

## The Role of Innovation Capability and Gender on Green Public Procurement in Higher Education Institutions

Dwi Sulistiani<sup>1\*</sup>, Nur Cholifah<sup>2</sup>, Siti Ma'rifatul Hasanah<sup>3</sup>

<sup>1,2,3</sup>UIN Maulana Malik Ibrahim, Malang, Indonesia

<sup>1</sup>[dwisulistiani@pips.uin-malang.ac.id](mailto:dwisulistiani@pips.uin-malang.ac.id), <sup>2</sup>[nurcholifah@uin-malang.ac.id](mailto:nurcholifah@uin-malang.ac.id), <sup>3</sup>[marifah@uin-malang.ac.id](mailto:marifah@uin-malang.ac.id)

\*[dwisulistiani@pips.uin-malang.ac.id](mailto:dwisulistiani@pips.uin-malang.ac.id)

### Article Info

#### Article history

Received December 5, 2024

Revised May 17, 2025

Accepted May 23, 2025

**Keywords:** innovation capability; green public procurement; HEIs, SDGs

### ABSTRACT

**Background.** Higher education institutions (HEIs), as public sector organizations, are required to support the Sustainable Development Goals (SDGs), including the implementation of Green Public Procurement (GPP). This research aims to provide empirical evidence of the moderation effect of gender on the influence of innovation capability on GPP.

**Methods.** This quantitative research used 68 questionnaires, which were filled in by members of the internal auditor unit and procurement officials of Islamic state HEIs. The OLS (Ordinary Least Squares) test was carried out using the Minitab application.

**Results.** The research results show that innovation capability positively affects the implementation of GPP, as long as gender is a moderation variable on that effect in HEIs (Higher Education Institutions). This research supports the RBV (Resource-Based View) theory that each organization needs resources to support its goals. The results of this research have implications for HEIs to increase their ability to innovate and select male procurement officers who can strengthen support for GPP implementation. For regulators, the results of this research can be used as a reference for making regulations regarding the implementation of GPP in HEIs.

**Conclusions.** The limitation of this research lies in the limited number of questionnaires at Islamic state HEIs. Further research can expand the scope of research to all types of HEIs and add other variables that support GPP.

## 1. INTRODUCTION

Since the SDGs were launched, all organizations, including educational institutions, have tried to achieve these sustainable goals. In the procurement field, the GPP issue is one that government institutions widely discuss. Procurement of goods/services carried out sustainably is based on the concept of value for money to fulfill three interests, namely, economic, social, and environmental. GPP is a significant issue for many countries, and it is gaining greater momentum during the coronavirus pandemic.

Several studies point to the challenges that make it difficult to integrate environmental considerations into public procurement and identify opportunities to overcome barriers and support GPP policies (Knebel & Seele, 2020; Lindström et al., 2020). However, there are exceptions, and some previous research has focused on applying social aspects in specific

procurement processes, such as food procurement (Stefani et al., 2017). Stahl et al. (2020) have focused on how specific procedures can improve GPP implementation. Other studies focus on identifying possible strategies to include social aspects in public procurement (Bernal et al., 2019) or collaboration between contracting authorities and suppliers (Witjes & Lozano, 2016). However, most previous studies have worked with different operationalizations or conceptualizations of GPPs, making it impossible to provide a picture of how much GPPs, including their subcategories, are implemented and what patterns emerge within them (Kretschmer et al., 2021; Kretschmer & Dehm, 2021).

Some theories are suitable for discussing research on GPP, including the Resource-Based View (RBV) theory. RBV theory states that competitive advantage can be more effectively achieved by utilizing internal rather than external factors. Companies with resources that meet the criteria of valuable, rare, inimitable, and non-substitutable can achieve sustainable competitive advantage (Barney, 1991). Although more research uses RBV theory on corporate objects in the commercial sector, RBV theory is still suitable for analyzing research in public sector organizations such as universities. Several public sector organizations use RBV theory in analyzing research results, including discussing research performance (Abramo et al., 2012), technology and innovation performance (Pudjiarti et al., 2022), and public procurement (Badus & Hatton, 2019; Akenroye et al., 2020; Baldus & Hatton, 2020; Yan & Cao, 2022). As commercial companies, HEIs also need scarce resources to achieve a competitive advantage. There are so many universities, so they must have certain uniqueness and advantages that other universities do not have. Therefore, this research uses the RBV theory to analyze the relationship between innovation ability and GPP at HEIs.

Feemster et al. (2022) show that contracting authorities usually avoid choosing green over conventional criteria. Green criteria are used instead of qualifications or are directly incorporated into conventional criteria. According to Cheng et al. (2018), the reasons for the rare use of environmental considerations in public procurement can be found in the need for appropriate regulations at national and international levels or the lack of training of procurement staff. Public procurement elements include procedures, type of contract, estimated price, final price, and savings from an empirical point of view (Džupka et al., 2020).

