“Organizational support as a moderator on academic entrepreneurship performance in state universities”

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ORGANIZATIONAL SUPPORT AS A MODERATOR ON ACADEMIC ENTREPRENEURSHIP PERFORMANCE IN STATE UNIVERSITIES

Abstract

Engaging in academic entrepreneurship enhances the potential for academics to generate scientific advancements, capitalize on findings, and create impactful contributions. This study examines how organizational support affects the relationship between entrepreneurial orientation and role integration on academic entrepreneurship performance at state universities in Indonesia. The population includes lecturers from eleven state universities with research results that can be commercialized. A purposive sampling method selected 330 respondents, focusing on science and social sciences lecturers with research at a technological readiness level of 6 to 9, demonstrating pilot stages and commercialization readiness based on national assessments. Data analysis used variance-based structural equation modeling and partial least squares (PLS). The findings indicate that entrepreneurial orientation significantly affects academic entrepreneurship performance ($p < 0.05$), and role integration significantly affects academic entrepreneurship performance ($p < 0.05$). Additionally, organizational support moderates the relationship between entrepreneurial orientation and academic entrepreneurship performance ($p < 0.05$), and organizational support moderates the relationship between role integration and academic entrepreneurship performance ($p < 0.05$).

Keywords entrepreneurial orientation, role integration, organizational support, academic entrepreneurship performance

JEL Classification L26, M21, I23

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INTRODUCTION

Universities now face the challenge of expanding their role in education and research while supporting entrepreneurship. "Teaching university" and "research university" are no longer adequate for describing higher education today. The entrepreneurial university concept demonstrates how universities are more than just education institutions. However, universities must evolve into institutions that combine teaching, research, and entrepreneurial activities. To carry out this mission, universities must engage academics to conduct knowledge and technology transfer activities, research commercialization, and industry collaboration to achieve academic entrepreneurship performance.

The limited number of academics involved in research commercialization is a problem faced in the performance of academic entrepreneurship in public universities in Indonesia. As a role model university, many university research results and innovations from various disciplines can be developed and utilized for society and industry and have the potential to be commercialized. This is in line with the National Innovation Research Agency's statement that many university research results have the potential to be com-

mercialized with unique ideas. Most of the research is still in the primary research category and has not conducted applied research, and development is also an obstacle. Meanwhile, government programs in the form of research schemes and funding options are sufficient to support university entrepreneurship performance.

Academic entrepreneurial success is essential for the advancement of university entrepreneurship initiatives. Moreover, fostering academic entrepreneurial performance motivates scholars to provide increased scientific research outcomes and leverage discoveries. It also propels advancements in university science, technology, and innovation, providing the institution with supplementary economic value and money. Academic entrepreneurship can enhance the dissemination of science and technology to society and invigorate universities and industry. Embracing academic entrepreneurship is essential to providing added value to universities and a long-term impact on society and industry.

1. LITERATURE REVIEW AND HYPOTHESES

Academic entrepreneurship is an essential component in actualizing the notion of an entrepreneurial university. Academic entrepreneurship initiatives involving scholars are fundamental for universities to become entrepreneurial institutions. According to Etzkowitz (2016), an entrepreneurial university is an institution with a dual mission of teaching and research while prioritizing an entrepreneurial agenda that underscores the significance of entrepreneurial endeavors and the commercialization of research with widespread societal implications. This concept illustrates the dual role of universities as educational institutions and research centers while actively promoting innovation, entrepreneurship, and the commercialization of research to convert knowledge into practical outcomes that benefit society and create economic value. Universities need to adapt and transform to become more entrepreneurial so that they not only produce a knowledge society but also play an active role in producing an innovation society. The entrepreneurial university is a university transformation that integrates teaching, research, and entrepreneurship activities with the utilization of research that impacts society (Salun et al., 2019). The entrepreneurial university denotes an institution specializing in developing knowledge, utilizing research, and establishing relationships with the business environment and society that lead to economic prosperity. It describes the university as an ecosystem that supports academic entrepreneurship, and the two complement each other in the context of innovation and entrepreneurship development in universities.

