary in public and private organizations (Sharma and Behl, 2020). Public organizations work under a noncompetitive scenario. Each public organization operates to achieve specific objectives, in terms of optimizing service delivery optimization, and citizen needs anticipation (Henriques *et al.*, 2019). Achieving these objectives is complex, especially that they involve decisions on the allocation of scarce resources with strategic economic significance (Rashid and Simpson, 2019). Consequently, SA of information technology, operations, employees and customers could enhance decision effectiveness on allocating resources; given that public sector organizations seem to achieve a limited impact of their strategic planning and its content on performance (Jacobsen and Johnsen, 2020). The proposed model of the current study comes to investigate SA in the public sector by examining drives such as reaching decision effectiveness and in turn enhance functionality and performance of public organizations.

In the same vein, at the level of public administration, the rational approach to formulating the strategy through strategic planning and implementing the strategy through measuring and managing performance, or what is known as rational planning, is one of the most important introductions that predict the quality of decision in public organizations (George and Desmidt, 2018), the matter with which it can be imagined that decision-making in public organizations revolves around the strategic contexts and that the SA in these contexts could support the achievement of effective decision-making. Therefore, the research focuses on investigating the relationship between SA and decision effectiveness in a public organization in a developing country like Egypt. The major research gap obtained from the prior literature is that very limited research studies have been done in that scope.

This paper is organized into major sections as follows. The first one includes the theoretical background. The second part entails hypotheses development. The third section is related to study methodology. The fourth section clarifies data analysis and results. The fifth section contains a discussion of the main results. Then the sixth section includes the theoretical and practical implications. Finally, the seventh and final section includes study limitations and directions for further research.

2. Theoretical background

2.1 Strategic alignment (SA)

The concept of SA is rooted in the contingency theory in management. Its basic premise is that the balance between the organization's strategy and its environmental context has significant impacts on performance. This context is represented in both the external and internal environments of the organization (Acur *et al.*, 2012; Chen and Huang, 2008). Therefore, organizations – whether private or public – operate in a particular context by consolidating synergies between strategy, processes, organizational resources and technological capabilities. Also, the mission, objectives and plans of organization should be integrated and synchronized with business strategies (Chi *et al.*, 2020). McAdam *et al.* (2019) indicate that SA is dynamic over time. So, it was defined as the dynamic process of bringing about adaptation with environmental change and uncertainties. Accordingly, the SA, even if achieved, cannot be sustained because of the changes that organizations always face in the business environment (Price, 2016).

2.2 Strategic alignment dimensions

Previous literature shows that the concept of SA belongs to the context of the science of management information systems, as it was presented for the first time by Henderson and Venkatraman (1993), who described SA as the degree of consistency and integration between the organization's strategies and its information technology strategies. Despite SA in the public sector being a neglected area of research (Jacobsen and Johnsen, 2020), the issue of SA is not limited to the field of information technology only, as the interrelated institutional constructs play an important role in understanding the complexity of institutional forces that influence organizations' strategic decisions (Angulo-Ruiz *et al.*, 2019). Consequently, several studies have employed other dimensions of SA, among these dimensions are "operations" (e.g. Alcoba, 2014; Acur *et al.*, 2012), "employees" (e.g. Biggs *et al.*, 2014; Kaplan and Norton, 2007; Brush and Manolova, 2005) and "Customers" (e.g. McAdam *et al.*, 2019; Acur *et al.*, 2012; Chenhall, 2005). It should be noted that those studies and more have combined two or more dimensions. The current study seeks to examine the SA through a broader angle by combining a range of dimensions that give a more comprehensive view. These dimensions are information technology, processes, employees and customers. Table 1 shows the citing of literature sources to every dimension employed in the designed comprehensive model by the authors.

Strategic alignment dimension	Studies
Information technology	Street *et al.* (2018); Price (2016); Al Khalifa (2016); Acur *et al.* (2012); Johnson and Lederer (2010); Brush and Manolova (2005)
Operations	Malshe *et al.* (2017); Sardana *et al.* (2016); Alcoba (2014); Kaplan and Norton (2007); Byrd *et al.* (2006); Chenhall (2005)
Individuals	Ayers (2015); Biggs *et al.* (2014); Kaplan and Norton (2007); Brush and Manolova (2005)
Customers	Sardana *et al.* (2016); McAdam *et al.* (2019); Acur *et al.* (2012); Byrd *et al.* (2006)

Table 1. Strategic alignment dimensions in the designed comprehensive model as cited in literature

2.2.1 Information technology. Technology is considered as a strategic asset that can help provide the organizations in emerging markets with reputation and earn social support (Angulo-Ruiz *et al.*, 2019). Bhardwaj (2019) identified that both IT and knowledge management can be perceived as strategic enablers of organizational cognition. IT–business alignment literature highlights the importance of alignment between technology and business components, which claims mutual bolster and drive between business strategies, IT strategies, business processes and IT processes (Chi *et al.*, 2020). Information technology is the most common dimension in previous literature related to the issue of strategic alignment in organizations. However, the nature of this relationship and its characteristics are still uncertain (Al Khalifa, 2016). Recently, organizations have become aware of the importance of information technology in many organizational aspects, such as managing knowledge effectively (Chen and Huang, 2008) and reducing operating costs, especially in public sectors. As in publicly funded not-for-profit organizations, the specific relationship between information and financial departments is critical, and when being positive, SA improves (Schobel and Denford, 2013). However, this should coincide with the synchronization of strategic objectives with information technology services (Price, 2016). Thus, the way to create value through investment in information technology is only through the SA that allows the best use of information technology in the organization (Turel *et al.*, 2017). Therefore, the integration between strategic planning and IT planning is constantly challenged to prevent misdirection of resources invested in information technology (Salles *et al.*, 2013). Failure in aligning efforts of knowledge management with the organization's strategic objectives is a great challenge (Bhardwaj, 2019).