Innovation Capability (IC) includes seven elements: vision and strategy, creativity and idea management, organizational intelligence, utilization of competency base, systems and technology management, culture and climate, and organizational structure (Cricelli et al., 2018). Many academics accept that RBV can offer new insights into managing knowledge and IC (Pekkola & Ukko, 2016). This viewpoint assumes that some organizational capabilities and resources positively impact innovation outcomes and can be used to expand organizational IC research findings (Zhang & Hartley, 2018; Lee et al., 2019; Mazzucchelli et al., 2021).

Public procurement can drive business innovation by supporting the formation of markets for new products, technologies, and services from a knowledge management perspective (Bleda & Chicot, 2020). The RBV explains that organizations with specific resources can help them achieve their innovative goals (Barney, 1991). Therefore, to pursue organizational change, such as green initiatives, organizations must adapt to the changing environment and encourage continuous innovation (Schwarz & Huber, 2008; Rajapathirana & Hui, 2018). Masoumik et al. (2014) found a substantial reciprocal relationship between the NRBV perspective and the concept of organizational innovation. According to Cheng & Yang (2017), IC consists of four aspects: (1) the capacity to develop new products, (2) the capacity to apply appropriate processes to produce new products, and (3) the capacity to develop and adopt new products. To meet future needs, and (4) to have the capacity to respond to unintended technological activities and unexpected opportunities.

Thus, as a company focused on environmental sustainability, it is expected to ensure that it will continue to innovate in green practices, leading to a competitive advantage. The result, by extension, suggests that an organization's capacity to innovate sustainably must extend to GPP (Modi et al., 2013). Therefore, companies must use their IC to support GPP progress, taking multiple routes, including supplier choice, material selection, and process implementation (Modi et al., 2013). Muriyatmoko (2020) determined that managers' focus on proactive environmental strategies promotes IC development in companies. In this regard, de Souza Dutra et al. (2017) suggest that failure to implement GPP may be traceable to inadequate technological and managerial capabilities.

Therefore, governments, like other organizations, must continuously adapt their procurement activities to innovations in the market to successfully pursue GPP (Grandia et al., 2015). Some evidence has been gathered linking GPP to innovation. For example, a study conducted in the UAE (AlNuaimi & Khan, 2019) found a positive relationship between IC and GPP in the public sector. This relationship is also highlighted by (Grandia et al., 2015), who suggest that the public sector must constantly adapt its procurement activities to respond to innovations in emerging markets. Additionally, they argue that innovation in procurement can lead to the creation of sustainable procurement models. For this reason, (Bryde, 2011), among others, suggests that companies must better identify GPP drivers. Future studies should take advantage of developments in other management areas, such as innovation management. The following explains the research hypothesis:

H1: Innovation capability has a positive effect on green public procurement

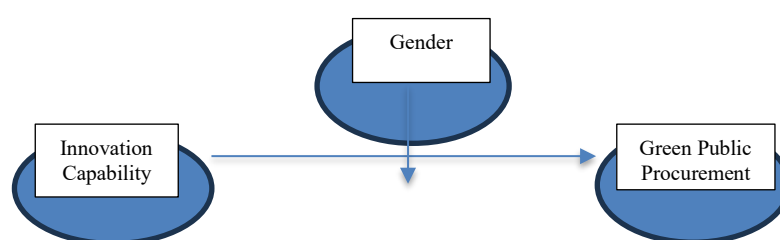
In the Czech Republic, the gender of procurement officials significantly impacts decisions about green public procurement (GPP). It implies that women are more inclined to advocate for GPP, suggesting a possible moderating impact in which gender improves the capacity for creativity in GPP implementation. Because it can result in a more successful

adoption and implementation of ecologically sustainable procurement procedures, this conclusion emphasises the significance of gender diversity in administrative and political roles (Bryngemark et al., 2023). Corporate green technology innovation is strongly impacted by board gender diversity, especially when there are three or more female directors. Additionally, the study points out that financial limitations and regional gender contexts attenuate this association, indicating that while gender dynamics in leadership may impact environmental performance, there is no direct correlation between procurement officials and public procurement practices (Velte, 2022). The gender diversity of the top management team (TMT) has an inverted U-shaped association with green innovation. It also explores how industry characteristics and the educational background of female executives modify this link, indicating that gender diversity in leadership can influence innovation outcomes in a corporate setting, but not in procurement (Halliday et al., 2021). The following explains the research hypothesis:

H2: Gender can moderate the influence of innovation capability on green public procurement

## 2. METHODS

This research aims to provide empirical evidence of the influence of IC on GPP in HEIs. There are 58 Islamic State HEIs throughout Indonesia (BPS, 2022). The unit of analysis in this research is individuals, in this case, members of the SPI (Internal Monitoring Unit) and goods and services procurement officials (PBJ) at Islamic State HEIs throughout Indonesia who are willing to be respondents. Primary data collection is questionnaires; 68 questionnaires have been filled in and are ready for further processing. The research model can be described as follows:



**Figure 1.** Research Model

Before data collection, this instrument, in the form of a questionnaire, will be tested for validity using the product-moment correlation technique. Decision-making on instrument validity testing is done by comparing the p-value at a significance level of 5%. If the p-value is < 5%, the instrument is declared valid, but if the p-value is > 5%, then the instrument is declared invalid (Gujarati & Porter, 2009). Furthermore, the instrument's reliability was also tested using the Cronbach's alpha method. The Cronbach's alpha ( $\alpha$ ) method is measured based on the

alpha ( $\alpha$ ) scale from 0.00 to 1.00. Cronbach's alpha value of 0.61 to 0.80 means reliable, while 0.81 to 1.00 means very reliable.

