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Introduction

New Public Management (NPM)'s doctrine, which could be conceptualized as "a way of reorganizing public sector bodies to bring their management, reporting, and accounting approaches closer to (a particular perception of) business methods" (Dunleavy & Hood, 1994, p. 9), has profoundly influenced the public sector worldwide (Dunleavy & Hood, 1994; Hood, 1995; Schedler & Proeller, 2000).

NPM emphasizes that the "traditional" conception of public sector organizations was not suitable for the new, much more challenging and changing environment, in which the public sector organizations operate (Diefenbach, 2009). In particular, NPM affirms that the public sector organizations must be reconceptualized considering two different perspectives (Dunleavy & Hood, 1994). First, the degree to which public sector organizations are distinct from the private sector organizations in terms of personnel, structure, and business method. NPM claims that the clear distinction between public sector and private sector organizations must disappear, that is, public sector organizations must be less distinctive from those of the private sector in terms of personnel, structure, and business method. In other words, public sector organizations should be much more "business-like" and "market-oriented", namely, oriented to performance, costs, efficiency, and auditing (Diefenbach, 2009; Dunleavy & Hood, 1994). Second, the degree of density of rules that limits the decision-making autonomy of the public officials in terms of staff, contracts, and money. NPM affirms that the conception of a highly regulated public sector that severely limits the decision-making power of public officials must be overcome in favor of a lower degree of regulation that gives public officials greater autonomy in terms of staff, contracts, and money (Dunleavy & Hood, 1994).

In brief, NPM's doctrine conceptualizes a "new" public sector characterized by a lower degree of regulation in which public sector organizations behave more similarly to those of the private one.

Consistent with NPM's doctrine, governments around the world have enacted public sector reforms. NPM public sector reforms have been a response for a public sector considered inadequate inasmuch ineffective, inefficient, underperforming, and unaffordable (i.e., excessive expenditure on public service in relation to state budget constraints) (Broucker & De Wit, 2015; Donina, Meoli, & Paleari, 2015). NPM public reforms aimed to face these public sector shortcomings through its radical transformation, that is, through the adoption of new principles underlying the public sector itself. NPM reforms, deeming the introduction of the mechanisms and principles that guide private sector in the public sector advantageous, stimulate competition among service providers and the creation of market or "quasi-market" mechanisms, accountability, and control of results by measuring performance (Donina et al., 2015).

Despite the implementation of NPM public sector reforms worldwide, it is important to stress that the application of NPM's doctrine in the public sector has not been without criticism. The literature has highlighted the failures, as well as the negative consequences, deriving from the application of the NPM public sector reforms (Arnaboldi & Lapsley, 2008; Arnaboldi, Lapsley, & Steccolini, 2015; Diefenbach, 2009; Dunleavy & Hood, 1994; Hood & Jackson, 1992; Lapsley, 2009). In response to such negative consequences and failures, governments have started further reforms. Such reforms, also identified as Post-NPM reforms, have aimed to introduce a new governance model, such as new public governance (Osborne, 2006), digital era governance (Dunleavy, Margetts, Bastow, & Tinkler, 2006), and whole-of-government approach (Christensen & Lægreid, 2007), to constitute a public sector that no longer relies on NPM's doctrine only. Post-NPM reforms have aimed to overcome a public sector that, following the application of NPM principles (i.e., improving efficiency, marketization, a private sector management style, contractualization, horizontally specialization in the public apparatuses, explicit standards, and output/outcome control), has been characterized by the organizational proliferation and fragmentation. Specifically, Post-NPM reforms, focusing on inter-organizationally orientation (i.e., based on principles of coordination, centralization, governance, and partnership), seek to improve the horizontal coordination among governmental organizations and also

to increase the coordination between the government and other actors. Nevertheless, it should be noted that the shift from a public sector inspired by the principles of NPM to one inspired by the principles of Post-NPM is neither immediate nor total. Instead, this shift must be conceived as a gradual change with the consequence that hybrid governance models characterize the public sector, that is, governance models influenced by both NPM and Post-NPM principles (Christensen, 2012; Reiter & Klenk, 2019; Wiesel & Modell, 2014). Post-NPM reforms are affecting different public domains worldwide, including the higher education sector (Christensen, 2011; Ferlie, Musselin, & Andresani, 2008).

The public higher education sector has not been immune even from previous public sector reforms inspired by the principle of NPM (Donina et al., 2015; Lorenz, 2012; Parker, 2011; Tolofari, 2005). The introduction of NPM reforms in the higher education sector aimed at increasing the effectiveness, efficiency, performance of higher education institutions as well as reducing public expenditure for the higher education sector.

The mechanisms and principles of NPM have reconceptualized the higher education system, along with the idea of Higher Education Institutions (HEIs). As evidenced by Broucker and De Wit "HEIs were from then on considered as organizations, rather than as sui generis collegial structures, with the company as ideal type leading the direction of governance reforms. In other words, reforms based on NPM were introduced to transform a state-dependent organization into a complete organization wherein aspects as identity, hierarchy, and rationality were introduced" (Broucker & De Wit, 2015, p. 60). Such a new reconceptualization of HEIs and the higher education sector can also be brought back to the concept of the neoliberal university. Indeed, the idea of a neoliberal university, that is, a university conforms to the principles of neoliberalism expressed also through the NPM reforms, refers to a university that operates in a public university sector based on free-market rhetoric, and that is dominated by management control mechanisms (Lorenz, 2012; Peters, Liu, & Ondercin, 2012; Slaughter & Rhoades, 2000).

The way and the degree of implementation of NPM reforms in the higher education system are not uniform among the countries since governments have applied NPM principle differently and to a different degree (Hood, 1995); nevertheless, it is possible to highlight the core features related to NPM reforms that reshaped the higher education system worldwide.

NPM reforms changed the governance of the higher education sector: this involved a shift from a state control model of higher education governance to a state supervisory sector, that is, the State does not directly control the higher education sector but performs the function of steering at a distance. The new "steering at a distance" governance establishes a reduction in state control and an increase in the autonomy of the individual HEI through the transition from a central planned model to a more self-regulated one. Coordination mechanisms changed from a traditional state-dominated regulation, i.e., "single-actor governance", to an approach wherein each HEI plays a role, i.e., "multi-actor governance". Such a new concept of governance of higher education sector significantly increased the autonomy of HEIs. However, it should be noted that NPM reforms also introduced accountability, as well as a mechanism for evaluating the performance achieved by each HEI, to moderate the freedom of HEIs. At the operational level, the "steering at a distance" governance is actualized through the constitution of public agencies. These public agencies act as brokers between the State and HEIs inasmuch, on the one hand, public agencies, based on directions provided by the State, furnish guidelines to HEIs; on the other hand, public agencies collect information related to HEIs that is then provided to the State (Broucker & De Wit, 2015; Capano, 2011; Donina et al., 2015; Meek & Davies, 2009).

Together with a change in the governance of the higher education sector, NPM reforms entailed a shift in the management style of HEIs. In particular, NPM reforms introduced a new management style characterized by corporatization, hierarchization, leadership, verticalization, and the decrease of representative governance structures (Broucker & De Wit, 2015; Parker, 2011).

Two other core features of the NPM reforms are the market-based reforms and budgetary reforms. As regards market-based reforms, governments aimed to increase the degree of marketization of the higher education sector in the hope that this would increase efficiency and accountability while simultaneously reducing the financial burden on the government (Broucker & De Wit, 2015). The enhancement of the degree of marketization of the higher education sector could be related to two different actions. First, the introduction of mechanisms of allocation of public funding among the different HEIs based on performance achieved by each HEI, in accordance with NPM principles. These mechanisms lead HEIs to compete with each other, that is, as if operating in market conditions, to increase, or at least not reducing, the financial resources that each HEI expects to receive. Second, a strong impulse to increase the degree of marketization inside the higher education sector comes from regulations that encourage the entrance of private entities, i.e., private HEIs, in the higher education sector. The entrance of new HEIs in the higher education sector, whether they are public or private, entails an increase in competition within the higher education sector with reference to the ability to attract students. As a result of market-based reforms, HEIs operate in an environment characterized by a higher degree of marketization in which the competition, both for students and funding, is increased (Broucker & De Wit, 2015; Guarini, Magli, & Francesconi, 2020). Budgetary reforms have been a typical instrument of NPM reforms. Based on the higher degree of autonomy obtained by HEIs due to the NPM reforms, the budgetary reforms intended to reshape the higher education sector funding system so that, through it, governments are able to steer at a distance the HEIs. In particular, budgetary reforms established that public financial resources are issued among the different HEIs on the performance achieved by HEIs in a competitive way. Consequently, to avoid a reduction of financial resources, HEIs tend to focus on aspects considered relevant by governments by allowing the governments themselves to steer HEIs, or at least partially limit the HEIs' autonomy (Jongbloed, 2008).

The aforementioned changes within the higher education sector have led to the introduction of quality assurance systems. These quality assurance systems, de facto, consist of control systems structured on two different typologies of criteria, i.e., ex-ante criteria and ex-post criteria. Ex-ante criteria, through accreditation systems, aim to guarantee that HEIs reach adequate standards; namely, ex-ante control aims at ensuring adequate minimum standards. Ex-post criteria verify the results that each HEI achieves concerning the various institutional activities, such as research and teaching. Quality assurance systems, based on both ex-ante and ex-post controls, produce information relating to the HEIs with a dual purpose. First, to provide information to governments, which, as a consequence of NPM reforms, require information as an element to policy development, to distribute financial resources, and accountability. Second, to supply information to HEI's governance authorities. Such governance authorities need performance information to carry out their strategic management activities to operate in an increasingly complex and competitive higher education context adequately. So, HEIs prevent their institutional activities from being carried out without adequate strategic management. It follows that quality assurance systems do not constitute a mere regulatory fulfillment but also a necessity for HEIs (Agasisti, Barbato, Dal Molin, & Turri, 2019; Boyle & Bowden, 1997; Coates, 2005; Jarvis, 2014).

To summarize, it emerges that NPM public reforms have profoundly reshaped the public higher education sector. On the whole, NPM reforms have molded a higher education sector characterized by a higher degree of marketization, i.e., characterized by a higher degree of competition both in terms of attracting public funding and students, in which HEIs have decision-making autonomy, although partially limited by accountability and mechanisms for evaluating the performance.

Due to NPM reforms, strategic management, that has been defined as "the broader process of managing an organization in a strategic manner on a continuing basis" (Poister, Pitts, & Hamilton Edwards, 2010, p. 524), becomes a relevant feature within the public higher education sector. At first, strategic management scholars paid less attention to the public sector, compared to the private one, since the "traditional" public sector did not entirely fit with strategic management. Strategic management "presupposes that senior managers have

autonomy enough to engage in decision making for the future” (Lane & Wallis, 2009, p. 102). In the “traditional” public sector, “public organizations are controlled by higher levels of political authority, giving managers limited discretion to manage” (Andrews, Boyne, Law, & Walker, 2011, p. 48). It follows that “traditional” public agency did not have a suitable degree of autonomy required by strategic management. After the NPM reform seasons, the “new” public sector became suitable for strategic management. Specifically, public organizations now have the appropriate degree of autonomy which allows them to adopt the strategic stance they deem most appropriate (Andrews et al., 2011; Lane & Wallis, 2009).

As a result of the relevance of strategic management in the public higher education sector, strategic management scholars began to investigate the implication related to strategic management in the public higher education sector. Nevertheless, although empirical research has been increased considerably, many countries have been neglected. Among these, there is the Italian context. The present thesis is part of this field of investigation with the aim, through the application of Miles and Snow (1978)’s strategic framework in the Italian public higher sector, to contribute so as to fill the above-mentioned gap. Besides, starting from the Italian public higher education sector, it intends to provide reflections that can be generalized for the whole public sector.

The thesis is composed of three different papers, that is, a systematic literature review and two different empirical works.

As regards the systematic literature review, it aims to point out the lessons, as well as further aspects that must be investigated, related to the strategic management in the public sector that stem from the application of Miles and Snow’s (1978) strategic framework in the public sector. Precisely, based on recommendations from Walker’s (2013) work, the literature review replicates and extends Walker’s (2013) work through the most recent empirical research related to strategic management conducted in the public sector. This literature review intends to test Walker’s findings and point out new emerging issues stemming from the research conducted in recent years, specifically in the time frame from 2013 to 2018. It emphasizes that, even though there has been a more extensive application of Miles and Snow’s (1978) strategic framework in the public sector, the empirical research still focuses primarily on UK and USA contexts. Moreover, as highlighted by Andrews et al. (2011), the reactor strategic stance is not always a losing strategy in the public sector.

Concerning the two empirical works, they, through the application of Miles and Snow’s (1978) strategic framework, focus mainly on strategic management within the Italian public higher education sector.

The first empirical work investigates the possible influence of public reforms on the strategic stance adopted by HEIs. It aims to understand whether the strategic stances adopted by Italian HEIs have changed because of the recent reforms, and, if so, how. For these purposes, the work analyzes the effects of Gelmini’s reform, which has deeply influenced the Italian higher education sector. This work investigates how the Italian public HEIs have adapted to the new external environment by their strategic stances. It emerges that Gelmini’s reform led to a process of strategic reorientation in the Italian public higher education system. Specifically, in contrast to Miles and Snow’s proposition, HEIs avoid adopting the prospector strategic stance in favor of the reactor or defender stances.

The second empirical paper attempts to identify whether there is a relationship between strategic stances adopted by Italian HEIs and their performance. Based on Miles and Snow’s framework, the strategic stance of each HEI is analyzed to inspect the aforementioned relationship and understand if the strategic stance influences HEI performance, and, if so, which strategic stance is more adapted in the Italian higher education sector. The results emphasize that the strategic stance adopted influences HEI performance. Nevertheless, in opposition to Miles and Snow’s assumption, such influence does not lead to a strategic hierarchy based on

performance, but rather to more considerable variety in terms of performance by HEIs that adopt the prospector strategic stance.

Reviewing Miles and Snow's assumptions in the public sector: Evidence from the most recent empirical research

Abstract

New public management reforms worldwide have led many public sector organizations to adopt strategic management practices. Subsequent research has employed common strategy frameworks and management models to understand whether and how strategic management practices influence the performance of public sector organizations. One of the most applied frameworks is that of Miles and Snow (1978). This framework identifies four different archetypes, that is, defender, prospector, analyzer, and reactor, that are used to cluster the different strategic approaches adopted by organizations. Moreover, Miles and Snow's framework emphasizes that organizational archetypes influence organizational performance and that the prospector, analyzer, and defender types perform equally well and outperform the reactor type. Several empirical studies have tested Miles and Snow's framework in the public sector and Walker (2013), in his review, identified the common findings stemming from them. Walker pointed out that his results must be taken with caution and that more research is necessary to generalize them. Responding to Walker's call, this systematic literature review tests Walker's findings and identifies new emerging issues stemming from the research conducted in recent years, in order to obtain a better understanding of the applicability of the Miles and Snow framework for strategic management in the public sector. Overall, two important issues emerge. First, there is an absence of a unanimous consensus regarding if and how strategic management practices influence public sector organizational performance. Second, there were still most empirical studies conducted in the US. It follows that further empirical research is needed to obtain a clear comprehension of the influence of strategic management practices in the public sector.

Keywords: adaptive cycle, organizational performance, strategic management, strategic stances

Introduction

Public sector reforms worldwide inspired by new public management (NPM) (Andrews et al., 2011; Lane & Wallis, 2009; Rosenberg Hansen & Ferlie, 2016) have introduced new managerial approaches. One consequence of this development is the wide adoption of strategic management practices in many public sector organizations. NPM reforms have reshaped the public sector to become composed of many organizations that exhibit a high degree of administrative autonomy, performance-based budgeting, and market-like conditions (Rosenberg Hansen & Ferlie, 2016).

The adoption of strategic management practices is supposed to influence public organizations' performance. However, on the basis of the peculiarities of the public sector, such as a high level of regulation, strategic management practices have different impacts on public organizations in different countries and tiers of government (Andrews, Boyne, Law, & Walker, 2009b; Andrews, Boyne, & Walker, 2006; Andrews et al., 2011; G. A. Boyne & Walker, 2004; Meier, O'Toole Jr., Boyne, & Walker, 2008). In order to understand how strategic management influences public sector organizations' performance, researchers have often applied theoretical frameworks and strategic management models that were initially developed in the private sector. One of the most adopted frameworks is that of Miles and Snow (1978).

Miles and Snow developed an extensive framework that clustered the different organizational strategy-structure relationships into four strategic archetypes: defender, prospector, analyzer, and reactor. These archetypes have also been employed in studies of strategy in the public sector to cluster the different strategic approaches and stances public sector organizations adopt. Specifically, strategic stances describe "the broad way an organization seeks to maintain or improve its performance" (G. A. Boyne & Walker, 2004, p. 232) and is useful in order to understand organizations' strategic behavior.

Two central propositions stem from Miles and Snow's framework. First, the organizational archetype influences organizational performance. Second, the prospector, analyzer, and defender types perform equally well and outperform the reactor type.

