

Information Technology and Religiosity as Moderating Variables of the Relationship between Investment Risk-Taking and Firm Performance

Wida Purwidianti^{1*}, Ika Yustina Rahmawati², Lahan Adi Purwanto³

¹²Faculty of Economic and Business, Universitas Muhammadiyah Purwokerto,
Jl KH Ahmad Dahlan, Purwokerto, Indonesia

³Faculty of Engineering and Science, Universitas Muhammadiyah Purwokerto,
Jl KH Ahmad Dahlan, Purwokerto, Indonesia

*widapurwidiанти@ump.ac.id

Abstract

Study on the impact of investment risk-taking on the performance of small and medium enterprises (SMEs) are still inconsistent. This study provides novelty to the relationship between the two variables by adding moderating variables of information technology and religiosity. This study took a sample of 94 SME owners in Banyumas Regency. The results show that the influence of investment risk-taking and information technology has no significant results. The higher level of religiosity of the SME owners will be able to improve the company's performance. The moderating relationship between information technology and investment risk-taking shows significantly positive results. In contrast, the moderating effect of the religiosity variable will further reduce the effect of investment risk-taking on company performance.

Keywords: Firm Performance, Information Technology, Investment Risk-Taking, Religiosity

INTRODUCTION

Small and Medium Enterprises (SMEs) play a significant role to provide jobs and developing the economy. SMEs occupy the first business position globally which are essential contributors to job creation and global economic development. SMEs control as many as 90% of businesses worldwide. In addition, SMEs can provide more than 50% of employment (Al Asheq & Hossain., 2019). Therefore, the performance of SMEs is essential to be maintained so that global economic development can be carried out.

According to the majority of research findings, the Covid-19 epidemic has given the economy a major shock. This condition impacts the condition of SMEs, which are challenging to retain their employees, their cash flow problems, and the increasing state of bankruptcy. The findings indicated that 50% of SMEs stopped operating as a result of restrictions on community activities. In addition, 60% of SMEs had run out of cash reserves (Brown et al., 2020; Ii et al., 2020; Juergensen et al., 2020; Pierre-Olivier Gourinchas et al., 2020).

The study's findings demonstrate that several factors have an impact on how well SMEs succeed including information technology (Nabeel-rehman & Nazri, 2019; Neirotti & Raguseo, 2016; Raymond et al., 2016), innovation (Rahaman et al., 2021), proactiveness (Rahaman et al., 2021), risk-taking (Rahaman et al., 2021), and religiosity (Zannah & Mahat, 2021). The research focuses on the issues of investment risk-taking, information technology, religiosity, and SMEs performance due to the fact that SMEs are linked to financial risk and uncertain situations (Juergensen et al., 2020).

Research on how taking risks affects SMEs' success has shown inconsistent results. Researchs show that investment risk-taking significantly impacts SMEs' performance (Dvorsky et al., 2020; Games & Rendi, 2019; Pratono, 2018; Rahaman et al., 2021). Different research find that taking risks does not significantly affect the performance of SMEs. (Purwidiанти & Hidayah, 2015; Zannah & Mahat, 2021)

The research results on the influence of information technology on the performance of SMEs have different impacts. A study of Rahaman et al

(2021) states that information technology indirectly affects SMEs' performance. Furthermore, Raymond et al. (2016) and Park et al., (2019) state that information technology has a direct impact on the performance of SMEs. Pratono (2018) found that information technology can be a moderating variable of the influence of risk-taking variables on the performance of SMEs.

This study will re-examine the role of information technology as a moderating variable on the influence between investment risk-taking and SMEs performance. The unique aspect of this study is the inclusion of religiosity as a moderating variable. Pratono (2018) stated that research on investment risk-taking behavior needs to add a moderating variable of religiosity. This is also supported by research Zannah and Mahat, (2021) which proves the level of religiosity can affect the performance of SMEs.

This study examines the moderating of information technology and religiosity variables on the effect of investment risk-taking and firm performance. This research is essential because it firstly will provide benefits and contributions for both the government and SMEs; this research provides recommendations related to the performance of SMEs. Secondly, it is beneficial for the science; this research contributes to developing theories in Management and Information Technology.

