

Investigating the Influence of Gender Diversity and Management Practices on the Introduction of Innovation in CEE Countries

Nikola Soukupova, Anna Dvorakova and Michaela Kotkova Striteska

University of Pardubice, Faculty of Economics and Administration, Pardubice, Czech Republic

anna.dvorakova@upce.cz

nikola.soukupova@upce.cz

michaela.kotkovastriteska@upce.cz

Abstract: The role of management in any organizational context is to identify and exploit positive influences and opportunities that lead to the achievement of business objectives and competitive advantage. Those involved in effective management should be able to define the factors that have a decisive influence on the innovative activity of the enterprise. The identification of these influences is a key source of knowledge for defining or adjusting corporate strategies, resulting in long-term benefits and effective business development. As the market is constantly evolving, businesses must adapt to it. In recent years, researchers and experts have paid considerable attention to the study of gender issues in various areas of management. Much of the existing research has shown a positive correlation between gender diversity and innovation in developed countries. However, empirical studies in transition or developing countries remain limited. Therefore, we focus on Central and Eastern European countries. Based on regression analysis of data from the large-scale WBES survey, the aim of the study is to identify the relationships between gender structure of management, management practices and innovation. Unlike previous studies, this study uses a management practices index that combines data from eight indicators of management practices and assesses how well they are structured. This study thus enriches the ongoing research on the impact of gender and the structure of management practices on innovation in the EU member states of Central and Eastern Europe. The contribution of this study lies in the analysis of several different types of gender diversity and a composite index of managerial practices in relation to firms' innovation performance, and the specific context of the analysis in Central and Eastern Europe countries may provide new insights, as different factors affect innovation performance in these countries than in their Western counterparts. The results of this research provide a deeper understanding of the dynamics between gender diversity in management and innovation, which could provide a basis for the development of policies and corporate strategies to promote diversity and innovation in the business environment of Central and Eastern Europe countries.

Keywords: Gender, Gender Diversity, Management Practices Index, Innovation, CEE Countries

1. Introduction

The equal representation of men and women, often referred to as gender diversity, has been demonstrated to positively affect innovation in developed countries (Ritter-Hayashi et al., 2019). To date, a limited number of scientific studies conducted in transition economies have revealed comparable findings, yet this body of research remains relatively rare (Tonoyan and Boudreaux., 2023; Prokop et al., 2023). In addition, it is important to note that the scientific studies that have been conducted employ disparate methodologies, with some focusing on board gender diversity (Horbach and Jacob, 2018), others on owner gender diversity (Prokop et al., 2023), top management team diversity (Lee and Chung, 2022) or employees gender diversity (Østergaard et al., 2011). This difference in approach significantly complicates the comparability of the findings across studies. It is evident that further research is required in this field. Consequently, the present study will examine the hypotheses pertaining to the influence of gender diversity and management practices on the adoption of innovation in CEE countries.

In the context of gender diversity and innovation, Torchia et al. (2011) explored that female directors increase the level of organisational innovation through their involvement in strategic board tasks. An essential strategic task that facilitates innovation performance is the establishment of an appropriate structure of management practices (Kalay and Lynn, 2015). The results of Haneda and Ito's study (2018) show that the simultaneous implementation of more than one management practice is associated with a higher probability of new product innovation. In particular, personal assessment has a strong and positive relationship with innovation success. The general reason is obvious: if performance appraisal is not used as a tool for employee development, it can create fear and mistrust, lack of motivation and employee engagement (Dvorakova and Kotkova Striteska 2023).

Testing these findings using large sample survey datasets would be useful (Haneda and Ito, 2018). This study therefore examines the impact of gender diversity and management practices on innovation in Central and Eastern European countries (hereinafter CEE countries), using regression model analyses of data from a large-scale WBES survey. This study makes a contribution to existing knowledge by analysing a number of different types of gender diversity and a composite managerial practices index in relation to firms' innovation

performance. Furthermore, the particular context of conducting the analysis in CEE countries may yield new insights, as distinct drivers influence innovation performance in these countries in comparison to their Western counterparts (Kotkova Striteska et al., 2024; Myslivcova et al., 2023; Vesely and Vesely, 2018).