Numerous studies have tested Miles and Snow's propositions in the public sector (Andrews, Boyne, Law, & Walker, 2008, 2009a; G. Boyne, 2001; G. A. Boyne & Walker, 2010; Cunningham, 2002; Hendrick, 2003; Hyndman & Eden, 2001; Johnsen, 2018; Lee, McGuire, & Kim, 2018; Young, Beekun, & Ginn, 1992). Through a systematic literature review, Walker (2013) pointed out common findings from a number of empirical studies related to Miles and Snow's framework up to 2013. The same author claims, however, that his results must be taken with caution and that further research is necessary in order to generalize the results. He underlines that the results can be biased by both the restricted geographical area studied and the public organizations that were analyzed; studies were principally conducted in the local government settings in the United Kingdom and the United States.

On the basis of Walker's (2013) recommendation, this paper aims to test his findings through a systematic literature review and point out new emerging issues stemming from the research conducted in recent years, specifically in the time frame from 2013 to 2018. This paper also attempts to underline, through the use of different databases such as Scopus and Web of Science, whether further empirical evidence has been published in the time frame considered by Walker, from which a clearer picture of the aspects related to strategic management associated with Miles and Snow's framework can be drawn.

The remainder of the paper is structured as follows. The next section describes Miles and Snow's framework, and the central propositions derived from it. Succeeding sections recap Walker's results, explain the methods used to identify the studies to be included in the literature review and the composition of the final sample, discuss the results of the considered studies, identify some limitations of the present literature review, and suggest future research.

The Miles and Snow framework

Miles and Snow elaborated an extensive theoretical framework on the basis of studies that they conducted in four different industries in the USA, namely, health care, college textbook publishing, electronics processing, and food processing, as well as previous theoretical contributions. Note that in many other countries much health care is organized as public sector services and funded by taxes and user charges, and not provided by private owned companies financed by private insurance or prices, as is common in the USA. The framework emphasizes the typical organizational problems to be solved simultaneously and consistently to help an organization align with the environment in order to be effective and efficient. Such problems stem from the simplified decomposition of the so-called adaptive cycle. The adaptive cycle could be defined as a complex and ongoing process that allows organizations to maintain "an effective alignment with the environment while effectively managing internal interdependencies" (Miles & Snow, 1978, p. 3).

According to the Miles and Snow framework, organizations face three problems. First, *the entrepreneurial problem*, that is, the choice of the product-market domain; second, *the engineering problem*, namely, the choice of technologies for productions and distributions; and third, *the administrative problem*, which concerns what structure and process to adopt. To address the aforementioned problems, each organization defines its strategy–structure relationship (Miles & Snow, 1978; Miles, Snow, Meyer, & Coleman Jr., 1978). Although the range of strategy–structure relationships is potentially vast, Miles et al. assert that they can be clustered into the four organizational archetypes of defender, prospector, analyzer, and reactor (Miles & Snow, 1978; Miles et al., 1978).

Defenders are organizations that "have a narrow product-market domains, and [...] are highly expert in their organization's limited area of operation but do not tend to search outside of their domains for new

opportunities” (Miles & Snow, 1978, p. 29). Consequently, these organizations “seldom need to make major adjustments in their technology, structure, or methods of operation, [...] they devote primary attention to improving the efficiency of their existing operations” (Miles & Snow, 1978, p. 29). *Prospectors* are organizations that “almost continually search for market opportunities, and the regularly experiment with potential responses to emerging environmental trends, and [...] often are the creators of change and uncertainty to which their competitors must respond” (Miles & Snow, 1978, p. 29). It follows that “because of their strong concern for product and market innovation, these organizations usually are not completely efficient” (Miles & Snow, 1978, p. 29). *Analyzers* are organizations that “operate in two types of product-market domains, one relatively stable, the other changing. In their stable areas, these organizations operate routinely and efficiently through use of formalized structures and processes. In their more turbulent areas, top managers watch their competitors closely for new ideas, and then they rapidly adopt those which appear to be the most promising” (Miles & Snow, 1978, p. 29). *Reactors* are organizations characterized by top managers who “frequently perceive change and uncertainty occurring in their organizational environments but are unable to respond effectively. Because this type of organization lacks a consistent strategy–structure relationship, it seldom makes adjustment of any sort until forced to do so by environmental pressures” (Miles & Snow, 1978, p. 29).

Such definitions indicate that three of the four archetypes have an unambiguous strategy to pursue, consisting of a clear pattern of behavior, whereas one does not have such a strategy and instead applies adjustments only when forced.

Miles and Snow’s framework brings out a central proposition: the prospector, analyzer, and defender perform equally well and outperform the reactor (Andrews et al., 2011; Meier et al., 2008; Walker & Brewer, 2009). This proposition derives from the reactor’s behavior, characterized as strategic failures, which has a pattern of environmental adjustment that is both inconsistent and unstable (Inkpen & Choudhury, 1995; Miles et al., 1978). The reactor, as underlined in its definition, is an organizational archetype that is driven not by internal factors but by external ones (Andrews et al., 2008). The reactor’s underperformance is overall corroborated in several studies conducted in the private sector (Conant, Mokwa, & Varadarajan, 1990; Slater & Olson, 2001), whereas the studies conducted in the public sector show mixed results (Andrews et al., 2008). An appropriate detail to emphasize is that some studies from the private sector conflict with Miles and Snow’s assumption; for instance, see Hambrick (1983).

Several empirical studies used an adapted model of Miles and Snow’s framework (Andrews et al., 2008; Andrews, Boyne, Meier, O’Toole Jr., & Walker, 2005; Andrews et al., 2006; Enticott & Walker, 2008; Jimenez, 2018; Meier, O’Toole Jr., Boyne, Walker, & Andrews, 2010; Walker, Andrews, Boyne, Meier, & O’Toole Jr., 2010; Walker & Brewer, 2009). The adaptation takes into consideration Boyne and Walker’s (2004) contribution that claims that the overall organizational strategy is not composed of a simple, single strategy, but it is a mix of different ones. The conception that organizational strategy is composed of one single strategy bears the need to classify the organizational strategy into four different types: prospector, defender, analyzer, and reactor. In particular, Boyne and Walker reject the assertion that organizational strategies are mutually exclusive and affirm that different strategies can be pursued at the same time. For instance, the same public agency can simultaneously apply two different strategies—prospector and defender—in two different public fields. It follows that the analyzer is a redundant category; for this reason, it is often not present in empirical studies.

Walker’s literature review

Miles and Snow’s framework has been widely applied in studies of the public sector in order to understand the possible influence of the strategic stance on organizational performance and, if such an influence exists, to understand the kind of connection that exists between strategic behavior and organizational performance

(Andrews et al., 2008, 2009a, 2006; Cunningham, 2002; Davis, Brannon, Zinn, & Mor, 2001; Enticott & Walker, 2008; Meier et al., 2008, 2010; Walker & Brewer, 2009).

In 2013, Walker conducted a systematic literature review recapping the findings related to strategic management and performance in public organizations from public sector research that employs Miles and Snow's framework. He reviewed peer-reviewed journal articles, books, and book chapters published until 2012 and identified through Google Scholar, presenting public organizations as the unit of analysis, Miles and Snow's framework, and organizational performance conceptualized as the dependent variable. Non-empirical research or conceptual pieces and publications containing partial statistical data or case studies were excluded although the aforementioned features were considered. The final sample, identified by Walker (2013), is composed of 25 articles, covering a 25-year time frame from 1987 to 2012; 12 studies were conducted in the US, 11 in the UK, 1 in China, and 1 one in Spain, with possible issues related to the generalization of the results stemming from the whole review. Different public organizations were used as the unit of analysis, namely, local governments, school districts, hospitals and nursing facilities, higher education institutions, and state-owned enterprises. However, the research conducted in the UK focused only on local governments. It follows that, again, generalization of the results could also be problematic with reference to the UK.

Concerning their content, the 25 studies tackle the different features of Miles and Snow's framework (i.e., strategy, structure, process, and environment) from different perspectives and in a fragmented way. In particular, the studies primarily focus on the relationship between performance and strategy content and then between strategy content and internal processes.

On the basis of the results of the 25 studies, Walker (2013) points out six findings that are related to the following areas: strategic stance and performance, internal alignment and strategy, and external alignment and strategy.

Concerning strategic stance and performance, Walker (2013) reveals that a mix of strategies is essential and that prospectors and defenders outperform reactors. Public organizations simultaneously pursue different strategies, as previously highlighted by Boyne and Walker (2004). Hence, empirical evidence rejects the proposition of Miles and Snow, which suggests that organizations pursue only one strategy. This detail can be explained by the multiplicity of objectives, which are often in conflict, that public organizations have to pursue; thus, a mix of strategies may help fulfill them. As demonstrated in several works (Johnsen, 2016; Meier et al., 2008, 2010), a specific strategic stance that is suitable for a specific objective may not be suitable for the other one. Such result could also stem from a more refined methodology used to classify a public organization's strategy, which allows a better understanding of the overall strategy that is being pursued. In fact, in early empirical research, the strategic stance was measured by a categorical approach, whereas a scale approach is preferred in most recent research. The first one uses different descriptions related to several strategic stances to classify an organization's strategy into a single and specific strategic archetype. The assumption behind this approach is that a public organization can pursue a single strategy and that they are mutually exclusive. In operational terms, this method involves asking the participants which of the different definitions best represents their organization's strategy. The second one does not use single-item strategy descriptions but a set of items, which reflect the different facets, related to the different strategic archetypes used to determine the degree, to which the different items fit the organization's strategy. The assumption behind this approach is that public organizations can pursue different strategies at the same time. From a practical point of view, it involves asking the participants to rank through a Likert scale how the different items are consistent with their organization's strategy. The categorical approach links the organization's strategy with the most prevalent strategy pursued, ignoring the others even if present, whereas the scale approach identifies the different strategies pursued simultaneously. The second relevant result, which corroborates Miles and Snow's central proposition, suggests that prospectors and defenders

perform better than reactors. However, different researchers claim that Miles and Snow's central proposition could not be corroborated in the public sector from a theoretical point of view because of the specific feature of the public sector (e.g., a higher level of regulation) (Andrews et al., 2011; G. A. Boyne & Walker, 2004). Walker's (2013) results corroborated this claim in the public sector.

The second area, internal alignment and strategy, concerns the relationship among internal organizational features, namely, strategic stance, process, strategy formulation, and organizational structure. On the basis of the different strategic stances' specific features, Miles and Snow suggest that the prospector stance has to be paired with incremental strategy formulation procedures along with decentralized structures, whereas the defender stance has to be matched with rational strategy formulation procedures alongside centralized structures. Such statements are not overall confirmed by Walker (2013). In particular, the former is only partially confirmed; Walker claims that incremental strategy formulation procedures in public organizations with a prospector stance has a positive effect on organizational performance, whereas the effect of the structure is not as considerable as supposed by Miles and Snow (1978). The latter is overall corroborated; that is, a defender stance allows for higher performance when combined with rational strategy formulation and centralized structures. Moreover, Walker (2013) asserts that to reach organizational success, strategic stance, and strategy formulation procedures need to be matched with an appropriate phase of strategy implementation. Such results are based on the subsequent findings: prospecting and incremental strategy processes offer a route to organizational success; defending, rational process, and centralized structures lead to higher organizational performance.

External alignment and strategy summarize the empirical results that stem from considering both internal and external characteristics: strategies work best in stable environments, and incremental implementation styles overcome complex and dynamic environments. Specifically, Walker (2013) argues that organizations operating in environments characterized by complex conditions (e.g., high rate of change or dynamism) are less effective than organizations that have a stable environment regardless of the adopted strategic stance. Such an assertion is partially coherent with the Miles and Snow framework. Indeed, they assert that defenders operate better in a stable environment and that prospectors operate better in a complex and dynamic environment. The first assertion is corroborated by Walker's (2013) result, whereas the latter is not. Moreover, findings indicate that an incremental strategy implementation style is more suitable in a complex and dynamic environment, once again highlighting the relevance of implementation processes.

Methods and Sample

A systematic literature review could be defined as a fully comprehensive summary realized through examining the relevant existing literature related to a specific research area, which aims at underlining the research progress made and the research gaps that require further investigations (Rowley & Slack, 2004; Xiao & Watson, 2019).

In order to perform the present literature review, this paper identified and used peer-reviewed journal articles, books, and book chapters that employ Miles and Snow's model in the public sector on the Scopus database. Initially, two different databases (Web of Science and Scopus) were used to identify the publications to be included in the final sample. Both databases were used because they are two of the most appropriate databases for research in the social sciences and, on the basis of their peculiarity, an integrated approach could provide better results for the purposes of the analysis (Aghaei Chadegani et al., 2013; Norris & Oppenheim, 2007). However, the results of both databases indicate that only the Scopus database has been used inasmuch as it already contains all the references provided by WOS.

In order to replicate and extend Walker's (2013) literature review, search terms consistent with those of Walker (2013) were used. To identify the relevant studies, "Miles" AND "Snow" AND "public" AND "performance", were used as search terms.

On the basis of the aforementioned search terms, 4433 studies were identified. All abstracts were read and the studies were included if they were consistent with the criteria Walker (2013) used: publications characterized by empirical research; not empirical or conceptual research were excluded; public organizations were used as unit of analysis; the research was supported by statistical data; research that applies qualitative methods or case studies were excluded; performance was used as the dependent variable.

With regard to the time frame, two different time slots were considered. The more recent one, from 2013 to 2018, was considered to update Walker's (2013) results with the latest research. The second one, from 1978 to 2012, was considered to understand whether a different database can be used (Scopus instead of Google Scholar) and whether additional publications emerged or not compared with those identified by Walker (2013).

In brief, the final sample is composed of 14 studies that are in accordance with Walker's (2013) criteria and includes works that were published up to 2018 and are not included in Walker's (2013) analysis. See table 1.

STUDY	UNIT OF ANALYSIS	COUNTRY	MILES AND SNOW'S MODEL ASPECTS
JIMENEZ, 2018	Local Government	United States	Strategic Content (Strategic Stance) Strategic Content (Strategic Stance) *Environment (Economic Condition) Strategic Content (Strategic Stance) *Process (Strategy Formulation)
PASHA, POISTER, & EDWARDS, 2018	Local Public Transit Agency	United States	Strategic Content (Strategic Stance) Strategic Content (Strategic Stance) *Process (Strategy Formulation)
KIM & BERRY, 2018	US State	United States	Strategic Content (Strategic Stance)
JOHNSEN, 2018	Local Government	Norway	Strategic Content (Strategic Stance) Strategic Content (Strategic Stance) *Process (Strategy Formulation)
WANG & KUO, 2017	Local Public Agency	Taiwan	Strategic Content (Strategic Stance)
CHEON & AN, 2017	School District	United States	Strategic Content (Strategic Stance)
JOHNSEN, 2016	Local Government	Norway	Strategic Content (Strategic Stance)
KROLL, 2015	Museums	Germany, Austria, Switzerland	Strategic Content (Strategic Stance) Strategic Content (Strategic Stance) *Process (Performance management)
FLINK, 2015	Local Government	United Kingdom	Strategic Content (Strategic Stance)
NARANJO-GIL, 2015	Hospital	Spain	Strategic Content (Strategic Stance)
ANDREWS & BREWER, 2014	School District	United States	Strategic Content (Strategic Stance) Strategic Content (Strategic Stance) *Environment/Process (Social Capital)
MACINATI & ANESSI-PESSINA, 2014	Public Health-care Organization	Italy	Strategic Content (Strategic Stance)
ANDREWS, BOYNE, & WALKER, 2012	Local Government	United Kingdom	Strategic Content (Strategic Stance)
NARANJO-GIL, HARTMANN, & MAAS, 2008	Hospital	Spain	Strategic Content (Strategic Stance)

Table 1 Publications included in the literature review
Source: our elaboration

The 14 studies were conducted in the US (5), Norway (2), Taiwan (1), Germany/Austria/Switzerland (1), the UK (2), Spain (2), and Italy (1). Various public organizations were used as unit of analysis, that is, local governments, local public transit agencies, US states, local public agencies, school districts, hospitals, and public health care organizations. With regard to the studies' content, all but five studies focused on strategic stances to understand whether they influence, directly or indirectly, organizational performance and/or

organizational features. In fact, only in a few studies did the strategic stances interact with other aspects of Miles and Snow (1978)'s framework (i.e., process and environment).

A comparison with the final sample obtained by Walker (2013) shows that Miles and Snow's framework is increasingly used in studies of the public sector and the context of analysis has become more heterogeneous in the recent years. In the last six years, 12 studies have been identified against the 27 identified in the previous 25-year time frame. Research was conducted in countries that were previously not studied, namely, Norway, Taiwan, Germany, Austria, Switzerland, and Italy. Nevertheless, an important detail to stress is that, although Miles and Snow's framework is being increasingly used in public sector studies, the results of this literature review could give rise to questions related to their generalization. In fact, many of the identified studies were still conducted in the US, which could raise concerns about the generality of the results.

Results

To summarize and underline the lessons connected to strategic management in the public sector, the main results derived from the analysis of the selected studies, connected to the implications deriving from Miles and Snow's work, are reported below. The findings related to Miles and Snow's central proposition, that is, the correlation between certain strategic stances and performance, are first reported, followed by the results concerning Miles and Snow's adaptive cycle.

