Results-oriented Culture, Performance Information Use and the Performance of Public Organizations: Evidence from Vietnam*

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Abstract

The purpose of this research is to investigate the mediating role of performance information use in the relationship between result-oriented culture and organizational performance. The data were collected from chief accountants and managers working in public-sector organizations in Vietnam. The analysis was based on the 197 completed questionnaires by using Partial Least Squares Structural Equation Modeling (PLS-SEM). For the test research model and hypotheses, the supporting tool is SmartPLS 3 software. Research findings show that result-oriented culture is positively associated with organizational performance, and that performance information use is a mediating mechanism that explains how a result-oriented culture leads to higher performance in public organizations. The findings of this study suggest that the result-oriented culture, not only directly improves organizational performance, but also indirectly does so by the use of performance information. This study provides evidence for theoretical understanding of the impact of result-oriented culture on the performance of public-sector organizations through performance information use, and suggests practical implications for public organizations in applying result-oriented culture to foster using performance measurement and improve organizational performance. In order to achieve good performance, public-sector organizations need to create and spread result-oriented culture and enhance the use of performance information for decision-making.

Keywords: Results-oriented Culture, Performance Information Use, Organizational Performance, Public Sector

JEL Classification Code: H83, M41, M48

1. Introduction

New Public Management (NPM) is considered the major theoretical framework in improving public sector...
public-sector performance, particularly aspects related to the measurement and performance information use. The leaders employ culture as a tool to change the leading role of the bureaucratic paradigm, thereby changing the assumptions; values behaviors in organization is basic requirement of performance management in public sector (Sanger, 2008). Furthermore, cultural change to improve performance is strongly supported by NPM doctrine (Thi Tran, Nguyen, & Nguyen, 2020). It is no longer appropriate to maintain a culture that emphasizes strict adherence to rules and regulations set forth in public organizations; management control to enhance operational outcomes requires a culture that focuses on outcomes rather than inputs or process, that is result-oriented culture (Verbeeten & Speklé, 2015). Moreover, result, accountability, and transparency of government agencies will be better thanks to a result-oriented culture (Ouda, 2015). The influence of result-oriented culture on performance in public-sector organizations has been explored in previous studies. Result-oriented culture not only has a direct impact on organizational effectiveness, but also indirectly via other intermediary mechanisms such as performance information (Garnett, Marlove, & Pandey, 2008), organizational commitment (Moon, 2000), the use of management initiatives (Baird & Harrison, 2017), and financial accountability (Thi Tran et al., 2020). When top leadership demonstrates a strong commitment to results, which will drive the need to use performance information (Cavalluzzo & Ittner, 2004), and the higher the use of performance information, the more likely it is to positively affect public-sector organization outcomes (Pollanen, Abdel-Maksoud, Elbanna, & Mahama, 2017; Sun & Van Ryzin, 2014). Nevertheless, empirical evidence on the role of PIU in the relationship between result-oriented culture and performance remains limits.

This study aims at closing the mentioned gap by examining the effect of result-oriented culture on performance via the PIU. This work is more meaningful to perform in Vietnam, which is in the process of reforming to improve the performance of administrative agencies as well as public-service delivery institutions. While previous studies focused on developed countries (Nitzl et al., 2019; Pollanen et al., 2017; Speklé & Verbeeten, 2014; Zhang, Van de Walle, & Zhou, 2016), in contrast, researching in a developing country will enrich the literature and experimental results. This study used survey data from chief accountants and managers of Vietnamese public organizations to test research hypotheses based on NPM doctrine and goal setting theory. Data was analyzed using structural equation modeling (SEM) with partial least squares analysis (PLS) by SmartPLS 3 software. A linear structure model is proposed, showing the relationship between latent concepts and estimating multiple paths simultaneously, thereby, PLS-SEM is particularly useful in this situation (Henseler & Fassott, 2010).