2.2.2 Operations. Due to the particular importance of organizational operations in strategy implementation, the researchers have stressed that the alignment in the functional processes enhances organizational performance and its purpose achievement, because it reduces language, thinking and physical barriers. It also allows the dissemination of more and faster information between different functions (Acur *et al.*, 2012) and ultimately achieves the overall objective of the organization effectively and efficiently (Salles *et al.*, 2013). The most challenging in operations alignment is the conflict between many of these operations, which arose from the objectives' discrepancy and the lack of appropriate frameworks for the interface between different functional processes (Zanon *et al.*, 2013). Thus, understanding the interactions between organizational functions can reduce conflict by exchanging views and values, this could be achieved when operations are reorganized with the organization's strategic priorities (Sardana *et al.*, 2016).

2.2.3 Employees. Fredrickson (1986) confirms that participation in the strategic process is not limited to a small number of individuals who are at the top of the organization. Therefore, the horizon of SA must be expanded from the top management level to the lower levels for giving better opportunities to identify possible flows in the interrelationships of strategies in different organizational functions (Zanon *et al.*, 2013). SA is conceived as a self-organizing culture phenomenon throughout the organization that includes self-perceptions of agreement between different stakeholders internally and externally on what is most important to the success of the organization (Hanson *et al.*, 2011). So, the employee SA could be understood as the similarity of perceptions of the importance of strategic priorities between individuals in the organization (Ateş *et al.*, 2020). Moreover, the consensus about strategy becomes an important factor (Zanon *et al.*, 2013). The consensus process is not only required during the strategy formulation but also when it is implemented (Nie and Young, 1997). However, in the Egyptian public context, public organizations are facing the problems of exclusion and injustice between different categories of staff, which decreases staff harmony (Mousa, 2019). Literature indicates that employees should not be charged with strategy implementation before the alignment is ensured (Ateş *et al.*, 2020).

2.2.4 Customers. Customers have attained a vital stature as an SA dimension in literature. Since all of the organization's efforts must primarily target the customer. Rather, the existence of any organization stems from the value it provides for its customers, and this requires organizations to adopt maximum customer focus (Hofmann and Kenebel, 2013), considering the literature that emphasized the importance of financial aspect (Schobel and Denford, 2013), customer "citizen" empowerment and participation (Henriques *et al.*, 2019) in public sectors. Malshe *et al.* (2017) indicate that SA increases the effectiveness of marketing strategies and delivers superior customer value. Sen and Sinha (2011) used the term alignment as a strategy to facilitate customer relationship management. This form of customer focus must take into account the trade-offs between the organization and customers that support the SA (McAdam *et al.*, 2019). Regarding the employee dimension, employees' satisfaction and motivation will influence service quality, which in turn influences customers' satisfaction and intentions (Balwant *et al.*, 2019). Referring to the IT dimension, academic literature on consumer research determined customer satisfaction as a vital evaluation criterion for the usage of IT (Olaleye *et al.*, 2019).

2.3 Decision effectiveness (DE)

Across many fields of study, the decision-making process has been prominently advocated for gaining insight into the sociopsychological antecedents that underlie it (Raut, 2020). However, understanding the concept of decision effectiveness provides a good answer to the question "how are some decisions good and others bad?" Many scientists agreed to define the effectiveness of the decision as "the extent to which the decision achieves the goals set by the management (Kaufmann *et al.*, 2012), and at a proper time (Wang and Byrd, 2017; Jansen *et al.*, 2013), within the considered constraints (Harrison and Pelletier, 1998)." Although this concept is common in scientific studies, it did not fill the researchers' curiosity with the effectiveness of the decision, which led some to put forward other views, for example, Hurt and Abebe (2015) argued that the effectiveness of the decision is determined by two things: quality and commitment, considering that the quality of decision is the extent to which the decision is viewed as the best available alternative, where the combination between this quality and commitment contributes to the most effective of the organization.

2.4 Decision effectiveness (DE) dimensions

There are a lot of scholars who sought to identify a range of dimensions through which the effectiveness of the decision can be measured (Djilali and Atika, 2017; Wang and Byrd, 2017; Thywissen *et al.*, 2018; Hurt and Abebe, 2015; Blenko *et al.*, 2010). Accordingly, the current study is based on three main dimensions that reflect the effectiveness of the decision: (1) the quality of the decision, (2) the decision time and (3) decision acceptance by employees, these three dimensions were employed in this study based on two arguments: first, the prevalence of these dimensions in many previous studies (e.g. Bhatia and Mullett, 2018; Djilali and Atika, 2017); and second, the possibility of expressing these three dimensions through a set of survey items.

2.4.1 Decision quality. Visinescu *et al.* (2017) consider that the perceived quality of decision represents the functions of both efficiency and effectiveness in the decision-making process in terms of decision outcomes, problem-solving performance, information processing performance and risk preferences of the decision-maker. Some researchers also pointed out that the quality of the decision can be understood through the extent to which the decisions of the organizations accurately reflect the causal relationships that link options to results (Forbes, 2007). The quality of decisions can be viewed from a broader perspective as the organizational inclusiveness (Carmeli *et al.*, 2009). Thus, the higher the quality of the data, the more accurate the decision model, and the greater the likelihood of good decision-making (Feldman *et al.*, 2018).