LITERATURE REVIEW

Risk-taking

Traditional finance defines risk as the probability that the actual level of profit will differ from the predicted level of profit. The potential for business failure or loss is another way to define risk (Rahaman et al., 2021). Risk-taking behavior can be interpreted as the company's willingness to take advantage of opportunities in uncertain environmental conditions.

Investors' preferences for risk will significantly determine investors' attitudes toward risk. Some investors are risk takers who are willing to invest with high risk because they have the bravery to incur the risk to achieve a high degree of profit. These investors who are moderate to risk only dare to take risks at an average level. Therefore, this investor will also get a moderate level of profit. Some investors are risk averse. They only take modest risks, so the amount of profit they make is similarly typical.

Information Technology

Previous research has demonstrated how information technology can enhance business performance. Information technology capability is the company's ability to deploy and mobilize information technology-based resources and other company resources and capabilities to improve

various key performance indicators (Nabeel-Rehman & Nazri, 2019).

Information technology competency includes two components: integration and alignment. IT integration is the extent to which a company can cooperate with its business partners by communicating and exchanging information. Integration of information technology is necessary for businesses to conduct business integration and respond quickly to market opportunities. Information technology alignment shows the alignment between technology and the company's business strategy. Companies can improve performance by aligning information technology and business strategy (Nabeel-Rehman & Nazri, 2019).

Religiosity

Religiosity can be defined as a practice carried out by believers for something that is accepted as truth based on a predetermined belief. Religiosity is related to the behavior and ethics of individuals believed to be accurate.

The manager's level of religiosity will influence the business performance of the company (Elias et al., 2019). Numerous studies have shown that the owner's or manager's religious affiliation will have an impact on the business's performance.

Investment Risk-taking and SME Performance

SMEs will always operate in a risky environment. To compete in the marketplace, they also have restricted resources. The owners will have an entrepreneurial spirit characterized by a willingness to take risks. The courage to take high risks is an effort to take better opportunities and performance (Rahaman et al., 2021).

Pratono (2016) stated that the comparison between risk and return could be used to understand the ability of SMEs to adopt information technology. Zhao and Zhu (2017) said that companies with risk aversion strategies tend to get lower profits. This is also supported by the statement Ding & Velamuri (2016) that SMEs become riskier in an uncertain environment. The results of studies by Dvorsky et al., (2020); Games and Rendi (2019); Rahaman et al. (2021) demonstrate that risk-taking has a favorable effect on SMEs' performance. The first hypothesis in this study is:

H₁: investment risk-taking affects the performance of SMEs

Information Technology and SMEs Performance

SMEs with a solid intention to seize business opportunities will achieve high performance under predictable technological turbulence (Pratono, 2016). SMEs that have limited technical capabilities will result in low performance. The availability of information technology enables SMEs to build

capabilities in a variety of areas, including product development and marketing. Pratono (2016). This statement is supported by several studies that have been conducted before.

The results of the study Raymond et al. (2016) state that information technology will directly influence SMEs' performance. The study's results Park et al., (2019) also found that information technology can affect the performance of SMEs. The second hypothesis in this study is

H₂: information technology affects the performance of SMEs

Religiosity and SME's Performance

Zannah and Mahat (2021) proves that the level of religiosity can affect the performance of SMEs. Kurniawati et al. (2020) prove that sharia principles will affect the performance of SMEs. Adi and Adawiyah (2018); Purwidiyanti and Darmawan (2019); Zahrah et al. (2016) state that religiosity affects company performance. Different results are shown by research Elias et al. (2019) which says that the level of managers' religiosity does not affect the performance of SMEs. The third hypothesis in this study is

H₃: religiosity affects the performance of SMEs

Risk-taking on SMEs Performance with Information Technology and Religiosity as Moderating Variables

Information technology and religiosity can be variables that strengthen or weaken the impact of investment risk-taking on company performance. Cheong (2018) researched the relationship between religiosity and investment risk-taking. The results prove that individuals with a high level of religiosity will make investments with a low level of risk. However, intrinsic religiosity can moderate the relationship. Managers of Muslim companies tend to make riskier decisions than other companies because of religious and social pressures. Pratono (2018) discovered evidence demonstrating that information technology can moderate the effect of risk-taking variables on the performance of SMEs.