Figure 1 depicts the results of the analysis and particularly underlines the different features of Miles and Snow's model and the results from the different publications. Agreement or disagreement between Miles and Snow's (1978) conclusions and the more recent evidence from research conducted in the public sector, is pointed out.

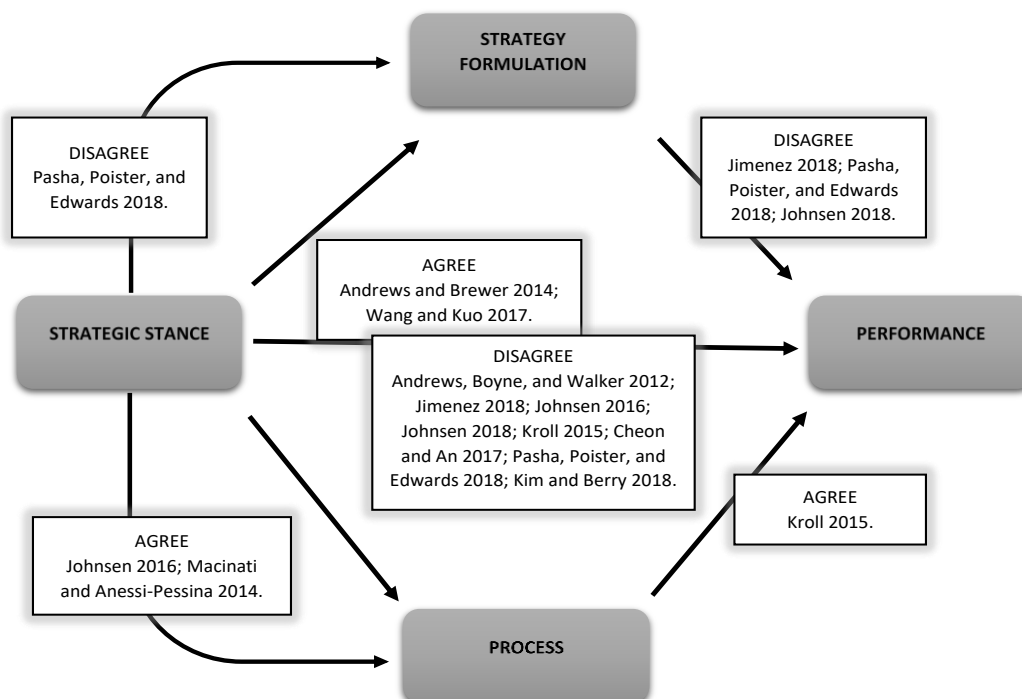


Figure 1 Results
Source: our elaboration

Strategic stance and performance

As already mentioned, Miles and Snow held that strategic stance influences organizational performance and that the prospector, analyzer, and defender perform equally well and outperform the reactor. Several recent papers support such statements.

Andrews and Brewer (2014), studying the relationship between social capital and public service performance in Texas school districts, analyzed whether and how strategic stance influences organizational performance. They measured the district's performance with different indicators such as the percentage of students who passed The Assessment of Knowledge and Skills (TASK), the percentage of students who took college admission test (SAT), and the percentage of students who performed well in college admission tests (ACT), and they suggested that the different strategic stances influence them differently. In particular, as highlighted in previous studies (Meier et al., 2008, 2010), the prospector stance positively influences the ACT performance indicator, the defender stance is correlated positively only with the TASK indicator performance, while the reactor stance does not have any impact—neither negative nor positive—on Texas districts' performance indicators.

Wang and Kuo (2017) found similar results. They analyzed whether or not strategic stances influence Taiwan's local governments' capability in a crisis response and, if so, how. Their work emphasizes that the prospector and defender stances are positively related to crisis response capacity, whereas the reactor stance is negatively related to it. In other words, the prospector and defender improve the local government's crisis response capacity, whereas the reactor harms it.

Andrews and Brewer (2014) and Wang and Kuo's (2017) works showed that the prospector and defender stances outperform the reactor stance, as previously suggested by Miles and Snow (1978) and Walker (2013).

Andrews et al. (2012) identified a relationship between strategic stance and performance, that is, the reactor stance outperforms the defender and prospector ones. Their article examined the relationship between strategic management and overspending, defined as the level of expenditure considered excessive by key stakeholders, in English local governments. The authors studied whether and how strategic management (namely, strategic actions and strategic stance) influences the budgetary performance of English local governments and found that budgetary performance is influenced by the adopted strategic stance. The prospector and defender stances are positively related to overspending, whereas the reactor stance is negatively linked to it. It follows that local governments have to adopt a reactor strategy or adhere to prudent financial management when adopting prospector or defender ones to improve budgetary performance.

Jimenez (2018) derived a similar conclusion. He analyzed whether and how organizational strategy influences the outcomes of fiscal retrenchment in the US cities and emphasized that organizations that adopt the reactor stance do not underperform compared with those that adopt another strategic stance. In Jimenez's (2018) work, fiscal retrenchment is defined as the process of responding to a budget crisis. He held that the prospector and reactor stances neither positively nor negatively influence the outcomes related to fiscal retrenchment, whereas the defender stance negatively affects the retrenchment outcomes. In brief, cities that adopt the defender stance underperform fiscally.

In a study on the impacts of strategic planning and management three decades since their introduction in Norwegian local governments, Johnsen (2016) underlined an opposite relationship compared with Jimenez (2018), that is, the defender stance outperforms the prospector and reactor stances, as municipal top-management perceives strategic stances and performance. Johnsen found that only the defender stance positively influences local government performance, whereas the prospector and reactor stances neither positively nor negatively influence it.

Such results were reconsidered by the same author in another study utilizing administrative data for performance in addition to the earlier used perception-based performance. In an analysis of the impact of strategic planning and management, strategy content, and stakeholder involvement on Norwegian local governments' performance, Johnsen (2018) used two different performance measures, that is, a subjective one, which is data stemming from a survey, and a more objective one, which is administrative data of municipal production; only a subjective measure was used in his previous work (Johnsen, 2016). The analysis underlined that the positive effect on performance, derived by the adoption of the defender stance, is limited to subjective performance. It follows that the positive relationship between defender stance and performance, which was identified in the previous work (Johnsen, 2016), could be bound to perceptions of respondents, but in concrete terms, the defender stance does not affect performance. In brief, the strategic stance does not improve performance tangibly, at least not in the short run, and the defender stance only improves the perception about performance.

Kroll (2015), analyzing the relationship between performance management and organizational performance in museums located in Germany, Austria, and Switzerland, came to a conclusion similar to Johnsen's (2018; 2016). He underlined that strategic stance, considered individually, is not able to positively or negatively influence performance.

Among the studies that consider the relationship between strategic stance and performance, three stand out because of the different Miles and Snow (1978) archetypes they used: Cheon and An (2017) and Pasha et al. (2018) used only the prospector and defender stances, and Kim and Berry (2018) used the analyzer stance along with the prospector and defender ones. We depict these results separately in such a way that the results derived from them are analyzed considering the peculiarities of the archetypes used.

Cheon and An (2017) analyzed how organizational strategy and organizational performance influence each other in Texas school districts, whose performances are evaluated based on the TASK pass rate. Overall, this analysis shows that the adopted organizational strategy neither positively nor negatively influences Texas districts' performance.

Pasha et al. (2018) investigated whether and how both strategic stance and strategic formulation individually and jointly affect the organizational performance of US local public transit agencies. They used two different measures to evaluate the public local transit agency's performance—one related to public local transit agency's effectiveness and the other one linked to the productivity of the public local transit agency. Their results were similar to those of Cheon and An (2017), that is, the defender stance is not able to positively or negatively influence performance, both related to effectiveness and productivity, whereas the prospector stance is able to positively influence only performance linked to productivity but not to effectiveness.

Kim and Berry (2018) analyzed the impact of strategic stance on performance related to the Child Support Enforcement (CSE) program of the US federal government. They evaluated performance based on five different performance indicators related to the CSE program, i.e., paternity establishment percentage, support order establishment, current collections, arrearage collections, and cost-effectiveness. Their findings showed that no strategic stance considered individually can influence all aspects related to the CSE program performance and that the different strategic stances affect performance aspects in a different way. In particular, the analyzer stance has a positive effect on arrearage collection and cost-effectiveness and a negative effect on paternity establishment, whereas the prospector and defender stance have a positive effect on paternity establishment.

The results mentioned above indicate that although a clear relationship between strategic stance and performance is not identified, two lessons are distinctively identified: a mix of strategies matters and the prospector and defender stances do not always outperform the reactor stance.

The first one corroborates Walker's (2013) finding that public organizations can achieve a good overall performance by adopting different strategic stances at the same time and not just one. This assertion may derive by the multiplicity of objectives, which are often in conflict, that public organizations (e.g., local governments, school districts) have to pursue at the same time. The combination of different strategic stances can help public organizations to achieve their different goals. The aforementioned results display that a single strategic stance is not able to influence all the performance aspects, namely, the different objectives, considered relevant by the key stakeholder. It follows that public organizations have to adopt different strategic stances to fulfill their different objectives as best as they can.

The prospector and defender stances do not always outperform the reactor one, thus indicating that Miles and Snow (1978) and Walker's (2013) findings that the prospector and defender stances outperform the reactor one is not always verified in the public sector. The results show that with reference to specific objectives, i.e., reduction in public expenditure, the reactor stance could be a better strategy than the prospector or defender ones, as demonstrated by Andrews et al. (2012) and Jimenez (2018). It follows that, as already pointed out in previous studies (Andrews et al., 2011; G. A. Boyne & Walker, 2004), the reactor stance could be conceptualized as a deliberative strategy in the public sector. Thus, it is not possible to establish a priori which strategic stances lead to better performance in the public sector. In fact, to improve performance, it is necessary to consider the performance under investigation and then adopt the strategic stance that better fits with it.

Strategic Stance and Strategy Formulation

Concerning the influence of strategic stance on the strategy formulation method, that is, how an organization develops its strategy to make decisions about its future, Miles and Snow (1978) asserted that, based on different logics underlying the different strategic stances, the strategic stance adopted by an organization influences the adopted strategy formulation method. Specifically, the prospector stance has to be matched with a wide-ranging, provisional, and exploratory strategy formulation method, whereas the defender stance has to be paired with a more planned and centralized one (Andrews et al., 2011).

The correlation between strategic stance and strategy formulation method was investigated by Pasha et al. (2018). They classified the strategic stance based on Miles and Snow's archetypes, namely, defender and prospector, and they clustered strategic formulation on two different kinds of formulation methods: formal strategic planning, in which the organization formulates its strategy based on objective data analysis and formal plans; and logical incrementalism, in which the organization formulates its strategy based on both bargaining with stakeholders and influences from the political context.

Pasha et al. (2018) examined the effects of strategic stance and method of strategy formulation on the performance of public local transit agencies. They analyzed the role of strategic stance in determining the way strategies are formulated, specifically whether the adopted strategic stance influences the adopted strategy formulation process or not and, if so, how. They found that organizations that adopt a prospector stance use both approaches to formulate their strategies and that defender organizations are less likely to use either formal strategic planning approach or logical incrementalism approach than prospector ones.

Such results are in contrast with the aforementioned Miles and Snow's assumption. Indeed, prospector organizations do not use exclusively a wide-ranging, provisional, and exploratory strategy formulation method, that is, the logical incrementalism method. Defender organizations are also less likely to formulate their strategy with a more planned and centralized strategy formulation method, that is, the formal strategic planning method, than prospector ones.

Nevertheless, an important detail to underline is that the difference in the results could be due to the different archetypes used to cluster the public organizations. Pasha et al. (2018) clustered the public

organizations only on the basis of the defender and prospector stances, ignoring the reactor one, which could lead to different results compared with the analyses that use all strategic archetypes.

Altogether, further research is necessary to understand whether and how the strategic stance influences the strategy formulation process.

Strategic Stance, Strategy Formulation, and Performance

Miles and Snow (1978), based on the different strategic logics underlying the different strategic stances, claimed that to achieve internal alignment, which improves organizational performance, the prospector stance has to be matched with a wide-ranging, provisional, and exploratory strategy formulation method, whereas the defender stance has to be paired with a more planned and centralized one (Andrews et al., 2011).

The joint effects of strategic stances and strategy formulation methods on performance were tested in three different studies: Jimenez (2018), Pasha et al. (2018), and Johnsen (2018), who analyzed whether and how the combinations of the different strategic stances along with different strategy formulation methods, namely, logical incrementalism method and formal strategic planning method, influence organizational performance. The three studies are in accordance with each other about the combined effects of strategic stances and strategy formulation methods on performance. In particular, they highlighted that combining the prospector stance with the incremental strategy formulation procedure has no positive or negative effects on organizational performance, whereas combining the defender stance with the strategic planning formulation procedure has negative effects on organizational performance.

Such results are in contrast with Miles and Snow's (1978) abovementioned postulate that was confirmed by Walker (2013). Combining the prospector stance with a wide-ranging, provisional, and exploratory strategy formulation method, that is, the logical incrementalism method, does not improve performance. Furthermore, combining the defender stance with a more planned and centralized strategy formulation method, namely, the formal strategic planning method, hurts organizational performance instead of improving it.

Overall, an important theoretical and practical implication derives from the most recent empirical research. That is, a clear pattern of combined effects related to strategic stances and strategy formulation procedures does not emerge as supposed by the older empirical research (Andrews et al., 2011; Miles & Snow, 1978; Walker, 2013). Thus, further research is necessary to understand such aspects better and avoid implementing the wrong strategy formulation procedures, which could damage organizational performance.

Strategic Stance and Process

With regard to the relation between strategic stance and internal processes, Miles and Snow (1978) stated that organizations can become efficient and effective by adopting processes that are coherent with their strategic stance, that is, different strategic stances have to be matched with different internal processes based on different logics underlying the strategic stances.

Macinati and Anessi-Pessina (2014) and Johnsen (2016) analyzed such relationship in the public sector.

Johnsen (2016), analyzing the strategic planning and management's status in local governments in Norway, studied whether the adopted strategic stance influences practices related to strategic management or not and, if so, how. He stated that the adopted strategic stance influences strategic management practices, particularly, that the prospector and defender stances correlate positively with the adoption of strategic management processes, whereas the reactor stance is neither positively nor negatively correlated with the adoption of strategic management processes. Such results are in accordance with Miles and Snow's (1978) proposition mentioned above. Organizations that adopt the prospector or defender stances, which are

organizations that have a clear strategy, are more oriented toward strategic management practices than organizations that adopt the reactor stance, that is, organizations that do not have a clear strategy.

Macinati and Anessi-Pessina (2014) derived a conclusion similar to Johnsen (2016). They examined whether and how management accounting use affects financial performance in Italian public health care organizations, focusing on the role of the adopted strategic stance with reference to the characteristics of the management accounting system and the use of management accounting by general managers. In other words, they tried to understand whether or not the adopted strategic stance influences the characteristics and the use of the management accounting system by the general manager, and if so, how.

Results show that the strategy adopted by public health care organizations influences both the characteristics and the use of a management accounting system by general managers. Public health care organizations that adopt a defender stance employ a more sophisticated management accounting system than public health care organizations that adopt a prospector stance, and the defender stance encourages the usage of management accounting systems. Such results are in accordance with Miles and Snow (1978). The defender stance, which has an underlying strategic logic that is more aligned with the accounting management system than the prospector stance, leads to a more sophisticated accounting management system and to its more intensive use by general managers.

Overall, the analysis indicates that the adopted strategic stance influences the organizational processes, as hypothesized by Miles and Snow (1978).

Strategic Stance, Process, and Performance

Miles and Snow (1978) argued that organizations can improve performance through internal alignment by adopting internal processes that are in accordance with the adopted strategic stance.

This assumption was analyzed by Kroll (2015), who examined the effects of the adopted strategic stance on the correlation between management performance system and organizational performance. In particular, through a study on whether and how performance management systems influence performance in German, Austrian, and Swiss museums, he analyzed if the adopted strategic stance influences the effects of management performance on organizational performance or not and, if so, how.

Kroll's (2015) results show that managerial data use, which stem from performance management systems, has different effects on performance depending on the adopted strategic stance. In particular, the use of managerial data positively influences organizational performance when the organization adopts a prospector stance, whereas positive effects do not occur when an organization adopts the defender or reactor ones. Combining the defender stance with performance information usage does not have any positive or negative effect on organizational performance and matching a reactor stance with the use of performance information has negative effects on organizational performance. Such results are in accordance with Miles and Snow's (1978) previously mentioned statement. In fact, organizations that adopt a reactor stance do not have a clear strategy; they await instructions from external parties and adapt to them. Thus, their behavior is not coherent with performance management logic.

Kroll's (2015) work underlines an important implication for public organizations. In particular, on the basis of the different effects of organizational processes on performance when combined with distinct strategic stances, public organizations must have an adequate level of decision-making autonomy to implement internal processes that are in accordance with the adopted strategic stance.

Conclusions

The aim of this literature review was to update Walker's (2013) findings and point out new emerging issues through the most recent (2013–2018) empirical research conducted in the public sector.