Academic entrepreneurship is a viewpoint that connects academic research with the commercialization of research outcomes to achieve a significant societal impact through intellectual property or the establishment of knowledge-based companies. The theoretical foundation of academic entrepreneurship refers to appropriating various entrepreneurial constructs such as innovation, opportunity identification, and risk-taking (Mars & Rios-Aguilar, 2010). This study emphasizes the importance of considering various elements in building university academic entrepreneurship. Skute (2019) states that academic entrepreneurship is a concept that emphasizes several entrepreneurial activities and highlights the need to encourage innovation and commercialization while collaborating with external partners to achieve economic growth and social benefits. Academic entrepreneurship indicates entrepreneurial activities by lecturers, researchers, and students that integrate knowledge, technology transfer, and research commercialization. The collaboration between academics and industry enhances the applicability of research outcomes. Moreover, academic entrepreneurial performance corresponds with the expanding role of higher education, wherein universities are progressively anticipated to foster innovation, entrepreneurship, and economic advancement (Lidow, 2022). With academic entrepreneurship, universities have a broader role in transforming knowledge and research into valuable solutions. The remark above suggests that the performance of academic entrepreneurship and the entrepreneurial activities of lecturers encompass the transmission of knowledge and technology and the commercialization of research, thereby benefiting society and facilitating collaboration between universities and industries.

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Academic entrepreneurship is generally related to entrepreneurial performance, which refers to the efficiency and effectiveness of entrepreneurial activities' actions and results. Hayter et al. (2018) elaborate that achieving academic entrepreneurial performance includes efforts directed toward commercialization to generate economic value through technology transfer activities, intellectual property, and industry collaboration. Academic entrepreneurship performance indicates lecturers' entrepreneurial activities that integrate knowledge and technology transfer and research commercialization, which benefit society and enable university and industry collaboration. Academic entrepreneurship performance is measured by the effectiveness of knowledge and technology transfer, the quantity of patents produced, and the number of research-based start-ups founded. Robust university-industry collaborations for developing and commercializing research outcomes would enhance academic entrepreneurship efficacy.

Abreu and Grinevich (2017) and K. Miller et al. (2018) emphasize the significance of patenting efforts, licensing agreements, and the establishment of knowledge-based businesses as essential metrics of the commercialization of university research. These activities reflect converting intellectual property and research findings into practical outcomes that drive innovation, knowledge and technology transfer, and economic progress. Colyvas and Anderson (2016) and Clayton et al. (2018) stated that organizations must engage internal intermediary support, such as business incubators and technology transfer agencies, to support commercialization. These internal support institutions facilitate academics' conducting commercialization activities and enable academic entrepreneurship performance. These institutions can enhance the university's position as a hub of innovation and entrepreneurship that influences the advancement of knowledge and research outcomes. Shaw et al. (2013) revealed the importance of the triangular relationship of academic entrepreneurship. The relationship explains that universities with a strong foundation in research need to synergize with investors and industry so that research results can be better utilized to bring research findings to the market and contribute to innovation and economic development. This relationship aims to create a robust innovation ecosystem through academic entrepreneurship.

Several studies support academic entrepreneurship and explain that for future progress, universities need to adopt academic entrepreneurship. Ahmadpoor and Jones (2017) and Fini et al. (2020) argue that academic entrepreneurship enables academics to perform more research and expand their scientific knowledge. Academics can better utilize their scientific findings and intellectual property. Academics facilitate scientific exploration, produce viable alternative answers, and promote the advancement of higher education. Colleges are increasingly proactive in disseminating their research to society. Lopes et al. (2021) identified that academic entrepreneurship will positively change universities, advance innovation, and contribute to society. Universities are moving toward commercializing research to advance the dissemination of knowledge and technologies that contribute to economic and social progress.

Several previous studies identified that individual and organizational factors influence university academic entrepreneurship performance. Hayter et al. (2018) found that individual factors and organizational environment influence university entrepreneurship success. This study highlights the necessity of comprehending individual traits and organizational context, integrating both for entrepreneurial success within academic institutions. Lecturers are individual factors, and universities are organizations with innovation ecosystems that impact the success of university entrepreneurship. Valka et al. (2020) underscored the significance of organizational, human, and environmental elements in shaping university intrapreneurial behavior. This study elucidates the factors that affect intrapreneurial conduct and the support provided by university organizations. Efforts to cultivate knowledge, use research findings, and foster innovations necessitate the significance of individual and organizational elements to attain the objectives of academic entrepreneurship. Wang et al. (2022) state that individual factors aligned with the university's entrepreneurial mission significantly impact academic entrepreneurial intentions. This study explains the relevance of individ-

ual factors and institutional support in university entrepreneurial activities. A university entrepreneurial mission enables individual involvement in university entrepreneurial activities.