The fourth and fifth hypotheses in the study are:

H₄: information technology can moderate the impact of return-on-investment risk on the performance of SMEs

H₅: religiosity can moderate the impact of return-on-investment risk on the performance of SMEs

Based on the hypothesis above, the framework of this research can be described as follows:

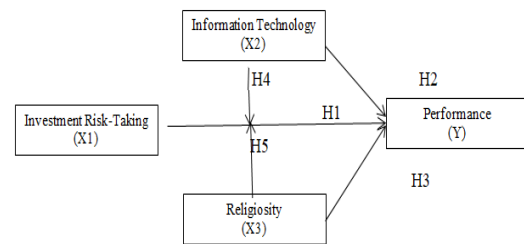


Figure 1. Conceptual Framework

METHOD

The population of the study is 1.604 SME owners in Banyumas Regency. The sample uses an error rate of 10% of 94 SMEs owners. The criteria for selecting the sample used are SMEs owners who are Muslim. SMEs utilizing technology owned by SMEs owners are still carrying out operational activities until the year the study was conducted. The data in this study are primary, secondary and primary data collection techniques using Google Form questionnaires and offline questionnaires for SMEs owners.

The performance of SMEs is measured by financial performance based on research conducted by Nabeel-rehman and Nazri (2019). There are five questions about increasing ROA, ROE, sales, market share, and sales growth. All items were measured using a Likert scale of 1 to 7.

Risk-taking uses risk tolerance measurement, a level of risk where investors are willing to invest (Grable, 2016; Grable & Lytton, 1999). Questions were asked about profit volatility, investment losses, declining investment value, willingness to bear short-term losses to earn long-term gains.

Information technology is measured by question items used in research (Nabeel-rehman & Nazri, 2019). Information technology can be recognized by two factors: IT integration and alignment. All items were measured using a Likert scale of 1 to 7.

The indicator of the religiosity variable uses the principles of sharia transactions. Twelve statement items in this indicator demonstrate the principles consisting of the principle of brotherhood, the principle of benefit, the principle of justice, balance, and the universal principle. The Likert scale used is a scale of 1 to 5 points.

This study applies a moderation regression equation with the MRA (Moderated Regression Analysis) model. The study tested reliability and validity tests for all questions used in the study. The classical assumption test is also used in this work as a normality test and a heteroscedasticity test. The autocorrelation test was not utilized because the study applied cross-section data. The multicollinearity test was not implemented because the regression test using moderating variables did not require a multicollinearity test. The close correlation between independent and interaction variables only shows the

exact measurement (Disatnik & Sivan, 2016; Gujarati, 2003; Hayes, 2013).

The model fit test used the F and coefficient of determination tests—r square. The model fit test demonstrates a fit result if the F test shows a significant probability of less than 0.10. Hypothesis testing uses t-test. Hypotheses one to five will be accepted if the probability value of the hypothesis testing shows a number less than 0.10.

RESULT AND DISCUSSION

A sample of 94 SME owners were used in this study. Descriptive statistics of respondents were 41 men and 53 women; the average age of the respondents was 29 years; 87.23% of SMEs are engaged in trading; SMEs have an average workforce of 3 people, and on average, SMEs have been established for 3.5 years.

Table 1. Respondent Answer's

Statement	Mean
Performance (Y) (Likert scale 1-7)	
Increasing ROA	3.9787
Increasing ROE	4.5426
Increasing sales	4.6277
Increasing market share	4.2234
Increasing sales growth	4.2979
Risk Taking (X ₁) (Likert Scale 1-7)	
Profit volatility	2.0745
Investment losses	1.9787
Declining investment value	3.5213
Willingness to bear short-term losses to earn long-term gains	1.9149
Information technology (X ₂) (Likert Scale 1-5)	
The information technology development plan reflects the objectives of the company's business plan.	4.9362
The information technology development plan supports the business strategy.	5.0851
The information technology development plan considers the company's external business environment.	4.9149
The development plan guides the company plan for information technology.	4.7979
The development of specific technologies guides the company's plans.	4.1170
The company transfers data to the company's business partners	3.7340
The company provides a connection between the company's system and the company's business partner systems.	4.0106
Companies quickly obtain relevant information, and the company's business partner database.	3.9468
The company easily accesses the database of the company's business partners.	3.9255
Religiosity (X ₃) (Likert Scale 1-5)	
Business transactions based on the principle of mutual understanding and mutual pleasure.	4.1170
The principle of freedom of transaction is that if the object is lawful and reasonable.	4.4255
Money only functions as a medium of exchange and a unit of measure of value,	4.2766