The Miles and Snow framework is increasingly used in public sector research, as highlighted by the increasing number of empirical works that employ it. Overall, the findings indicate the absence of a unanimous consensus regarding both the correlation among the different examined features connected to Miles and Snow's model—strategic stance, strategy formulation, and internal process—and the way strategic stances, considered individually or jointly with strategy formulation and internal process, affect organizational performance. The most recent empirical research reviewed in this paper found results that contrast with each other (e.g., Andrews, Boyne, and Walker 2012; Johnsen 2018; Wang and Kuo 2017) and with those of earlier studies (e.g., Jimenez 2018; Pasha, Poister, and Edwards 2018). Such divergences in the results could stem from the empirical research's peculiarities: the studies were conducted in different countries and contexts, in different public sector organizations, and the organizational effects were detected in different ways. With regard to the detection of impacts on organizational performance, researchers used subjective as well as objective data and different data sources to detect the same organizational characteristics. Thus, different results may emerge in the same context when different kinds of data and sources are used (Johnsen, 2016, 2018).

Concern also arises regarding the contexts in which the various empirical studies were conducted. In fact, although the studied contexts have become more heterogeneous in the past few years, both with reference to the countries and to the unit of analysis, most of the empirical studies were still conducted in the US and in local government. Such issues, as also highlighted by Walker (2013), could raise concerns about the external validity of the results.

The above findings indicate that further empirical research is necessary to obtain a clear comprehension of strategic management practices and their impact in the public sector. Miles and Snow's framework has yet to be applied in many public sector contexts, that is, countries and public sector organizations that have been neglected in previous empirical research. Specifically, an interesting task is to apply Miles and Snow's framework even more outside the US and UK contexts, where the model so far mostly has been tested, and consider public sector organizations other than local governments. In brief, a more systematic application of Miles and Snow's framework in the public sector is required to understand the effects of strategic management better and identify more general results that could help policymakers and public managers implement an appropriate strategic reorientation that allows public sector organizations to be efficient and effective and to improve their performance.

The current literature review also has some limitations that need to be specified. First, although the databases and the criteria used to identify the studies that constitute the final sample, utilized two of the most appropriate databases for research in the social sciences field (Scopus and Web of Science), further publications could have been identified if additional databases had been utilized. Concerning the criteria used, aiming to replicate Walker's (2013) literature review, publications were excluded if they were not in accordance with the strict criteria used by Walker to identify publications. It follows that the number of publications included in the final sample was adversely affected by such limitations. For these reasons, a possible useful step in further research is to replicate the present literature review by using additional databases along with less stringent criteria to understand whether, considering a sample with more empirical studies, the present results are corroborated or not and if additional features emerge.

Second, this paper analyzed the selected studies with other methods than the statistical method to compare and summarize the results of the analyzed publications, as conducted by Walker (2013). This choice was made during the planning of the literature review due to the small number of papers identified. In this way,

it was possible to include studies both with statistical less significant as well significant results. An important detail to stress is that, on the basis of the criteria used to identify the publications, the final sample is composed of empirical works that display statistically proven results. Therefore, the studies that used qualitative data and case studies were not included similarly to Walker's (2013) review. Future reviews could also include more studies, for example, studies that utilize qualitative data and case studies.

Pre- and Post- Reform Strategic Stances in Italian Higher Education Institutions

Abstract

Consistent with the New Public Management (NPM)'s doctrines, public organizations currently operate paying increasing attention to their performance achievements. Emphasis on performance has a big influence on the public sector worldwide, and Italy is not an exception. In the last twenty years, the Italian public sector higher education system has been subjected to several laws that completely reshaped the environment in which higher education institutions (HEIs) operate. Therefore, HEIs have had a need to implement a strategic reorientation to achieve an alignment between their strategic stance and the new emerging environment. Maintaining the same strategic stance could indeed lead to a misalignment with the external environment and, consequently, a reduction in their own performance. The present work, using Miles and Snow's (1978) framework, examines whether the HEIs have carried out a process of strategic reorientation in order to adapt their strategic stance to the new emerging higher education system. Results show that a process of strategic reorientation has been conducted in the Italian public higher education system. Nevertheless, in contrast to Miles and Snow's proposition, the process of strategic reorientation led many HEIs to avoid adopting the prospector strategic stance in favor of the reactor or defender stances.

Keywords: strategic management, strategic stance, public sector, new public management, higher education institutions

Introduction

Strategic management is a fundamental topic in the field of public management theory; it has been defined as "the broader process of managing an organization in a strategic manner on a continuing basis" (Poister, Pitts, & Edwards, 2010, p. 524). While strategic management has been intensely studied in the private sector, only at a later time did it begin being investigated in the public sector.

At first, strategic management scholars paid less attention to the public sector because the "traditional" public sector did not entirely fit with strategic management. Strategic management "presupposes that senior managers have autonomy enough to engage in decision making for the future" (Lane & Wallis, 2009, p. 102). In the "traditional" public sector, "public organizations are controlled by higher levels of political authority, giving managers limited discretion to manage" (Andrews et al., 2011, p. 48). It follows that "traditional" public agency did not have a suitable degree of autonomy required by strategic management.

After the many New Public Management (NPM) reforms, the "new" public sector became more suitable for strategic management. In particular, public organizations have now the appropriate degree of autonomy, which allows them to adopt the strategic stance they deem most appropriate (Andrews et al., 2011; Lane & Wallis, 2009). As a result, different frameworks, previously developed and adopted to analyze the strategies most often within the private sector, have been translated to the public sector. Among them, one of the most applied frameworks is the one from Miles and Snow (1978).

Miles and Snow (1978) developed an extensive framework that clusters the different organizational strategy-structure relationships into four different archetypes, that is, defender, prospector, analyzer, and reactor. These archetypes have been employed in studies of strategic management in the public sector to cluster the different strategic approaches and stances that public sector organizations adopt. Specifically, strategic stance describes "the broad way an organization seeks to maintain or improve its performance" (G. A. Boyne & Walker, 2004, p. 232) and is useful in understanding organizations' strategic behavior. In brief, Miles and

Snow's (1978) framework has been used to identify the different strategic stances adopted by public organizations in decision-making processes.

Moreover, Miles and Snow (1978) argued that, to be efficient and effective, organizations must align their strategic stance with the features of the external environment. Similarly, such an assumption is emphasized by other scholars (Andrews et al., 2011; Naranjo-Gil, 2015; Naranjo-Gil et al., 2008), suggesting that, whenever the case, organizations must carry out a strategic reorientation to avoid misalignment with the environment that could compromise their efficiency and effectiveness. Thus, the Miles and Snow's (1978) framework is largely the application of contingency theory, and to some extent new institutional theory, from organization theory to the strategic management field.

The present paper adopts Miles and Snow's (1978) framework to investigate the possible influence of public reforms on the strategic stances adopted by public sector organizations. In particular, it aims to understand whether the strategic stances of Italian higher education institutions (HEIs) have changed as a consequence of the reforms issued in recent years, and, if so, how. For these aims, the paper analyzes the effects of Gelmini's reform, which has profoundly influenced the Italian higher education system. In particular, this paper analyses how the Italian public HEIs have adapted to the new environment by their strategic stances. The next section deals with Miles and Snow's (1978) framework. Succeeding sections describe the context of the analysis, develop the hypotheses on how the environment can influence the strategic stance adopted, explain the research methods, discuss the results of the analysis, and explore the implications of the findings.

The Miles and Snow framework

In 1978, Miles and Snow (1978) developed an extensive theoretical framework based on empirical studies that they conducted in four different industries in the USA, that is, health care, college textbook publishing, electronics processing, and food processing, as well as previous theoretical contributions. The framework emphasizes three different organizational problems to be solved simultaneously and coherently to help an organization align with the environment to be efficient and effective. First, *the entrepreneurial problem*, i.e., the choice related to product-market domain; second, *the engineering problem*, i.e., the choice of technologies for productions and distributions; third, *the administrative problem*, i.e., the choice correlated to structure and processes to adopt. Such organizational issues derive from the simplified decomposition of the so-called adaptive cycle. The adaptive cycle could be conceptualized as a complex and ongoing process that allows organizations to maintain "an effective alignment with the environment while effectively managing the internal interdependences" (Miles & Snow, 1978, p. 3).

To face the above mentioned organizational problems, organizations define their strategy-structure relationship (Miles & Snow, 1978; Miles et al., 1978). Miles et al. assert that, even though the range of strategy-structure relationships is potentially vast, they can be clustered into the four organizational archetypes of defender, prospector, analyzer, and reactor (Miles & Snow, 1978; Miles et al., 1978). *Defenders* are organizations that "have narrow product-market domains, and [...] are highly expert in their organization's limited area of operation but do not tend to search outside of their domains for new opportunities" (Miles & Snow, 1978, p. 29). As a result, defenders "seldom need to make major adjustments in their technology, structure, or methods of operation, [...] they devote primary attention to improving the efficiency of their existing operations" (Miles & Snow, 1978, p. 29). *Prospectors* are organizations that "almost continually search for market opportunities, and they regularly experiment with potential responses to the emerging environmental trends, and [...] often are the creators of change and uncertainty, to which their competitors must respond" (Miles & Snow, 1978, p. 29). *Analyzers* are organizations that "operate in two types of product-market domains, one relatively stable, the other changing. In their stable areas, these organizations operate routinely and efficiently through use of formalized structures and processes. In their more turbulent areas, top managers watch their competitors closely for new ideas, and then rapidly adopt

those which appear to be the most promising” (Miles & Snow, 1978, p. 29). *Reactors* are organizations that “frequently perceive change and uncertainty occurring in their organizational environments but are unable to respond efficiently. Because this type of organization lacks a consistent strategy-structure relationship, it seldom makes adjustment of any sort until forced to do so by environmental pressures” (Miles & Snow, 1978, p. 29).

On the basis of the aforementioned definitions, it emerges that all but one archetype have a clear strategy to pursue, consisting of a clear pattern of behavior, whereas one applies adjustments only when forced to do so. Moreover, it is common to hypothesize that prospector and defender strategies would give a better fit and hence performance than the reactor stance (Miles & Snow, 1978; Miles et al., 1978), though there have been empirical cases to the contrary (Andrews et al., 2012, 2011; Jimenez, 2018).

As highlighted above, Miles and Snow’s (1978) framework helps identify the different strategic stances that public organizations adopt in decision-making processes. However, several empirical studies have used an adapted model of Miles and Snow’s framework (Andrews et al., 2008, 2005, 2006; Enticott & Walker, 2008; Jimenez, 2018; Meier et al., 2010). Such an adapted model stems from Boyne and Walker’s (2004) contribution. They claimed that the overall strategy is not composed of a simple, single strategy, but, rather, that it is a mix of different strategies. The conception that organizational strategy consists of one single strategy bears the need to classify the organizational strategy into four different types, namely, prospector, defender, analyzer, and reactor. Boyne and Walker (2004), rejecting the assertion that organizational strategies are mutually exclusive, affirmed that different strategies can be pursued at the same time. For example, the same public agency can simultaneously apply two different strategies – prospector and defender – in two separate public fields. It follows that the analyzer is a redundant category. For this reason, the analyzer archetype is often not present in empirical research.

The context of the analysis

The composition of the Italian public higher education system has not been subject to substantial changes in recent years. It is composed of 67 HEIs, that is, 61 university institutions (UIs) and 6 special institutes of higher education (SIHEs). SIHEs differ from UIs in terms of training provided because SIHEs provide mainly doctoral education. According to the National Agency for the Evaluation of Universities and Research Institutes (Agenzia Nazionale di Valutazione del sistema Universitario e della Ricerca, ANVUR), based on the number of enrolled students, HEIs could be clustered into the categories of big (more than 40.000 students), medium (between 40.000 and 15.000 students), and small (fewer than 15.000 students). The public Italian higher education system is composed of 11 big UIs, 25 medium UIs, and 31 small HEIs, that is, 25 UIs and 6 SIHEs.

About 32.000 full and associate professors are currently employed inside the Italian public higher education system. This number declined over the past decade. In fact, there has been a 6% reduction in the number of professors employed compared to 2009. Such a modification is the consequence of the limits imposed on turnover, which hindered the recruitment of professors in retirement cases (Marini, 2017).

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Professors (Full and Associate)	34.032	31.398	30.416	29.276	28.325	29.300	31.205	31.100	31.160	31.979

Table 1 Professor trend

Source: processing based on data provided by the Ministry of Education, University and Research

At present, the higher education system offers educational services for about 1,5 million students. This number has decreased in the last decade. Although the number of students has remained stable in recent years or has slightly increased on an annual basis, it is significantly reduced as compared to the number of enrolled students at the beginning of the decade, when it was over 1,6 million. In the academic year

2018/2019, there was a reduction of about 10% of enrolled students compared to the academic year 2010/2011. This decreasing trend of enrolled students could be partially related to demographic aspects. In fact, in recent years in Italy, there has been a demographic decline due to the consequent aging of the population, which negatively affects the number of enrolled students in the higher education system. The negative trend of enrolled students is associated with a pattern of opposite sign relating to the number of people who register for the first time in the higher education system, namely, new enrolments. Indeed, starting from the academic year 2015/2016, there has been a constant increase in new enrolments on an annual basis. In the academic year 2018/2019, more than 265.000 new enrolments were reported, recording an increase of about 7,7% compared to the academic year 2014/2015. The increasing trend of new enrolments could be the result of a series of policies aimed at increasing the number of new enrolments. In fact, because of the low percentage of new enrolments as well as enrolled students, various measures have been implemented, e.g., more financial resources to support enrolled students, which aim to encourage new enrolments.

	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019
New Enrolments	264.689	258.186	249.482	247.201	247.513	251.110	261.981	264.071	266.588
Enrolled Students	1.682.616	1.640.432	1.585.639	1.542.145	1.516.794	1.491.706	1.491.483	1.497.235	1.500.030

Table 2 - Enrolment and enrolled student trend 2010/2011 – 2018/2019

Source: processing based on data provided by the Ministry of Education, University and Research

Italian public higher education students are the recipients of the university educational supply, i.e., the degree courses offered by the Italian public higher education system. The size of the supply has varied considerably in recent years. Degree courses have decreased in the last decade. In fact, after a peak of almost 5500 courses in 2007, the number has reduced by about 24%. This reduction resulted from an adaptation of the educational supply to the government guidelines. In fact, following a constant increase in the educational supply that culminated in the peak of 2007, the Italian government issued guidelines, i.e., government guidelines for university published 6 November 2008, that aimed to contain as well as reduce the educational supply.

	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019
Degree Courses	5453	5249	4948	4742	4481	4376	4002	3953	3975	3998	4064	4143

Table 3 - Degree course trend 2007/2008 – 2018/2019

Source: processing based on data provided by the Ministry of Education, University and Research

The Italian public higher education system is financed mainly by state public funding. In particular, the ordinary financing fund (Fondo di Finanziamento Ordinario, FFO), established by Law 537 of 1993, represents the principal source of funding for HEIs. Through the FFO analysis, it is possible to identify the financial resources that the State allocates annually for the higher education system as well as to understand, based on the FFO trend, the investment policies related to it. From an analysis of the FFO, it emerges that the average annual financial resources that the State invested in the higher education system amounted to approximately € 7 billion in the last decade. Focusing on the FFO trend, the overall result is that the investments that the State made on an annual basis decreased in the previous ten years, that is, there was an average annual reduction of about 7%. In fact, although there have been increasing or decreasing fluctuations on a yearly basis, in the last decade, an investment level of 7,5 billion, as recorded in 2009, has never been reached.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ordinary Financing Fund (FFO)	7.513,1	6.681,3	6.919,1	6.997,1	6.697,7	7.011,4	6.913,4	6.957,5	7.024,3	7.318,5	7.450,8

Table 4 - Ordinary financing fund trend 2009 – 2019 (€ million)

Source: Italian Parliament

In the last twenty years, Italian public HEIs have been subject to different reforms and laws aimed explicitly at increasing the quality, efficiency, and effectiveness of teaching and research, as well as improving the overall organizational effectiveness and efficiency (Capano, Regini, & Turri, 2017; Donina et al., 2015; Vesperini, 2009). In 2010, Law 240, known as Gelmini’s reform, reorganized the entire Italian public higher education system.

Gelmini’s reform brought about a radical change in the financing system of HEIs, making it more dynamic and volatile (Banfi & Viesti, 2016). The main differences dealt with the criteria used to distribute financial resources. First, Gelmini’s reform, through the standard cost per student, aimed to connect financial resources to the number of enrolled students who are on schedule with their student careers. Second, Gelmini’s reform connected funds to the organizational performance of HEIs.

Through the introduction of the standard cost per student who is on schedule with their career, Gelmini’s reform intends to overcome the criterion of historical quota (*quota storica*) which has been used to allocate financial resources unrelated to performance among public HEIs. The historical quota criterion establishes that HEIs receive financial resources based on funding obtained in previous years. The standard cost per student who is on schedule with their career is applied to estimate, in percentage terms, the cost incurred by each HEI compared to the total cost relating to students who are on schedule with their careers enrolled in the Italian higher education system. Based on it, the financial resources of the FFO do not associate with the HEI performance are allocated among the different HEIs. In other words, the standard cost per student who is on schedule with their career aims to allocate financial resources to each HEI based on the number of its enrolled students who are not delayed with their student careers. It is important to emphasize that providing financial resources only for the students who are on schedule with their student career means that financing system funds only for a portion of the total enrolled students. It follows that the public HEIs receive no financial resources for the students in delay, which implies, on the one hand, the need for a greater rationalization of the use of resources, on the other hand, the necessity of finding mechanisms by which to avoid delays in student careers. Recently, Decree 585/18 partially mitigates this severe financial effect on HEIs, establishing funding for students less than one year late in their careers.