The validity and reliability test of the questionnaire was carried out on 38 students who had taken introductory accounting and management courses. Respondents in the validity and reliability tests were students at Islamic State HEIs in the Islamic Education Management study program, who were different from the respondents in this study. Validity and reliability testing is assisted by using the statistical software "Minitab." The following are the results of the validity and reliability tests:

**Table 1.** Validity and Reliability Test Results

| Questions | Pearson correlation | P-value | Cronbach's Alpha |
|-----------|---------------------|---------|------------------|
| IC1       | 0.874               | 0.000   | 0.9679           |
| IC2       | 0.940               | 0.000   | 0.9673           |
| IC3       | 0.932               | 0.000   | 0.9676           |
| IC4       | 0.960               | 0.000   | 0.9672           |
| IC5       | 0.939               | 0.000   | 0.9677           |
| GPP1      | 0.748               | 0.000   | 0.9680           |
| GPP2      | 0.482               | 0.002   | 0.9694           |
| GPP3      | 0.501               | 0.001   | 0.9701           |
| GPP4      | 0.825               | 0.000   | 0.9682           |
| GPP5      | 0.855               | 0.000   | 0.9671           |
| GPP6      | 0.840               | 0.000   | 0.9674           |
| GPP7      | 0.367               | 0.023   | 0.9727           |
| GPP8      | 0.754               | 0.000   | 0.9689           |
| GPP9      | 0.771               | 0.000   | 0.9687           |
| GPP10     | 0.735               | 0.000   | 0.9690           |

Source: author's own

Table 1 shows a P-value < 5%, which indicates that the questionnaire used is valid. Apart from that, the reliability value, which is more than 0.81, shows that the questionnaire is reliable. Therefore, this questionnaire is declared suitable for use and can be used for further testing. Test the hypothesis using OLS (Ordinary Least Squares) with the Minitab application.

### 3. RESULTS AND DISCUSSION

#### RESULTS

The following are the results of descriptive statistical tests

**Table 2.** Descriptive Statistic

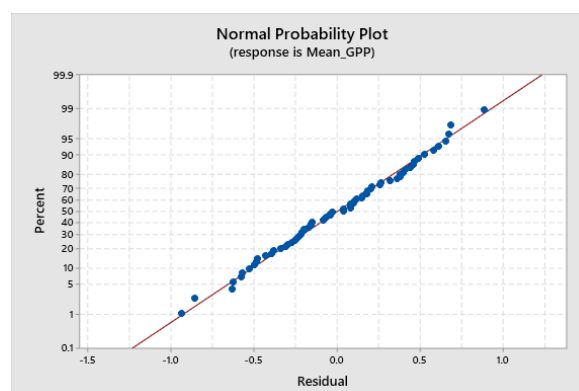
| Variable | Description   | Mean   |
|----------|---|--------|
| G        | Gender  | 0.4853 |
| A        | Age   | 37.50  |
| LB       | Length of work  | 11.682 |
| IC1      | Our higher education institutions (HEIs) have produced many innovative and valuable ideas           | 3.750  |
| IC2      | Our HEIs promote an environment that encourages our ability to create innovative and valuable ideas | 3.838  |
| IC3      | Our HEIs devote much time to creating innovative and valuable ideas                                 | 3.691  |
| IC4      | Our HEIs believe that creating innovative and valuable ideas is an important activity               | 3.824  |

| Variable | Description   | Mean   |
|----------|---|--------|
| IC5      | Our HEIs actively produce innovative and valuable ideas   | 3.7941 |
| GPP1     | Our HEIs are practicing green public procurement (GPP) now  | 3.485  |
| GPP2     | Our HEIs should practice GPP more massively   | 4.029  |
| GPP3     | Our HEIs have a clear strategy regarding GPP  | 4.059  |
| GPP4     | The manual for procurement of goods and services (PBJ) at our HEIs mentions the chapter related to GPP. | 3.279  |
| GPP5     | In the PBJ contract, we have mentioned the GPP criteria   | 3.294  |
| GPP6     | Life cycle costs are also discussed in the GPP evaluation at our HEIs                                   | 3.368  |
| GPP7     | GPP means expensive procurement   | 2.971  |
| GPP8     | Our HEIs are willing to pay a higher fee to be able to implement GPP                                    | 3.279  |
| GPP9     | Implementing GPP means worsening HEI's relationship with suppliers/vendors                              | 3.221  |
| GPP10    | Our HEIs validate supplier/vendor reports to fulfill GPP  | 3.265  |