The subsequent sections are structured as follows: Section 2 presents the literature review and the hypotheses development, next part describes the methodology and data used, part 4 presents the results of our research, which are then discussed with the findings of relevant studies. The final section offers concluding remarks, including theoretical and practical implications, research limitations, and suggestions for future research.

2. Literature Review and Hypothesis Development

Innovation can be defined as the utilisation of novel knowledge, ideas, methodologies and competencies to develop distinctive capabilities that bolster an organisation's competitive advantage in the global marketplace. This process encompasses both technological and administrative dimensions (Andersson et al., 2008; Daft, 1978). Innovation is essential for the development of economic growth as it enhances firms' performance, competitive advantage and market share (Torchia et al., 2011). Investment in R&D plays a key role in the development of innovation (Rehman et al., 2020) as it promotes the discovery of new ideas, product development and process improvement. These innovations in turn attract further investment, create jobs and stimulate long-term economic growth (Bakari et al., 2023). To date, much research on firm-level innovation has focused on the relationship between innovation and performance, on different types of innovation and competitive advantage, or on the determinants of innovation and firm growth. (Latan et al., 2019; Wang & Wang, 2012; Arranz et al., 2019). Focusing on intangible resources, such as employee composition, is crucial for understanding innovation performance (Biscione et al., 2022). Gender diversity has been associated with higher innovation in developed countries (Østergaard et al., 2011; Díaz-García et al., 2013), but its impact in the CEE region remains understudied.

Gender diversity is considered as a key intangible resource in firms that encompasses differences in knowledge, experience and skills (Ali et al., 2011; Østergaard et al., 2011). Women bring different approaches to problem solving (Quintana-Garcia & Benavides-Velasco, 2008), have a better ability to reduce conflict in the workplace, are often better educated, and have higher work expectations than men (Nielsen & Huse, 2010; Eriksson-Zetterquist, 2007). Gender diversity strengthens external ties, team knowledge, and innovation performance, which enhances firm innovation performance (Diaz-García et al., 2013). The inclusion of women in work teams has been found to enhance the knowledge gap and innovation performance of the firm, particularly when coupled with male entrepreneurship (Dai et al., 2019).

The research conducted by Ritter-Hayashi et al. (2019) indicates that the presence of female managers in senior positions and the inclusion of women as owners of firms are both associated with an increase in the level of innovation activity within those firms. Nevertheless, the existing literature on the relationship between innovation and female top managers remains limited (Becic & Vojinic, 2018; Dezsó & Ross, 2012). Some research findings indicate that firms where women occupy top management positions demonstrate a lower level of innovation activity (Becic & Vojinic, 2018). Conversely, other studies, such as that conducted by Dohse et al. (2019), indicate that women occupying ownership roles are more innovative than those in managerial roles. Top managers generally influence firms' innovativeness by creating an environment that fosters innovation, including trust, employee engagement and accountability (Ritter-Hayashi, 2019). Transformational leadership, often associated with women, promotes innovation (Zuraik and Kelly, 2018; Jung et al. 2003; Jung et al., 2008). Thus, women in leadership positions may have the potential to increase the level of innovation in firms (Eagly and Carli, 2003). However, research on gender influence on innovation remains scarce and often yields inconsistent results, highlighting the need for further research on this relationship, particularly in developing countries (Ruiz-Jiménez and Fuentes-Fuentes, 2016; Singhathep and Pholphirul, 2015). Based on these findings, we therefore put forward hypotheses:

H1a: Gender diversity in the ownership structure of a firm positively influences the firm's innovation activities.

H1b: Gender diversity in top management has a positive impact on the firm's innovation activities.

H1c: Gender diversity among employees positively affect the firm's innovation activities.

Following on from the area of gender diversity and its impact on innovation, it is also essential to consider the role of management practices in shaping a firm's innovation capabilities. Gender diversity is an important factor that can influence the structure of managerial practices and thus the ability of companies to innovate. Management practices include the methods, procedures and strategies that managers use to effectively manage