2.4.2 Decision time. The current public organizations are facing increased pressure to make quick and effective decisions. But doing so can be challenging because the speed and effectiveness of the decision are often thought to be contrasted (Dane *et al.*, 2012). However, public organizations are like private ones in that they both work under dynamic environments. To survive in a dynamic environment, the organizations must get information quickly and turn them into action (Carmeli *et al.*, 2009). Then decision effectiveness can be achieved by enhancing the speed of decision-making (Wang and Byrd, 2017). In line with this, the timeliness of the decision has been associated with positive results in terms of organizational effectiveness and performance (Haesevoets *et al.*, 2016), and vice versa. Where quick decision-making can lead to bad decisions and poor performance if the overall information gathering is sacrificed for speed. At the same time, quick decision-making does not necessarily indicate a rush (Baum and Wally, 2003). Individuals however rarely have sufficient information or time to make a perfectly reasonable decision (Raut, 2020).

2.4.3 Decision acceptance. Acceptable decisions are the most efficient and effective because they embody the commitment to the public organization and its objectives (Pollard, 1988). Based on the importance of the implementation step in making the decision, one of the decisive factors in effective decision-making is to anticipate whether the working group will accept the decision or not. Although a good decision may be made, it cannot be guaranteed to impress others to the fullest (Brown, 1990). Therefore, by determining the degree of decision acceptance by subordinates, the decision-maker can discover the degree of support to be provided by subordinates for that decision. Employees are not only influenced by the outcome of the decision, but also by the way this decision has been reached (Haesevoets *et al.*, 2016).

3. Hypotheses development

The concept of SA is based on the premise of contingency theory. This theory is particularly useful when there is a lack of comprehensive theoretical frameworks, where it is better to focus on methodologies that are based on the context of the situation to which the organization is exposed than on a single best method of managing (DeClercq *et al.*, 2014). The decision-making process has an important holistic feature, as it consolidates and integrates into all other management functions (Papulovaa and Gazovaa, 2016). Feldman *et al.* (2017) argued that the improvement of the decision needs to develop the system of the organization as whole. In the process of assessing decision effectiveness, the overall coherence and harmony are more important than the decision-making process itself (Hofmann and Knebel, 2013).

3.1 Strategic alignment in information technology and decision effectiveness

Despite the importance of human experience in decision-making, this does not deny that information is crucial to decision-making. The development of information systems has undoubtedly contributed to decision-making (Djilali and Atika, 2017). Given the close relationship between information systems in organizations and decisions, many researchers have considered the effectiveness of the decision as an indicator of the performance of information systems (Wang and Byrd, 2017; Acito and Khatri, 2014). One of the most powerful aspects of the IT and business intelligence system is the ability to harness and synthesize vast amounts of data in information, thereby providing decision-makers with high-quality information in such a way that they cannot generally obtain without technology and business intelligence (Visinescu *et al.*, 2017). Accordingly, the following hypothesis is derived:

H1. SA in information technology is positively related to decision effectiveness: (a) decision quality, (b) decision time and (c) decision acceptance.

3.2 Strategic alignment in operations and decision effectiveness

Many decisions are made at all levels to conduct the organization's operations. Achieving SA in organizational operations facilitates the flow of accurate and sound information to decision-makers and helps to improve decisions while improving the harmonization of processes (Zanon *et al.*, 2013). In other words, this alignment should serve the achievement of the organization's strategic objectives. As the decision effectiveness is influenced by the organizational steps and procedures leading to this decision (Thywissen *et al.*, 2018). Accordingly, the following hypothesis is derived:

H2. SA in operations is positively related to decision effectiveness: (a) decision quality, (b) decision time and (c) decision acceptance.

3.3 Strategic alignment in employees and decision effectiveness

The role of the organization's personnel at all levels in reaching the effectiveness of the decision cannot be overlooked. In this regard, the consensus among the individuals working on the decisions to be implemented is important to enhance trust and facilitate the exchange of information, because this creates a common mental framework between these individuals (Zanon *et al.*, 2013). According to Ayers (2015) and Marrelli (2011), employees are more organizationally bound and more committed to pursuing them when they are included in decision-making that affects their business. Carmeli *et al.* (2009) declared the participatory decision-making as an embodiment of the coherence of the working group, thus contributing to more effective decision-making. Accordingly, the following hypothesis is derived:

H3. SA in employees is positively related to decision effectiveness: (a) decision quality, (b) decision time and (c) decision acceptance.

3.4 Strategic alignment in customers and decision effectiveness

In a strategic context, organizations should provide high-quality products and services to their customers and maximize their satisfaction (Kaplan and Norton, 2007). SA could reduce product development time, improve quality and increase responsiveness to customer needs (Acur *et al.*, 2012). If customer satisfaction is viewed as a strategic objective, it is necessary to find a way to link consumer requirements with potential decision alternatives and correlate this to the decision-making goal of customer satisfaction (Etgar, 2008). Accordingly, the following hypothesis is derived:

H4. SA in customers is positively related to decision effectiveness: (a) decision quality, (b) decision time and (c) decision acceptance.

The research conceptual framework is shown in Figure 1.