Source: author's own

The data processed was 68 questionnaires filled in by members of the internal supervision unit and HEIs' procurement officials throughout Indonesia. Data was filled in by 48.5% of men and 51.5% of women. Table 1 shows the gender balance in the placement of SPI members and Procurement Officers in all HEIs in Indonesia. The average age of SPI members and Procurement Officers is 37.5 years, meaning they are relatively mature, and the average length of service has been almost 12 years. These data show that the selection of SPI members and Procurement Officers by higher education leaders was appropriate, as they selected people who were mature and more able to make wise decisions. The long average length of service indicates that SPI members and Procurement Officers understand higher education well.

In the innovation ability variable, the average question was answered with a score of almost four. These results show that HEIs can innovate. Meanwhile, for the dependent variable, namely GPP (green public procurement), some scores vary between 2.97 and 4.059. This value shows the diversity of GPP implementation at HEIs. Research output is obtained based on the results of running data on the Minitab software, which can be presented as follows. The normality test results use a scatterplot image output, as in Figure 2 below.



**Figure 2.** Normality test

Figure 2 shows that the data is distributed normally, or it can be concluded that there is no normality problem. The autocorrelation test results were obtained using the following Durbin-Watson values.

**Table 3.** Autocorrelation test

| Model                     | IC=>GPP | IC*G=>GPP |
|---------------------------|---------|-----------|
| Durbin-Watson Statistic = | 2.22344 | 1.87542   |

Source: author's own

Based on Table 3 above, the d value shows 2.22344 and 1.87542, which means  $> 1.66436$ . So, there is no autocorrelation between the variables above. Another assumption test is whether there are problems with multicollinearity and heteroscedasticity, which can be explained in Table 4.

**Table 4.** Multicollinearity test

| Term      | Coef   | SE Coef | T-Value | P-Value | VIF  |
|-----------|--------|---------|---------|---------|------|
| Constant  | 0.757  | 0.266   | 2.85    | 0.006   |      |
| Mean_IC   | 0.3012 | 0.0973  | 3.10    | 0.053   | 2.47 |
| Constant  | 3.250  | 0.105   | 30.94   | 0.000   |      |
| Mean_IC*G | 0.0960 | 0.0395  | 2.43    | 0.018   | 1.00 |

Source: author's own

The data in Table 4 above shows that the VIF value is  $< 10$ , namely 2.47 and 1.00, or the Tolerance value is  $> 0.01$ , meaning the model has no multicollinearity. The P value shows a value of  $0.053 > 0.05$ , meaning that both groups have the same or homogeneous variance, so there is no heteroscedasticity problem.

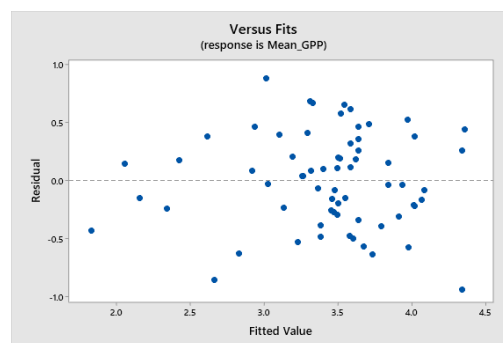
**Figure 3.** Heteroscedasticity test

Figure 3 shows the results of the heteroscedasticity test. The image above shows: 1. The data points are spread above, below, or around the numbers 1 and 2. The points do not gather only above or below, 3. The distribution of data points must not form a wavy pattern that widens, then narrows, and widens again 4. The distribution of data points is not patterned. Therefore, this research data is considered to have no heteroscedasticity problems. Meanwhile, hypothesis testing can be presented in Table 5, which shows that the results of the ability to innovate have a positive effect with a significance level of 1% on GPP, with a P value of  $0.000 (< 0.01)$  with a value of  $\beta = 0.38$ . Meanwhile, the moderating effect of gender was also proven necessary in this study with a significance value of  $0.018 (< 0.05)$ , even though with a lower coefficient, namely with a value of  $\beta = 0.1$ .

**Table 5.** Hypothesis test result

| Hypothesis test | Coefisien      | P-Value | Note     |
|-----------------|----------------|---------|----------|
| IC => GPP       | $\beta = 0.38$ | 0,000   | Accepted |

|             |               |       |          |
|-------------|---------------|-------|----------|
| IC*G => GPP | $\beta = 0.1$ | 0.018 | Accepted |
|-------------|---------------|-------|----------|

Source: author's own

The coefficient of determination value shows how the contribution of independent variables in the regression model can explain the variation of the dependent variable. The higher the coefficient of determination value, the better the research model. Table 6 shows that the regression model directly influencing IC on GPP provides a higher determination value (50.27%) than the model moderated by gender (8.22%). These results indicate that IC contributes more when alone, without being moderated by gender.