organizations to improve their productivity and performance (Bloom & Van Reenen, 2007). Management practices vary from country to country. Although the size and profitability of consulting industries often serve as an indicator of the importance of management practices, research has also shown a direct link between changes in management practices and the performance of medium and large firms (Bloom et al., 2013; Bruhn et al., 2018). In particular, management practices that are oriented towards quality management have a significant influence on the generation of new ideas and innovations (Kim, 2012). Higher levels of managerial education are positively correlated with effective management practices, indicating that skilled managers can design and implement more productive strategies (Bandiera et al., 2020; Queiro, 2022). The implementation of well-structured management practices, including the establishment of clear goals, structured communication, and adaptability, has been shown to enhance the innovation capacity of organisations. This is particularly advantageous for small and medium-sized enterprises (SMEs) in navigating market changes (Valero, 2021). Supportive human resource management practices, such as continuous learning and appropriate performance appraisals, also play an important role in enhancing an organization's ability to adopt innovation (Abrunhosa & Sá, 2008). Furthermore, enhancements in managerial techniques are constrained by a dearth of proficient managerial human capital and skilled labour (Homkes, 2011). To better measure how well-structured companies are implementing management practices that lead to higher performance, the Management Practices Index (MPI) is used. MPI involves long-term problem solving, setting production or service goals, and using motivational tools such as bonuses or promotions to reward good performance and punish poor performance (WBES). Based on these findings, we therefore put forward a second hypothesis:

H2: Management practices have a positive impact on firm's innovation activities.

Based on the results of the literature search on the impact of gender representation and managerial practices on the promotion of innovation in CEE EU countries and the formulated hypotheses, we present the conceptual model of our study (see Figure 1).

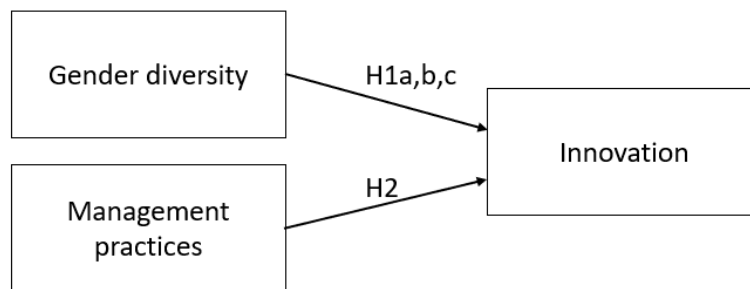


Figure 1: Conceptual model

3. Data and Methodology

This study uses data from the 2019 to 2023 World Bank Enterprise Survey (WBES), which provides cross-sectional data from a representative sample of 5 534 firms in the private manufacturing and services sectors. The survey covers a wide range of topics related to the business environment, including attitudes toward gender diversity and management practices. We chose to use the comprehensive Management Practices Index (MPI) to assess management practices. The MPI examines 8 key areas of business focus, including practice management, relationship management and business planning. It is calculated as follows:

$$mgmt1_i = \frac{\sum_{j=2}^9 mgmtj_i}{8}$$

where $mgmtj_i = [0,100]$ is management practice j (2 through 9) by business i , averaged over all 8 components. Observations for which all 8 components are available are used. Due to this structure, $mgmt1$ varies between 0 and 100 (WBES). MPI scores help firms better understand their opportunities, identify gaps, and define next steps to address them. The research sample consists of 8 Central and Eastern European countries that are also members of the European Union. They are Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, Slovenia and Slovakia. These countries have a similar historical development and are commonly classified as emerging innovation systems (Stojcic, 2021), at the same time, are also members of the EU and therefore recognise similar policies, strategies and objectives.

To quantify the success of innovation as a dependent variable, INV was used to represent the proportion of firms that have introduced a new product or service in the last three years. The independent variables focus on two main constructs. The first construct is the representation of women in firm management (Conyon and He, 2017; Gharbi and Othmani, 2023) measured by the variables women participation in ownership (WPO), majority women ownership (MWO), woman top manager (WTM), proportion of permanent full-time workers that are women (PFW). These variables were chosen in order to analyze the gender diversity at different levels of management in the company, starting from ownership, through top managers to ordinary employees. The second construct is an assessment of management practices (Bloom et al., 2019) by composite management practices index (MPI), that combines information from eight management practices indicators. Finally, we supplement our model with a control variable closely related to innovation – spend on R&D in the last fiscal years (R&D) as stated by Rehman et al (2020). A more detailed overview of the variables, including their units and sources, is presented in the following table (see Table 1).

