

Strategic-Decision Quality in Public Organizations: An Information Processing Perspective.

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Abstract

This study draws on information processing theory to investigate predictors of strategic-decision quality in public organizations. Information processing theory argues that (a) rational planning practices contribute to strategic-decision quality by injecting information into decision-making and (b) decision-makers contribute to strategic-decision quality by exchanging information during decision-making. These assumptions are tested upon fifty-five Flemish pupil guidance centers. Rational planning practices are operationalized as strategic planning, performance measurement and performance management. Information exchange by decision-makers during decision-making is operationalized as procedural justice of the decision-making process. Results suggest that procedural justice, strategic planning and performance management contribute to strategic-decision quality while performance measurement does not.

Keywords

Rational planning, decision-making, strategic planning, performance measurement, performance management, procedural justice

Introduction

In the slipstream of new public management, rational planning has conquered the public sector by storm (Boyne, 2001; Bryson, 2010). Rational planning is a theoretical framework of strategic management that centers on a rational approach to strategy formulation through strategic planning and strategy implementation through performance measurement and performance management (Andrews, Boyne, Law, & Walker, 2009b; Poister, Pitts, & Edwards, 2010). Rational planning has been the subject of several legislative provisions worldwide such as Best Value in the UK and the Government Performance and Results Act in the US (Bovaird, 2008; Boyne, Gould-Williams, Law, & Walker, 2004; Poister & Streib, 2005). Key to rational planning's popularity is the assumption that it contributes to strategic-decision quality in the public sector by offering a counterweight to political or intuitive decision-making (Boyne, 2001; Walker, Andrews, Boyne, Meier, & O'Toole, 2010). From an information processing perspective, this assumption is, at least theoretically, valid (Elbanna, 2006; Rogers, Miller, & Judge, 1999). Rational planning practices can inject information into decision-making processes by offering, for instance, focus on strategic goals, insights into the organizational environment, and insights into performance information (e.g. Boyne et al., 2004; Poister, 2005; Taylor, 2011).

Although these theoretical arguments prompt the assumption that rational planning practices can be viewed as significant predictors of strategic-decision quality in public organizations, the validity of this assumption is debated. First, while several scholars have provided arguments for the effectiveness of rational planning practices in public organizations (e.g. Bryson, 2011; Joyce, 2014), there has been an equal amount of criticism geared towards its inappropriateness for the public sector (Ugboro, Obeng, & Spann, 2011). For instance, Bovaird (2008) and Radin (2006) indicated that, due to their mechanistic nature, rational planning practices are inapplicable in the complex, adaptive context of public organizations. Additionally, three recent reviews on the topic acknowledged that the debate on rational planning's effectiveness in public organizations is far from over due to the lack of conclusive and generalizable evidence (Bryson, Berry, & Yang, 2010; George & Desmidt, 2014; Poister et al.,

2010). Second, the, albeit limited, empirical evidence on rational planning's effectiveness in public organizations has, so far, centered on performance-related outcomes (e.g. Andrews, Boyne, Law, & Walker, 2009a; Jung & Lee, 2013), while empirical studies focusing on the output of rational planning practices (e.g. strategic-decision quality) are, to our knowledge, lacking (Bryson, Crosby, & Bryson, 2009; Poister et al., 2010). Third, research on rational planning practices in public organizations has typically not included variables that measure the behavior of decision-makers within strategic decision-making processes (Bryson et al., 2009; George & Desmidt, 2014). However, if we want to assess the main effect of rational planning practices on strategic-decision quality, literature on strategic decision-making processes argues that we cannot disregard the amount of variance in strategic-decision quality already explained by the behavior of decision-makers (e.g. Olson, Parayitam, & Bao, 2007; Parayitam & Dooley, 2009). Conclusively, as a result of these three issues the assumed contribution of rational planning practices to strategic-decision quality in public organizations is a 'shot in the dark' (Walker & Boyne, 2006, 375).

Our study contributes to the debate on rational planning's effectiveness in public organizations by addressing the above-mentioned three issues. First, we focus on strategic-decision quality (i.e. dependent variable) as key output of rational planning practices in public organizations. We thus offer knowledge on the process output of rational planning, which is argued to precede process outcomes such as organizational performance (Kellermanns, Walter, Floyd, Lechner, & Shaw, 2011; Pollitt & Bouckaert, 2004). Strategic-decision quality is particularly useful process output because it focuses on a specific set of strategic decisions as units of analysis (Elbanna, 2006) and reflects how decision-makers feel about 'the overall quality' of strategic decisions, 'the range of relevant issues' addressed by strategic decisions and 'the depth' of strategic decisions (Olson et al., 2007, 207).