Statement	Mean
not as a commodity or something that can be traded.	
Business does not contain elements of usury.	4.7128
The company does not have aspects of injustice.	4.7234
Business does not contain elements of <i>maysir</i> (speculation).	4.6596
The company does not have features of <i>gharar</i> (obscurity).	4.6915
Business does not contain haram elements.	4.7340
The business does not adhere to the time value of money principle because the profits obtained in business activities are related to the risks inherent in these business activities.	4.3404
Transactions are based on a clear and correct agreement and for the benefit of all parties without harming other parties.	4.5213
There is no distortion or deviation of prices through demand engineering or supply engineering.	4.5851
Business does not contain elements of cooperation with bribery.	4.6809

The validity and reliability testing results were measured using a Likert scale except for the investment risk-taking variable. The test results on the company's performance variables demonstrate all question items that have a significant Pearson correlation value at the 1% level and Cronbach's alpha value of 0.952. The test results on the information technology variable show that all question items have a significant Pearson correlation value at the 1% level and Cronbach's alpha value of 0.905. The test results on the religiosity variable indicate that all question items have a significant Pearson correlation value at the 1% level and Cronbach's alpha value of 0.935.

Testing the classical assumption of normality shows a residual normality problem because the Kolmogorov-Smirnov value has a significance value below 0.05. Therefore, this study discarded two outlier data. The normality test results show that the Kolmogorov-Smirnov value has a significance of 0.200. They are testing the classical assumption of heteroscedasticity using the Glejser test. The test results show that all variables have a significant value above 0.05. This test demonstrates that the study's regression equation is free of the heteroscedasticity issue.

The results of model feasibility testing and hypothesis testing are presented in Table 2.

Table 2. Results of Hypothesis-testing

Variable	Coefficient	SE	Sig
Investment Risk-taking (X ₁)	0.486	0.405	0.233
Information Technology (X ₂)	-0.732	0.472	0.125
Religiosity (X ₃)	2.651	0.837	0.002***

Variable	Coefficient	SE	Sig
Investment Risk-Taking x Information Technology (M1)	0.107	0.049	0.032**
Investment Risk-Taking x Religiosity (M2)	-0.215	0.086	0.015**
Constanta	5.128	4.085	0.213
R-square	0.356		
Adjusted R-square	0.318		
F Test	9.501		0.000***

The results of the model fit test indicate that the F test value of 9.501 is significant at the 0.000 level. Therefore, the regression equation model has demonstrated the fit of the model. The value of the coefficient of determination is shown by the adjusted R square value of 31.8 percent. This indicates that the independent variable in this study can account for 31.8 percent of the variation in the company's performance. The remaining 68.2 percent is explained by other variables that are not examined.

The test shows that the investment risk-taking variable (X_1) has a regression coefficient value of 0.486 with a significance level of 0.233. The results of this test indicate that investment risk-taking does not have a significant impact on company performance. The first hypothesis stating that risk-taking investment has an impact on the performance of SMEs, is rejected.

The information technology variable (X_2) has a regression coefficient of -0.732 and a significance value of 0.12. These results provide evidence that information technology does not affect company performance. As a result, the second hypothesis states that information technology has an impact on SMEs' performance. Rejected.

The regression coefficient of the religiosity variable (X_3) is 2.651, with a significance level of 0.002. These results prove that religiosity positively and significantly influences company performance. The third hypothesis states that religiosity affects the performance of SMEs is accepted.

The interaction variable between investment risk-taking and information technology (M1) displays a regression coefficient of 0.107 and is significant at 0.032. Therefore, these results confirm that information technology can strengthen the impact of risk-taking on company performance. The fourth hypothesis states that information technology can moderate the impact of return-on-investment risk on the performance of SMEs is acceptable.

The interaction variable between investment risk-taking and religiosity (M2) shows a regression coefficient value of -0.215 and is significant at 0.015. Therefore, these results prove that religiosity can weaken the impact of risk-taking on company performance. The fifth hypothesis states that religiosity can moderate the impact of return-on-

investment risk on the performance of SMEs is acceptable.