Gelmini’s reform reinforced the principle expressed by Law 43 of 2005, reaffirmed by Law 1 of 2009, concerning the distribution of the financial resources of the FFO based on outcomes/outputs achieved by the single HEI concerning quality, efficiency, and efficacy. Law 43 of 2005 established that the Ministry must perform evaluations of the three-year planning of the single HEI which must be taken into account during the allocation of FFO. Subsequently, Law 1 of 2009 reaffirmed and specified the concept previously expressed by Law 43 of 2005. It establishes that since 2009, a part of FFO – at least 7% – must be issued taking into consideration: the quality of the educational services; the quality of the results of educational processes; the quality of scientific research; and the quality, efficiency, and effectiveness of the HEI location. Through Law 43 of 2005 and Law 1 of 2009, financial resources were linked to outcomes/outputs achieved by the HEI, with a sort of performance-based budgeting (Vesperini, 2009). Before Gelmini’s reform, the public financial resources allocated to Italian HEIs were mainly shared among the different institutions based upon past funding, whereas only a small percentage of total financial resources depended on performance. After Gelmini’s reform, the financing system of the Italian public HEI has been increasingly decoupled from the

past funding of the HEI and, instead, increasingly linked to performance in research and teaching. In particular, Gelmini’s reform establishes that, through a gradual process, the percentage of financial resources, compared to the total public financial resources allocated to Italian public HEIs, received by each HEI based on historical criteria is decreasing to increase the percentage of financial resources assigned in accordance with performance criteria. The reform affirms that such resources must increase each year between 0,5% and 2%. Table 5 depicts the increase in recent years.

Year	% State Funding (FFO) related to performance
2009	about 7%
2010	about 10%
2011	12%
2012	13%
2013	13,5%
2014	about 18%
2015	about 20%
2016	about 20%
2017	about 22%
2018	about 24%
2019	about 26%

Table 5 - Evolution of the ordinary financing fund's percentage related to performance

Source: processing based on data provided by the Ministry of Education, University and Research

Gelmini’s reform also provided an impetus to renovate the quality assurance system in the Italian higher education system (Agasisti et al., 2019). Reform established that it was necessary to create a quality assurance system that aimed to improve and guarantee the quality of the overall Italian higher education system.

The quality assurance system is based on two different typologies of criteria, that is, ex-ante criteria and ex-post criteria. Ex-ante criteria aim to guarantee that each Italian HEI reaches adequate standards related to didactics, structure, organization, lecturer qualification, research, and financial-economic sustainability. Ex-post criteria verify the results that each single institution achieves in research and teaching.

To comply with the requests highlighted by Gelmini’s reform, a quality assurance system was developed – the self-assessment-evaluation-accreditation system (sistema di Autovalutazione – Valutazione periodica – Accreditamento – AVA) – which is based on self-evaluation, periodic evaluation, and HEI system accreditation. This system is articulated at three different levels: first, a self-evaluation system implemented by each institution, that is, an internal evaluation system; second, a national evaluation system, that is, an external evaluation system; and third, a system of initial and periodic accreditation of the institution and courses of study of the individual HEI. The AVA quality assurance system aims to achieve the following objectives: provide Italian public HEIs with a quality assurance model that addresses the behavior of academics; provide useful information to the single institution to establish its strategies; provide comparative information to the single HEI to promote improvements; provide information to Ministry of Education, University and Research (Ministero dell’Istruzione, dell’Università e della Ricerca, MIUR) to establish the planning of the higher education system and the allocation of financial resources among Italian public HEIs; and provide information to the external environment related to the Italian public higher education system. The task of making the AVA system operational has been delegated to the National Agency of Evaluation of the University System and Research (ANVUR).

The ANVUR, in compliance with the Decree of the President of the Republic 760 of 2010, also evaluates the quality of research (Valutazione della Qualità della Ricerca, VQR). This activity provides an up-to-date picture of the quality of research in the various scientific areas, according to which improvements are set up within

the assessed institution. In accordance with Law 232 of 2016, the evaluation of activity is carried out every five years.

The evaluation of quality research heavily influences Italian public HEIs inasmuch as the evaluation results are used to allocate a portion of the incentive share of the FFO that, as mentioned, will increase until the 30% of FFO.

In brief, it emerges that in recent years a big step forward has been made in the field of quality assurance related to the Italian higher education system. In particular, the institution of ANVUR, and its associated functions, together with the performance-based budget linked to the quality of the Italian higher education system, have renewed the quality assurance system.

In sum, in light of the different laws that have been issued in the last twenty years, the Italian higher education system has profoundly changed. In particular, the most relevant changes are related to:

- *Financing system of Italian higher education system:* There has been a radical change from a system of financing based on historical cost, which paid little attention to performance, to a financing system in which the issue of financial resources is strongly influenced by performance. Today, the prize share is almost 30% of state public funds; this does not mean that there are more resources available for HEIs but, rather, that the existing resources will be allocated in a competitive manner, thereby stimulating competition among HEIs;
- *Evaluation system of the Italian higher education system:* The performance evaluation system has been redesigned in terms of both bodies and procedures. The ANVUR has replaced the two previous evaluation bodies, CNSVU and CIVR, and the number of evaluations has increased. Nowadays, there is a quality assurance system (AVA) that did not exist before Gelmini's reform, and the activity of evaluation of the quality of research is run systematically every five years.

Overall, it emerges that Italian public HEIs currently operate in a more competitive environment. This new environment pushes them towards more strategic behavior and a stronger performance orientation as a means of improving their efficiency, effectiveness, and quality so as to increase, or at least to not reduce, the public financial resources they expect to receive.

Strategic stance: Hypotheses development

The laws issued in the last twenty years have entirely renewed the environment in which HEIs operate, introducing a higher degree of competition that should stimulate HEIs to pursue strategic reorientation. All organizations must align their strategic stances with the external environment (Andrews et al., 2011; Miles & Snow, 1978; Naranjo-Gil, 2015; Naranjo-Gil et al., 2008) and HEIs are no exception. As highlighted by Miles and Snow (1978), organizations, through the adaptive cycle, define their own strategic stance that allows them to effectively align with the external environment. A new and changing environment encourages organizations to reconsider their strategic stances to avoid misalignment with that environment. To maintain the same strategic stance in the changing HEI environment could indeed compromise the HEI performance inasmuch as there would be a misalignment between the strategic stance and the external environment. It follows that a strategic reorientation is expected of many of the HEIs.

Hypothesis 1: After the recent regulations, HEIs carry out a process of strategic reorientation.

In terms of trying to understand how HEIs would likely reorient their strategic stance, Miles and Snow's (1978) framework may provide some suggestions, as it argues that organizational strategic stances must be aligned with the features of the external environment. As mentioned, the defender strategic stance focuses mainly

on internal processes to maximize efficiency. Therefore, it seems particularly suitable for a stable environment, i.e., one characterized by small and predictable changes. On the other hand, it does not fit in a turbulent environment, where changes are frequent and unpredictable. By contrast, the prospector strategic stance concentrates principally on scanning the external environment to exploit new opportunities and promptly face threats. Therefore, it is more suitable for a turbulent environment than for a stable one. Finally, the reactor strategic stance, due to the lack of a clear strategy, is traditionally not related to a specific condition in the external context. As a consequence, HEIs are supposed to adopt a prospector strategic stance.

Hypothesis 2A: After the recent regulations, HEIs tend to adopt the prospector strategic stance.

Note, however, that if higher education policies or technologies are in flux or uncertain, then also a reactor stance could be a rational alignment. Besides, as pointed out by Andrews et al. (2011), the reactor strategic stance may be proper in the case of the highly regulated public sector where the continuous regulatory interventions may have favored the adoption of the reactor strategic stance. In fact, on the one hand, the process of constant normative interventions has made the Italian public higher education system uncertain and continually changing; on the other, intending to increase the quality, efficiency, and effectiveness of the higher education system, the regulatory interventions partially sacrificed the degree of autonomy of HEIs, that is, increased the level of regulation of the Italian higher education system. Consequently, HEIs are supposed to adopt the reactor strategic stance.

Hypothesis 2B: After the recent regulations, HEIs tend to adopt the reactor strategic stance.

It is important to underline that the hypotheses 2A and 2B represent two different alternatives, that is, the occurrence of one hypothesis implicates the unacceptability of the other one.

Research Methods

Research Design

To determine whether HEIs carried out a process of strategic reorientation and, if so, what sort of strategic reorientation they engaged in, survey data relating to the adopted strategic stances were collected. Adopted strategic stances were gathered with reference to two different years, i.e., 2014 and 2019, which are, respectively, the periods of the beginning and full implementation of Gelmini's reform. In particular, adopting a research approach already used in the literature (Abernethy & Brownell, 1999; Naranjo-Gil et al., 2008), respondents provided their perceptions about the strategic stances of their HEIs in 2014 and 2019. Subsequently, perceptions about strategic stance were employed in quantitative analysis, namely, an exploratory factor analysis, to determine the different strategic stances present in the Italian higher education system in the two considered years.

The aspects relating to data collection, data, and the results derived from the analyses are reported in more detail below.

Strategic Stance

A survey was carried out to identify the strategic stance adopted by the single HEI. This survey was addressed to respondents involved, either directly or indirectly, in the HEI's strategic decision-making process so as to obtain the fairest possible answers in relation to the strategic stance adopted by the single HEI. Specifically, members of the Academic Senate, the Deans of Department, the Deans of Faculty, and members of the Board of Directors of the HEI were contacted, in total 2725 individuals. All sixty-seven HEIs, which compose the Italian public higher education system, were engaged in the survey. After the first contact, to increase the answer rate, four monthly reminders were sent. Overall, two hundred and twenty-five replies were collected from fifty-six different HEIs, resulting in a response rate of 8%. In particular, seventy responses were received

at the Senate level, one hundred and eleven at the Departmental one, twenty-seven at the Board of Directors level, and seventeen at the Faculty level. The appendix reports, for the HEIs that participated in the survey, the data concerning the degree of participation.

The survey used a questionnaire composed of a set of items so as to identify the strategic stance adopted by the single HEI, in alignment with previous empirical research (Andrews et al., 2008, 2009b, 2009a; Jimenez, 2018; Johnsen, 2016; Pasha et al., 2018). Based on the theoretical complexity pertinent to the strategic stance, as highlighted by Johnsen (2016), it was decided to use a set of items already employed in a previous work, in order to use a set of previously validated items. In particular, the set of items used by Andrews et al. (2009) has been adapted to the Italian public higher education system.

The set of items is composed of eleven different items. They are related to the three different archetypes from Miles and Snow (1978), that is, defender, prospector, and reactor. As highlighted previously, each archetype is characterized by a different underlying strategic alignment. Specifically, five different items are related to the reactor archetype, whereas three different items are linked to each of the remaining (i.e., defender and prospector) archetypes.

Below, Table 6 shows the eleven items included in the questionnaire.

Defender

The university seeks to keep its own institutional priorities stable over time
 Efficiency is the fundamental aspect of the overall university strategy
 Focusing on its core activities is a key aspect of the overall university strategy

Prospector

The university continually redefines its own institutional priorities
 The university tries to be the first to identify new university services (e.g., new masters for graduate students), as well as new ways of delivering them (e.g., e-learning course)
 The research for new opportunities (e.g., collaborations with the business world) is the main aspect of its overall strategy

Reactor

The university does not constantly implement a process of adaptation to external pressures
 The university does not have defined institutional priorities
 The university makes changes only when required by external agencies
 The university pays little attention to potential new opportunities
 The university explores new opportunities exclusively when required by external agencies

*Table 6 – Items related to Miles and Snow’s strategy archetype
 Source: our elaboration on Andrews et al.’s (2009b) items*

Respondents provided their own opinions about the strategic stance adopted by their HEIs in the two years considered. In particular, they expressed a judgment on a Likert scale that varied from strongly disagree (1) to strongly agree (7) with the items included in the questionnaire.

The appendix reports the descriptive statistics relating to the answers that the respondents provided.

Results

All the individual responses were analyzed using exploratory factor analysis. The exploratory factor analysis was used to underline the different strategic stances adopted inside the Italian public higher education system in the two years considered, namely, 2014 and 2019.

The results of the exploratory factor analyses are reported in Tables 7 and 8.

Table 7 reports the results of the exploratory factor analysis related to 2014. An initial exploratory factor analysis revealed three different factors. The third factor exhibited a Cronbach’s alpha coefficient of internal

consistency¹ equal to 0.460, that is, unacceptable (Mallery & George, 2003). Therefore, the items correlated with the third factor were deleted and the analysis was rerun without them (Hair, Black, Babin, & Anderson, 2019). The third factor was correlated with two different items, namely, “The university seeks to keep its own institutional priorities stable over time” and “Focusing on its core activities is a key aspect of the overall university strategy”.

Once the exploratory factor analysis was rerun, two different factors emerged. These factors accounted for about 63% of the total variance, which can be considered a satisfactory result (Hair et al., 2019). The Cronbach’s alpha coefficients related to factor 1 and factor 2 – respectively, .865 and .704 – are satisfactory (Mallery & George, 2003). The factor loadings are all above 0.5, indicating that they must be considered significant (Hair et al., 2019).

Factors 1 and 2 represent the adopted strategic stances among Italian public HEIs. The former is correlated with all reactor items. The latter is correlated with all prospector items and with a defender item; it means that factor 2 represents mainly the prospector strategic stance, although with a focus on efficiency. Overall, two different underlying strategic stances were present amongst Italian public HEIs in 2014, that is, reactor and prospector.

	Factor	
	1	2
The university explores new opportunities exclusively when required by external agencies	.838	
The university makes changes only when required by external agencies	.838	
The university does not have defined institutional priorities	.798	
The university pays little attention to potential new opportunities	.794	
The university does not constantly implement a process of adaptation to external pressures	.587	
The university continually redefines its own institutional priorities		.776
The research for new opportunities (e.g., collaborations with the business world) is the main aspect of its overall strategy		.661
The university tries to be the first to identify new university services (e.g., new masters for graduate students), as well as new ways of delivering them (e.g., e-learning course)		.633
Efficiency is the fundamental aspect of the overall university strategy		.624
Cronbach’s alpha	.865	.704

Table 7 - Factor analysis, dataset 2014

Source: our elaboration

Table 8 depicts the exploratory factor analysis results related to 2019. These results derive from the reiterated implementation of the exploratory factor analysis. A first exploratory factor analysis emphasized that three different items, that is, “The university does not have defined institutional priorities”, “The university does not constantly implement a process of adaptation to external pressures”, and “The research for new opportunities (e.g., collaborations with the business world) is the main aspect of its overall strategy”, showed a communality² value lower than 0.50, namely, lower than the minimum suggested value (Hair et al., 2019). Based on the communality value, it was necessary to discard the items and rerun the exploratory factor analysis without considering them (Hair et al., 2019).

A subsequent factor analysis, performed after removal of the above-highlighted items, stressed three different factors. The third factor was correlated with only one item, namely, “The university continually redefines its own institutional priorities”. Based on the purpose of exploratory factor analysis, “to summarize

¹ The Cronbach’s alpha coefficient of internal consistency assesses the reliability of factors. It is based on the average inter-item correlation between the variable which make up a factor.

² It represents the amount of variance accounted by the factor solution for each variable.

the information contained in a number of original variables into a smaller set of new, composite dimensions or variates (factors), [...] that is, to search for and define the fundamental constructs or dimensions assumed to underline the original variable” (Hair et al., 2019, p. 127), it was decided to rerun the analysis without accounting for the third factor.

Table 8 shows the solution of the exploratory factor analysis correlated to the collected data for 2019 through the survey, that is, two different factors. The factors account for about 68% of the total variance, namely, an acceptable value (Hair et al., 2019). The Cronbach’s alpha coefficients related to factor 1 and factor 2 – respectively, .855 and .745 – are satisfactory (Mallery & George, 2003). The factor loadings are all above 0.45, indicating that they must be considered significant (Hair et al., 2019).

The two different factors represent the different adopted strategic stances inside the Italian public higher education system. Factor 1 is correlated with all the items related to the strategic stance of reactor. Factor 2 is correlated with all the items related to defender and with a prospector item; it means that factor 2 represents mainly the defender strategic stance. This is also confirmed by the value of factor loading related to prospector item inasmuch is the lowest.

Altogether, two different strategic stances were present in the Italian public higher education system also in 2019, this time, reactor and defender.