Second, we draw on information processing theory, a popular theoretical framework in the strategic decision-making literature, to hypothesize predictors of strategic-decision quality (i.e. independent variables) in public organizations. Information processing theory typically views public organizations as systems that continuously need to collect and exchange information (Daft,

Bettenhausen, & Tyler, 1993). Specifically applied to decision-making, decision-makers need to collect and exchange information in order to make informed and qualitative decisions (Olson et al., 2007). We hypothesize that rational planning practices typically inject information relevant to decision-making into the decision-making process, thus improving strategic-decision quality (Rogers et al., 1999). Additionally, we hypothesize that strategic-decision quality is also impacted by the extent to which decision-makers exchange information during decision-making by being allowed to participate in decision-making, exercise their voice during decision-making and appeal decisions (Colquitt, 2001; Rubin, 2009). These decision-making process characteristics are labeled by Kim and Mauborgne (1993,1995) as procedural justice of the decision-making process. By including procedural justice of the decision-making process as a predictor of strategic-decision quality, we complement previous research on rational planning because we also attribute attention to behavior during decision-making as another important indicator of planning process output such as strategic-decision quality (Bryson et al., 2009; George & Desmidt, 2014).

Third, we include three rational planning practices (i.e. strategic planning, performance measurement, performance management) that are high on the agenda of public sector reforms and public management scholars (Boyne, 2001; Boyne et al., 2004; Poister et al., 2010). The impact of these practices is tested upon fifty-five public human services organizations, namely Flemish pupil guidance centers. As such, our study answers the call for more contingency-based planning research (Bryson et al., 2010; Walker & Andrews, 2015) by examining rational planning's effectiveness in an empirical setting different from local government or transport departments, and acknowledges the multidimensional nature of rational planning (Boyne, 2001; Poister et al., 2010) by including three separate rational planning practices instead of using a single planning construct.

In what follows, we discuss our theoretical framework and formulate hypotheses. Next, the methods are defined. This includes units of analysis, data, common method bias, variables, controls and analysis. Based on a multiple regression model, the statistical results of our study are presented. We conclude by discussing the implications and limitations of our study. Findings

support information processing theory but also offer some nuance. In our model, which controls for resource scarcity, tenure and team size, the independent variables strategic planning, performance management and procedural justice are positively related to strategic-decision quality.

Theory and Hypotheses

Over the past decade, a limited number of empirical studies tested the effectiveness of rational planning in the public sector (e.g. Boyne & Gould-Williams, 2003; Jung & Lee, 2013). These studies have provided evidence-based insights on rational planning and their value cannot be underestimated. Interestingly enough, these studies have almost unilaterally focused on measures of organizational performance to assess rational planning's effectiveness. While some studies found a positive relationship (e.g. Poister, Pasha, & Edwards, 2013; Walker et al., 2010), others resulted in statistically non-significant direct effects (e.g. Andrews et al., 2009a; Andrews, Boyne, Law, & Walker, 2011). Few studies have explicitly focused on strategic-decision quality as a measure of rational planning's effectiveness, despite the fact that strategic-decision quality is an often-cited argument as to why rational planning would 'work' in public organizations (Boyne, 2001; Walker et al., 2010). We address this research gap and offer evidence for the relation between rational planning practices and strategic-decision quality in public organizations based on information processing theory.

Information processing theory argues that the quality of strategic decisions is inherent to the information that is collected and exchanged during decision-making (Daft et al., 1993). While information collection implies the development and involvement of some form of organizational system or process that injects information into decision-making, information exchange implies some form of behavior by decision-makers that allows individuals to exchange information during decision-making (Kim & Mauborgne, 1995; Rogers et al., 1999). Hence, we include measures of organizational information processes (i.e. rational planning practices) as well as behavior by decision-makers during decision-making (i.e. procedural justice of the decision-making process) as predictors of strategic-decision quality in our model. First, in support of rational planning's

information processing capabilities, Rogers et al. (1999, 568) argue that through rational planning practices 'information is collected and injected into the strategic decision-making process'. Second, in support of procedural justice's information processing capabilities, Kim and Mauborgne (1995, 46) argue that 'the quality of strategy content is a function of the information processing capability inherent in the procedural justice model of strategic decision making'. In the remainder of this section, we further explain the rationale underlying our model and develop hypotheses concerning the relationships between rational planning practices, procedural justice of the decision-making process and strategic-decision quality (see Figure 1).

[Insert Figure 1 about here]

Rational planning practices

Although some ambiguity and semantic pitfalls remain on what exactly constitute rational planning practices, scholars distinguish two different planning phases: a formulation phase and an implementation phase (Andrews et al., 2009b). The formulation phase typically includes strategic planning (Poister et al., 2013), while the implementation phase typically includes performance measurement (Poister et al., 2013) and performance management (Poister & Streib, 2005).

Our first hypothesis concerns strategic planning's contribution to strategic-decision quality. Strategic planning is a systematic and stepwise process that focuses on formulating a strategic plan (i.e. strategy formulation) in a rational and analytical manner (Bryson, 2010; Poister et al., 2013; Ugboro et al., 2011). Drawing on information processing theory, we argue that the resulting formal strategic plan is an important source of information for decision-making because it typically offers insights into the strategic course and priorities of the organization as well as illustrating key organizational information such as the organizational strengths and weaknesses (Poister et al., 2013; Vaara, Sorsa, & Pälli, 2010). Hence, strategic decisions are taken based on the information gathered by the strategic planning process and presented in the strategic plan (Rogers et al., 1999; Ugboro et al., 2011).