The entrepreneurial orientation of academics determines the success of university entrepreneurship. D. Miller (1983) and Saeed et al. (2014) formulated the concept of entrepreneurial orientation, characterized as an individual's propensity for innovation, proactivity, and risk-taking capability. The combination of this tendency will encourage a person to engage in entrepreneurial activities. Entrepreneurial orientation allows a person to create and develop new ideas and positively impact oneself, the organization, and society. According to Oly Ndubisi (2014), entrepreneurial orientation pertains to the processes, practices, and decision-making activities associated with innovation and exploiting opportunities. This description aligns with the inclination to be imaginative, proactive, and willing to take risks. By integrating these elements, one can identify opportunities and make decisions for entrepreneurial success.

Furthermore, Lumpkin and Dess (1996) and Real et al. (2014) concentrate on the correlation between entrepreneurial orientation and organizational success. In academic entrepreneurship, entrepreneurial orientation is associated with individual-level productivity and research contributions. This perspective is crucial for practical academic entrepreneurship, whereby creativity and collaboration are greatly esteemed. Covin et al. (2020) identified individual and group entrepreneurial orientation as crucial determinants of entrepreneurial success. The research evaluated entrepreneurial orientation at individual and group levels by examining factors such as innovativeness, proactiveness, and risk-taking behavior affecting academic entrepreneurship performance. Individual entrepreneurial approach facilitates the conversion of research findings into commercial products, technological transfer, and intellectual property development, thus enhancing academic entrepreneurship performance. In this study, entrepreneurial orientation is the tendency of lecturers to be proactive, innovate, take risks, have autonomy (willingness to be independent), and be aggressive in producing research that will be commercialized.

Role integration in academic entrepreneurship involves role adjustment by academics, both as academics and entrepreneurial academics. Academic entrepreneurship involves individuals playing several roles and responsibilities that are performed by academics (Qian et al., 2018). Involvement in academic entrepreneurship gives academics a role identity as academics (scientific identity) and entrepreneurial academics (entrepreneurial identity). Scientific identity refers to the perception of academics that reflects the behavior of scientists. Meanwhile, entrepreneurial identity encourages academics to consider various forms of commercialization activities. Academics involved in academic entrepreneurship should combine their role identities as academics and entrepreneurs (Meek & Wood, 2016; Ramarajan, 2014). These studies suggest that the role of academics in conducting teaching, academic research, and entrepreneurial activities in the role of entrepreneurial academics should be balanced. Academics need to align responsibilities and values about the different roles. Role integration plays a significant impact in shaping academic entrepreneurship. O'Kane et al. (2019), Guo et al. (2019), and Meek and Wood (2016) stated that in academic entrepreneurship, role integration efforts are focused on knowledge-based activities and identifying opportunities for commercializing research through patents, licensing, start-ups, and engagement with industry.

Institutional support from universities is essential to create a favorable climate and environment for advancing research, technology, and entrepreneurship. University assistance is essential to enable the commercialization of research outcomes and the transfer of technology and knowledge via collaborations with other entities (Fichter & Tiemann, 2018). Universities serve to connect academic research with its practical implementation in industry or society. This assistance is essential for aiding academics in the development and application of research findings till the commercialization phase. Nayem et al. (2024) elaborate on university efforts to direct the creation of start-ups. Start-ups are established by leveraging innovations or technology generated by scholars. This effort is a direct pathway for academics and universities to commercialize their research results through marketable products, technologies, or services.

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Wonglimpiyarat (2016) states that university policies and strategies are a form of organizational support. University policies and strategies are essential building blocks that enable academics to engage in academic entrepreneurship activities. University policies guide, protect, and motivate academics to commercialize their research. Hernandez and Carrà (2016) and Rathore and Agrawal (2021) consider funding and rewards as organizational supports for academic entrepreneurship performance. Funding and awards motivate academics to participate in academic entrepreneurship. Academics receive funding and awards to assist them in turning their research into innovations that can be commercialized. University assistance fosters, facilitates, and nurtures academic endeavors associated with advancing science, research, technology, and innovation, influencing the success of academic entrepreneurship.