	Factor	
	1	2
The university explores new opportunities exclusively when required by external agencies	.931	
The university makes changes only when required by external agencies	.909	
The university pays little attention to potential new opportunities	.792	
Focusing on its core activities is a key aspect of the overall university strategy		.826
The university seeks to keep its own institutional priorities stable over time		.821
Efficiency is the fundamental aspect of the overall university strategy		.748
The university tries to be the first to identify new university services (e.g., new masters for graduate students), as well as new ways of delivering them (e.g., e-learning course)		.460
Cronbach’S ALPHA	.855	.745

Table 8 – Factor analysis, dataset 2019

Source: our elaboration

In comparing the results stemming from the exploratory factor analyses, it emerges that the adopted strategic stances inside the Italian higher education system varied in the two considered years.

Discussion and conclusion

The exploratory factor analyses emphasize that the three hypotheses are partially corroborated in the Italian public higher education system.

As regards the process of strategic reorientation, the exploratory factor analyses underline the fact that the strategic stances adopted in the Italian public higher education system have changed over the years considered. Two different strategic stances are observed in each year. Prospector and reactor types are identified in 2014 while defender and reactor types are detected in 2019. In analyzing the results conjointly, it emerges that different deliberative strategic stances, which are the prospector and defender types, are present in the two years considered along with an often-presumed non-deliberative strategic stance, namely, the reactor type, which is present in both considered years. This new configuration of the strategic stance assumed by the HEIs stems from the fact that, as evidenced by most of the HEIs that responded to the survey, recent regulations have influenced their strategic stance, leading them to implement a strategic reorientation process. It follows that, overall, H1, namely, that after the recent regulations, HEIs carry out a process of strategic reorientation, is corroborated.

Regarding the strategic stance adopted by HEIs following the recent regulations, it emerges that the two hypotheses highlighted above are partially confirmed. Hypothesis 2A, i.e., that after the recent regulations, HEIs tend to adopt the prospector stance, is not corroborated. The process of strategic reorientation led HEIs to avoid adopting the prospector stance in favour of the reactor or defender stances. Hypothesis 2B, i.e., that after recent regulations, HEIs tend to adopt the reactor strategic stance, is partially confirmed. In fact, although after the recent regulations the strategic stance of the reactor is still detected within the Italian public higher education system, it is not the only one identified. Together with the strategic stance of the reactor, the strategic stance of the defender is detected for the first time.

In sum, from the empirical analysis it emerges that HEIs, following the recent regulations, have carried out a process of strategic reorientation which has led to the confirmation of the reactor strategic stance and, for the first time, the emergence of the defender strategic stance to the detriment of the prospector one.

Such an alignment of not adopting the prospector strategic stance could be motivated by several factors, one of which may be Gelmini's recent reform and the related regulations that profoundly influence the Italian public higher education system. Specifically, the relationship between the State and Italian public HEIs and the degree of autonomy of Italian public HEIs have been reshaped. Also, the financing system of the Italian public higher education system has been modified.

Concerning the degree of autonomy of Italian public HEIs, as evidenced by several scholars (Capano et al., 2017; Donina et al., 2015), Gelmini's reform and the related regulations, in order to prioritize the quality, efficiency, and effectiveness of the Italian public higher education system, partially sacrificed the recently awarded autonomy, that is, they partially sacrificed the principle of "steering at a distance", prioritized by Laws 168 of 1989, 537 of 1993, 127 of 1997, and 43 of 2005. Accordingly, Italian public HEIs are inclined to adopt a reactor or defender type instead of a prospector one, inasmuch as the underlying logic of the prospector type is not adequate in the reshaped relationship.

Also, the financing system has radically changed. The current financing system of Italian public HEIs establishes that an important share of financial resources allocated among Italian public HEIs (FFO), 26%, is issued based on performance. It follows that Italian public HEIs that do not achieve good performance are penalized in the form of reduced financial resources. In particular, the underperforming Italian public HEIs lose financial resources, which are redistributed among better-performing HEIs. The current financing system, therefore, creates a competitive environment for Italian public HEIs that struggle to achieve adequate performance in order to avoid losing financial resources in favor of other institutions.

Due to the focus on quality, efficiency, and effectiveness that has been introduced by recent reforms, Italian public HEIs are encouraged to adopt strategies that principally focus on these aspects and neglect strategies that, while potentially addressing other important issues like innovation, can negatively affect aspects considered most relevant by recent reforms. In other words, Italian public HEIs become risk-averse, that is, they focus on performance dimensions that are privileged by recent regulations and do not pay attention to other dimensions. For instance, with regards to research activity, Italian public HEIs are prone to carry out research activities that comply with criteria established by the legislation, regardless of the impact of research activities. As highlighted above, the ANVUR is the agency that evaluates the quality of research. In order to carry out this evaluation activity, the ANVUR analyzes the products of research that result in publications and neglects not-published products. It follows that the Italian public HEIs are inclined to perform mainstream research and avoid frontier research. The attitude of being risk-averse is created by an absorption of additional financial resources and leads to the potential loss of financial resources as they are not considered in the performance assessment.

From another point of view, the current financing system of Italian public HEIs, along with the focus on quality, efficiency, and effectiveness, de-incentivizes the adoption of the prospector strategic stance. With

this in mind, a point of reflection for policymakers emerges. In particular, policymakers should reflect on the consequences stemming from the current Italian legislation system, that is, the current system does not encourage the adoption of a prospector strategic stance. Whereas the current system supports the adoption of defender strategic stance or reactor strategic stance. In fact, if on the one hand the recent reforms and laws rightly push towards an increase in quality, efficiency, and effectiveness, which are motivated by the decreased financial resources, on the other hand, pursuing only these objectives with these reforms could cause damage to the Italian public higher education system because limited attention is paid to the new opportunities present in the reference environment. It follows that policymakers should design legislation for the Italian public higher education system that encourages the adoption of prospector strategic stance.

This research, of course, shows several limitations. First, the use of a survey to detect the different stances. Such a method relies on various respondents' perceptions, which might be different from what has been implemented by HEIs. The survey was addressed to individuals directly involved in HEI's strategic decision-making processes to mitigate such issues. Furthermore, to understand the participants' full awareness of strategic reorientation, the open questions included in the survey have been used to better comprehend the respondents' knowledge level. Those showing inadequate knowledge of their HEI's strategic stances were excluded from the analysis. Secondly, despite numerous reminders aimed at increasing the response rate, we received 225 usable responses on 2725, with an 8 % total response rate. Although the sample shows no biases, such as a clear connection between each HEIs' response rate and its size or the prevalence of respondents belonging to a specific body, empirical data does not allow us to further investigate the sample's sub-samples and to obtain robust results.

Appendix

UNIVERSITY	ANSWERS	
	N	% on total contacted
"Aldo Moro" University of BARI	4	7%
University of BASILICATA	1	3%
University of BOLOGNA	8	8%
University of BRESCIA	3	8%
University of CAGLIARI	9	16%
University of CALABRIA	1	3%
University of CAMERINO	4	13%
University of CASSINO and SOUTHERN LAZIO	1	3%
University of CATANIA	4	6%
"G. d'Annunzio" University of CHIETI-PESCARA	1	2%
University of FERRARA	2	4%
University of FLORENCE	6	7%
University of FOGGIA	3	8%
University of GENOA	5	6%
University of INSUBRIA VARESE-COMO	3	8%
University of MACERATA	4	10%
University of MESSINA	2	4%
University of MILAN	9	9%
University of MILAN-BICOCCA	5	10%
Polytechnic Institute of MILAN	4	8%
University of MODENA and REGGIO EMILIA	6	11%
University of MOLISE	4	14%
"Federico II" University of NAPLES	9	11%
"Luigi Vanvitelli" University of CAMPANIA	1	2%
"Parthenope" University of NAPLES	6	18%
"L'Orientale" University of NAPLES	1	4%
University of PADUA	6	6%
University of PALERMO	1	2%
University of PARMA	6	15%
University of PAVIA	10	15%
University of PIEMONTE ORIENTALE EASTERN PIEDMONT	4	10%
University of PISA	3	4%
Polytechnic University of MARCHE	5	11%
"Mediterranea" University of REGGIO CALABRIA	1	4%
"La Sapienza" University of ROME	7	6%
"Tor Vergata" University ROME	3	6%
"ROMA TRE" University of ROME	4	8%
University of SALENTO	3	7%
University of SALERNO	2	4%
University SANNIO of BENEVENTO	2	9%
University of SASSARI	3	8%
University of SIENA	4	10%
University of TERAMO	4	12%
University of TURIN	15	16%
Polytechnic of TURIN	3	5%
University of TRENTO	3	8%
University of TRIESTE	5	11%
University of TUSCIA	1	3%
University of UDINE	3	8%
"Ca' Foscari" University of VENICE	3	7%
"IUAV" University of VENICE	2	11%
University of VERONA	7	12%
University of L'AQUILA	3	7%
"Carlo Bo" University of URBINO	2	4%
University for foreigners of SIENA	3	14%
University for foreigners of PERUGIA	1	3%

Table A.1 – HEI response rate

Source: our elaboration

Answer - N= the number of different respondents for each HEI

Answer - % = the percentage response rate for each HEI that is composed of the ratio between the number of respondents and the number of people appointed in the decision-making bodies

	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5	ITEM 6	ITEM 7	ITEM 8	ITEM 9	ITEM 10	ITEM 11
N Valid	225	225	225	225	225	225	225	225	225	225	225
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	5,46	3,88	5,21	3,12	4,21	3,39	4,04	5,13	3,94	3,63	3,91
Median	6	4	6	3	4	3	4	6	4	4	4
Std. Deviation	1,020	1,512	1,303	1,400	1,478	1,376	1,599	1,458	1,679	1,515	1,637
Range	6	6	6	6	6	6	6	6	6	6	6
Minimum	1	1	1	1	1	1	1	1	1	1	1
Maximum	7	7	7	7	7	7	7	7	7	7	7

Table A.2 - Descriptive Statistics 2014

Source: our elaboration

	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5	ITEM 6	ITEM 7	ITEM 8	ITEM 9	ITEM 10	ITEM 11
N Valid	225	225	225	225	225	225	225	225	225	225	225
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	5,47	4,79	5,92	3,83	5,21	4,18	4,73	5,82	3,28	2,93	3,31
Median	6	5	6	4	5,5	4,5	5	6	3	2	3
Std. Deviation	1,248	1,520	1,114	1,662	1,381	1,407	1,567	1,496	1,713	1,596	1,754
Range	6	6	6	6	6	6	6	5	6	6	6
Minimum	1	1	1	1	1	1	1	2	1	1	1
Maximum	7	7	7	7	7	7	7	7	7	7	7

Table A.3 - Descriptive Statistics 2019

Source: our elaboration

ITEM 1 = The university seeks to keep its own institutional priorities stable over time

ITEM 2 = Efficiency is the fundamental aspect of the overall university strategy

ITEM 3 = Focusing on its core activities is a key aspect of the overall university strategy

ITEM 4 =The university continually redefines its own institutional priorities

ITEM 5 =The university tries to be the first to identify new university services (e.g., new masters for graduate students), as well as new ways of delivering them (e.g., e-learning course)

ITEM 6 =The research for new opportunities (e.g., collaborations with the business world) is the main aspect of its overall strategy

ITEM 7 = The university does not constantly implement a process of adaptation to external pressures

ITEM 8 = The university does not have defined institutional priorities

ITEM 9 = The university makes changes only when required by external agencies

ITEM 10 = The university pays little attention to potential new opportunities

ITEM 11 = The university explores new opportunities exclusively when required by external agencies

Strategic content and Organizational Performance in Italian Public Universities

Abstract

Over the last twenty years, the Italian public university sector has been subjected to various laws that aimed to constitute a public university sector in which the performances achieved by the single university take on a central role. Using Miles and Snow's framework, this work aims to examine whether and how the strategic stance adopted by each university influences its performance. The results emphasize that the strategic stance adopted influences university performance. Nevertheless, contrary to Miles and Snow's assumption, such influence does not lead to a strategic hierarchy based on performance, but rather to more considerable variety in terms of performance by universities that adopt the prospector strategic stance.

Keywords: strategic management, strategic stance, public sector, new public management, higher education institutions, performance.

Introduction

Following the globally public reforms inspired by New Public Management theory (NPM), the attention to performance has been increasing considerably in the public sector as previously happened in the private one. Emphasis on performance influences all public sector worldwide (G. A. Boyne & Walker, 2010).

The public university system, that is, all public universities, is not immune to regulations inspired by the principles of NPM (Donina et al., 2015; Møller & Skedsmo, 2013); it follows that the focus on performance is also central to it. Indeed, different central governments often pay attention to the performance achieved by the single public university and increasingly use the information on performance to determinate the allocation of the financial resources among the different public universities (Layzell, 1999; Sörlin, 2007).

In order to achieve better performance, different approaches and tools have been implemented in the public context. Among these, a considerable attention has been paid to strategic management that could be defined as "the broader process of managing an organization in a strategic manner on a continuing basis" (Poister, Pitts, & Hamilton Edwards, 2010, p. 524).

The increasing relevance of strategic management in the public sector could be explained with the expected influence it could have on performance as it happens among private sector organizations (G. A. Boyne & Walker, 2010). Indeed "strategic management is an essential tool to lift levels of organizational performance" (G. A. Boyne & Walker, 2010, p. 191).

For this reason, one of the most promising lines of study of strategic management in the public sector aims at understanding whether and how strategic management, namely strategy content and strategy formulation, influences public organization performance (Andrews et al., 2008, 2009a; G. Boyne, 2001; G. A. Boyne & Walker, 2010; Hendrick, 2003; Hyndman & Eden, 2001; Johnsen, 2018; Joyce & Drumaux, 2014; Lee et al., 2018).

Private sector models have been used to pursue these aims. Among them, one of the most applied models is the Miles and Snow (1978)'s one.

Miles and Snow (1978) developed an extensive framework that clustered the different strategy-structure relationships in four organizations' archetypes: defender, prospector, analyzer, and reactor. Two central results stem from Miles and Snow (1978)'s work, specifically: first, organizational archetype influences the

organizational performance; second, defender, prospector, and analyzer are equal to perform well, and outperform reactor.

While in studies dealing with private sector organizations these two insights are generally corroborated, the public sector shows differences (Andrews et al., 2008, 2009b, 2006; Johnsen, 2018; Meier et al., 2010; Walker et al., 2010).

Based on these contradictory empirical results, further empirical research to understand whether and how strategic content influences organizational performance, and which strategic stance is more suited to the public sector, is needed. Moreover, since the majority of the existing empirical studies are conducted in the UK and USA, other contexts should be tested to understand commonalities and differences (Walker, 2013; Walker et al., 2010).

The present paper aims at two principal objectives. First, to increase empirical research about the relationship between strategic content and organizational performance in the public sector, and second, to test the Miles and Snow's model outside the UK context, namely in the Italian public university system.

Specifically, this work tries to identify whether there is a relationship between strategic stance and organizational performance in the Italian higher education system. Based on Miles and Snow's model, the strategic stance of the single university is analyzed in order to inspect the aforementioned relationship and understand if strategic content really influences organizational performance and which strategic stance is more adopted in the Italian higher education system.

Literature review

In 1978 Miles and Snow developed an extensive theoretical framework basing on studies conducted in four different industries (i.e., healthcare, college textbook publishing, electronics processing, and food processing) as well as previous theoretical contributions. The model stresses the organizational problems which must be resolved, simultaneously and in a consistent way, in order for an organization to be efficient and effective.

The organizational problems derive from the decomposition of a complex and ongoing process which allows organizations to manage internal interdependences while maintaining an effective alignment with the environment, that is, they stem from the so-called adaptive cycle (Miles & Snow, 1978).

Three different organizational problems descend from the adaptive cycle. First, the *entrepreneurial problem*, namely, what kind of strategy to adopt, second, the *engineering problem*, that is, what technology to use, and third, the *administrative problem*, i.e., what structure and process to adopt. Answering to the above mentioned problems, each organization defines its own strategy-structure relationship (Miles & Snow, 1978).

Miles and Snow (1978) assert that, although the range is potentially vast, strategy-structure relationships can be clustered in four organizations' archetypes named respectively defender, prospector, analyzer, and reactor.

Defenders are organizations which "are highly expert in their organization's limited area of operation but do not tend to search outside of their domains for new opportunities, and [...] they devote primary attention to improving the efficiency of their existing operations" (Miles & Snow, 1978, p. 29). Prospectors are organizations that "almost continually search for market opportunities, and they regularly experiment with potential response to emerging environmental trends" (Miles & Snow, 1978, p. 29). Analyzers are organizations which "operate in two types of product-market domains, one relatively stable, the other changing. In their stable areas, these organizations operate routinely and efficiently through use of formalized structure and processes. In their more turbulent areas, top managers watch their competitors closely for new ideas, and then they rapidly adopt those which appear to be the most promising" (Miles & Snow, 1978, p. 29). Reactors are organizations which do not have a clear strategy, and they rarely make

“adjustment of any sort until forced to do so by environmental pressures” (Miles & Snow, 1978, p. 29). In brief, three of the four archetypes have an unambiguous strategy, while one does not have an evident strategy and it makes adjustments only when forced.

Miles and Snow (1978)’s work brings out two central aspects. First, the organizational archetype influences the organizational performance, and second, prospector, analyzer, and defender are equal to perform well, and outperform reactor.