The cited importance of strategic planning's informative role in decision-making is also confirmed by several studies in public administration. For instance, Baker (1992) argues that the strategic plan offers a clear rationale for decision-making within a U.S. federal agency. Ingman, Kersten, and Brymer (2002) identify strategic plans as essential tools for prioritization and for enhanced decision-making. Poister and Streib (1989) illustrate that strategic planning can indeed enhance managerial decision-making in US municipalities. A finding that is confirmed by Berry and Wechsler (1995) who argue that 82 per cent of US state agency directors claim that the strategic plan is an important instrument that assists in decision-making. Finally, Poister (2005, 1053) also elaborates on the informative role of strategic planning by indicating that strategic plans can 'provide overall direction for major decisions throughout the organization on an ongoing basis'. Hence, we hypothesize that:

H1: Strategic planning is positively related to strategic-decision quality.

Our second hypothesis concerns performance measurement's contribution to strategic-decision quality. Performance measurement is a monitoring instrument that encompasses the identification of quantitative performance measures linked to the strategic plan and strategic goals, setting targets for these performance measures, monitoring the achievement of those targets and using performance information to benchmark the organization (Poister et al., 2013). Hence, performance measurement offers information in the form of quantitative data that can be used during decision-making efforts in order to again result in informed strategic decisions (Moynihan & Pandey, 2010). Performance measurement systems thus 'rest on the assumption that when performance information is generated, managers will use it to make better decisions' (Hvidman & Andersen, 2014, 38). A perspective that is shared by Askim, Johnsen, and Christophersen (2008) who find that public organizations that engage specifically in benchmarking performance measures also incorporate this information in their strategic decisions.

The link between performance measurement and decision-making is also illustrated by Askim (2009) who argues that experienced councilors search for performance information when

they are confronted with a decision dilemma and are uncertain on the decision to take. Moreover, Taylor (2011) recommends the usage of performance information to enhance decision-making processes by both public agencies and accountability authorities. Conclusively, we hypothesize that performance measurement is a decision-making instrument that can provide focus to decision-makers, encourage learning during decision-making and provide performance data over time, which in turn all contribute to the quality of strategic decisions (Kelman & Myers, 2011; Poister & Streib, 2005).

H2: Performance measurement is positively related to strategic-decision quality.

Our third hypothesis concerns performance management's contribution to strategic-decision quality. Performance management in our model centers around the links between the strategic plan, the objectives of key individuals and the evaluation of said individuals by central stakeholders (Poister & Streib, 2005). This specific approach to strategy-implementation as defined by Poister and Streib (2005) does not necessarily involve the 'hard' quantification of targets but rather focuses on aligning the strategic plan and strategic goals of the organization with the interests of key individuals. By linking strategic plans and individual objectives, performance management facilitates continuous communication of the importance of and the commitment towards achieving strategic goals (Poister & Van Slyke, 2002). This, in turn, encourages decision-makers to focus during decision-making because strategic decisions will be taken in order to achieve successful realization of both strategic and personal-level goals (Poister, 2005; Poister & Van Slyke, 2002). Or, in the words of Poister (2010, S252) 'without such linkages, strategic planning is much less effective in driving decisions and actions in an agency and moving purposefully into the future'.

Performance management also injects information into decision-making in the form of formalizing and managing stakeholder expectations (Brignall & Modell, 2000; Poister & Streib, 2005). Because public organizations are typically characterized by 'complex interrelationships between multiple stakeholders and the intensely political nature of decision-making', performance management offers a framework for identifying and managing the expectations of

key stakeholders and thus ensuring that strategic decisions are focused on satisfying those expectations (Brignall & Modell, 2000, 300). We hypothesize that performance management facilitates information gathering in decision-making and contributes to strategic-decision quality, by encouraging focus on strategic goals through individual-level goals and incorporating stakeholder expectations.

H3: Performance management is positively related to strategic-decision quality.

Procedural justice

Apart from information collection through rational planning practices, information processing theory also argues that decision-makers need to exchange information in order to make informed and qualitative strategic decisions because each individual holds a specific piece of the decision-making puzzle (Daft et al., 1993; Olson et al., 2007). In order to facilitate said information exchange, decision-makers need to be encouraged to participate in decision-making through the procedures used for decision-making and through the interpersonal treatment within the decision-making group (Kim & Mauborgne, 1993; Korsgaard, Schweiger, & Sapienza, 1995). Precisely those two elements have been attributed to the concept of perceived procedural justice (Colquitt, 2001; Rubin, 2009).

Our fourth hypothesis concerns procedural justice's contribution to strategic-decision quality. While the semantic term in itself might imply that procedural justice limits itself to measures of 'fairness', it is actually a multidimensional measure of information exchange which assesses 'the degree to which procedures provide individuals the opportunity to communicate their views, evidence, or arguments', 'the degree to which individuals can regulate the opportunities available to exercise voice' and 'the degree to which opportunities exist to either appeal decisions or change the ground rules' (Rubin, 2009, 127).