**Table 6.** R-Square test result

| Hypothesis test | R-square | R-squared (adj) | Note |
|-----------------|----------|-----------------|------|
| IC => GPP       | 50.27%   | 49.51%          | High |
| IC*G => GPP     | 8.22%    | 6.83%           | Low  |

Source: author's own

## DISCUSSION

The ability to innovate based on the results of this research plays a role in supporting GPP. Innovation Capability (IC) includes seven elements: vision and strategy, creativity and idea management, organizational intelligence, utilization of competency base, systems and technology management, culture and climate, and organizational structure (Cricelli et al., 2018). More and more academics accept that RBV can offer new insights into managing knowledge and IC (Pekkola & Ukko, 2016). This viewpoint assumes that some organizational capabilities and resources positively impact innovation outcomes and can be used to expand organizational IC research findings (Zhang & Hartley, 2018; Lee et al., 2019; Mazzucchelli et al., 2021).

Public procurement can drive business innovation by supporting the formation of markets for new products, technologies, and services from a knowledge management perspective (Bleda & Chicot, 2020). The RBV explains that organizations with specific resources can help them achieve their innovative goals (Barney, 1991). Therefore, to pursue organizational change, such as green initiatives, organizations must adapt to the changing environment and encourage continuous innovation (Schwarz & Huber, 2008; Rajapathirana & Hui, 2018). Masoumik et al. (2014) found a substantial reciprocal relationship between the NRBV perspective and the concept of organizational innovation. According to Cheng & Yang (2017), IC consists of four aspects: (1) the capacity to develop new products, (2) the capacity to apply appropriate processes to produce new products, and (3) the capacity to develop and adopt new products. To meet future needs, and (4) to have the capacity to respond to unintended technological activities and unexpected opportunities.

Therefore, governments, like other organizations, must continuously adapt their procurement activities to innovations in the market to pursue GP (Grandia et al., 2015) successfully. Some evidence has been gathered linking GPs to innovation. For example, a

study conducted in the UAE (AlNuaimi & Khan, 2019) found a positive relationship between IC and GP in the public sector. This relationship is also highlighted by (Grandia et al., 2015), who suggest that the public sector must constantly adapt its procurement activities to respond to innovations in emerging markets. Additionally, they argue that innovation in procurement can lead to the creation of sustainable procurement models. Therefore, (Bryde, 2011), among others, suggests that companies need to identify GP drivers better. Future studies should take advantage of developments in other management areas, such as innovation management.

The results of this study provide empirical evidence of the role of gender in the influence of IC on GPP. The benefits of gender diversity on business creativity, especially in green innovation, are demonstrated by including women on boards. The study suggests that gender diversity in top management can impact broader innovation results and highlights the importance of government funding and research and development as mediators in boosting business innovation (Jabari & Muhamad, 2020). Green innovation is more likely to be promoted by female CEOs, especially in developed areas and state-owned businesses. Although it does not explicitly connect these variables to procurement authorities, the study highlights the moderating impacts of state ownership, regional development, business size, and industry type on the association between female leadership and green innovation (D. Kolev et al., 2021). Female CEOs are more innovative than their male counterparts, indicating that discrimination and organisational biases force women to become more innovative, especially in areas with lower GDP and less government backing (Malagila et al., 2021). The study finds that while there is no gender disparity in conventional innovations, women struggle with unorthodox innovations. The disproportionate rejection of these ideas by female examiners suggests that institutional policies, not cultural discrimination, are to blame for the gender gaps in innovation capacities that have been documented (Velte et al., 2020).

According to the study, SMEs led by men are more likely than those managed by women to adopt process improvements, which improves performance results. This suggests notable gender disparities in small and medium-sized businesses' capacity for innovation (Tambunan, 2011). According to the survey, there are no appreciable differences between SMEs led by men and women regarding overall innovation capability. There is no gender difference in the tendency for organisational and product innovations, although male CEOs are more likely to innovate processes (Usman et al., 2020). According to the study, compared to businesses owned by men, those owned by women were less likely to innovate. The endowments effect favourably benefited the gender innovation gap, while the coefficients effect negatively impacted it, showing considerable gender inequalities in innovative capacities (Adhikari et al., 2019). According to the study, female team leaders are viewed as less effective at guiding innovation because they participate in fewer opening behaviours necessary for innovation

than male leaders. This demonstrates notable disparities between the sexes regarding creativity in team leadership settings (Nash et al., 2017).

Using the RBV (Barney, 1991), employees' collective learning and behavior may depend on the type of leadership for resources that meet the criteria of valuable, rare, imperfectly imitable, and non-substitutable (VRIN). This theory supports the company's ability to achieve superior performance. Based on RBV theory, leadership can be considered an important resource, where the primary goal of implementing GPP is to develop, motivate, and offer opportunities for companies to enable improved work behavior to support sustainable competitive advantage and superior performance (Vizcaíno et al., 2021). This perspective is confirmed by (Filho et al., 2020), who concluded that the leadership style of an organization's top management is positively correlated with the likelihood of success in implementing GPP.