The paper is structured as follows: Section 2 reviews the relevant literature and puts forward the study hypotheses. The sampling and data collection, measuring variables as well as data analysis method are presented in Section 3. Section 4 reports the main findings and the discussion. Finally, we draw conclusions and suggest directions for further research in Section 5.

2. Literature Review and Development Hypotheses

2.1. Result-Oriented Culture and PIU

The NPM theory is described as the way to bring managerialism, entrepreneurship, economic rationality, and results orientation into the public sector (Hood, 1991; Nitzl et al., 2019). The fundamental premises of NPM consist of (1) employing professional managers, (2) setting clear standards and measuring performance, (3) emphasizing the consistency of public services, (4) decentralizing management, (5) increasing competition between organizations and sub-units, (6) paying more attention to the management style of the private sector, and (7) using resources more effectively (Hood, 1991). Organizational culture not only determines the organization’s strategy and goals, but also decides how the organization operates (Kim, Lee, & Roh, 2006), including the measurement and use of performance information for decision-making (Henri, 2006). Building on NPM theory, the first step to improve the performance is to create a result-oriented culture in public institutions because the bureaucratic, traditional governance model of the public sector is no longer relevant (OECD, 2005). The result-oriented culture is a component of organizational culture, focusing on productivity, performance and result orientation (Zammuto & Krakower, 1991). These are in line with NPM reforms (Hood, 1991). According to Ammons and Roenigk (2015), when managers concentrate on outputs, quality, and performance, they tend to perform more effectively than those who only care about inputs for monitoring purposes. Furthermore, result-oriented culture encourages employees to act for results, which create the need to use performance information to set goals, monitor activities, enforce policies, and create incentives (Verbeeten & Speklé, 2015).

Result-oriented culture exists when employees have to choose the appropriate actions to achieve the most effectiveness and complete organization’s goals (Perrin, 2002). Relying on goal-setting theory, employees use feedback from performance measurement systems to know how to achieve goals (Birnberg, Luft & Shields, 2006). It is quite difficult to change method to the desired results if employees they do not fully understand what they are doing (Locke & Latham, 2002). In addition, Rivenbark, Fasiello, and Adamo (2018) confirmed that performance data using
2.2. PIU and Performance

According to Simons (2000), the main purpose of performance measurement system is to transmit performance data including both financial and non-financial information, which influences the decision-making and managerial action. De Brujin (2003) also argued that performance information is the formal product of performance measurement system, and these are generally professional and institutionalized activities. Previous studies have acknowledged the existence of a variety of PIU. For example, Behn (2003) argued that performance information is used to evaluate, control, budget, motivate, celebrate, learn, and improve, while Hansen and Van De Stede (2004) identify four different roles of performance information: operational planning, performance evaluation, goal communication, and strategy development. Van Dooren, Boukaert, and Halligan (2010) distinguish between control, steering, learning, and accountability uses of performance information. In summary, performance information plays a particularly important role in assisting managers and this is more strongly stated when managers use these data to alter action with the goal of increasing performance (Cavalluzzo & Ittner, 2004; Kroll & Vogel, 2014; Moynihan, 2005; Poister, Pasha, & Edwards, 2013).

The public sector is increasing performance management and measurement practices in the expectation that it would produce useful information for managers, and therefore, improve performance of public organizations. Many studies supposed the link between performance information use and performance is positive; and influenced levels depend on other factors. For instance, Poister et al. (2013) suggested that using performance measurement systems will increase the outcomes of public transport organizations in the United State. In later studies, Speklé and Verbeeten (2014, 2015) found that this effect is influenced by the type of use, the intensity and contractability level of services. Sun and Van Ryzin (2014) found a positive effect of performance information use on outcomes in New York's public schools; Pollanen et al. (2017) also obtain same findings in Canada. Accordingly, the following hypothesis is put forward:

\[ H2: \text{PIU has a positive effect on organizational performance.} \]

2.3. Result-Oriented Culture and Performance

NPM doctrine aims at outputs, it means that result-oriented culture is necessary to promote institution’s activities better (Perrin, 2002). All employees will have a strong commitment to achieve the targets if outputs are important for them. Therefore, this has a positive effect on the organization’s performance. Furthermore, goal-setting theory posits that working commitments are also one of the direct causes of performance (Latham & Locke, 1991). The effectiveness and improved efficiency is not surprising when the objectives are clear to all employees. In addition, employees with high commitment to achieve the organization’s goals are more productive, and therefore improve the performance of organization (Phornlaphatrachakorn & Peemanee, 2020).