4. Method

The current study is an explanatory study, which aims to answer the question of determining the reason for the impact of some variables on other ones (Saunders *et al.*, 2009). Consequently, this study relies on the nonexperimental approach, by drawing conclusions based on the observation and not on controlling the treatments, without stipulating the cause and effect, as is common in semireal experimental designs (Creswell, 2014). Also, the deductive approach is appropriate for the nature of the study, which is tolerable with the use of a nonexperimental quantitative methodology as the deductive approach allows theory testing by investigating the results (Bryman and Bell, 2015; Kothari, 2004). The methodology of nonexperimental research lies within the postpositivism philosophy of knowledge creation (Crotty, 2020), which is the methodology used in the current study to implement a

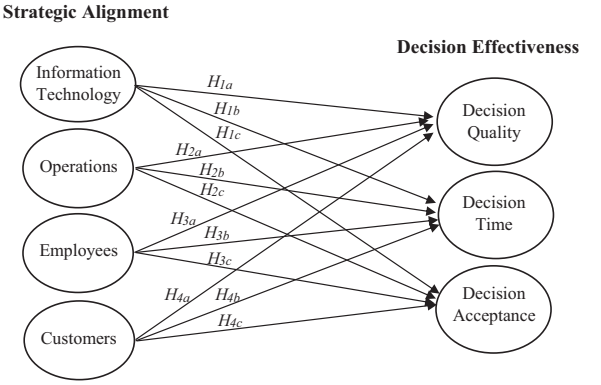

Figure 1.
Theoretical framework and hypotheses.

quantitative analysis that relies on collecting data from a large number of individuals using methods such as survey.

4.1 Population, sample and collection of data

This study examines the causal relationship between SA and decision effectiveness in nonprofit public service organizations in Egypt. The Directorate of Health Affairs in Dakahlia Governorate was selected as this directorate produces a wide variety of vital services to more than 6m people, to manage the entire health sector in that Governorate. Given that Egypt has more than 26 directorates in Health Affairs, it was very difficult rather than impossible to conduct the research considering all of them. Hence, given that the generic management system in all those directorates is quite similar, as well as the constraints of time and costs, we selected the Directorate of Health Affairs in Dakahlia Governorate only to be investigated. The selection of population unit comes consistent with Fredrickson's (1986) viewpoint that the implementation of the strategy is carried out through all its human resources who work in different operations and locations of the organizational hierarchy, which means that the participation in the strategic process is not limited to a few individuals who are located at the top of the organizational pyramid.

The population of this study represents all the 11,604 employees in the Directorate of Health Affairs in Dakahlia, according to the records of its personnel affairs. According to Saunders *et al.* (2009), when the number of population is between 10,000 and 100,000 individuals, the sample size should be between 370 and 383 individuals. At a confidence level of 95% and a margin of error ±5%, assuming that the characteristics required to be studied in the population are available at a rate of 50%. So, a random sample consisting of the upper-size 383 individuals was targeted. Furthermore, it fulfills the sample size criterion for conducting a partial least squares (PLS) analysis (Thompson *et al.*, 1995).

The questionnaire was distributed and collected by self-administered technique via delivery and subsequent collection manually for the paper printed survey. This technique of data collection allows ensuring that the respondents represent the target sample where they are interviewed face to face during delivery and collection, as well as letting them fill the list freely and at the time they are free to do, therefore, reducing bias and increasing response rate (Babbie, 2010). A number of 383 valid questionnaires were collected randomly, representing a 100% response rate. This process was completed during October and November 2018. Finally, Harman's single-factor test was used to examine the absence of common method bias, the results of that test show that a single factor extracted explained 33.7% of total variance, which is a value far less than 50% (Podsakoff *et al.*, 2012). Accordingly, there is no common method bias of the data.

4.2 Measures

To measure the independent variable "strategic alignment" as proposed in the research model, combinations of several measures have been set from previous literature to express the quadrant-dimensioned model on a 16-item scale. Those measures were developed by (Sardana *et al.*, 2016; Al Khalifa, 2016; Ayers, 2015; Biggs *et al.*, 2014; Alcoba, 2014; Johnson and Lederer, 2010; Byrd *et al.*, 2006; Bergeron *et al.*, 2004; Nie and Young, 1997). To measure the dependent variable "decision effectiveness," a construct of 12 items was adopted from previous literature developed by (George and Desmidt, 2018; Visinescu *et al.*, 2017; Wang and Byrd, 2017; Porumbescu and Grimmelikhuijsen, 2018; Jansen *et al.*, 2013; Ji and Dimitratos, 2013; Blenko *et al.*, 2010). All of the constructs were measured with a five-point Likert-type scale (5 = strongly agree, to 1 = strongly disagree). The scale's validity was discussed with a panel of experts (both academicians and staff working in the Directorate of Health Affairs in Dakahlia Governorate) to assess the clarity and appropriateness of items, and tenuous modifications were done for some items. The final questionnaire items are reported in the Appendix.

4.3 Measurement model analysis

To analyze the research model, the PLS-SEM technique was employed using the WarpPLS 5.0 software. Table 2 shows descriptive statistics for the data collected. Additionally, tests for multicollinearity were performed to avoid high correlations among the constructs of independent variables. The results revealed that all constructs had variance inflation factor (VIF) values less than 3.3, which is within the cutoff level of 5.0 (Hair *et al.*, 2016).