The results of this study indicate that investment risk-taking does not affect company performance. These results support the findings (Purwidiyanti & Hidayah, 2015; Zannah & Mahat, 2021). The regression coefficient reveals a positive but not significant direction. The results of this study do not support the research conducted by (Dvorsky et al., 2020; Games & Rendi, 2019; Rahaman et al., 2021). SMEs owners need to take risks to obtain better company performance (Pratono, 2018). SMEs owners are willing to invest capital in small companies in the expectation of benefiting from these investment decisions, which can be interpreted as being willing to take risks in these investment decisions. The results of this study indicate that investment risk-taking does not significantly affect the company's performance. There may be other factors that have a more significant influence on the company's performance compared to investment risk-taking.

Information technology variable does not have a significant impact on company performance. These results do not support the research (Park et al., 2019; Pratono, 2016; Raymond et al., 2016). The regression coefficient shows a positive but not significant number. Pratono (2016) states that SMEs with limited technological capabilities will perform poorly. The existence of information technology allows SMEs to develop capabilities of SMEs in various fields, such as product development and marketing. The information technology capability of the company is defined as the ability to deploy and mobilize information technology-based resources in combination with other company resources to improve the company's key performance indicators (Nabeel-rehman & Nazri, 2019). In this study, information technology has not been able to affect the company's performance because SMEs in this study still use relatively simple information technology such as laptops and cell phones. SMEs in this study have not used advanced information technology, for example, information systems, in running their business.

The religiosity variable has a positive and significant influence on company performance. This can demonstrate that the higher the level of religiosity of the SME owner, the higher the company's performance. These results support research conducted by Hari Adi and Adawiyah (2018); Purwidiyanti and Darmawan (2019); Zahrah et al. (2016), which state that religiosity affects company performance. The practice of religiosity by company owners will encourage company performance (Kurniawati et al., 2020).

This study can find the role of information technology as a variable that moderates the relationship between investment risk and company performance. Information technology can cause

SMEs owners to take risks at a higher level to improve company performance. These results justify research Stein and Wiedemann (2016) about the existence of information technology turbulence that can encourage SMEs owners who take high risks to achieve high company performance. SMEs owners are urged to focus more on risk management so that their businesses will be sustainable in the future. An investment will create two opposite sides, namely the risks and benefits of investment. Adopting information technology can improve the ability to understand the risks and benefits. SMEs with a strong drive will be able to improve their performance under the high instability of information technology (Pratono, 2016). This result is different from research Pratono (2018) which proves that the interaction between information technology and risk weakens the impact of risk-taking on company performance.

Testing the interaction between risk-taking and religiosity has a significantly negative coefficient. It can be interpreted that the existence of religiosity will weaken the impact of risk-taking on company performance. This study's results support Cheong's research (2018), which states that companies with managers with a high level of religiosity will reduce their investment risk-taking. Research by Alalmal et al. (2018) elaborates that managers in Islamic companies prefer to avoid risk in their business. In Islam, it is advised to refrain from taking unnecessary risks. Díez-Esteban et al., (2019) and Frijns et al. (2022) state that excessive risk-taking from the company's owner will cause the company's financial crisis and be dangerous.

Conclusion

This research has two objectives. The first one is to test the impact of risk-taking on company performance. The results of testing the first hypothesis show that investment risk-taking does not significantly impact company performance. Testing the second hypothesis on the impact of information technology on company performance also shows an insignificant impact. The testing results of the third hypothesis that the influence of the religiosity variable on company performance indicates a positive and significant impact. The second objective is to examine the moderating role of information technology and religiosity on the impact of risk-taking on company performance. The moderating relationship between information technology and investment risk-taking shows significant positive results. In contrast, the moderating effect of the religiosity variable will further reduce the effect of investment risk-taking on company performance. The results of this study demonstrate that information technology and religiosity can moderate the impact of investment risk-taking on company performance. Therefore, SMEs need to focus more on utilizing information technology in their operations. They also need to pay attention to religious rules in their

business development. For the government, the results of this study can be used as guidelines in implementing SMEs development policies, namely by considering investment risk-taking, advances in information technology, and religious rules.