#### **4. CONCLUSION**

This research provides empirical evidence of the positive influence of innovation capability on implementing GPP in higher education institutions. Innovation capabilities are not only needed by companies that aim to make a profit, but in the world of education, where the aim is to improve services, they also need this ability to implement GPP better. HEIs need the implementation of the GPP to help support the SDGs globally. In addition, this study also provides empirical evidence of the role of gender in the influence of IC on the implementation of GPP in HEIs. Male employees have higher IC than female employees, further supporting GPP.

This research provides benefits both theoretically and practically. The results of this research support the RBV (Resource-Based View) theory, which suggests the need for specific resources to achieve competitive advantage, especially in implementing GPP in HEIs. This research can also be a basis for policy-making regarding green procurement, especially for procurement officials. This research has implications for increasing innovation capabilities, which is reinforced by gender, to support the implementation of GPP in HEIs. It is important to select male employees placed in procurement to support innovation and GPP in HEIs. The presentation of the results of this research can also be a basis for policymakers (LKPP) and the Chancellor to improve existing regulations, especially in the procurement of public goods and services. The limitation of this research lies in the limited number of questionnaires at Islamic state HEIs. Further research can expand the scope of research to all types of HEIs

#### **5. ACKNOWLEDGEMENTS**

BOPTN LP2M Universitas Islam Negeri Maulana Malik Ibrahim Malang

#### **6. REFERENCES**

- Abramo, G., D'Angelo, C. A., Ferretti, M., & Parmentola, A. (2012). An Individual-Level Assessment of The Relationship Between Spin-Off Activities And Research Performance in Universities. *R and D Management*, 42(3), 225–242. <https://doi.org/10.1111/j.1467-9310.2012.00680.x>
- Adhikari, B. K., Agrawal, A., Malm, J., Vackar, R. C., Rio, T., Valley, G., & States, U. (2019). Do women managers keep firms out of trouble ? Evidence from corporate litigation and policies ☆. *Journal of Accounting and Economics*, 67(1), 202–225. <https://doi.org/10.1016/j.jacceco.2018.09.004>
- Akenroye, T. O., Owens, J. D., Elbaz, J., & Durowoju, O. A. (2020). Dynamic capabilities for SME participation in public procurement. *Business Process Management Journal*. <https://doi.org/10.1108/BPMJ-10-2019-0447>
- AlNuaimi, B. K., & Khan, M. (2019). Public-sector green procurement in the United Arab Emirates: Innovation capability and commitment to change. *Journal of Cleaner Production*, 233, 482–489. <https://doi.org/10.1016/j.jclepro.2019.06.090>
- Badus, B. J., & Hatton, L. (2019). U.S. chief procurement officers' perspectives on public procurement. *Journal of Purchasing and Supply Management*, 1–7. <https://doi.org/https://doi.org/10.1016/j.pursup.2019.05.003>
- Baldus, B. J., & Hatton, L. (2020). U.S. chief procurement officers' perspectives on public procurement. *Journal of Purchasing and Supply Management*, 26(1), 100538. <https://doi.org/10.1016/J.PURSUP.2019.05.003>
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
- Bernal, P. N., Delrot, P., Loterie, D., Li, Y., Malda, J., Moser, C., & Levato, R. (2019). Volumetric Bioprinting of Complex Living-Tissue Constructs within Seconds. *Advanced Materials*, 31(42), 1–10. <https://doi.org/10.1002/adma.201904209>
- Bleda, M., & Chicot, J. (2020). The role of public procurement in the formation of markets for innovation. *Journal of Business Research*, 107, 186–196. <https://doi.org/10.1016/j.jbusres.2018.11.032>
- Bryngemark, E., Söderholm, P., & Thörn, M. (2023). Adopting green public procurement practices: Analytical challenges and empirical illustration on Swedish municipalities. *Ecological Economics*, 204(September 2022). <https://doi.org/10.1016/j.ecolecon.2022.107655>
- Cheng, C., & Yang, M. (2017). Enhancing performance of cross-border mergers and acquisitions in developed markets: The role of business ties and technological innovation capability. *Journal of Business Research*, 81(August), 107–117. <https://doi.org/10.1016/j.jbusres.2017.08.019>
- Cheng, W., Appolloni, A., D'Amato, A., & Zhu, Q. (2018). Green Public Procurement, missing