Additionally, the reflective measurement model was analyzed for evaluating its reliability and validity for each construct. The reliability testing included both the construct measure's indicator and internal consistency reliability, while validity testing included both convergent and discriminant validity. As shown in Table 2, the results of the model reliability and validity indicated that all indicator item loadings of constructs' indicators were more than 0.6 (Henseler, 2017), so indicators are reliable. The internal consistency of each construct was also accepted, as the Cronbach's α values and composite reliability (CR) were all above 0.7 (Hair *et al.*, 2016). Also, the average variance extracted (AVE) values of each construct support the convergent validity, they were all above 0.50. Finally, the discriminant validity was supported through the square root values of the AVE of each construct, as they all were greater than its correlation with the other construct (Fornell and Larcker, 1981) (see Table 3). Consequently, the measurement model of the study was supported (see Table 4).

4.4 Structural model analysis

Before proceeding to test the model, by using five model fitting parameters; those parameters are: Tenenhaus GoF (GoF), Simpson's paradox ratio (SPR), *R*-squared contribution ratio (RSCR), statistical suppression ratio (SSR) and nonlinear bivariate causality direction ratio (NLBCDR). The (GoF) of the model = 0.587, which is considered a large value (large $\geq$ 0.36) (Henseler, 2017); the (SPR) = 1.000, which is ideal (acceptable if $\geq$ 0.7) (Kievit *et al.*, 2013); the (RSCR) = 1.000, which is also ideal (acceptable if $\geq$ 0.9) (Henseler, 2017); the (SSR) = 1.000, which is accepted (acceptable if $\geq$ 0.7); and finally, the (NLBCDR) = 1.000, which is accepted also (acceptable if $\geq$ 0.7) (Kock, 2015). Consequently, the structural model fit was supported.

5. Results of hypotheses testing

According to Hair *et al.* (2016), assessing the structural model depends on looking at the R^2, beta (β) and the corresponding *p*-values, the predictive relevance (Q^2) and the effect sizes (f^2), results are reported in Table 5.

	Mean	S.D.	Corrected item-total correlation	Skewness	Kurtosis
Strategic alignment in information technology					
SA-IT1	3.53	1.19	0.64	−0.53	−0.71
SA-IT2	3.33	1.19	0.65	−0.31	−0.86
SA-IT3	3.24	1.16	0.57	−0.21	−0.85
SA-IT4	3.35	1.18	0.57	−0.36	−0.71
Strategic alignment in operations					
SA-OP1	3.09	1.17	0.61	−0.07	−0.87
SA-OP2	3.15	1.06	0.62	−0.27	−0.62
SA-OP3	3.25	1.08	0.58	−0.22	−0.73
SA-OP4	3.16	1.12	0.63	−0.19	−0.69
Strategic alignment in employees					
SA-EM1	3.10	1.14	0.59	−0.05	−0.84
SA-EM2	3.20	1.19	0.58	−0.25	−0.79
SA-EM3	3.16	1.14	0.52	−0.20	−0.75
SA-EM4	3.28	1.19	0.52	−0.26	−0.84
Strategic alignment in customers					
SA-CU1	3.16	1.09	0.55	−0.21	−0.60
SA-CU2	3.27	1.13	0.61	−0.31	−0.71
SA-CU3	3.07	1.21	0.65	−0.09	−0.94
SA-CU4	3.10	1.21	0.62	−0.16	−0.88
Decision quality					
D-Q1	3.23	1.08	0.66	−0.15	−0.73
D-Q2	3.24	1.16	0.58	−0.19	−0.91
D-Q3	2.96	1.21	0.64	0.04	−0.96
D-Q4	3.01	1.14	0.62	−0.09	−0.83
Decision time					
D-T1	3.07	1.23	0.60	−0.11	−0.98
D-T2	2.95	1.16	0.69	−0.04	−0.87
D-T3	3.24	1.14	0.53	−0.27	−0.76
Decision acceptance					
D-A1	3.10	1.13	0.64	−0.05	−0.79
D-A2	2.94	1.16	0.64	−0.04	−0.74
D-A3	2.96	1.20	0.61	0.05	−0.87
D-A4	3.00	1.12	0.63	0.08	−0.64
D-A5	2.95	1.22	0.66	0.03	−0.86

Table 2.
Descriptive statistics and normality tests of the constructs in the model

As suggested, SA in information technology is positively related to decision quality ($\beta = 0.24$, $p < 0.001$, $f^2 = 0.152$) and decision acceptance ($\beta = 0.14$, $p < 0.004$, $f^2 = 0.083$), while it has no significant relationship with decision time. SA in operations is positively related to decision quality ($\beta = 0.14$, $p < 0.003$, $f^2 = 0.09$), decision time ($\beta = 0.28$, $p < 0.001$, $f^2 = 0.18$) and decision acceptance ($\beta = 0.21$, $p < 0.001$, $f^2 = 0.14$). SA in employees is positively related to decision quality ($\beta = 0.31$, $p < 0.001$, $f^2 = 0.21$), decision time ($\beta = 0.15$, $p < 0.001$, $f^2 = 0.09$) and decision acceptance ($\beta = 0.36$, $p < 0.001$, $f^2 = 0.25$). SA in customers is positively related to decision quality ($\beta = 0.18$, $p < 0.001$, $f^2 = 0.12$), decision time ($\beta = 0.35$, $p < 0.001$, $f^2 = 0.23$) and decision acceptance ($\beta = 0.17$, $p < 0.001$, $f^2 = 0.12$).