Table 1: Overview of Variables

| Type | Variable | Description | Unit | Source |
|-------------|----------|---|--------|--------|
| Dependent | INV | Firms that introduced a new product/service over last 3 years | %firms | WBES |
| Independent | WPO | Women participation in ownership | %firms | WBES |
| | MWO | Majority women ownership | %firms | WBES |
| | WTM | Woman top manager | %firms | WBES |
| | PFW | Proportion of permanent full-time workers that are women | %firms | WBES |
| | MPI | Management practices index | %firms | WBES |
| Control | R&D | Spend on R&D in the last fiscal years | %firms | WBES |

This study uses a linear regression model to analyze the relationship between dependent (INV) and independent (WPO, MWO, WTM, PFW, MPI) variables. For a comprehensive overview of linear regression, refer to Montgomery et al. (2021). Through regression analysis, we can identify how individual factors affect the innovation performance of firms in each CEE country. The results allow us to assess the extent to which gender representation in the ownership structure, top management and among employees, together with the quality of managerial practices, contributes to innovation within the economies.

The coefficient of determination was also a critical component of our analysis, enabling us to evaluate the goodness of fit of our regression model to the observed data. A higher coefficient of determination signifies a superior fit of the linear regression model to the collected data. All calculation in this study were carried out with Gretl software.

4. Results and Discussion

Several interesting findings emerge from the results of our linear regression model (see Table 2). The validity of these findings is further enhanced by the coefficient of determination 0.997. the model explains 99.7% of the variability in the data, indicating high accuracy. The relevance of our analysis is further underlined by the 95% significance of our chosen control variable (R&D).

Table 2: Regression Analysis Results

| Independent | Coeff. Estimate | Std. Error | t-value | p-value | Sign. Code |
|-------------|-----------------|------------|---------|---------|------------|
| CONST | 9,914 | 7,718 | 1,284 | 0,421 | ** |
| WPO | -0,089 | 0,084 | -1,060 | 0,482 | |
| MWO | -4,035 | 0,162 | -24,95 | 0,026 | ** |
| WTM | 4,379 | 0,230 | 19,01 | 0,034 | ** |
| PFW | 0,123 | 0,158 | 0,779 | 0,579 | |

| Independent | Coeff. Estimate | Std. Error | t-value | p-value | Sign. Code |
|-------------|-----------------|------------|---------|---------|------------|
| MPI | 1,049 | 0,089 | -11,76 | 0,054 | * |
| R&D | 1,849 | 0,052 | 35,32 | 0,018 | ** |

R-squared 0.997

Signif. codes: '***' 0.001; '**' 0.01; '*' 0.05; '.' 0.1

According to regression model results, the WPO variable did not show a statistically significant effect on innovation. The variable MWO showed a negative effect on innovation at the 95% significance level, indicating that gender diversity among owners does not have a significant positive effect on innovation, thus **rejected H1a**. Our findings thus contradict the results of the study by Dohse et al. (2019) which shows that women in ownership positions are more innovative than women in managerial positions. Additionally, the results of our study are inconsistent with the findings of the authors Ritter-Hayashi et al. (2019), who demonstrated that the inclusion of women among business owners is associated with an increase in the level of innovation activity in these firms. This may be because while business owners have strategic control and long-term influence, their day-to-day interaction with operational processes, where innovation often occurs, may be limited. Unlike top managers with a direct influence on creating conditions that support innovation. In some regions, there may also be historical or social barriers and stereotypes that prevent women from fully participating in entrepreneurship or accessing the resources, funding, that are key to fostering innovation.

On the contrary, variable WTM indicates a positive and statistically significant relationship with innovation, **confirming H1b**. The results of the analysis are consistent with the findings of previous research (Eagly and Carli, 2003; Diaz-García et al. 2013). Women managers often bring different approaches to decision making and problem solving due to their diverse experiences and perspectives. Quintana-García and Benavides-Velasco (2008) emphasize that diversity of thought promotes creativity and innovation, which is important for the development of new products, services and processes. Thus, the presence of women in leadership roles allows firms to draw on a wider range of ideas and perspectives, leading to more innovative outputs. In addition, women have a better ability to manage teams, reduce conflicts and create a harmonious workplace environment, which is crucial for generating and implementing innovative ideas (Nielsen & Huse, 2010). On the other hand, the variable PFW was not statistically significant, indicating that the data **do not support H1c**. This result may be influenced by the fact that a woman, as a regular employee, has a more limited influence on strategic decisions and therefore cannot push for innovative plans, new ideas and approaches that promote innovative activities.