Several studies have investigated the performance of academic entrepreneurship in universities. Secundo and Elia (2014) explored the development of an academic entrepreneurship performance measurement system by identifying entrepreneurship development initiatives, opportunity recognition and elaboration, and technology development as influential to academic entrepreneurship success. The study highlighted that universities must take proactive measures to assess academic entrepreneurship performance by utilizing existing intellectual capital and potential development strategies. However, it did not identify the link between entrepreneurial orientation, role integration, and the role of organizational support on academic entrepreneurship performance. Hayter et al. (2018) show that regulatory and incentive support academics can explore commercialization opportunities and engage in the entrepreneurial ecosystem. This study only discusses some elements of organizational support and does not discuss individual factors in exploring research commercialization opportunities.

Guo et al. (2019) identified academic entrepreneurship as a factor influencing its success, with role integration as an intervening variable. This study did not identify role integration or link entrepreneurial orientation and organizational support as factors affecting academic entrepreneurship success. Wang et al. (2022) discovered that entrepreneurial identity and scientific identity influence academic entrepreneurial intents via the university purpose. This study examines the impact of role integration and its correlation with the institution's mission on academic entrepreneurial inclinations. It does not address the impact of entrepreneurial orientation and other types of organizational support on the performance of academic entrepreneurship. No research has been conducted on integrating academic entrepreneurship performance, entrepreneurial orientation, role integration, and organizational support. This study identifies a research gap concerning the relationship among entrepreneurial orientation, role integration, organizational support, and academic entrepreneurship performance, highlighting areas for further investigation. Organizational support is a moderating variable in the relationship between entrepreneurial orientation, role integration, and academic entrepreneurship performance.

The conceptual framework in Figure 1 used in this study establishes connections between academic

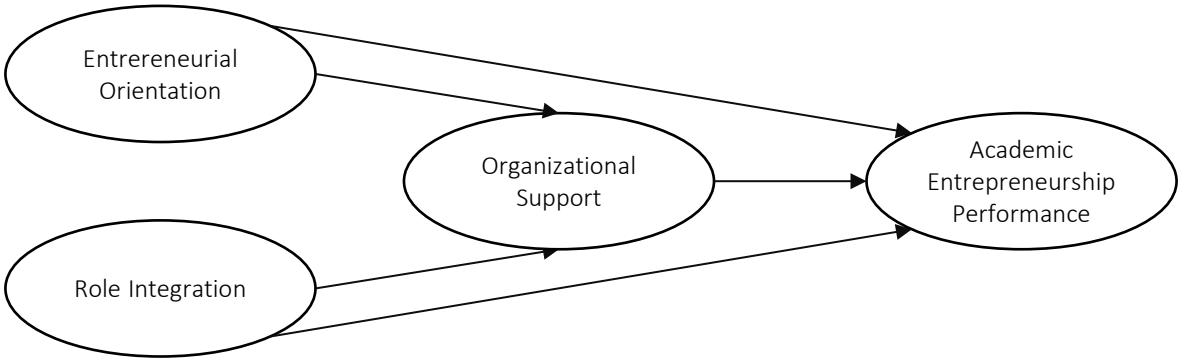

Figure 1. Conceptual framework

entrepreneurship theory, organizational support theory, entrepreneurial orientation theory, and role integration theory, as determined by the literature review.

This study examines how organizational support affects the relationship between entrepreneurial orientation and role integration on academic entrepreneurship performance at state universities in Indonesia. The hypotheses proposed are as follows:

H1: Entrepreneurial orientation has a significant influence on academic entrepreneurship performance.

H2: Role integration has a significant influence on academic entrepreneurship performance.

H3: Organizational support has a significant positive effect on the relationship between entrepreneurial orientation and academic entrepreneurship performance.

H4: Organizational support has a significant positive effect on the relationship between role integration and academic entrepreneurship performance.

2. METHODS

This study's population consisted of lecturers who had research results that had the potential to be commercialized at eleven state universities in Indonesia. This study used the purposive sampling method in the non-probability sampling involving 330 lecturers. Respondents were lecturers from the fields of science and social sciences who have research results that have the potential to be commercialized and have reached the level of technological readiness that ranges from 6 to 9 and have demonstrated the pilot stage and readiness for commercialization, as determined by the National Readiness Assessment.

This study used a quantitative research technique to investigate the impact of organizational support on the relationship between academic entrepreneurship performance, entrepreneurial orientation, and role integration at state universities in Indonesia. The paper utilizes primary data obtained from questionnaires administered to participants, which were administered both online and offline. The questionnaire has 45 assessment instruments that pertain to academic entrepreneurship performance, organizational support, entrepreneurial orientation, and role integration. Respondents provided their responses using a Likert scale.