Regarding the prediction capacity of the proposed model (R^2), SA explains 56.5% for decision quality, 50.9% for decision time and 58.9% for decision acceptance. To examine the

	SA-IT	SA-OP	SA-EM	SA-CU	D-Q	D-T	D-A	p Value
SA-IT1	(0.814)	−0.050	0.038	0.029	−0.046	0.095	−0.057	<0.001
SA-IT2	(0.819)	−0.170	0.086	−0.030	−0.040	0.033	−0.043	<0.001
SA-IT3	(0.755)	−0.041	0.048	−0.240	0.098	−0.094	0.167	<0.001
SA-IT4	(0.758)	0.279	−0.183	0.240	−0.005	−0.044	−0.059	<0.001
SA-OP1	0.035	(0.788)	−0.093	−0.034	0.058	0.032	0.034	<0.001
SA-OP2	0.019	(0.794)	−0.135	−0.011	0.127	−0.011	0.033	<0.001
SA-OP3	−0.074	(0.765)	0.295	0.123	−0.220	0.014	−0.114	<0.001
SA-OP4	0.018	(0.802)	−0.056	−0.073	0.027	−0.034	0.043	<0.001
SA-EM1	−0.037	−0.038	(0.789)	0.081	0.138	−0.049	−0.139	<0.001
SA-EM2	0.009	0.076	(0.779)	−0.189	0.076	−0.082	−0.050	<0.001
SA-EM3	0.200	−0.049	(0.737)	−0.169	−0.210	0.183	0.001	<0.001
SA-EM4	−0.173	0.010	(0.731)	0.284	−0.018	−0.043	0.201	<0.001
SA-CU1	0.139	−0.160	0.138	(0.745)	0.212	0.002	−0.151	<0.001
SA-CU2	0.011	−0.034	0.004	(0.789)	−0.198	0.072	0.102	<0.001
SA-CU3	0.045	0.004	0.142	(0.816)	−0.021	−0.027	−0.091	<0.001
SA-CU4	−0.188	0.179	−0.279	(0.795)	0.019	−0.045	0.134	<0.001
D-Q1	−0.134	0.094	−0.069	0.029	(0.820)	0.013	0.024	<0.001
D-Q2	0.145	−0.049	−0.143	0.345	(0.760)	−0.168	−0.156	<0.001
D-Q3	0.054	−0.078	0.205	−0.249	(0.814)	0.061	0.008	<0.001
D-Q4	−0.056	0.030	−0.002	−0.105	(0.791)	0.085	0.117	<0.001
D-T1	−0.096	−0.072	0.101	−0.063	0.155	(0.829)	−0.027	<0.001
D-T2	0.070	−0.080	0.082	−0.005	−0.070	(0.880)	−0.087	<0.001
D-T3	0.023	0.168	−0.202	0.073	−0.086	(0.771)	0.128	<0.001
D-A1	−0.054	0.120	0.058	−0.079	−0.191	0.008	(0.782)	<0.001
D-A2	0.059	0.083	0.017	−0.172	−0.036	0.092	(0.776)	<0.001
D-A3	0.040	−0.044	−0.146	0.146	0.230	−0.172	(0.754)	<0.001
D-A4	−0.114	−0.092	0.040	0.224	0.065	−0.042	(0.773)	<0.001
D-A5	0.067	−0.068	0.026	−0.110	−0.058	0.107	(0.795)	<0.001

Note(s): SA-IT= Strategic alignment in information technology, SA-OP = Strategic alignment in operations, SA-EM = Strategic alignment in employees, SA-CU= Strategic alignment in customers, D-Q = Decision quality, D-T = Decision time, D-A = Decision acceptance

Table 3. Combined loadings and cross-loadings of measurement items

				Correlations and square roots of AVE						
Construct	α	CR	AVE	SA-IT	SA-OP	SA-EM	SA-CU	D-Q	D-T	D-A
SA-IT	0.795	0.867	0.619	(0.787)						
SA-OP	0.795	0.867	0.620	0.673	(0.787)					
SA-EM	0.755	0.845	0.577	0.596	0.695	(0.759)				
SA-CU	0.794	0.866	0.619	0.678	0.693	0.686	(0.787)			
D-Q	0.807	0.874	0.634	0.638	0.638	0.670	0.649	(0.796)		
D-T	0.769	0.769	0.686	0.528	0.640	0.598	0.661	0.708	(0.828)	
D-A	0.835	0.835	0.602	0.605	0.669	0.697	0.655	0.742	0.651	(0.776)

Table 4. Cronbach's α, composite reliability, convergent and discriminant validity results

predictive validity of the study model, the cross-validated construct redundancy Q^2 is necessary. The greater its value than 0, the greater the predictive validity of the model. Q^2 is 0.566 for decision quality, 0.510 for decision time and 0.589 for decision acceptance. All Q^2 values are greater than zero and then satisfy the condition. Those results give support to hypotheses from H1 to H4 (see Figure 2)

Hypothesis	Relationship	Std. β	p Value	Result
H1a	SA-IT → D-Q	0.24	<0.001	Supported
H1b	SA-IT → D-T	0.011	0.412	Rejected
H1c	SA-IT → D-A	0.136	0.004	Supported
H2a	SA-OP → D-Q	0.14	0.003	Supported
H2b	SA-OP → D-T	0.28	<0.001	Supported
H2c	SA-OP → D-A	0.21	<0.001	Supported
H3a	SA-EM → D-Q	0.31	<0.001	Supported
H3b	SA-EM → D-T	0.15	<0.001	Supported
H3c	SA-EM → D-A	0.36	<0.001	Supported
H4a	SA-CU → D-Q	0.18	<0.001	Supported
H4b	SA-CU → D-T	0.35	<0.001	Supported
H4c	SA-CU → D-A	0.17	<0.001	Supported

Table 5.
Results of hypothesis testing

6. Discussion

The results of the study confirmed that there is a significant positive effect of the SA on the decision effectiveness, as it could enhance decision quality, time and acceptance. The SA was found to explain 56.5% of decision quality, 50.9% of decision time and 58.9% of decision acceptance. This result comes consistent with the results of Forbes (2007) and Visinescu *et al.* (2017) in considering that the quality of perceived decision is related to the outcome of the decision, so that it is recognized by careful understanding of the causal relationships that link options to results.