Regarding this second assertion, which is overall corroborated in several studies conducted in the private sector³ (Conant et al., 1990; Slater & Olson, 2001), it might not hold in the public one, due to its peculiarities (Andrews et al., 2006, 2011; G. A. Boyne & Walker, 2004). For instance, Andrews et al. (2011), which quoting Snow and Hrebiniak (1980), argue that the “study of four industries confirmed Miles and Snow’s primary hypothesis, except in the case of highly regulated industries where reactors outperformed prospectors and defenders. This finding may have implications for the relative effectiveness of different strategies in the public sector” (Andrews et al., 2011, p. 51).

Indeed, analyzing the public strategic management literature emerges that there is not an overall linear relationship between strategic content and performance, contrary to the private sector, and that different empirical works emphasize different relationships between strategic content and organizational performance (Andrews et al., 2008, 2009b, 2005, 2006; Enticott & Walker, 2008; Johnsen, 2018; Kroll, 2015; Meier et al., 2008, 2010; Walker et al., 2010; Walker & Brewer, 2009).

Andrews et al. (2009b), investigating organizational performance in Welsh local government, confirm the relationship between strategy content and organizational performance highlighted by Miles and Snow (1978). In particular, they claim that prospector and defender are associated with higher levels of performance, and that prospector and defender outperform reactor.

A similar conclusion has been identified by Andrews et al. (2006), Andrews et al. (2005), and Walker and Brewer (2009). Specifically, they find that prospector outperforms reactor, but unlike Andrews et al. (2009b), they underline that defender does not influence, neither negatively nor positively, the organizational performance. In short, according to them, prospector is the best strategy to adopt, while reactor is the worst one.

Walker et al. (2010), in accordance with the aforementioned works, claim that the best strategy to adopt is prospector. Nevertheless, they do not agree on the worst strategy to adopt. In particular, investigating the relationship between strategy, networking and service performance in English local governments, they find that defender is negatively associated with organizational performance, while reactor does not influence organizational performance. In other words, the worst strategy in the public sector is defender instead of reactor.

Andrews et al. (2008) and Enticott and Walker (2008) come to a similar conclusion to Walker et al. (2010). In their works they underline that the best strategy to adopt is prospector, but they do not find the worst strategy. Indeed, it stems from their empirical research that reactor and defender are irrelevant for organizational performance. In short, according to them public organizations should behave as prospector.

Empirical results as opposed to what has just been said derive from the research of Johnsen (2018) and Kroll (2015). They both stress that strategy content, considered individually, is not able to influence, neither positively nor negatively, the organizational performance. In other words, they assert that strategic content influences organizational performance only if considered in a systematic view, that is, along with the other organizational processes (e.g. strategy formulation process).

³ It is appropriate to stress that some studies are conflicting with Miles and Snow’s assumption, for instance see Hambrick(1983).

In contrast with the above mentioned researches, Meier et al. (2008) find an ambiguous relationship between strategy content and organizational performance. Indeed, on the basis of different indicators used to evaluate organizational performance, they stress out that the defender would be the most suited in case of performance related to core task, whereas the prospector would allow to achieve better performance related to the exploitation of new opportunities or introduction of innovation. It derives that strategy content would be based on organizational performance outcomes that public agency intends to pursue. In other words, they underline that there is contingency between strategy and performance, namely, it is not possible to establish a priori which strategy is the best, but strategy depends on what organizational outcome the public agency intends to pursue.

In view of the different empirical results, which are very different among them (i.e., they vary from confirming Miles and Snow (1978)'s assertions to contingency between strategy and performance), it follows that the relationship between strategy content and performance is still an open question. Hence, the present work aims to test the Miles and Snow (1978)'s assumptions in a context not yet studied, namely the Italian public university system, in order to increase the empirical evidence that contributes to make the relationship between strategic stance and organizational performance clearer.

Italian University context

Public universities in Italy have been subject to several processes of reform aimed at increasing both the degree of autonomy and the quality, as well as efficiency and effectiveness, of the overall higher education system (Capano et al., 2017; Vesperini, 2009).

Literature splits the last thirty years into two different time frames: first, from the end of eighties to the early years of the twenty-first century; second, from the early years of the twenty-first century up to now (Donina et al., 2015; Vesperini, 2009).

In the first-time frame, Italian laws and reforms focused mainly on the degree of autonomy of Italian universities and they aimed at improving the autonomy of the university. The main goal of Italian regulation was to change the relationship between State and Italian universities; it wanted a "steering at a distance" relationship. In the second one, Italian regulation has focused on improving the quality of teaching and research, as well as improving the overall effectiveness and efficiency of the Italian higher education system. It is important to underline that recent laws and reforms have partially sacrificed the steps made earlier regarding the degree of autonomy, in order to prioritize the quality and efficiency/effectiveness of Italian university system (Capano et al., 2017; Donina et al., 2015; Vesperini, 2009).

In the following it is reported the most relevant laws and reforms which have been influencing the Italian higher education system. Specifically, in table 1 are reported, in a synthetic way, the less recent laws and reforms, whereas the recent ones are described in more detail.

Law 168 of 1989	It established the constitution of a Ministry for Universities and Scientific Research (MURST), and the statutory, didactic, scientific, financial, and accounting autonomy of Italian public universities.
Law 537 of 1993	It reformed the budget management system of each university. Each university can independently decide how to allocate its own funding, without being subject to ministerial approval, among the different university expenditures.
Law 127 of 1997	Each university decides the structure of its own curricula in accordance with general principles established by the Ministry.

<p>Law 43 of 2005</p>	<p>It established that the planning has not set by the Ministry, as previously happened, but by the single university. The single university, on a three-year basis and in compliance with the macro objectives and general guidelines set by the Ministry, has to realize and adopt a three-year plan. Moreover, it affirmed that the Ministry has to perform evaluations of the three-year planning of the single universities which must be taken into account during the allocation of the ordinary financing fund (Fondo di Finanziamento Ordinario, FFO)⁴.</p>
<p>Law 1 of 2009</p>	<p>It reaffirmed and specified the concept previously expressed in Law 43 of 2005. It establishes that since 2009 a part of ordinary financing fund, at least 7%, has to be issued taking into consideration the outcomes/outputs reached by single university with regard to quality, efficiency, and effectiveness.</p>

*Table 1- Law and reforms which influences higher education system
Source: our elaboration*

Among the most recent laws and reforms that deeply influence the Italian higher education system there are the Law 15 of 2009, known as Brunetta's reform, and the Law 240 of 2010, known as Gelmini's reform. Such regulatory reforms underline the principles of the continuous improvement of the quality of public services, the improvement of efficiency and effectiveness in the public sector, as well as the principles of performance assessment, and based-performance budget introduced previously.

Brunetta's reform introduced, for the first time in the Italian public sector, a performance management cycle. It is based on principles of New Public Management (NPM), that is, transparency, performance evaluation and performance measurement, result's monitoring, performance cycle, accountability, citizens as customers, and pay for results (Dal Molin, Turri, & Agasisti, 2017; Esposito, De Nito, Iacono, & Silvestri, 2013).

It establishes that each public institution, also including Italian public universities, has to introduce the performance management cycle which is articulated in the following phases: *definition and assignment of the objectives to be achieved, the expected results and the respective indicators; link between the objectives and the allocation of resources; monitoring in progress and activation of any corrective measures; measurement and assessment of performance, both organizational and individual; use of reward systems, according to merit valorization criteria; reporting of the results to the political-administrative bodies, at the top of the administrations, as well as to the competent external bodies, citizens, stakeholders, users and recipients of the services*. The phases are concretized through the redaction of the *Performance Plan* and *Performance Relation* which are respectively the forecast and final documents related to the performance management cycle. The overall goal of the Brunetta's reform, using the performance management cycle, is to increase: the level of transparency and accountability towards its citizens; the level of effectiveness and efficiency in the public sector; the quality of public services.

In 2010, Gelmini's reform introduced a radical change in the financing system of Italian universities, making it more dynamic and also volatile. Banfi and Viesti (2016) point out "the great volatility of total resources and the uncertainty about present and future availability (almost always the assignment decrees were issued

⁴ The ordinary financing fund (Fondo di Finanziamento Ordinario, FFO) is a state funding which was established by Law 537 of 1993. It represents the principal source of funding for Italian universities.

towards the end of the solar year they were called upon) have hindered financial planning processes” (Banfi & Viesti, 2016, p. 289).

Before Gelmini’s reform the public financial resources allocated to Italian public universities were principally shared among the different universities upon past funding, while only a very small percentage of total financial resources depended on university performance. The traditional funding was connected to the past funding, so-called historical quota (quota storica), so that each university received public financial resources depending on funding obtained in previous years. After Gelmini’s reform, the Italian university has been less linked to the university past funding, and increasingly to university performance.

Gelmini’s reform establishes that, through a gradual process, the percentage of financial resources, compared to the total public financial resources allocated to Italian public universities which each university receives based on historical criteria, is decreasing so as to increase the percentage of financial resources which are assigned in accordance with performance criteria. In particular, it establishes that the percentage of financial resources, which are assigned in accordance with performance criteria, that is prize share, has to increase each year between 0.5 % and 2% ⁵. In table 2 are shown how the prize share has changed in recent years.

Year	% State Funding (FFO) related to performance
2009	about 7 %
2010	about 10 %
2011	12%
2012	13%
2013	13,5%
2014	about 18 %
2015	about 20 %
2016	about 20%
2017	about 22 %
2018	about 24 %
2019	about 26 %

Table 2- Evolution of the ordinary financing fund's percentage related to performance
Source: processing based on data provided by the Ministry of Education, University and Research

Moreover, Gelmini’s reform, in an attempt to overcome the historical quota criteria for the allocation of financial resources not related to performance, introduced the criterion of standard cost per student who is on schedule with their career. Through such criterion, financial resources not associated with performance are divided among the different universities based on the number of enrolled students who are on schedule with their careers, which implies that the university funding system finances each university only with reference to a part of its enrolled students, that is, enrolled students who are not in delay with their student careers. The consequent failure to obtain financial resources for students who are not on schedule with their student careers implies, on the one hand, the need for more significant rationalization of financial resources and, on the other, the need to find mechanisms by which to avoid delays in student careers. Recently, Decree 585/18 partially mitigates this severe financial effect on universities, establishing funding for students less than one year late in their career.

⁵ It is important to underline that the Law 98 of 2013 has modified both the percentage of annual increase and the minimum quota. In particular, it establishes that: the premium must not be less than 16% for 2014, 18% for 2015, 20% for 2016; each year the percentage must increase by 2% at least until it is equal to 30% of the ordinary financing fund (FFO).

Nowadays Italian public universities operate in a more competitive environment. This new environment pushes them towards a more strategic behavior, that is, more oriented to performance, to improve their efficiency, effectiveness, and quality so as to increase, or at least to not reduce, the public financial resources that they will expect to receive.

Gelmini's reform also gave an impulse to renew the quality assurance system in the Italian university system. Indeed, it established that it was necessary to institute a quality assurance system that aims at improving and guaranteeing the quality of the Italian university system. The Gelmini's reform limited to establishing general principles and delegated to the government for its implementation.

The renewed quality assurance system has to be based both on ex-ante criteria and ex-post criteria. The former aims at guaranteeing that each university reaches adequate standards related to didactics, structure, organization, lecturers' qualification, research, and financial economical sustainability, namely an ex-ante control aims at guaranteeing adequate minimum standards. The latter verifies the result that each single university carries out in research and teaching.

In accordance with the principles highlighted by Gelmini's reform, it was developed a quality assurance system, AVA system, based on: *self-evaluation*, *periodic evaluation*, and *university system's accreditation*. It has been made operational by the National Agency of Evaluation of the University System and Research⁶ (ANVUR).

The AVA system is articulated in three levels: a self-evaluation system which is implemented by each university (internal evaluation system); a national evaluation system (external evaluation system); a system of initial and periodic accreditation of universities and courses of study of individual university. The main objectives of AVA system are: provide to the single universities a quality assurance model which addresses the academics' behavior; provide useful information to the single universities to establish their own strategies; provide comparative information to the single universities in order to foster improvements; provide information to Ministry of Education, University and Research (Ministero dell'Istruzione, dell'Università e della Ricerca, MIUR) so as to establish the planning of university system and the allocation of financial resources among the single universities; provide information to students and external environment related to Italian higher education system.

About ANVUR, it is important to stress that the Agency, based on Decree of the President of the Republic 760 of 2010, performs another very important activity linked to evaluation, namely evaluation of the quality of research (Valutazione della Qualità della Ricerca, VQR).

The evaluation of the quality of research allows to have an up-to-date picture of the quality of research in the various scientific areas, on the basis of which set up improvement activities within the assessed institutions. According to the current legislation, namely Law 232 of 2016, it is performed every five years.

The evaluation of the quality of research has heavy repercussions on individual universities as the results are used to allocate part of the prize share of the ordinary financing fund (Fondo di Finanziamento Ordinario,

⁶ The National Agency of Evaluation of University System and Research was instituted in 2006 by the Law 286 of 2006. It performs the following functions: external evaluation of the quality of the activities of universities and public and private research bodies recipients of public funding, on the basis of an annual program approved by the Minister of University and Research; address, coordination and supervision of the evaluation activities assigned to the internal evaluation units of the universities and research bodies; evaluation of the efficiency and effectiveness of state funding and incentive programs for research and innovation activities. Moreover, the Law underlines that the results of the ANVUR evaluation activities are a reference criterion for the allocation of state funding to universities and research institutions. It follows that the Agency has a central role in the evaluation of Italian university system.

FFO). Indeed, as underlined above, in recent years the prize share of ordinary financing fund has been increasing every year and it is established that it is going to increase until 30 % of ordinary financing fund.

In brief, it emerges that in recent years a big step forward has been made in the field of assurance quality related to the Italian higher education system. The establishment of ANVUR, and its associated activities, along with the performance-based budget linked to the quality of the Italian university system, have allowed to renew it.

In sum, in view of different laws and reforms which have been issued in the last thirty years, the Italian university system has been deeply changed. In particular, the most relevant changes are related to:

- *Financing system of Italian university system*: there has been a radical change from a system of financing based on historical cost, which has paid little attention to performance, to a financing system in which the issue of financial resources is strongly influenced by performance. Today, the prize share is almost 30% of state public funds;
- *Evaluation system of the Italian university system*: the performance evaluation system has been redesigned both for the bodies and the procedures. The ANVUR has replaced the two previous evaluation bodies, CNSVU and CIVR, and the number of evaluations has been increasing. Nowadays, there is an assurance quality system (AVA), which did not exist before Gelmini's Reform, and the activity of evaluation of the quality of research is conceived in a systematic way, every five years.

It emerges that Italian universities have been transformed from "traditional" public agencies to the "new" ones. The "new" public agency, contrary to the "traditional" one, is characterized by a high degree of administrative autonomy, performance-based budget, and market-like condition (Rosenberg Hansen & Ferlie, 2016). Moreover, the continuous process of laws and reforms makes the Italian higher education system highly turbulent and unstable.

Methodology

Research Design

To comprehend if and how strategic stance influences university performance, the data relating to the adopted strategic stance and performance were collected. Adopted strategic stances were gathered with reference to the period of the beginning of the reforms that changed the Italian public university system profoundly. Specifically, respondents provided their own perceptions about the strategic stance of their universities with reference to 2014.

Strategic Stance

To identify the strategic stance adopted by the single university a survey was carried out. It was addressed to respondents involved, directly or indirectly, in the university's strategic decision-making process to obtain the fairest possible answers in relation to the strategic stance adopted by the single university. Specifically, members of the Academic Senate, Deans of Department, Deans of Faculty, and members of the Board of Directors of the University were contacted, in total, 2725 individuals. All sixty-seven universities, which compose the Italian public university system, were engaged in the survey. After the first contact, to raise the answer rate, four monthly reminders were sent. Overall, two hundred and twenty-five replies were collected from fifty-six different universities, resulting in a response rate of 8%. Seventy responses were received at the Senate level, one hundred and eleven at Departmental one, twenty-seven at the Board of Directors level, and seventeen at the Faculty level. The appendix reports, for the universities that participated in the survey, the data concerning the degree of participation.

The survey used a questionnaire composed of a set of items. It was decided to include a set of items, to identify the strategic stance adopted by the single university, in coherence with empirical researches

conducted previously (Andrews et al., 2008, 2009b, 2009a; Jimenez, 2018; Johnsen, 2016; Pasha et al., 2018). Based on the theoretical complexity pertinent to strategic content, as highlighted by Johnsen (2016), it was decided to use a set of items already employed in previous work to use a set of items already validated. In particular, the set of items used by Andrews et al. (2009) has been properly adapted to the Italian public university system.

The set of items is composed of eleven different items. They are related to the three different Miles and Snow (1978)'s archetypes, that is, defender, prospector, and reactor, that, as highlighted previously, are characterized by a different underlying strategic logic. Specifically, five different items are related to the reactor archetype, whereas three different items for each are linked to the defender and prospector archetypes.

Below, Table 3 shows the eleven items included in the questionnaire.