This assumed positive impact of procedural justice on decision-making quality is not just theoretically interesting, it has also been empirically validated. For instance, Korsgaard et al. (1995) find that procedural justice of the decision-making process positively impacts decision-makers' perceptions of strategic decisions. A finding that is shared by Kim and Mauborgne (1995)

who claim that procedurally just decision-making processes elicit stronger information processing capabilities and contribute to the effectiveness of strategic decisions. In two earlier studies by the same authors (Kim & Mauborgne, 1991, 1993), a positive contribution of procedural justice to decision-making (i.e. compliance and satisfaction with strategic decisions) is also presented. Hence, we hypothesize that:

H4: Procedural justice of the decision-making process is positively related to strategic-decision quality.

Methods

Units of analysis

Our units of analysis are pupil guidance centers in Flanders. We focus on Flanders, the northern, Dutch speaking part of Belgium, because education in Belgium is a regional responsibility. In order to ensure a homogeneous research setting that allows us to control for a variety of external contingencies (e.g. economic context, political context, legislative context) (Andrews et al., 2009a), we decided to focus only on Flemish pupil guidance centers. There are seventy-two Flemish pupil guidance centers spread geographically throughout Flanders. These centers are public human services organizations, which perform a supportive role in the Flemish education system. The central mission of these centers is to support pupils, their parents, teachers and school principals in all Dutch-speaking schools within their jurisdiction in order to enhance the wellbeing of said pupils. As such, the key focus of the centers lies on preventive healthcare, the educational career and psychological and social functioning of pupils. The workforce of each center typically includes physicians, psychologists and social workers. Each center is headed by a director who is supported by department heads, quality managers and/or policy advisors.

Data

A four-step data-gathering procedure was executed based on the recommendations of Lee, Benoit-Bryan, and Johnson (2012). First, we developed a cross-sectional electronic survey. This survey includes only previously published measures to ensure concurrent validity and was pretested by both a practitioner and academic committee in order to maximize face validity

(Andrews et al., 2009a). One item of the performance measurement-scale and two items of the performance management-scale were dropped as a result of the pretesting phase because these were deemed inapplicable. Second, in order to ensure the commitment of pupil guidance centers to participate in our survey we contacted the central authorities that offer training and advice to the centers. These authorities provided full cooperation and stimulated centers to participate in our study. Third, in order to identify expert informants, we contacted the directors of the seventy-two Flemish pupil guidance centers by phone, asked them to participate in the study and provide the details of those individuals closely involved in strategic decision-making within their organization. Fourth, the cross-sectional electronic survey was sent to all identified expert informants (i.e. directors and other decision-makers). To ensure a high response rate as well as qualitative responses, we offered incentives to all respondents in the form of a research report and guaranteed anonymity. The throughput time between the initial distribution of the survey and the final survey response was about one month (i.e. late March 2014 to late April 2014) (Lee et al., 2012).

In order to be included in our final data set, we required at least two respondents per organization (Enticott, Boyne, & Walker, 2009). Hence, we adopted a multi-informant approach. The rationale for this approach lies in the fact that all of our variables are measured at the organizational level. If we would employ a single informant approach, we might risk that 'what is supposedly a measure of a whole organization may actually represent only a single level or subunit' (Enticott et al., 2009, 230). In fifty-five of the seventy-two centers, we gathered survey data from at least two respondents (i.e. a 76,39 per cent response rate). On average, we received 3,40 respondents per organization with a range of 2 – 8 respondents. In order to identify a score that is representative for the organization, we aggregated the responses of the two or more informants within a pupil guidance center and calculated the average score. For instance, if we have two responses (e.g. one from a director and one from a policy advisor), the mean of those two responses was used. Issues with sample representativeness and probability sampling methods were limited in our data. Our population equaled our sample frame and more than three

quarters of that population participated. In order to address nonresponse bias, we compared the answers of early and late respondents to our survey via time-trend extrapolation (Armstrong & Overton, 1977). We found no significant differences (Lee et al., 2012).

Common method bias

Because our research design utilizes the same source for measuring the dependent and independent variables (i.e. a cross-sectional survey), common method bias could be a concern. In support of our choice to use a survey, Favero and Bullock (2014) argue that common method bias is of particular concern in studies that measure organizational characteristics, such as organizational performance, as dependent variable through perceptual survey items. Such perceptual measurements often result in skewed data, where respondents for instance overestimate the performance of their organization (Brewer, 2006; Meier & O'Toole, 2013). In contrast, when perceptual items are used to measure attitudes, interpretations of events or behavioral intentions (e.g. perceived strategic-decision quality), common method bias might be less of a concern (Favero & Bullock, 2014; Meier & O'Toole, 2013). Nevertheless, we tried to minimize issues of common method bias through our survey design and by identifying its impact through a statistical test (Jakobsen & Jensen, 2014).