This research is still limited to SMEs in Banyumas regency. Further research suggests expanding the research area to cover several regencies. This is carried out to increase the generalizability of the study. The utilization of information technology by SMEs has not been uncovered by this study. Further researchers are advised to choose SMEs utilizing information technology for corporate information systems. This is carried out so that the validity of the research findings can be further increased.

REFERENCES

- Adi, P. H., & Adawiyah, W. R. (2018). The impact of religiosity, environmental marketing orientation and practices on performance: a case of Muslim entrepreneurs in Indonesia. *Journal of Islamic Marketing*, 9(4), 841–862. <https://doi.org/10.1108/JIMA-09-2016-0067>
- Alalmal, S., Al-Awadhi, A. M., Hassan, M. K., & Turunen-Red, A. (2018). The influence of religion on the determinants of capital structure: the case of Saudi Arabia. *Journal of Islamic Accounting and Business Research*, 11(2), 472–497. <https://doi.org/10.1108/JIABR-03-2018-0043>
- Al Asheq, A., & Hossain, M. U. (2019). SME performance: Impact of market, customer and brand orientation. *Academy of Marketing Studies Journal*, 23(1), 1-9.
- Brown, R., Rocha, A., & Cowling, M. (2020). Financing entrepreneurship in times of crisis: exploring the impact of COVID-19 on the market for entrepreneurial finance in the United Kingdom. *International Small Business Journal: Researching Entrepreneurship*, 38(5), 380–390. <https://doi.org/10.1177/0266242620937464>
- Cheong, C. W. H. (2018). Religiosity and corporate risk-taking. *Asian Journal of Finance & Accounting*, 10(2), 81. <https://doi.org/10.5296/ajfa.v10i2.13749>
- Díez-Esteban, J. M., Farinha, J. B., & García-Gómez, C. D. (2019). Are religion and culture relevant for corporate risk-taking? International evidence. *BRQ Business Research Quarterly*, 22(1), 36–55. <https://doi.org/10.1016/j.brq.2018.06.003>
- Ding, Y., & Velamuri, V. M. S. R. (2016). Institutional complexity and the strategic behaviors of SMEs in transitional environmen. *International Journal of Emerging Markets*, 11(4).
- Disatnik, D., & Sivan, L. (2016). The multicollinearity illusion in moderated