Organizational culture is the antecedent of organizational performance that has been confirmed in the literature (Maccouilides & Heck, 1993). Studies often examine the effects of separate cultural types on organizational performance (Nitzl et al., 2019). Ogbonna and Haris (2000) highlighted that competitive and innovative cultures are positively associated with organizational outcomes. Fekete and Bocskei (2011) suggested that the financial performance of the organization is influenced by market culture. Generally, Yesil and Kaya (2013) confirmed that different culture types will have different effects on organizational performance. Examining the effects of result-oriented culture on public-sector performance is researched by other authors (Nitzl et al., 2019; Thi Tran et al., 2020; Verbeeten & Speklé, 2015). Verbeeten and Speklé (2015) showed that result-oriented culture has a direct and positive impact on performance, it motivates both managers and employees who work more effectively, thereby enhances performance. In contrast, Nitzl et al. (2019) argued that this effect is indirect through other variables. A recent study conducted by Thi Tran et al. (2020) reaches also the same findings. Based on both NPM doctrine and goal-setting theory and empirical evidences, we propose the following hypothesis:

\[ H3: \text{Result-oriented culture has a positive impact on organizational performance.} \]

2.4. The Mediating Role of PIU

According to Baird, Harrison, and Reeve (2007), result-oriented culture motivates organizations to embrace new accounting methods, set up improvement process in business and competitive ability. Furthermore, performance measurement is an element associated with accounting methods that support policymakers through providing useful information as well as enhancing transparency and accountability (Stecconlini, Saliterer, & Guthrie, 2020). In addition, NPM reforms propose that managers need to take responsibility for performance instead of just following rules and procedures, therefore, performance information is important for them to monitor and evaluate the efficiency and effectiveness in comparison with goals (Verbeeten & Speklé, 2015). Thus, result-oriented culture increases the
information-using demand in evaluating performance, improving transparency and accountability, thereby improving operational performance. Empirical evidence from Garnett et al. (2008) has shown that commitment to goals has a positive impact on organizational performance and PIU is a mediate factor. On this basis, an hypothesis is developed as following:

**H4:** PIU mediates the relationship between result-oriented culture and organizational performance.

The theoretical model is presented in Figure 1.

3. Methodology

3.1. Sampling and Data Collection

This study used survey data from managers and chief accountants who have working experience at least three years and adequate knowledge of performance measurement system in Vietnamese public organizations. The managers have operating rights, hold cultural-related issues and measuring performance of the organization, and the chief accountant is the direct consultant of senior managers in setting up and operating performance measurement systems. The appropriate level of analysis for our study is the organization, with one person surveyed from each unit. Vietnam has a total of 143,700 public organizations (General Statistics Office, 2018), 350 samples were selected by convenient sampling method. We pre-tested the questionnaire by asking ten public-sector managers and chief accountants to complete survey instrument and to discuss their experience. Some 350 questionnaires were sent either directly or via email. There were 197 valid responses, giving a total response rate of 56.2%. According to Hair, Hult, Ringle, and Sarstedt (2017), the appropriate sample size for PLS-SEM model is ten times the largest number of structural paths directed at a particular construct in the structural model. Therefore, collected sample size is suitable for analysis by SmartPLS 3 software.

As shown in Table 1, 27.4% of respondents are working in administrative organizations, the rest (72.6%) are in public organizations including specific fields such as education, health, and other fields. This structure is suitable for the Vietnamese public institutions divided by operation fields (General Statistics Office, 2018). The majority of respondents were senior managers (51.3%), followed by chief accountants (32.5%) and mid-level managers (16.2%).