- concepts and future trends – A critical review. *Journal of Cleaner Production*, 176, 770–784. <https://doi.org/10.1016/j.jclepro.2017.12.027>
- Cricelli, L., Greco, M., Grimaldi, M., & Llanes Dueñas, L. P. (2018). Intellectual Capital and University Performance in Emerging Countries: Evidence From Colombian Public Universities. *Journal of Intellectual Capital*, 19(1), 71–95. <https://doi.org/10.1108/JIC-02-2017-0037>
- D. Kolev, K., Hughes-Morgan, M., & Rehbein, K. (2021). The Role of Female Directors in the Boardroom: Examining Their Impact on Competitive Dynamics. *Business and Society*, 60(4), 811–843. <https://doi.org/10.1177/0007650319847477>
- Dutra, de S. C. T., Rohan, U., Branco, R. R., Chinelli, C. K., de Araujo, A. J. V. B., & Soares, C. A. P. (2017). Barriers and Challenges to the Sustainability Requirements Implementation in Public Procurement of Engineering Works and Services. *Open Journal of Civil Engineering*, 07(01), 1–13. <https://doi.org/10.4236/ojce.2017.71001>
- Džupka, P., Kubák, M., & Nemec, P. (2020). Sustainable Public Procurement in Central European Countries. Can It Also Bring Savings? *Sustainability*, 12, 1–13. <https://doi.org/10.3390/su12219241>
- Feemster, K. A., Kim, Y., Abe, M., Johnson, K., & Sasaki, S. (2022). Response to Igarashi, et al, cost-effectiveness analysis for PCV13 in adults 60 years and over with underlying medical conditions which put them at an elevated risk of pneumococcal disease in Japan. *Expert Review of Vaccines*, 21(5), 589–590. <https://doi.org/10.1080/14760584.2022.2036127>
- Filho, W. L., Eustachio, J. H. P. P., Caldana, A. C. F., Will, M., Salvia, A. L., Rampasso, I. S., Anholon, R., Platje, J., & Kovaleva, M. (2020). Sustainability leadership in higher education institutions: An overview of challenges. *Sustainability (Switzerland)*, 12(9). <https://doi.org/10.3390/su12093761>
- Grandia, J., Steijn, B., & Kuipers, B. (2015). It is not easy being green: increasing sustainable public procurement behaviour. *Innovation: The European Journal of Social Science Research*, 28(3), 243–260. <https://doi.org/10.1080/13511610.2015.1024639>
- Gujarati, D. N., & Porter, D. C. (2009). Basic econometrics. In *The McGraw-Hill* (5th ed.).
- Halliday, C. S., Paustian-Underdahl, S. C., & Fainshmidt, S. (2021). Women on Boards of Directors: A Meta-Analytic Examination of the Roles of Organizational Leadership and National Context for Gender Equality. *Journal of Business and Psychology*, 36(2), 173–191. <https://doi.org/10.1007/s10869-019-09679-y>
- Jabari, H. N., & Muhamad, R. (2020). Gender diversity and financial performance of Islamic banks. *Journal of Financial Reporting and Accounting*, 19(3), 412–433. <https://doi.org/10.1108/JFRA-03-2020-0061>
- Knebel, S., & Seele, P. (2020). Introducing public procurement tenders as part of corporate

- communications: a typological analysis based on CSR reporting indicators. *Corporate Communications*, 26(3), 484–500. <https://doi.org/10.1108/CCIJ-01-2020-0029>
- Kretschmer, S., & Dehm, S. (2021). Sustainability transitions in university food service—A living lab approach of locavore meal planning and procurement. *Sustainability (Switzerland)*, 13(13). <https://doi.org/10.3390/su13137305>
- Kretschmer, S., Dehm, S., Bilali, H. El, Strassner, C., & Hassen, T. Ben. (2021). Sustainability Transitions in University Food Service-A Living Lab Approach of Locavore Meal Planning and Procurement. *Sustainability*, 13, 1–31. <https://doi.org/10.3390/su13137305>
- Lee, H. S., Cheng, F. F., Har, W. M., Md Nassir, A., & Ab Razak, N. H. (2019). Efficiency, firm-specific and corporate governance factors of the Takaful insurance. *International Journal of Islamic and Middle Eastern Finance and Management*, 12(3), 368–387. <https://doi.org/10.1108/IMEFM-06-2018-0187>
- Lindström, H., Lundberg, S., & Marklund, P. O. (2020). How Green Public Procurement can drive conversion of farmland: An empirical analysis of an organic food policy. *Ecological Economics*, 172(December 2019), 106622. <https://doi.org/10.1016/j.ecolecon.2020.106622>
- Malagila, J. K., Zalata, A. M., Ntim, C. G., & Elamer, A. A. (2021). Corporate governance and performance in sports organisations: The case of UK premier leagues. *International Journal of Finance and Economics*, 26(2), 2517–2537. <https://doi.org/10.1002/ijfe.1918>
- Masoumik, S. M., Abdul-Rashid, S. H., & Olugu, E. U. (2014). Gaining competitive advantage through strategic green supply chain management: From a literature review towards a conceptual model. *International Journal of Supply Chain Management*, 3(3), 49–58.
- Mazzucchelli, A., Chierici, R., Tortora, D., & Fontana, S. (2021). Innovation capability in geographically dispersed R&D teams: The role of social capital and IT support. *Journal of Business Research*, 128(February), 742–751. <https://doi.org/10.1016/j.jbusres.2019.05.034>
- Meehan, J., & Bryde, D. (2011). Sustainable procurement practice. *Business Strategy and the Environment*, 20(2), 94–106. <https://doi.org/10.1002/bse.678>
- Modi, C., Patel, D., Borisaniya, B., Patel, H., Patel, A., & Rajarajan, M. (2013). A survey of intrusion detection techniques in Cloud. *Journal of Network and Computer Applications*, 36(1), 42–57. <https://doi.org/10.1016/j.jnca.2012.05.003>
- Muriyatmoko, D. (2020). Pengaruh Indeksasi DOAJ Terhadap Sitasi Pada Jurnal Terakreditasi Sinta Menggunakan Analisis Regresi Linier. *Jurnal Simantec*, 7(1), 31–38. <https://doi.org/10.21107/simantec.v7i1.6527>
- Nash, M., Davies, A., & Moore, R. (2017). What style of leadership do women in STEMM fields perform ? Findings from an international survey. 1–16.
- Pekkola, S., & Ukko, J. (2016). Designing a performance measurement system for