First, our survey design followed recommendations of MacKenzie and Podsakoff (2012) and Podsakoff, MacKenzie, and Podsakoff (2012). Some of these recommendations were already discussed in the previous section (e.g. pretesting survey, identifying expert informants, offering incentives, gaining support from central authorities & directors). Response options were also labelled in the survey and highlights were used to indicate different items. In order to emphasize the importance and accuracy of responses, we explained the central objectives of the survey in the introduction mail and we offered full anonymity. The dependent and independent variables were separated in the survey by placing them on different pages, which creates a time lag between the respondent's answers (Jakobsen & Jensen, 2014; MacKenzie & Podsakoff, 2012; Podsakoff et al., 2012).

Second, we identified the impact of common method bias via the statistical test developed by Harman (1976). We executed a one-factor test. The items in the survey that measure strategic-decision quality, strategic planning, performance measurement, performance management and procedural justice were incorporated in an unrotated factor analysis. Five different factors were identified, items were not linked to one factor. None of the identified factors explained a large percentage of variance, with the biggest factor explaining about 38 per cent of variance. Conclusively, based on (a) the procedural measures that were included in our survey design and (b) the lack of one dominant factor or one highly explanatory factor emerging from our unrotated factor analysis, we can conclude that common method bias is not likely to be problematic in our study.

Dependent variable

We measured strategic-decision quality with the six items ($\alpha = .946$) presented by Olson et al. (2007) (see table 1 for full items). In order to identify a set of relevant strategic decisions, we followed the same approach as Carmeli, Tishler, and Edmondson (2012) and asked decision-makers to focus on the most recent strategic decisions. More specifically, they were asked to focus on the decisions in 2013 that involved the entire decision-making team of the center and that were specifically linked to their 2009 – 2013 policy cycle. Similar to previous studies, strategic-decision quality in our analysis measures perceptions of decision-makers concerning the quality of strategic decisions (e.g. Amason, 1996; Carmeli et al., 2012; Olson et al., 2007). Such a measurement approach is assumed to provide reliable results in the absence of more objective measures (Dess & Robinson, 1984). The strategic-decision quality variable demonstrates acceptable internal consistency ($\alpha > .700$) and factor loadings of the items are sufficient (i.e. $> .500$) (Hair, Black, & Babin, 2010).

[Insert Table 1 about here]

Independent variables

First, the measures used for the rational planning practices are as follows (see table 2 for full items): strategic planning was measured by four items ($\alpha = .727$) developed by Poister et al.

(2013). Performance measurement was also measured by four items ($\alpha = .790$) developed by Poister et al. (2013). Performance management was measured by four items ($\alpha = .612$) developed by Poister and Streib (2005). Respondents were asked to focus on their center's rational planning practices during the 2009 – 2013 policy cycle. Strategic planning and performance measurement demonstrate acceptable internal consistency ($\alpha > .700$). Performance management offers satisfactory internal consistency taking into account that this is a newer scale with few items ($\alpha > .600$) (Hair et al., 2010). Factor loadings of the items are sufficient (i.e. $> .500$) (Hair et al., 2010).

[Insert Table 2 about here]

Second, procedural justice of the decision-making process was measured by the seven items ($\alpha = .905$) developed by Colquitt (2001) (see table 3 for full items). The items were adapted to the specific context. More specifically, respondents were asked to assess the decision-making processes underlying the decisions in 2013 that involved the entire decision-making team of the center and that were specifically linked to their 2009 – 2013 policy cycle. The procedural justice variable demonstrates acceptable internal consistency ($\alpha > .700$) and factor loadings of the items are sufficient (i.e. $> .500$) (Hair et al., 2010).

[Insert Table 3 about here]

Controls

We include three control variables that are assumed to impact strategic-decision quality. First, we include the average tenure of decision-makers within the center. Second, we include the number of decision-makers identified by the director (i.e. team size). Third, we include resource scarcity of the center. We measured resource scarcity as a ratio-variable, namely the number of schools serviced by the center divided by the number of fulltime equivalent units employed by the center. These controls are recommended by Olson et al. (2007) when investigating predictors of strategic-decision quality.

[Insert Table 4 about here]

Analysis

In order to test the hypotheses, this study utilizes multiple regression modelling. However, table 4 indicates high correlations between the variables. We need to ensure that multicollinearity is not an issue in our model before conducting the regression analysis. We calculate the variance inflation factor (VIF) to assess potential issues with multicollinearity. All VIF-values are below 2.5 indicating that multicollinearity is not an issue. We now continue to our statistical results.

Statistical Results

[Insert Table 5 about here]

Table 5 presents an overview of the multiple regression model, including the unstandardized coefficients and the standard errors. The model, which controls for tenure, team size and resource scarcity, explains almost two-thirds of the variation in strategic-decision quality. It is also statistically significant. The statistical results support information processing theory, but offer some nuance. First, the coefficients of strategic planning and performance management are indeed positive and significant as anticipated in H1 and H3. Second, the coefficient of procedural justice of the decision-making process is also positive and significant as anticipated in H4. Moreover, based on the significant coefficients in our results, procedural justice is the strongest predictor of strategic-decision quality. Conflictingly, the coefficient of performance measurement has a negative sign and is non-significant thus leading to the rejection of H2.