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational field</td>
<td>Administrative</td>
<td>27.4</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>14.2</td>
</tr>
<tr>
<td></td>
<td>Health</td>
<td>40.6</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>17.8</td>
</tr>
<tr>
<td>Job position</td>
<td>Senior manager</td>
<td>51.3</td>
</tr>
<tr>
<td></td>
<td>Mid-level manager</td>
<td>16.2</td>
</tr>
<tr>
<td></td>
<td>Chief accountant</td>
<td>32.5</td>
</tr>
<tr>
<td>Work experience</td>
<td>From 3 to 5 years</td>
<td>19.3</td>
</tr>
<tr>
<td></td>
<td>From 6 to 10 years</td>
<td>42.6</td>
</tr>
<tr>
<td></td>
<td>Over 10 years</td>
<td>38.1</td>
</tr>
<tr>
<td>Employee in organization</td>
<td>(Mean) Min/Max</td>
<td>(87.23) 5/983</td>
</tr>
<tr>
<td>Age</td>
<td>(Mean) Min/Max</td>
<td>(20.64) 4/74</td>
</tr>
</tbody>
</table>

Note: Total number of respondents N = 197.

![Figure 1: Theoretical Model](image)
Respondents have long working experience, up to 42.6% of respondents have 5 to 10 years of working experience, and 38.1% have more than 10 years. These characteristics contribute to confirm that the collected sample is sufficiently representative to test the research model.

3.2. Measuring Variables

This study utilized pre-developed, reliable, and valid scale to measure three variables in research model. Multi-item five-point semantic scales were used to assess all variables.

3.2.1. Result-Oriented Culture

A 4-item scale was adapted from Verbeeten and Speklé (2015), this scale was developed relying on NPM theory to capture the extent to which the respondents agree with the statement related to accountability, performance, commitment to get goals of manager, and recognize the individual’s contributions to the organizational performance. On the other hand, NPM is the main theory to develop research hypothesis, thus, this is the appropriate measurement in this study. Result-oriented culture is measured by 5-point Likert scale, from 1 “totally disagree” to 5 “totally agree”.

3.2.2. PIU

Performance information may serve a variety of difference purpose within organization (Cavalluzzo & Ittner, 2004; Henri, 2006; Speklé & Verbeeten, 2014), it is considered as a feedback channel to compare performance to goals and also as a transmission means of information to stakeholders (Henri, 2006). In addition, performance information is also a vital database to support the managers in making strategic decisions and controlling organization (Cavalluzzo & Ittner, 2004; Henri, 2006; Kroll, 2015). In terms of PIU, respondents were asked about how well information from performance metrics was used for internal administration purposes and to create communication channel with the stakeholders, consistent with the function of performance information as presented. An 8-item scale was borrowed from Cavalluzzo and Ittner (2004), and measured on a 5-level scale, from 1 “not at all” to 5 “very frequently”.

3.2.3. Organizational Performance

Obviously, there are certain challenges in public-sector performance metrics because of the conceptual ambiguity and the difficulty in finding an optimal measure (Jung & Lee, 2013; Nitzl et al., 2019). Objective measures have been criticized as they only quantify aspects that are easy to measure (Song & Meier, 2018) and not all of them are always available (Kim, 2004). Whereas, perceptual measures can create bias of the respondents and are not separately supervised (Andrews, Boyne, & Walker, 2006; Jung & Lee, 2013). According to Brewer and Selden (2000), one should not focus too much on objective criteria because of reflecting performance in a narrow aspect when measuring public-sector performance, and these metrics can provide a false picture of the organization’s performance. Besides, the self-report measures based on individual perception are an appropriate approach when research in public-sector organizations (Giauque, Anderfuhren-Biget, & Varone, 2013; Kim, 2010; Pollanen et al., 2017). Base on well-established instruments developed by Van de Ven and Ferry (1980), this study applied seven items to evaluate quantitative and qualitative performances. This scale has also been used by Speklé and Verbeeten (2014) and Nitzl et al. (2019). Respondents were asked to answer their organization’s score as opposed to others relative, using a five-point semantic scale from 1 “far below average” to 5 “far above average”.