The main focus is to ensure the primacy and dependability of the answers given (Hair et al., 2019). Three hundred thirty respondents returned the questionnaire from the Institute of Technology Bandung (30 respondents), Gadjah Mada University (55 respondents), IPB University (31 respondents), University of Indonesia (33 respondents), Airlangga University (18 respondents), Padjadjaran University (26 respondents), University of Sumatera Utara (18 respondents), Diponegoro University (37 respondents), Hasanuddin University (26 respondents), Institute of Technology Sepuluh Nopember (30 respondents), and University of Pendidikan Indonesia (26 respondents). Secondary data from many sources, including the Ministry of Education, Culture, Research, and Technology and the National Research and Innovation Agency, are utilized. Supplementary data from relevant sources were gathered to validate the research concept.

The study used the Partial Least Squares (PLS) method for data analysis. The choice of PLS-SEM is predicated on its ability to handle complex models and moderation and mediation interactions effectively. It is preferred over covariance-based models because of its enhanced performance with small sample sizes and flexibility in accommodating assumptions that may not meet typical distribution criteria in social science data. The collected data are analyzed using PLS-SEM to evaluate the relationships among various factors and the role of organizational support as a moderator. Partial Least Squares Structural Equation Modeling (PLS-SEM) is an effective statistical technique for examining complex relationships and interactions among variables (Hair et al., 2019).

Comprehending the traits of the sampled population necessitates awareness of the attributes of the respondents (Table 1).

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Table 1. Characteristics of respondents

Characteristic	Total	Percentages
Gender		
Female	218	66.06
Male	112	33.94
Total	330	100.00
Scientific Domain		
Science	313	94.84
Social Science	17	5.16
Total	330	100.00
Education		
Master Degree	25	7.57
Doctoral Degree	305	92.43
Total	330	100.00
Work Experience		
Under 10 years	0	0.00
10 to 20 years	155	46.96
Up to 20 years	175	53.04
Total	330	100.00

3. RESULTS

Initial measurements of the model constructs were conducted via construct validity and reliability assessments. The construct reliability assessment employs widely recognized instrument reliability evaluations, namely Cronbach's alpha and composite reliability. The study employed various reliability assessments to verify the absence of measurement bias. Composite or construct reliability is typically evaluated using statistical measures like Cronbach's alpha and DG rho, often utilized in principal component analysis (PCA) – constructs exhibiting Cronbach's alpha values of 7.0 or more. The instrument's validity was assessed using a combined loading and cross-loading approach. The paper employed the average variance extracted (AVE) and its square roots to evaluate convergent and discriminant validity. Variance inflation factor (VIF) was used to examine potential collinearity. An acceptability threshold of 0.7 or greater is regarded, although thresholds of 0.8 or above are considered noteworthy (Nunnally & Bernstein, 1994). Table 2 shows the composite dependency coefficient for the latent variables.

Table 2 presents the Cronbach's alpha values for the four constructs exceeding the threshold value of 0.70, as Vaske et al. (2017) indicated. The composite reliability coefficient for the four latent variables exceeds the threshold of 0.70, as stipulated by Peterson and Kim (2013). The findings demonstrate that the four latent variables meet the criteria for reliability assessment. The data indicate that the latent variables show internal solid consistency and are reliable construct evaluation markers.

Discriminatory validity is evaluated by the Average Variance Extracted (AVE) square root. The items have discriminant solid validity, as indicated by the square root of the average variance extracted (AVE), surpassing the correlation coefficient with other constructs (Huang et al., 2023). The correlation coefficient has been verified to be lower than the customary threshold of 0.71. The construction exhibits a VIF score below 5, indicating a lack of collinearity. This indicates that the mean latent variable may explain more than 50% of the variability observed in the indicators.

Table 2 displays the anticipated AVE values that exceed the defined threshold of 0.50. Table 3 presents the aggregate values of loading and cross-loading. The loading value of each item is more closely related to its respective construct than other items' constructs. All items exhibit convergent

Table 2. Composite reliability measurements

Measurements	Entrepreneurial Orientation (EO)	Role Integration (RI)	Academic Entrepreneurship Performance (AEP)
CRC	0.924	0.911	0.943
CBα	0.888	0.984	0.935
AVE	0.650	0.734	0.692
VIF	1.973	2.086	2.144
Correlation among vs. with sq. rts. of AVEs			
Entrepreneurial Orientation	0.810	0.678	0.681
Role Integration	0.668	0.896	0.586
Academic Entrepreneurship Performance	0.591	0.585	0.831

Note: CRC = composite reliability coefficients, CBα = Cronbach's alpha coefficients, AVE = average variances extracted, VIF = variance inflation factor.

solid validity with their corresponding constructs. The data indicate that the measurement instruments were both valid and reliable. This model exhibits no indication of measurement bias based on the actual findings.