Discussion

The results imply that both rational planning practices and procedurally just decision-making processes can contribute to strategic-decision quality in public organizations. The study offers support for the importance of both organizational information processes as well as behavior by decision-makers in public sector decision-making as argued by information processing theory (Kim & Mauborgne, 1995; Rogers et al., 1999). Controlling for rational planning practices, procedural justice is a significant predictor of strategic-decision quality. Controlling for procedural justice, strategic planning and performance management are significant predictors of strategic-decision quality. The non-significance of performance measurement, however, requires

a more nuanced perspective. Hence, the contributions of our study results to public management research are threefold.

First, the study contributes to the debate on rational planning's effectiveness in public organizations by testing the relation between three rational planning practices (i.e. strategic planning, performance measurement and performance management) and strategic-decision quality in a sample of 55 Flemish pupil guidance centers. Although several authors have criticized the appropriateness of rational planning in public organizations (e.g. Bovaird, 2008; Radin, 2006), our findings suggest that, in the context of Flemish pupil guidance centers, strategic planning and performance management are positively related to strategic-decision quality. These findings tie in with other empirical studies that identified benefits associated with the adoption of rational planning practices in public organizations worldwide, including Canadian public service organizations (Elbanna, Andrews, & Pollanen, 2015), US public transit agencies (Ugboro et al., 2011), English local government (Walker et al., 2010) and Seoul Metropolitan City in South Korea (Im & Lee, 2012). While the criticism towards rational planning practices in public organizations is potent, it does not, thus far, seem to result in a variety of empirical evidence that presents significant negative consequences associated with the adoption of rational planning in the public sector. Empirical evidence of significant positive consequences seems to be more frequent (Bryson et al., 2010; George & Desmidt, 2014; Poister et al., 2010; Walker & Andrews, 2015).

Second, the non-significant result for performance measurement supports the call for more contingency-based research on rational planning in order to discover which practices work in which situation (Bryson et al., 2010; Walker & Andrews, 2015). Flemish pupil guidance centers are public human services organizations focusing on the enhancement of the wellbeing of pupils in the Flemish education system. This is entirely different and, arguably, more difficult to quantify than the 'harder' objectives of, for instance, public transit agencies (Poister et al., 2013). The low mean score of performance measurement (3.87 on a Likert- scale of 1-7) does indeed indicate that, on average, Flemish pupil guidance centers are less inclined to use performance measures or numerical targets to track their progress towards strategic goals. In line with the findings of Julnes

and Holzer (2001) and Nomm and Randma-Liiv (2012), we argue that the low average score of performance measurement in Flemish pupil guidance centers can possibly be attributed to a lack of resources and a politically unstable environment. Similar to public organizations worldwide, the financial crisis and the resulting austerity measures within the Flemish government resulted in severe budgetary cuts for Flemish pupil guidance centers. A lack of resources inhibits the adoption of performance measurement in public organizations because technical difficulties and challenges during adoption require intensive investment and expertise (Boyne et al., 2004; Julnes & Holzer, 2001). Flemish pupil guidance centers have also been mentioned in the Government of Flanders 2014-2019 coalition agreement as being subjected to reforms that are aimed at eradicating overlap and fragmentation. As such, the pending reforms generate a politically unstable situation where there might not be a 'sense of urgency' to adopt performance measurement systems (Nomm & Randma-Liiv, 2012). If performance measurement is not really adopted by Flemish pupil guidance centers, statements about performance measurement's relation with strategic-decision quality based on our statistical analysis could be premature. We thus follow the argument of Boyne, Gould-Williams, Law, and Walker (2002, 706) and conclude that performance measurement in Flemish pupil guidance centers 'may provide more information on performance, but its impact [...] will depend on whether and how it is used'.

Third, our evidence indicates that strategic planning, performance management and procedural justice are associated with higher levels of strategic-decision quality. The positive relation between strategic planning and strategic-decision quality implies that the information-processing capability of strategic planning can help public organizations in their decision-making processes (Rogers et al., 1999). During strategic planning, information regarding a public organization's environment is systematically gathered and converged into a set of strategic issues, based on which strategic goals for the organization are selected (Bryson, 2011; Poister et al., 2013). Strategic planning thus plays an important converging role by deliberately transforming a vast amount of information into a specific set of strategic goals that can then systematically inform decisions on an ongoing basis within public organizations (Poister, 2005; Poister & Streib, 2005).

Hence, through the deliberate and systematic formulation of strategic goals, strategic planning ensures that decisions are made to achieve overarching strategic goals as opposed to solely address political or intuitive motives (Boyne, 2001; Walker et al., 2010). Since strategic planning is often a cornerstone of public sector reforms (Bryson et al., 2010; Ugboro et al., 2011), the positive relation between strategic planning's deliberate, systematic and converging approach to information processing, and strategic-decision quality is relevant for a variety of public organizations worldwide.