3.3. Control Variables

The size and the age of the organization were included as control variables for organizational performance in accordance with previous research (Gomes, Mandes, & Carvalho, 2017; Tran & Nguyen, 2020; Verbeeten, 2008). Organization’s size is measured by the number of full-time employees (Gomes et al., 2017), whereas organization’s age is the number of operation years (Glisson & Martin, 1980).

4. Results and Discussion

The study performed a two-step analysis suggested by Hair et al. (2017). The first step was aimed at evaluating the overall measurement scales. The second step was aimed at testing structural model to evaluate the interpretability of the path coefficients and effects of control variables (Hair et al., 2017).

4.1. Results of the Evaluation of the Construct Measurements

First, we tested the reliability and validity of the latent variables in the theoretical model to evaluate the overall measurement model, and then convergent and discriminant validity were also checked. Table 2 presents the results of the criteria of measurement model.

As shown in Table 2, all of Cronbach’s Alpha coefficients of the results-oriented culture, PIU and organizational performance scales reach the required acceptable threshold of greater than 0.6 (Chin, 1998). In addition, the composite reliability of the latent variables was greater than 0.7, which satisfies the reliable requirement as proposed by Hair et al. (2017).
Next, the convergent validity was evaluated through two criteria, the outer loadings and the average variance extracted (AVE) index. According to Hair et al. (2017), the scale is satisfactory for the convergence validity when the external loading of the observed variables need to be statistically significant and have a value from 0.7, and the AVE of latent variables should be greater than 0.5. The outer loadings of the observed variables ranged from 0.702 to 0.891, t-value exhibited greater than 2.54 (from 11.434 to 57.629) and statistically significant at 1%. Besides, the AVE of scales was above 0.5. Therefore, the three measurement scales of constructs were satisfactory in term of convergent validity.

Cross-loading, Fornell-Lacker, Heterotrait-Monotrait ratio (HTMT) were used to evaluate the discriminant validity of scales (Hair et al., 2017). Although cross-loading and Fornell-Larcker are popularly used in PLS-SEM, it is still limited (Garson, 2014). HTMT is a better criterion in evaluating the discriminant validity of the scale (Henseler, Ringle, & Sarstedt, 2015). The model is suitable at HTMT < 1 and the best at HTMT < 0.9 (Henseler et al., 2015). As presented in Table 3, the HTMT index fluctuates in the range from 0.442 to 0.595, indicating discriminant validity of scales.

Common method variance (CMV) often happens with self-reported data (Podsakoff & Organ, 1986). If this