- collaborative network. *International Journal of Operations and Production Management*, 36(11), 1410–1434. <https://doi.org/10.1108/IJOPM-10-2013-0469>
- Pudjiarti, E. S., Lisdiyono, E., & Werdiningsih, R. (2022). Knowledge management to develop comprehensive networking of university-industry collaboration in technology and innovation performance. *International Journal of Data and Network Science*, 6(2), 461–468. <https://doi.org/10.5267/j.ijdns.2021.12.008>
- Rajapathirana, R. P. J., & Hui, Y. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation and Knowledge*, 3(1), 44–55. <https://doi.org/10.1016/j.jik.2017.06.002>
- Schwarz, G. M., & Huber, G. P. (2008). Challenging organizational change research. *British Journal of Management*, 19(SUPPL. 1). <https://doi.org/10.1111/j.1467-8551.2008.00566.x>
- Stahl, G. K., Brewster, C. J., Collings, D. G., & Hajro, A. (2020). Enhancing the role of human resource management in corporate sustainability and social responsibility: A multi-stakeholder, multidimensional approach to HRM. *Human Resource Management Review*, 30(3), 100708. <https://doi.org/10.1016/j.hrmr.2019.100708>
- Stefani, G., Tiberti, M., Lombardi, G. V, Cei, L., & Sacchi, G. (2017). Public food procurement: A systematic literature review. *International Journal Food System Dynamic*, 8(4), 270–283. <https://doi.org/http://dx.doi.org/10.18461/ijfsd.v8i4.842>
- Tambunan, T. T. H. (2011). Development of Small and Medium Enterprises in A Developing Country: The Indonesian Case. *Journal of Enterprising Communities*, 5(1), 68–82. <https://doi.org/10.1108/17506201111119626>
- Usman, M., Siddique, M. A., Makki, M. A. M., Gull, A. A., Dardour, A., & Yin, J. (2020). Executives' pay–performance link in China: evidence from independent and gender-diverse compensation committees. *International Journal of Emerging Markets*. <https://doi.org/10.1108/IJOEM-09-2019-0701>
- Velte, P. (2022). Archival research on integrated reporting: a systematic review of main drivers and the impact of integrated reporting on firm value. In *Journal of Management and Governance* (Vol. 26, Issue 3). Springer US. <https://doi.org/10.1007/s10997-021-09582-w>
- Velte, P., Stawinoga, M., & Lueg, R. (2020). Carbon performance and disclosure: A systematic review of governance-related determinants and financial consequences. *Journal of Cleaner Production*, 254, 120063. <https://doi.org/10.1016/j.jclepro.2020.120063>
- Vizcaíno, F. V., Cardenas, J. J., & Cardenas, M. (2021). A look at the social entrepreneur: the effects of resilience and power distance personality traits on consumers' perceptions of corporate social sustainability. *International Entrepreneurship and Management Journal*, 17(1), 83–103. <https://doi.org/10.1007/s11365-019-00626-0>
- Witjes, S., & Lozano, R. (2016). Towards a more Circular Economy: Proposing a framework

linking sustainable public procurement and sustainable business models. *Resources, Conservation and Recycling*, 112(September), 37–44.

<https://doi.org/10.1016/j.resconrec.2016.04.015>

Yan, R., & Cao, F. (2022). Improving Public Health and Governance in COVID-19 Response: A Strategic Public Procurement Perspective. *Frontiers in Public Health*, 10.

<https://doi.org/10.3389/fpubh.2022.897731>

Zhang, M., & Hartley, J. L. (2018). Guanxi, IT systems, and innovation capability: The moderating role of proactiveness. *Journal of Business Research*, 90, 75–86.

<https://doi.org/10.1016/j.jbusres.2018.04.036>