Our results also imply that linking the strategic goals to individual objectives and evaluations of key staff (e.g. directors) through performance management significantly predicts strategic-decision quality. As hypothesized, this finding suggests that performance management bridges the gap between strategic goals of the organization and goals of individuals, and ensures that it is in the best interest of individuals to include the strategic priorities of the organization in their decision-making processes (Poister & Streib, 2005). While strategic planning thus ensures that strategic goals are formulated, performance management ensures that the implementation of strategic goals is assigned to key individuals within the organizations (Poister, 2010; Poister & Van Slyke, 2002). Interestingly enough, while strategic planning is an often-mentioned cornerstone of public sector reforms (Boyne, 2001; Bryson et al., 2010), linking plans and individuals via performance management is not (Poister, 2010). We argue that the positive decision-making impact of performance management merits further inquiry by public management scholars. By connecting the strategic plan to the objectives and stakeholder evaluations of key employees such as directors and other decision-makers, public organizations align these individuals with the organizational strategy (Poister & Streib, 2005). Performance management could prove to be a key incentive for including strategic goals and stakeholder expectations in decision-making because this would be in the best interest of one's own individual objectives.

Our findings also suggest that procedural justice of the decision-making process significantly predicts strategic-decision quality. Not only is its coefficient significant and positive,

it also has the highest value out of all significant predictors in our model. This study offers support for the procedural justice model of decision-making as argued by Kim and Mauborgne (1995). Decision-makers in Flemish pupil guidance centers who believe they are allowed to participate in decision-making processes, exercise their voice during decision-making processes and, if necessary, appeal decisions (Rubin, 2009), also on average report higher degrees of strategic-decision quality. While organizational information processes such as strategic planning and performance management are important, this study offers empirical evidence that in order to understand strategic-decision quality in the public sector we cannot oversimplify the context by neglecting the importance of individual behavior within decision-making teams. The extent to which decision makers are allowed to exchange information during decision-making can be expected to be of crucial importance in order to fully comprehend the quality of strategic decisions in public organizations (Bryson et al., 2009; George & Desmidt, 2014).

Future empirical research could focus on other output attributed to rational planning practices in public organizations (e.g. strategic-decision commitment, understanding or consensus) (Kellermanns et al., 2011; Yang, Sun, & Eppler, 2009). Such research is especially interesting for public strategic management because output of rational planning practices is argued to be an antecedent to outcomes such as organizational performance (Kellermanns et al., 2011; Pollitt & Bouckaert, 2004). Mediated models could also be constructed to test if strategic-decision quality, as key process output of rational planning, indeed mediates the relationship between rational planning practices and organizational performance in public organizations. This would help us gain insights into the complex causality underlying rational planning and performance in the public sector (Boyne, 2001), as well as illustrate the 'bottom-line' importance of process output such as strategic-decision quality.

While procedural justice offers a multidimensional starting point, future studies could incorporate a variety of decision-making behavior into empirical models. For instance, assuming that interpersonal treatment needs to encourage information exchange between decision-makers during decision-making, group dynamics such as conflict, trust and communication between

decision-makers offer valuable research avenues (Carmeli et al., 2012; Olson et al., 2007). Apart from focusing on behavior during decision-making, one could also assess the impact of individual perceptions towards the rational planning practices. For instance, how could acceptance of rational planning practices influence the informational role of rational planning in decision-making? If rational planning practices are coerced by central government but not accepted by individuals, this might result in a refusal to incorporate information generated by these practices in decision-making (e.g. Andrews et al., 2009a).

Finally, in order to generate insights into how performance measurement can be useful for decision-making in public human services organizations, future research efforts such as single and multi-case studies could present best practices in specific public human services organizations or compare performance measurement systems across organization types. Future empirical research could also expand the scope of this study by including antecedents and measures of performance information usage because performance measurement does not necessarily illustrate the usage of performance information in decision-making (Taylor, 2011).

Limitations

Although our findings are interesting, some limitations need to be considered. First, our study was conducted in Flanders, findings may not be generalizable to other contexts. Second, we focused on Flemish pupil guidance centers. These organizations are unique to the Flemish educational system. Findings may vary based on a different set of contingencies (e.g. local government). Third, our study was cross-sectional and offers a snapshot. Longitudinal data could extend the analysis over time and offer more robust evidence. Fourth, we utilized perceptual data based on a multi-informant survey. When available, a variety of data sources (e.g. multiple surveys, archival data) could help counter some of the issues associated with perceptual data drawn from one survey-based source.