Table 2: Evaluation of the Construct Measurements

<table>
<thead>
<tr>
<th>Construct and Items</th>
<th>Outer Loading</th>
<th>t-value</th>
<th>CB</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results-oriented culture</td>
<td>0.857</td>
<td>14.036</td>
<td>0.881</td>
<td>0.649</td>
<td></td>
</tr>
<tr>
<td>Higher management of my organization is strongly committed to achieving the formulated objectives</td>
<td>0.801</td>
<td>14.036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managers in my organization are being held responsible for the results they achieve</td>
<td>0.843</td>
<td>23.918</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managers in my organization are confronted when they do not succeed in realizing their targets</td>
<td>0.814</td>
<td>20.127</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees in my organization receive recognition when they help to achieve the objectives of my organization</td>
<td>0.763</td>
<td>16.864</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance information use (PIU)</td>
<td>0.759</td>
<td>15.606</td>
<td>0.868</td>
<td>0.593</td>
<td></td>
</tr>
<tr>
<td>Setting program priorities</td>
<td>0.798</td>
<td>13.416</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allocating resources</td>
<td>0.745</td>
<td>11.780</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adopting new program approaches or changing work processes</td>
<td>0.738</td>
<td>11.434</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinating program efforts with other internal or external organizations</td>
<td>0.757</td>
<td>14.882</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refining program performance measures</td>
<td>0.702</td>
<td>23.920</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting new or revising existing performance goals</td>
<td>0.848</td>
<td>31.833</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting individual job expectations for employees</td>
<td>0.816</td>
<td>18.409</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rewarding employees</td>
<td>0.816</td>
<td>18.409</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational performance</td>
<td>0.846</td>
<td>0.944</td>
<td>0.707</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The quantity or amount of work produced</td>
<td>0.799</td>
<td>16.661</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The quality or accuracy of work produced</td>
<td>0.847</td>
<td>21.002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The number of innovations or new ideas by the unit</td>
<td>0.774</td>
<td>18.969</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The reputation of 'work excellence.'</td>
<td>0.845</td>
<td>24.846</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attainment of unit production or service goals</td>
<td>0.806</td>
<td>57.629</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The efficiency of unit operations</td>
<td>0.891</td>
<td>51.257</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The morale of unit personnel</td>
<td>0.816</td>
<td>25.892</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: CB: Cronbach’s Alpha; CR: Composite Reliability; AVE: Average Variance Extracted.
problem has not been controlled, the correlation between the observed variables may be overstated, which leads to an increase in the relationship between the constructs and a decrease of discriminant validity among them (Straub, Boudreau, & Gefee, 2004). In this study, CMV was tested by the widely-known Harman’s one-factor because it is simple and is commonly used in management studies (Fuller, Simmering, Atinc, Atinc, & Babin, 2016). Accordingly, CMV is not a problem when exploratory factor analysis (EFA) with all research variables creates its own value shows that the first factor accounts for more than 50% of variance between variables (Podsakoff & Organ, 1986). In this study, Harman’s one-factor test with SPSS 22.0 software showed that Harman’s single-factor accounted for only 32.44% of the total variance extracted from the entire model, smaller than the threshold of 50.0%. This result indicated that CMV is not a serious problem.

4.2. Hypothesis Testing Results

The model predictability and the relationship between latent variables are tested by estimating structural modeling (Hair et al. 2017). Firstly, we checked for multicollinearity issue to ensure that the independent variables were not strongly correlated with together (O’Brien, 2007); there is no multicollinearity phenomenon with VIF < 5 (Hair et al., 2017). The analysis results showed that the value of the inner VIF for all items ranged from 1.000 to 1.326 and were lower than the critical of 5.0. It means that the study does not have multicollinearity phenomenon. To test the hypotheses, the process of evaluating the strength and statistical significance of each path in the structural model is taken. The indicators consist of the coefficient β, the t-value and R², evaluated by bootstrapping procedure based on 3,000 samplings. The main results are presented in Table 4.

Hypothesis 1 predicted that result-oriented culture is positively related to PIU. As predicted, the correlation between result-oriented culture and PIU was positive, the analysis revealed path coefficient (β = 0.496; t = 8.006; p < 0.05). This result consistent with the assumptions of NPM doctrine and goal-setting theory is that when result-oriented culture exists in the organizations, the operational goals are clearly defined and the managers as well as employees are committed to achieve goals; this motivates the need of PIU (Birnberg et al., 2006; Perrin, 2002). The debates related to the impact of organizational cultural aspects on performance data use have been given in previous studies. For example, in a developing culture, performance information would be more integrated in decision-making, employees would be honest about weaknesses and more open to discussing performance issues (Moynihan, Pandey, & Wright, 2012; Taylor, 2011). Taylor (2011) has argued and proposed that cultural levels as well as types are related to the use of PIU. However, the previous studies have not examined the relationship between results-oriented culture and PIU in the public sector, particularly in a developing country like Vietnam. Therefore, this study enriches the literature alongside theoretical arguments by providing empirical evidence of the positive effect of result-oriented culture on the PIU. Result-oriented culture focuses on goal fulfillment and achievements whereas performance information is used with expectation to promote the performance, thereby, result-oriented culture will enhance the PIU.