- Regression Analysis. *Marketing Letters*, 27(2), 403–408. <https://doi.org/10.1007/s11002-014-9339-5>
- Dvorsky, J., Belas, J., Gavurova, B., & Brabenec, T. (2020). Business risk management in the context of small and medium-sized enterprises. *Economic Research-Ekonomska Istraživanja*, 0(0), 1–19. <https://doi.org/10.1080/1331677X.2020.1844588>
- Elias, M. E., Nawi, M. N. M., Mahidin, N., & Pozin, M. A. A. (2019). The influence of religiosity leaderships practices towards the smes business performance in food and beverages industry. *International Journal of Supply Chain Management*, 8(1), 644–652.
- Frijns, B., Hubers, F., Kim, D., Roh, T.-Y., & Xu, Y. (2022). National culture and corporate risk-taking around the world. *Global Finance Journal*, 100710. <https://doi.org/10.1016/j.gfj.2022.100710>
- Games, D., & Rendi, R. P. (2019). The effects of knowledge management and risk taking on SME financial performance in creative industries in an emerging market: the mediating effect of innovation outcomes. *Journal of Global Entrepreneurship Research*, 9(1), 1-14.
- Grable, J. E. (2016). Financial risk tolerance. In *Handbook of Consumer Finance Research* (19–31). <https://doi.org/10.1007/978-0-387-75734-6>
- Grable, J., & Lytton, R. (1999). Financial risk tolerance revisited: the development of a risk assessment instrument. *Financial Services Review*, 8, 163–181. [https://doi.org/10.1016/S1057-810\(99\)00041-4](https://doi.org/10.1016/S1057-810(99)00041-4)
- Gujarati, D. N. (2003). *Basic Econometrics*. McGraw-Hill/Irwin.
- Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis* (D. A. Kenny & T. D. Little (eds.)). The Guilford Press.
- Ii, W. W. B., Saunders, K. T., & Saunders, K. T. (2020). *Entrepreneurial Finance : Analyzing the Demand for the Personal Guarantee*. 22(2).
- Juergensen, J., Guimón, J., & Narula, R. (2020). European SMEs amidst the COVID-19 crisis: assessing impact and policy responses. *Journal of Industrial and Business Economics*, 47(3), 499–510. <https://doi.org/10.1007/s40812-020-00169-4>
- Kurniawati, S. L., Lestari, W., Sari, L. P., & Kartika, T. P. D. (2020). Shariah governance, Maqasid al-Shariah, SMEs performance: the role of gender and age. *Journal of Economics, Business, & Accountancy Ventura*, 23(2), 279-292. <https://doi.org/10.14414/jebav.v23i2.2374>
- Nabeel-rehman, R., & Nazri, M. (2019). Information technology capabilities and SMEs performance: a understanding of a multi mediation model for the manufacturing sector. *Interdisciplinary Journal of Information, Knowledge, and Management*, 14, 253–276.
- Neirotti, P., & Raguseo, E. (2016). Information & management on the contingent value of IT-based capabilities for the competitive advantage of SMEs: Mechanisms and empirical evidence. *Information & Management*, 2015. <https://doi.org/10.1016/j.im.2016.05.004>
- Park, H. U. N., Yoo, J., Moon, S., Yoo, H., Lee, H., Kwon, T., & Hahn, H. (2019). Effect of technology and market dynamism by supporting services. *Science, Technology & Society*, 1(24), 144–160. <https://doi.org/10.1177/0971721818806113>
- Pierre-Olivier Gourinchas, Kalemli-Özcan, Şebnem, Penciakova, V., & Sander, N. (2020). Covid-19 and SME failure. In *NBER Working Paper*, 28(2).
- Pratono, A. H. (2016). Strategic orientation and information technological turbulence: contingency perspective in SMEs. *Business Process Management Journal*, 22(2).
- Pratono, A. H. (2018). Does firm performance increase with risk-taking behavior under information technological turbulence?: Empirical evidence from Indonesian SMEs. *Journal of Risk Finance*, 19(4), 361–378. <https://doi.org/10.1108/JRF-10-2017-017>
- Purwidiyanti, W., & Darmawan, A. (2019). Peran mediasi perilaku keuangan pada pengaruh variabel demografi, risk tolerance dan religiusitas terhadap kinerja UKM di Kabupaten Banyumas. *Laporan Penelitian*.
- Purwidiyanti, W., & Hidayah, A. (2015). Pengaruh orientasi kewirausahaan terhadap kinerja keuangan UMKM di Kembaran, Kabupaten Banyumas. *Prosiding SNaPP2016 Sosial, Ekonomi, dan Humaniora*, 245–252.
- Rahaman, M. A., Luna, K. F., Ping, Z. L., Islam, M. S., & Karim, M. M. (2021). Do risk-taking, innovativeness, and proactivity affect business performance of SMEs? A case study in Bangladesh. *The Journal of Asian Finance, Economics and Business*, 8(5), 689-695. <https://doi.org/10.13106/jafeb.2021.vol8.no5.0689>
- Raymond, L., Bergeron, F., Croteau, A., & St-pierre, J. (2016). *IT-enabled Knowledge Management for the Competitive Performance of Manufacturing SMEs : An Absorptive Capacity-based View*. *Knowledge and Process Management*, 23(2), 110-123. <https://doi.org/10.1002/kpm>
- Stein, V., & Wiedemann, A. (2016). Risk governance: conceptualization, tasks, and research agenda. *Journal of Business Economics*, 86(8), 813–836.

<https://doi.org/10.1007/s11573-016-0826-4>

Zahrah, N., Hamid, S. N. A., Rani, S. H. A., & Kamil, B. A. M. (2016). Enhancing job performance through Islamic religiosity and Islamic work ethics. *International Review of Management and Marketing*, 6(7), 195-198.

Zannah, M., & Mahat, F. (2021). The innovation, risk-taking and proactiveness on performance of SMEs in Nigeria, the moderating role of microfinance sponsored by TETFUND. *IOSR Journal of Business and Management*, 23(3), 20-27.

Zhao, S., & Zhu, Q. (2018). A risk-averse marketing strategy and its effect on coordination activities in a remanufacturing supply chain under market fluctuation. *Journal of Cleaner Production*, 171, 1290-1299. <https://doi.org/10.1016/j.jclepro.2017.10.107>