Conclusion

This study revisits the debate on rational planning's effectiveness in the public sector by adopting a decision-making perspective grounded in information processing theory. The results suggest

that strategic planning and performance management are rational planning practices that inject information into decision-making thus contributing to strategic-decision quality. However, the non-significance of performance measurement supports previous pleas for more contingency-based planning research. Our results also illustrate that more attention towards the behavior of decision-makers during decision-making processes is merited because procedural justice of the decision-making process is the strongest predictor of strategic-decision quality. Nevertheless, due to the limited dataset, further research is required to confirm if these findings hold within another context. Such research could investigate the predictors of strategic-decision quality in the public sector by testing the impact of both organizational information processes as well as the behavior of decision-makers during decision making processes. For now, however, this study suggests that rational planning practices and procedurally just decision-making process matter to public sector decision-making.

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Tables

Table 1: Survey items and factor loadings of strategic-decision quality variable

Survey items	Factor 1
Strategic-decision quality ($\alpha = .946$) (7-point Likert-scale, 1 = very bad, 7 = very good)	
The strategic decisions have had a ... effect on the center.	.908
Relative to what we expected, the results of the strategic decisions have been844
Overall, we feel that the strategic decisions were929
The degree to which our strategic decisions covered the maximum range of relevant issues was894
The degree to which our strategic decisions were well structured and reflective of interrelationships and intra-relationships among the relevant issues was922
The degree to which our strategic decisions were expressed in depth was839
Eigenvalue/cumulative variance	4.752/79.199

Note: Sample size = 55

Table 2: Survey items and factor loadings of rational planning variables

Survey items	Factor 1
Strategic planning ($\alpha = .727$) (7-point Likert-scale, 1 = completely disagree, 7 = completely agree)	
When we formulate strategy, we use a systematic planning process.	.870
We have completed a formal strategic plan or plan update periodically.	.796
We have conducted situational analyses of our strengths and weaknesses.	.646
We have established strategic goals and have used them to drive decisions and actions throughout the center.	.677
Eigenvalue/cumulative variance	2.266/56.653
Performance measurement ($\alpha = .790$) (7-point Likert-scale, 1 = completely disagree, 7 = completely agree)	
We have used performance measures to track the accomplishments of strategic goals and objectives.	.852
We have used performance measures to track performance over time.	.864
We have set clear numerical targets and then actively monitored and managed performance in order to achieve those targets.	.794
We have used measures to compare performance between our departments.	.604
Eigenvalue/cumulative variance	2.469/61.713
Performance management ($\alpha = .612$) (7-point Likert-scale, 1 = completely disagree, 7 = completely agree)	
Objectives established for management team members come from the overall strategy.	.714
Central authority holds the director responsible for implementing the strategy.	.752
Evaluation of the director is based on accomplishment of the strategic goals and objectives.	.554
Our director tries to keep the stakeholders focused on the strategic goals and objectives.	.696
Eigenvalue/cumulative variance	1.868/46.690

Note: Sample size = 55

Table 3: Survey items and factor loadings of procedural justice variable

Survey items	Factor 1
Procedural justice of the decision-making process ($\alpha = .905$) (7-point Likert-scale, 1 = to a very small extent, 7 = to a very large extent)	
Have you been able to express your views and feelings during decision-making processes?	.794
Have you had influence over the strategic decisions arrived at by decision-making processes?	.866
Have decision-making processes been applied consistently?	.796
Have decision-making processes been free of bias?	.863
Have decision-making processes been based on accurate information?	.777
Have you been able to appeal the strategic decisions arrived at by decision-making processes?	.725
Have decision-making processes upheld ethical and moral standards?	.762
Eigenvalue/cumulative variance	4.469/63.838

Note: Sample size = 55

Table 4: Descriptive statistics and zero order correlations

Variable	Mean	Standard deviation	1	2	3	4	5	6	7	8
1 Strategic-decision quality	5.06	0.68	1.000							
2 Strategic planning	5.42	0.67	.724**	1.000						
3 Performance measurement	3.87	0.82	.288*	.348**	1.000					
4 Performance management	4.20	0.54	.646**	.599**	.425**	1.000				
5 Procedural justice	5.18	0.55	.746**	.713**	.353**	.609**	1.000			
6 Tenure	15.10	5.88	.059	0.027	-.294*	-.224	.002	1.000		
7 Team size	4.05	1.56	.123	.148	-.186	-.052	.061	.191	1.000	
8 Resource scarcity	1.35	0.37	.159	.158	.030	.007	.129	.039	.172	1.000

* = $p < 0.05$, ** = $p < 0.01$

Note: Sample size = 55.

Table 5: Regression results

Independent variable	Coef. (s.e.)
Constant	-.692 (.622)
<i>Rational planning practices</i>	
Strategic planning	.286* (.131)
Performance measurement	-.024 (.081)
Performance management	.364* (.149)
<i>Procedural justice of the decision-making process</i>	
Procedural justice	.462** (.157)
<i>Controls</i>	
Tenure	.011 (.011)
Team size	.018 (.039)
Resource scarcity	.101 (.159)
R^2	.677
Adjusted R^2	.629
F	14.068**
* = $p < 0.05$, ** = $p < 0.01$	
Note: Sample size = 55.	

Figures

Figure 1: Predictors of strategic-decision quality in public organizations