Hypothesis 2 proposed that PIU has a positive influence on performance of public-sector organizations in Vietnam. In accordance with hypothesis, a significant relationship between PIU and organizational performance (β = 0.228; t = 4.706; p < 0.05). Accordingly, when a public organization enhances the use of PIU, it will improve the performance. Goal-setting theory claimed that feedback information (for example performance information) can create opportunities to set more rigorous goals in the future, provide relevant information for better strategic decision-making, and take incentive measures to improve performance (Locke & Latham, 2002). This result supports...
the studies of Poister et al. (2013), Speklé and Verbeeten (2014); Sun and Van Ryzin (2014). However, this result is not in line with the studies by Halachmi (2002) and Tran and Nguyen (2020). Gerrish (2016) indicated that “the act of measuring performance may not improve performance, but managing performance might”, which shows the effect of measuring performance is not clear, and needs to be explored more in the future. Therefore, the evidence from this study has contributed to clarify the relationship between performance measurement practices and public organizations performance.

Hypothesis 3 conjectured that result-oriented culture positively impact the performance of public organizations in Vietnam. This hypothesis is supported ($\beta = 0.366$; $t = 3.419$; $p < 0.05$), it means that organizations that have result-oriented culture will produce higher performance. Indeed, when both managers and employees become aware of their responsibility for organization’s performance, they will have a stronger commitment to complete their goals and take accountability. This result adds more support to NPM theory (Hood, 1995), which encourages public-sector reform by creating result-oriented culture in the organization. Previously, some studies have examined the relationship and given similar results, however most of them have been conducted in developed countries (Nitzl et al., 2019; Rizzi, Annunziata, & Frey, 2018; Verbeeten & Speklé, 2015); researching in developing countries is still limited (Pham, Vu, Pham, & Vu, 2020; Thi Tran et al., 2020). According to Heady (2001), one of the challenges of public administration in developing countries is less result-oriented as public organizations tend to concentrate on achieving goals rather than program objectives. As a result, short-term goals are achieved, but long-term performance may be negatively affected. Therefore, public entities in developing countries that would like to improve performance should promote result-oriented management culture, then managers and employees would have a significant influence on the outcomes for which they are held accountable, and that they are able to work systematically toward goal achievement.

Hypothesis H4 proposed the indirect impact of result-oriented culture on performance through PIU as the mediating variable. A mediated analysis from the bootstrap technique showed that indirect effect of result-oriented culture on performance through PIU was statistically significant ($\beta = 0.113$; $t = 3.172$; $p < 0.05$). Two direct effects consist of the influence of result-oriented culture on PIU and PIU on performance have been confirmed when hypotheses H1 and H2 were accepted, therefore, hypothesis H4 related to the indirect effect of result-oriented culture on performance is also accepted as suggested by Hair et al. (2017). This finding suggests that PIU is complementary mediator, in part, for the relationship between result-oriented culture and organizational performance. This means that, when managers strive for organization’s goals as well as assume performance accountability, they will need to use information from the performance measurement system. Furthermore, performance information is also considered as a means of justifying decisions or actions in an organization (Henri, 2006), therefore, the higher result-oriented culture, the higher the need to use performance information. Performance would be improved if the accountability and work goals are satisfactory. Previously, Garnett et al. (2008) argued that task instructions, feedback, and upward communications are mediated in the relationship between mission-oriented culture and performance. Our study has contributed to the literature by confirming the mediating role of PIU; this