The MPI variable showed a positive effect on innovation at the 90% significance level. This suggests that better management practices can positively affect innovation, **confirming H2**. The results of our analysis are also consistent with the claim of Bloom et al. (2013), who emphasize that well-structured management practices can improve the performance of firms, including their innovation capacity. In addition, Kim (2012) points out that quality management, which is part of well-structured management practices, can directly influence innovation. These studies confirm our results and support the view that systematic improvement of management practices can significantly contribute to the innovative potential of organizations.

5. Conclusion

This study reveals how gender diversity in firms affects innovation in EU member countries in CEE. Our findings show that while gender diversity among owners (MWO) does not have a significant effect on innovation, gender diversity in top management (WTM) shows a positive association with innovative performance. Furthermore, well-structured management practices, as measured by the management practices index (MPI), were found to be associated with higher levels of innovation. This demonstrates the crucial importance of well-structured management practices in driving innovation, particularly with regard to gender diversity in leadership roles. Thus, the results highlight the importance of incorporating gender diversity into management strategies in order to enhance innovation potential in the CEE region.

The contribution of this research is that its results offer new insights into the impact of gender diversity and managerial practices and shed light on which factors should be taken into account when formulating strategies to enhance innovation in enterprises in EU member countries in Central and Eastern Europe. The results of this study have several applications for business owners, managers and policy makers in other transition countries. A useful tool could be the introduction of quotas for women in leadership positions and subsequent monitoring.

This could increase the representation of women in leadership positions. These quotas, set by companies or policies, could be applied in both the private and public sectors, with benefits to companies that promote this balance. Supporting the development of female talent through mentoring and training programmes or providing flexible working conditions that can facilitate women's participation in senior management while balancing work and personal commitments would be appropriate. Policy makers and business leaders in CEE countries could lead public campaigns and support the introduction of policies to promote diverse leadership teams and initiatives to increase gender balance in leadership. Consequently, mechanisms for monitoring and regularly evaluating gender diversity in companies should be put in place. From a theoretical perspective, the study contributes to existing knowledge by showing the differential impact of gender representation on innovation, particularly in transition economies. It also develops an understanding of the interaction between managerial practices and innovation and provides a basis for further research on these dynamics. By incorporating an index of managerial practices, the study offers a new perspective on examining the impact of managerial practices on innovation.

This study also has limitations that present opportunities for future research. First, our study is based on a sample of firms from selected Central and Eastern European countries that have a similar post-1990 historical development and are also EU members. A future study could be extended to include comparisons with other EU member states or non-post-communist countries. Secondly, it would be interesting to make a comparison of the countries in our research after 2025, as EU Member States have set themselves the target of achieving gender equality in companies by that year (Commission.europa.eu, 2020). Last but not least, it would be possible to add more input variables and use a different method of analysis in the future.

Acknowledgements

This paper was supported by the Student Grant Competition SGS_2024_012 of the University of Pardubice in 2024. We thank the Enterprise Analysis Unit of the Development Economics Global Indicators Department of the World Bank for the data.