At the information technology level, our findings are in the same line with previous studies' results in that the quality of decisions improves through improved information technology (e.g. Visinescu *et al.*, 2017; Cooper and Haines, 2008; Erwat and Fabunmi, 2006). Also, our findings are consistent with the results of Porumbescu and Grimmelikhuijsen (2018) and Haesevoets *et al.* (2016) indicating that information technology provides precision in the collection of information used in the decision-making process and thus increases the transparency of decision-making, then its acceptance.

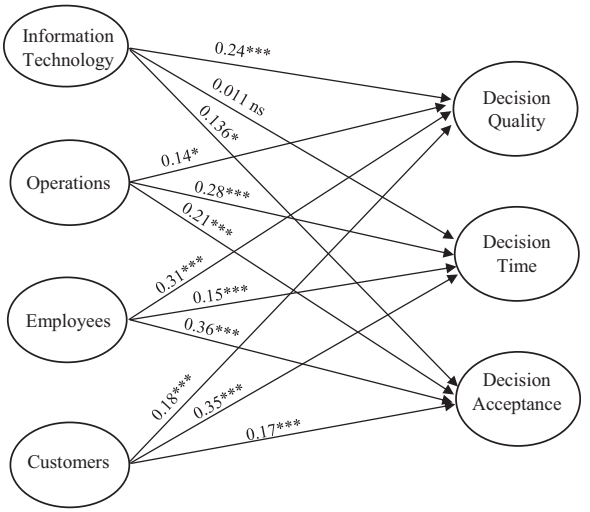

Figure 2.
PLS results of research model paths

Unlikely, our findings reveal that information technology has a nonsignificant effect on decision time (H1b). This could be explained through the apparent lack of exploitation of the information technology available in the directorate, as well as the existence of problems related to the implementation of decisions by the individuals working with it. According to Koida's (2017) viewpoint, it is possible that these problems are related to the number of interruptions during the decision-making process that hinders the implementation of the decision promptly. Or perhaps there is a conflict of objectives between the members of the organization leading to prolonging the time of decision-making. So, these results are consistent with the argument presented by Wen *et al.* (2018) on the necessity to analyze the dynamics of teamwork between decision-makers and implementers. Moreover, the highest impact of IT-SA was for decision quality ($\beta = 0.24$) and that would emphasize the importance of information technology in the strategic plan to share information (Chi *et al.*, 2020).

At the operations level, in line with Zanon *et al.* (2013) and Sasvari (2013), our findings confirmed that a good decision-making process is inherently integrated into all functions of the organization, as improving SA could improve the quality of decisions, by facilitating the flow of accurate and sound information to decision-makers. In terms of decision time, in the same line with the literature (e.g. Ayers, 2015; Zanon *et al.*, 2013; Marrelli, 2011; Brown, 1990), findings shed light on organizational processes as an integral part of the service itself. Hence, it is not surprising to catch decision time as the most influenced dimension by operations SA ($\beta = 0.28$). If the directorate improves and simplifies its operations, the time of the decisions taken will be improved. Also, our findings indicate that the organizational operations and decision-making procedures affect the acceptance of decisions by achieving transparency in those processes and listening to the views of the employees through their involvement in both decision-making and the operations structures development.

At the employees' level, our findings refer to the importance of the strategy implementation stage and its related decisions, which refers to the importance of procedural justice in decision-making as a predictor of its quality (George and Desmidt, 2018). Our results are consistent with Wen *et al.* (2018) in the importance of analyzing the dynamics of teamwork between decision-makers. These findings also revealed the importance of SA in improving decision acceptance, agreeing with discussions in the literature (e.g. Porumbescu and Grimmelikhuijsen, 2018; Cooper and Haines, 2008). Moreover, the highest impact of employee SA was for decision acceptance ($\beta = 0.36$), which comes consistent with Ateş *et al.*'s (2020) discussion about that SA prevents managers from negatively influencing followers through communicating messages that differ from those of the top management.

At the customer level, the results of the current study agree with Malshe *et al.* (2017), Mortensen and Albjorn (2012) and Etgar (2008) about the importance of looking at customer satisfaction as a strategic objective and linking that objective with the organizational decision, which could seek to maximize the customer value. This comes also consistent with citizens' needs anticipation as an objective of public organizations (Henriques *et al.*, 2019). Also, the highest impact of customers' SA was for decision time ($\beta = 0.35$), which could be explained as the effectiveness of the decision in terms of its time is determined primarily by the extent to which the customer feels that the services received are provided in the shortest possible time. SA from customer perspective enhances decision acceptance, this could be explained by the fact that whenever the organization is concerned with customers and seeking to satisfy them, every effort is directed toward simplifying processes and procedures and exploiting information technology to the maximum extent possible, which facilitates the staff work in serving these customers and making them feel satisfied, then enhances their acceptance of the various organizational decisions.

Finally, our findings come contradictory with some literature findings, which imply alignment may lead to stagnation, strategic inflexibility as the alignment process can be time-

consuming, costly and too formal to enable quick responses to changing environmental conditions (e.g., Chi *et al.*, 2020). However, those researches do not employ SA dimensions in a comprehensive model like the current study, which can explain the inconsistency of the findings in this regard.