### Table 4: Partial Least Squares Results for the Theoretical Model

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Independent Variable</th>
<th>PIU</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$\beta$</td>
<td>$t$-value</td>
</tr>
<tr>
<td>Direct effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1</td>
<td>Results-oriented culture</td>
<td>0.496</td>
<td>8.006*</td>
</tr>
<tr>
<td>H2</td>
<td>PIU</td>
<td>0.228</td>
<td>4.706**</td>
</tr>
<tr>
<td>H3</td>
<td>Results-oriented culture</td>
<td>0.366</td>
<td>3.419*</td>
</tr>
<tr>
<td>Control variable</td>
<td>Size</td>
<td>-0.155</td>
<td>1.762**</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>-0.097</td>
<td>1.246</td>
</tr>
<tr>
<td>Indirect effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H4</td>
<td>Results-oriented culture → PIU → Performance: $\beta = 0.113$; $t$-value = 3.172</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adjusted $R^2$: 0.24

Note: *, **Correlation is significant at the 1% and 5% level, respectively (2-tailed t-test).
provides a deeper understanding of how results-oriented culture influences performance.

Looking at control variables, the results show that organization’s size has a negative effect on performance ($\beta = -0.155$; $t = 1.762$) with statistical significance of 5%, whereas the control impact of organization’s age is not significant. These results indicated that smaller public organizations have more effectiveness and efficiency compare to larger organizations in Vietnam’s public sector.

5. Conclusion

Based on NPM framework and goal-setting theory, we developed hypotheses about the relationship between three research variables including result-oriented culture, PIU, and public-sector organizational performance. This study contributes to existing literature by providing empirical evidence for the mediating role of the PIU in the link between result-oriented culture and performance. Although the direct effect of result-oriented culture on organization performance has been shown in previous studies (Thi Tran et al., 2020; Verbeeten & Speklé, 2015), the mediating role of PIU in the above relationship has not been tested. The analysis results, in fact, have proved the role of PIU as a partial mediator. This result is meaningful for Vietnam as well as other developing countries, when employees work with a strong commitment to outcomes, performance information becomes a useful tool for accountability, and thereby drives the organization’s performance. These results suggest that public-sector managers need to create and spread result-oriented culture for all of employees, which motivates the use of performance information for management, and resulted in enhancing performance. Unlike other previous studies conducted in developed countries, our study contributes to clarify the relationship between PIU and performance of public-sector organizations in a developing country such as Vietnam. The finding suggests that using performance information purposefully will promote the effectiveness and efficiency of public organizations, therefore, managers need to properly and fully understand the important role of performance data as well as how to use these data appropriately.

Nevertheless, this study also has certain limitations. Firstly, in terms of the ways to measure PIU and performance, we considered PIU as an unidimensional construct, whereas PIU is also considered as second-order construct with many components as the approach of Henri (2006) and Speklé and Verbeeten (2014). Regarding to organizational performance scale, we use perceived measurement instead of archival data, which does not really reflect the performance objectively and may cause bias due to subjective perception of respondents. Secondly, organizational culture is a broad and multifaceted concept and it has been discussed in previous studies. However, this study only examined the effect of one aspect of organizational culture, which is result-oriented culture. Thirdly, data is based on a cross-sectional survey of public sector organizations, which makes it difficult to determine causal relationships. Fourthly, this study only uses data collected in Vietnam so generalization is limited because of each country’s institutional environment.

As mentioned above, the effect of PIU on performance is still not a consensus in all of experimental studies, therefore, future studies need to expand to examine this relationship and pay more attention to additional control and mediation factors. In addition, a combination of self-reported and archival data should be used in evaluating the organizational performance in order to capture performance aspects completely as well as reduce the common method variance of respondents based on personal perceptions (Podsakoff, MacKenzie, Podsakoff, & Lee, 2003). Another recommendation for future studies is to fully consider aspects of organizational culture and its impact on performance. This would explain in more detail the effect of each type of cultural traits on the organizational performance. In addition, the effect of result-oriented culture on performance can be mediated by other mechanisms, for instance, financial accountability (Thi Tran et al., 2020), or communication (Ganett et al., 2008). Further work should examine the relative effects of these potential mediators, particularly in taking the research in transitional economies.

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