References

- Abrunhosa, A., & Sá, P. M. E. (2008). Are TQM principles supporting innovation in the Portuguese footwear industry?. *Technovation*, 28(4), 208-221.
- Ali, M., Kulik, C. T., & Metz, I. (2011). The gender diversity–performance relationship in services and manufacturing organizations. *The International Journal of Human Resource Management*, 22(07), 1464-1485.
- Andersson, M., Lindgren, R., & Henfridsson, O. (2008). Architectural knowledge in inter-organizational IT innovation. *The Journal of Strategic Information Systems*, 17(1), 19-38.
- Arranz, N., F. Arroyabe, C., & Fernandez de Arroyabe, J. C. (2019). The effect of regional factors in the development of eco-innovations in the firm. *Business Strategy and the Environment*, 28(7), 1406-1415.
- Bakari, S., El Weriemmi, M., & Yedder, N. B. (2023). The Impact of Domestic Investment, Innovation and R&D on Economic Growth in Mena Countries. *Journal of Smart Economic Growth*, 8(2), 1-23.
- Bandiera, O., Prat, A., Hansen, S., & Sadun, R. (2020). CEO behavior and firm performance. *Journal of Political Economy*, 128(4), 1325-1369
- Becic, M., & Vojinic, P. (2018, October). The Role of Female Top Manager in Innovation Activities: Case of CEECs? Firms. In *Proceedings of Economics and Finance Conferences* (No. 6909790). International Institute of Social and Economic Sciences.
- Biscione, A., Boccanfuso, D., Caruso, R., & de Felice, A. (2022). The innovation gender gap in transition countries. *Economia Politica*, 39(2), 493-516.
- Bloom, N., & Van Reenen, J. (2007). Measuring and explaining management practices across firms and countries. *The quarterly journal of Economics*, 122(4), 1351-1408.a
- Bloom, N., Brynjolfsson, E., Foster, L., Jarmin, R., Patnaik, M., Saporta-Eksten, I., & Van Reenen, J. (2019). What drives differences in management practices?. *American Economic Review*, 109(5), 1648-1683.
- Bruhn, M., Karlan, D., & Schoar, A. (2018). The impact of consultin
- Conyon, M. J., & He, L. (2017). Firm performance and boardroom gender diversity: A quantile regression approach. *Journal of Business Research*, 79, 198-211.
- Daft, R. L. (1978). A dual-core model of organizational innovation. *Academy of management journal*, 21(2), 193-210.
- Dai, Y., Byun, G., & Ding, F. (2019). The direct and indirect impact of gender diversity in new venture teams on innovation performance. *Entrepreneurship Theory and Practice*, 43(3), 505-528.
- Dezso, C., & Ross, D. (2011). Does female representation in top management improve firm performance. *A panel data investigation. Recuperado*, 25.
- Díaz-García, C., González-Moreno, A., & Jose Sáez-Martínez, F. (2013). Gender diversity within R&D teams: Its impact on radicalness of innovation. *Innovation*, 15(2), 149-160.