7. Theoretical and practical implications

The SA model presented in this study differs from other models presented by the previous scientific studies in this regard. As far as authors were able to access it from the literature, the SA models were limited to a limited set of dimensions, and most of them have focused on the information technology in particular. Therefore, the current study hopes to contribute in the scientific literature through providing a more comprehensive model of SA. Besides, the study findings are consistent with what Feldman *et al.* (2017) argued, that improved decision-making requires a comprehensive and balanced approach that supports the strategic objectives of the organization. Therefore, the present study, according to its analysis of the relationship between the SA and the decision effectiveness, provides a model that contributes to understanding the relationship between the overall SA and the achievement of the decision. Additionally, our comprehensive model of SA would bring a new era built on a theoretical base that diminishes some drawbacks of alignment such as stagnations or inflexibilities stated by Chi *et al.* (2020).

Regarding practical implications, this study can provide insight to practitioners and managers on developing SA and improving the effectiveness of decisions. First, through the SA model, organizations should be aware that all of model dimensions (IT, processes, individuals and customers) should be considered simultaneously, so that each dimension serves the others, while ensuring that all of them are going along the same path of the organization's strategic objectives. Second, the results of the study confirmed that the mere investment and mobilization of financial resources to provide advanced information technology is not the best way to develop the business of the organization unless accompanied by attention to the other three dimensions. Third, the comprehensive model suggested in the study gives attention to considering both customers and employees from a holistic perspective, such that satisfied employees result in satisfied customers and vice versa. Finally, the link between customers and employees should be enhanced through organizational operations, such that the more the operations are simple and clear, the more the overall effectiveness of the organizations' decisions. In this way, the overall employee and customer satisfaction will be raised, which in turn reflects the overall well-being of the whole society.

In addition, this research is going to help the directorate management in Egypt to understand the interconnectivity between SA and decision effectiveness. As managers should reconsider the investment in information technology, so that the maximum benefit from directorate available technological resources is achieved. At the same time, dispensing with technology that does not add value to the directorate's activities. Moreover, reviewing the processes required to provide services to customers, so that those processes are simplified to achieve the goals, then, both service providers and recipients are satisfied at the same time. In addition, establishing procedural justice rules in the directorate through clear labor standards for all employees, as well as honing their skills concerning dealing and benefiting from the technology, encouraging them to express their views at work and take them into account. Finally, putting more attention to the customer focus, by developing electronic services that would reduce the service delivery time to a minimum, as well as paying attention to customer complaints and dealing with them seriously.

8. Limitations and future research

The current study had some limitations that point to future research directions. First, this study has been conducted in a developing country, so the research could be extended as a comparative study between both developing and developed countries, as the cross-culture issues may produce meaningful results. Second, the study was restricted to employees in the Directorate of Health Affairs in the Dakahlia governorate as a nonprofit organization, so the researchers propose a similar study to be applied to profit organizations. Third, in addition to the SA dimensions as predictors for decision effectiveness in the study model, other dimensions could be added to this model for further research, especially the environmental dynamism and competition competencies as well. Especially that according to contingency theory, SA can explain how organizations realize and absorb environmental uncertainty (Turel *et al.*, 2017). Fourth, the present study is a cross-sectional, so future studies may perform longitudinal studies that provide strong interpretations of the causal relationships. Fifth, further research may need to explore the moderating role of the contingency factors, such as environmental uncertainty, organizational culture since they may give valuable insights. Finally, the study examined the dimensions of the SA without addressing the obstacles to achieving that alignment, which is another issue that can be examined in future researches.

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Appendix

Measures

Information technology (IT):

(1) Management is keen on knowing the technology that other institutions use.

(2) The information technology in my organization contributes to reducing costs, improving the quality of services, ease of communication.

(3) The technology in my organization is consistent with its long-term goals.

(4) My organization is keen to spread the culture of using information technology to get the job done.

Operations (OP):

(1) My organization addresses the problems to prevent it from happening again.

(2) My organization designs its operations in line with achieving its long-term goals.

(3) My organization strives to continuously improve its operational functions.

(4) My organization makes decisions to solve problems objectively.

Employees (EM):

(1) My organization's long-term goals are clearly communicated to all of its employees.

(2) The employees clearly understand the priorities of the organization's work.

(3) The employees are interested in achieving the organization's long-term goals.

(4) The employees are encouraged and developed to work in a team style.

Customers (CU):

(1) My organization provides a large variety of services without adversely affecting the quality of these services.

(2) My organization seeks to improve the quality of its services.

(3) My organization directs all its activities to meet the needs of customers.

(4) My organization seeks to create a good mental image for its customers.

Decision Quality (DQ):

(1) The decision-makers of my organization are keen to analyze data objectively when making decisions.

(2) The decisions taken by my organization are commensurate with the available capabilities.

(3) The decisions made by my organization are the best they can be.

(4) The required decisions are implemented as proper without errors.

Decision Time (DT):

(1) The decisions in my organization are made quickly, without delay.

(2) The decisions in my organization are made at the appointed time.

(3) My organization can make quick decisions in response to any changes that occur in the environment.

Decision Acceptance (DA):

(1) The decision-making mechanism allows my organization to communicate it clearly with the employees.

(2) The decisions of my organization receive general acceptance from employees.

(3) My organization is keen to explain the purpose of its decisions to employees.

(4) The decision-making steps for my organization are clear.

(5) The outcomes achieved by the decisions of my organization satisfy the employees.

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