Defender

The university seeks to keep its own institutional priorities stable over time
 Efficiency is the fundamental aspect of the overall university strategy
 Focusing on its core activities is a key aspect of the overall university strategy

Prospector

The university continually redefines its own institutional priorities
 The university tries to be the first to identify new university services (e.g., new masters for graduate students), as well as new ways of delivering them (e.g., e-learning course)
 The research for new opportunities (e.g., collaborations with the business world) is the main aspect of its overall strategy

Reactor

The university does not constantly implement a process of adaptation to external pressures
 The university does not have defined institutional priorities
 The university makes changes only when required by external agencies
 The university pays little attention to potential new opportunities
 The university explores new opportunities exclusively when required by external agencies

*Table 3 – items related to Miles and Snow's strategy archetype
 Source: our elaboration on Andrews et al. (2009b)'s items*

Respondents provided their own opinion about the strategic stance adopted by their universities. In particular, they expressed a judgment that varies from strongly disagree (1) to strongly agree (7) with the items included in the questionnaire.

An exploratory factor analysis was performed to grasp the strategic stance adopted inside the Italian public university system in the period analyzed⁷. The analysis emphasizes two different factors, meaning that two different strategic stances were revealed in 2014, that is, prospector and reactor.

Based on factory analysis' results, factor scores have been calculated for each university to cluster Italian public universities based on the factors, namely, on the basis of the strategic stances identified by the exploratory factor analysis (Hair, Black, Babin, & Anderson, 2019). Initially, the factor scores have been calculated for each observation, that is, for each respondent. Subsequently, such factor scores are employed to estimate Italian public universities' factor scores, which consist of the average value of the factor scores of the respondents who belong to the same university.

Since the factor score is a "composite measures of each factor computed for each subject" (Hair et al., 2019, p. 163) that represents conceptually "the degree to which each individual scores high on the group of

⁷ For a detailed analysis concerning the exploratory factorial analysis carried out based on the survey data, see the previous chapter. The factorial analysis developed in the previous chapter was employed for this work.

items/variables with high loading on a factor” (Hair et al., 2019, p. 163), it is decided to attribute to each university the strategic stance correlated to the factor for which the university presents the highest factor score. It follows that the strategic stance attributed to Italian public universities is not the only one pursued by them, but it represents the prevailing strategic stance.

University Performance

In order to comprehend the trend of Italian university performance, performance data are collected using the information provided by the Italian Ministry of Education, University and Research.

The Ministry of Education, University and Research performs functions of regulation, support and enhancement of recognized autonomy to schools, universities, research and research institutions. It has been decided to use the performance data of the universities provided by the Ministry of Education, University and Research because the single university pays close attention to performance evaluations carried out by the Ministry. In fact, as above highlighted, an increasing percentage over time of the State funding (FFO) is issued based on the university performance, and, at the same time, the percentage not related to performance has been decreasing, so the single university takes note of the performance evaluation provided by The Ministry of Education, University and Research.

The performance trend of Italian universities, through data issued by the Ministry of Education, University and Research, is analyzed comparing the shares of the overall performance-related resources that each university received in two different years, that is, 2014 and 2019. As mentioned above, the share is assigned among the different universities based on the performance achieved; consequently, it can be used as a proxy for university performance. It was decided to compare 2014, year of detection of the strategic stance, with 2019 since the adoption of a specific strategic stance does not produce its effects in terms of performance in the short term. A five-year interval was considered appropriate for detecting performance effects.

Comparing the share that each university obtained in the two years considered, it is possible to understand whether or not the single university improved its performance.

Specifically, for each university, the difference in percentage terms between the prize quota received in 2019 and that obtained in 2014 is calculated. It was decided to employ in the analysis the percentage difference for two different reasons. First, it is possible in this way to neutralize the incidence of the contexts’ peculiarities, such as the size of the university, the territorial wealth, the geographical location and so on, that could affect the share obtained by each university. It can be assumed that in a limited period, i.e., five years, there is no profound change in the peculiarities of each university. Second, through the difference expressed in percentage terms, it is possible to better understand the extent of the change in relative performance.

Data

Strategic Stance

Descriptive statistics relating to the answers provided by respondents are reported in the appendix. As above highlighted, the data stemming from the survey are employed in order to emphasize the strategic stance adopted by each university in 2014. Table 4 depicts the prevailing strategic stance of Italian public universities in the period under investigation.

University Performance

The data are reported in Table 4.

Table 4, "Change 2019 -2014", shows the variation based on 2014, in percentage terms, of the performance of Italian universities and it is calculated as follows: (% of the share in 2019 – % of the share in 2014)/% of the share in 2014.

UNIVERSITY	STRATEGIC STANCE 2014	Change 2019 - 2014
"Aldo Moro" University of BARI	Prospector	7.48%
University of BASILICATA	Reactor	-2.13%
University of BOLOGNA	Prospector	-14.67%
University of BRESCIA	Reactor	-6.25%
University of CAGLIARI	Prospector	-1.82%
University of CALABRIA	Reactor	-5.63%
University of CAMERINO	Reactor	9.62%
University of CASSINO and SOUTHERN LAZIO	Prospector	-6.00%
University of CATANIA	Reactor	21.86%
"G. d'Annunzio" University of CHIETI-PESCARA	Prospector	0.00%
University of FERRARA	Prospector	8.80%
University of FLORENCE	Prospector	-4.30%
University of FOGGIA	Reactor	-15.07%
University of GENOA	Prospector	2.12%
University of INSUBRIA VARESE-COMO	Prospector	1.39%
University of MACERATA	Reactor	-8.96%
University of MESSINA	Prospector	15.94%
University of MILAN	Reactor	8.99%
University of MILAN-BICOCCA	Reactor	-5.61%
Polytechnic Institute of MILAN	Reactor	-4.69%
University of MODENA and REGGIO EMILIA	Reactor	-7.41%
University of MOLISE	Reactor	-9.26%
"Federico II" University of NAPLES	Prospector	26.62%
"Luigi Vanvitelli" University of CAMPANIA	Reactor	30.23%
"Parthenope" University of NAPLES	Prospector	20.83%
"L'Orientale" University of NAPLES	Prospector	11.36%
University of PADUA	Reactor	-6.31%
University of PALERMO	Reactor	4.56%
University of PARMA	Reactor	-8.57%
University of PAVIA	Prospector	-8.72%
University of PIEMONTE ORIENTALE EASTERN PIEDMONT	Reactor	1.25%
University of PISA	Reactor	12.23%
Polytechnic University of MARCHE	Reactor	4.72%
"Mediterranea" University of REGGIO CALABRIA	Prospector	2.38%
"La Sapienza" University of ROME	Reactor	-0.32%
"Tor Vergata" University ROME	Reactor	-12.73%
"ROMA TRE" University of ROME	Reactor	-4.97%
University of SALENTO	Prospector	-2.88%
University of SALERNO	Reactor	-8.85%
University SANNIO of BENEVENTO	Prospector	0.00%
University of SASSARI	Reactor	-14.75%
University of SIENA	Prospector	-31.48%
University of TERAMO	Prospector	-25.53%
University of TURIN	Reactor	2.42%
Polytechnic of TURIN	Reactor	10.42%
University of TRENTO	Reactor	- ⁸

⁸ Based on Italian legislation, the University of Trento is excluded from the allocation of the prize share. For more information, consult the M.D. 4th November 2014 n.815.

University of TRIESTE	Reactor	-16.43%
University of TUSCIA	Reactor	8.20%
University of UDINE	Reactor	-19.73%
"Ca' Foscari" University of VENICE	Prospector	0.00%
"IUAV" University of VENICE	Reactor	-17.50%
University of VERONA	Prospector	-13.44%
University of L'AQUILA	Reactor	_ ⁹
"Carlo Bo" University of URBINO	Reactor	5.26%
University for foreigners of SIENA	Reactor	30%
University for foreigners of PERUGIA	Prospector	85.71%

Table 4 - Strategic Stance and Performance of Italian public universities.

Source: our elaboration

Discussion and conclusion

Once the data relating to both the strategic stance and variation performance have been collected, they are analyzed together to understand the effect of the strategic stance on university performance.

Firstly, the usage of a cross-tabulation analysis aims at drawing attention to the relationship between adopted strategic stance and university performance.

Change 2019 – 2014	Strategic Stance	
	Prospector	Reactor
From -31.48 % to -21.48%	2	
From -21.48% to -11.48%	2	6
From -11.48% to -1.48%	5	12
From -1.48% to 8.52%	7	7
From 8.52% to 18.52%	3	4
From 18.52% to 28.52%	2	1
From 28.52% to 38.52%		2
From 78.52% to 88.52%	1	

Table 5 – Strategic Stance and Performance Variations.

Source: our elaboration

Table 5 shows the data relating to the change in performance crossed with the various strategic stances adopted. The "Change 2019-2014" column shows the percentage variation of performance detected, grouped in eight different intervals. The "Strategic stance" column is divided based on the identified strategic stances, i.e., Prospector and Reactor. The intersection between each row and each column shows, for each performance interval, the number of universities that, based on the strategic stance adopted, record variations in the performance falling within that interval.

Analyzing the data contained in Table 5, it results that no strategic stance leads Italian public universities to achieve a better level of performance; namely, a strategic stance hierarchy based on performance does not emerge. Both strategic stances are associated with each performance interval, except for the extreme intervals that are only associated with universities that adopt a prospector strategic stance. From this, two different considerations arise. First, Miles and Snow (1978)'s assumption, that is, prospector outperforms reactor, is not corroborated in the Italian public university sector. Such results, in agreement with other

⁹ Based on Italian legislation, the University of L'Aquila is excluded from the allocation of the prize share. For more information, consult the M.D. 4th November 2014 n.815.

empirical research (Jimenez, 2018; Johnsen, 2018; Kroll, 2015), emphasize that a strategic stance hierarchy based on performance, as hypothesized by Miles and Snow and subsequently confirmed in other works (Andrews et al., 2009b; Walker et al., 2010; Walker & Brewer, 2009), could be not present inside the public sector. Second, focusing on the worst result in terms of performance achieved by the Italian public universities, that is, from -31.18% to -21.48%, reactor strategic stance could be considered, as highlighted by Andrews et al. (2011), an effective strategy in the public sector. In fact, no university that adopts the reactor strategic stance registers such a negative variation in terms of performance.

Secondly, through the usage of descriptive statistics, the relationship between the adoption of a specific strategic stance and university performance is analyzed. Such analysis aims to understand the potential effects of adopting a specific strategic stance on university performance. Descriptive statistics are depicted in the appendix.

The descriptive statistics show that the adoption of a specific strategic stance influences the changes in performance achieved by universities. The Italian universities that adopt a reactor strategic stance recorded changes in performance, whether positive or negative, more contained than universities that adopt a prospector strategic stance. In fact, the reactor strategic stance is associated with a change in performance that varies from about -20% to about +30% compared to a change from about -31% to about +86% recorded for the prospector strategic stance. From this, it can be deduced that, as foreseeable based on the different logics underlying the strategic stances, the adoption of a prospector strategic stance leads to more significant variability in terms of performance compared to that of a reactor. It would seem, therefore, that the adoption of a specific strategic stance affects the performance levels achievable by universities.

The more considerable variability in terms of performance related to prospector strategic stance could also be confirmed by the process of strategic reorientation performed by Italian universities. In fact, as underlined in the previous chapter, Italian universities carried out a process of strategic reorientation that led to the non-adoption of the prospector strategic stance by Italian universities. In a context such as that of the Italian public university sector, characterized, on the one hand, by the reduction of available financial resources and, on the other hand, by growing attention to the performance achieved for the allocation of financial resources, the adoption of prospector strategic stance could have negative consequences for universities. Adopting a prospector strategic stance, albeit it may allow universities to achieve significant positive change in performance, could lead to a considerable negative change in performance. Italian universities, through the process of strategic reorientation, opted for less risky strategic stances, namely, reactor and defender, which would allow avoiding the risk associated with the prospector strategic stance.

To sum up, it emerges that the strategic stance adopted influences the performance achieved by Italian universities. However, in opposition to Miles and Snow (1978)'s assumption, such influence does not lead to a strategic hierarchy based on performance, but rather to more considerable variability in terms of performance recorded by universities that adopt the prospector strategic stance.

The present work also has a limitation that needs to be specified. Such limitation refers to the method used to detect the strategic stance adopted by Italian public universities. It was identified through a survey; that is, it is based on the perception that participants have of the strategic stance adopted by their universities. Although only people who are, directly or indirectly, involved in the decision-making process were contacted to have the fairest possible representation, there could be a difference between the perceived strategic stance and that adopted by the university.

Appendix

UNIVERSITY	ANSWERS	
	N	% on total contacted
"Aldo Moro" University of BARI	4	7%
University of BASILICATA	1	3%
University of BOLOGNA	8	8%
University of BRESCIA	3	8%
University of CAGLIARI	9	16%
University of CALABRIA	1	3%
University of CAMERINO	4	13%
University of CASSINO and SOUTHERN LAZIO	1	3%
University of CATANIA	4	6%
"G. d'Annunzio" University of CHIETI-PESCARA	1	2%
University of FERRARA	2	4%
University of FLORENCE	6	7%
University of FOGGIA	3	8%
University of GENOA	5	6%
University of INSUBRIA VARESE-COMO	3	8%
University of MACERATA	4	10%
University of MESSINA	2	4%
University of MILAN	9	9%
University of MILAN-BICOCCA	5	10%
Polytechnic Institute of MILAN	4	8%
University of MODENA and REGGIO EMILIA	6	11%
University of MOLISE	4	14%
"Federico II" University of NAPLES	9	11%
"Luigi Vanvitelli" University of CAMPANIA	1	2%
"Parthenope" University of NAPLES	6	18%
"L'Orientale" University of NAPLES	1	4%
University of PADUA	6	6%
University of PALERMO	1	2%
University of PARMA	6	15%
University of PAVIA	10	15%
University of PIEMONTE ORIENTALE EASTERN PIEDMONT	4	10%
University of PISA	3	4%
Polytechnic University of MARCHE	5	11%
"Mediterranea" University of REGGIO CALABRIA	1	4%
"La Sapienza" University of ROME	7	6%
"Tor Vergata" University ROME	3	6%
"ROMA TRE" University of ROME	4	8%
University of SALENTO	3	7%
University of SALERNO	2	4%
University SANNIO of BENEVENTO	2	9%
University of SASSARI	3	8%
University of SIENA	4	10%
University of TERAMO	4	12%
University of TURIN	15	16%
Polytechnic of TURIN	3	5%
University of TRENTO	3	8%
University of TRIESTE	5	11%
University of TUSCIA	1	3%
University of UDINE	3	8%
"Ca' Foscari" University of VENICE	3	7%
"IUAV" University of VENICE	2	11%
University of VERONA	7	12%
University of L'AQUILA	3	7%
"Carlo Bo" University of URBINO	2	4%
University for foreigners of SIENA	3	14%
University for foreigners of PERUGIA	1	3%

Table A.1 – University response rate

Source: our elaboration

Answer - N = the number of different respondents for each university

Answer - % = the percentage response rate for each university that is composed of the ratio between the number of respondents and the number of people appointed in the decision-making bodies

	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5	ITEM 6	ITEM 7	ITEM 8	ITEM 9	ITEM 10	ITEM 11
N Valid	225	225	225	225	225	225	225	225	225	225	225
Missing	0	0	0	0	0	0	0	0	0	0	0
Mean	5,46	3,88	5,21	3,12	4,21	3,39	4,04	5,13	3,94	3,63	3,91
Median	6	4	6	3	4	3	4	6	4	4	4
Std. Deviation	1,020	1,512	1,303	1,400	1,478	1,376	1,599	1,458	1,679	1,515	1,637
Range	6	6	6	6	6	6	6	6	6	6	6
Minimum	1	1	1	1	1	1	1	1	1	1	1
Maximum	7	7	7	7	7	7	7	7	7	7	7

Table A.2- Descriptive Statistics 2014

Source: our elaboration

ITEM 1 = The university seeks to keep its own institutional priorities stable over time

ITEM 2 = Efficiency is the fundamental aspect of the overall university strategy

ITEM 3 = Focusing on its core activities is a key aspect of the overall university strategy

ITEM 4 =The university continually redefines its own institutional priorities

ITEM 5 =The university tries to be the first to identify new university services (e.g., new masters for graduate students), as well as new ways of delivering them (e.g., e-learning course)

ITEM 6 =The research for new opportunities (e.g., collaborations with the business world) is the main aspect of its overall strategy

ITEM 7 = The university does not constantly implement a process of adaptation to external pressures

ITEM 8 = The university does not have defined institutional priorities

ITEM 9 = The university makes changes only when required by external agencies

ITEM 10 = The university pays little attention to potential new opportunities

ITEM 11 = The university explores new opportunities exclusively when required by external agencies

	Performance Change - Reactor	Performance Change - Prospector
N Valid	32	22
Missing	0	0
Mean	-0.007944	0.033541
Median	-0.048299	0
Std. Deviation	0.126829	0.228364
Range	0.499604	1.171958
Minimum	-0.197279	-0.314815
Maximum	0.302326	0.857143

Table A.3 – Descriptive Statistics, Change Performance and Strategic Stance

Source: our elaboration

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