- Dohse, D., Goel, R. K., & Nelson, M. A. (2019). Female owners versus female managers: Who is better at introducing innovations?. *The Journal of Technology Transfer*, 44, 520-539.
- Eagly, A. H., & Carli, L. L. (2003). The female leadership advantage: An evaluation of the evidence. *The leadership quarterly*, 14(6), 807-834.
- Eriksson-Zetterquist, U. (2007). Gender and new technologies. *Gender, Work & Organization*, 14(4), 305-311.
- European Commission (2021). Gender equality strategy. *European Commission*. https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_cs. Accessed September 3, 2024.
- Gharbi, S., & Othmani, H. (2023). Threshold effects of board gender diversity on firm performance: panel smooth transition regression model. *Corporate Governance: The International Journal of Business in Society*, 23(1), 243-261.
- Haneda, S., & Ito, K. (2018). Organizational and human resource management and innovation: which management practices are linked to product and/or process innovation? *Research Policy*, 47(1), 194-208.
- Homkes, R. (2011). *Enhancing management quality: the potential for productivity growth after the recession* (No. 328). Centre for Economic Performance, LSE.
- Horbach, J., & Jacob, J. (2018). The relevance of personal characteristics and gender diversity for (eco-) innovation activities at the firm-level: Results from a linked employer–employee database in Germany. *Business Strategy and the Environment*, 27(7), 924-934.
- Jung, D. D., Wu, A., & Chow, C. W. (2008). Towards understanding the direct and indirect effects of CEOs' transformational leadership on firm innovation. *The leadership quarterly*, 19(5), 582-594.
- Jung, D. I., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The leadership quarterly*, 14(4-5), 525-544.
- Kalay, F., & Lynn, G. (2015). The impact of strategic innovation management practices on firm innovation performance. *Research Journal of Business and Management*, 2(3), 412-429.
- Kim, D. Y., Kumar, V., & Kumar, U. (2012). Relationship between quality management practices and innovation. *Journal of operations management*, 30(4), 295-315.
- Kotkova Striteska, M., Myslivcova, K., Prokop, V., & Zapletalova, L. (2024). Employees' engagement, family ownership, or gender diversity? Searching for determinants of SMEs' green behaviors in CEE countries. *Corporate Social Responsibility and Environmental Management*.
- Latan, H., Jabbour, C. J. C., de Sousa Jabbour, A. B. L., de Camargo Fiorini, P., & Foropon, C. (2020). Innovative efforts of ISO 9001-certified manufacturing firms: Evidence of links between determinants of innovation, continuous innovation and firm performance. *International Journal of Production Economics*, 223, 107526.
- Lee, J., & Chung, J. (2022). Women in top management teams and their impact on innovation. *Technological Forecasting and Social Change*, 183, 121883.
- Montgomery, D. C., Peck, E. A. and Vining, G. G. (2021). *Introduction to linear regression analysis*. John Wiley and Sons.
- Myslivcová, K., Hausmannova, N., & Zapletalová, L. (2023, September). Drivers of Environmental Responsibility in Family Firms: The Role of an Environmental Manager. In *European Conference on Knowledge Management* (Vol. 24, No. 1, pp. 924-931).
- Nielsen, S., & Huse, M. (2010). Women directors and board strategic decision making: The moderating role of equality perception. *European Management Review*, 7(1), 16-29.
- Østergaard, C. R., Timmermans, B., & Kristinsson, K. (2011). Does a different view create something new? The effect of employee diversity on innovation. *Research policy*, 40(3), 500-509.
- Prokop, V., Hojnik, J., Zapletal, D., & Žižmond, E. (2023). On the path to sustainable development: The nexus among owner gender diversity, energy management, and firms' innovation radicalness. *Business Strategy and the Environment*, 32(4), 1799-1815.
- Queiró, F. (2022). Entrepreneurial human capital and firm dynamics. *The Review of Economic Studies*, 89(4), 2061-2100.
- Quintana-García, C., & Benavides-Velasco, C. A. (2008). Innovative competence, exploration and exploitation: The influence of technological diversification. *Research policy*, 37(3), 492-507.
- Rehman, N. U., Hysa, E. and Mao, X. (2020). Does public RandD complement or crowd-out private RandD in pre and post economic crisis of 2008?. *Journal of Applied Economics*, 23(1figuy), 349-371. <https://doi.org/10.1080/15140326.2020.1762341>
- Ritter-Hayashi, D., Vermeulen, P., & Knoblen, J. (2019). Is this a man's world? The effect of gender diversity and gender equality on firm innovativeness. *Plos one*, 14(9), e0222443.
- Ruiz-Jiménez, J. M., & Fuentes-Fuentes, M. D. M. (2016). Management capabilities, innovation, and gender diversity in the top management team: An empirical analysis in technology-based SMEs. *BRQ Business Research Quarterly*, 19(2), 107-121.
- Singhathep, T., & Pholpirul, P. (2015). Female CEOs, firm performance, and firm development: evidence from thai manufacturers. *Gender, Technology and Development*, 19(3), 320-345.
- Stojcic, N. (2021). Collaborative innovation in emerging innovation systems: Evidence from Central and Eastern Europe. *The Journal of Technology Transfer*, 46(2), 531-562.
- The World Bank Group. (n.d.). *Enterprise Surveys – Management Practices, Innovation and Technology, Gender*. Retrieved September 5, 2024, from <https://www.enterprisesurveys.org/en/enterprisesurveys>
- Tonoyan, V., & Boudreaux, C. J. (2023). Gender diversity in firm ownership: Direct and indirect effects on firm-level innovation across 29 emerging economies. *Research Policy*, 52(4), 104716.

- Torchia, M., Calabrò, A., & Huse, M. (2011). Women directors on corporate boards: From tokenism to critical mass. *Journal of business ethics*, 102, 299-317.
- Valero, A. (2021). Education and management practices. *Oxford Review of Economic Policy*, 37(2), 302-322.
- Veselý, J., & Veselý, Š. (2018). Underlying factors of management practices in Czech companies. *Scientific papers of the University of Pardubice. Series D, Faculty of Economics and Administration*. 42/2018.
- Wang, Z., & Wang, N. (2012). Knowledge sharing, innovation and firm performance. *Expert systems with applications*, 39(10), 8899-8908.
- Zuraik, A., & Kelly, L. (2018). The role of CEO transformational leadership and innovation climate in exploration and exploitation. *European journal of innovation management*, 22(1), 84-104.