The study constructed models to describe the connections discovered in this study after acquiring data on academic entrepreneurship achievement. Conventional techniques previously utilized by Chin et al. (2012) and Sharma et al. (2009), and most recently by Elbaz et al. (2017), to determine the moderating effect of organizational support. Three equations frequently depict organizational support. The preliminary model utilized the entire dataset. The second model is derived only from the treatment group data, whereas the third is entirely generated from the control group data.

Differences in path coefficients, magnitude of influence, and coefficient of determination were observed to determine the moderating role of organizational support variables.

Table 4 demonstrates that the treatment produced statistically significant results in the initial group. The parameter coefficients (EO) β = 0.339 and (RI) β = 0.276 were determined to be significant at a 99% confidence level. The coefficient of determination, R^2, is 0.533. The statistical analysis of the second treatment group indicated that the parameter coefficients (EO) β = 0.342 and (RI) β = 0.259 were statistically significant at the 99% confidence level. The coefficient of determination, R^2, was computed to be 0.621. The findings for the control group indicated that the parameter coefficient (EO) β = 0.391 was statistically significant at a 99% confidence level. The parameter coefficient (RI) β = 0.446 was statistically significant at a 99% confidence level, although R^2 = 0.480 was the lowest among the three treatment groups. The outcome validates the null hypotheses H1 and H2. Two in-

Table 3. Loadings and cross-loading of variables

No.	Item	Entrepreneurial Orientation	Role Integration	Academic Entrepreneurship Performance	Type	p-value
1	Initiative in taking opportunities	0.844	0.557	0.559	Reflect	0.000
2	Research productivity for commercialization	0.784	0.701	0.442	Reflect	0.000
3	Follow-up execution of research result	0.737	0.632	0.416	Reflect	0.000
4	Product innovation from research result	0.835	0.733	0.621	Reflect	0.000
5	Marketing innovation from research result	0.890	0.681	0.670	Reflect	0.000
6	Strategic innovation from research result	0.861	0.493	0.557	Reflect	0.000
7	Knowledge exploration	0.366	0.872	0.631	Reflect	0.000
8	Collaborative research	0.525	0.821	0.584	Reflect	0.000
9	Involvement in scientific publications	0.628	0.755	0.533	Reflect	0.000
10	Knowledge exploitation	0.788	0.754	0.761	Reflect	0.000
11	Resource management	0.614	0.788	0.552	Reflect	0.000
12	Involvement in research commercialization	0.650	0.794	0.752	Reflect	0.000
13	Implementation of knowledge	0.414	0.565	0.876	Reflect	0.000
14	Application of research results	0.535	0.498	0.786	Reflect	0.000
15	Technology adoption in research	0.657	0.556	0.877	Reflect	0.000
16	Intellectual property	0.516	0.542	0.856	Reflect	0.000
17	Involvement in spin-off	0.512	0.577	0.873	Reflect	0.000
18	Consultation	0.552	0.544	0.827	Reflect	0.000

Table 4. Path coefficient comparison

Path coefficients	Combined results R^2 = 0.533			Treatment Group R^2 = 0.621			Control group R^2 = 0.480		
	B	Effect size	P Value	ß	Effect size	P Value	ß	Effect size	P Value
EO → AEP	0.339	0.182	<0.001	0.342	0.295	<0.001	0.391	0.385	0.033
RI → AEP	0.276	0.166	<0.001	0.259	0.274	0.002	0.446	0.242	<0.001

Note: EO = entrepreneurial orientation; RI = role integration; AEP = academic entrepreneurship performance.

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dependent factors account for 53% of the variance in academic entrepreneurial performance, as indicated by the coefficient of determination (R^2 = 0.533). The data indicate that entrepreneurial orientation exerts a more substantial influence on the academic entrepreneurship performance of public institutions than role integration, as evidenced by the highest path coefficient.

To assess the impact of organizational support, distinct evaluations were conducted for the treatment modification group (which received organizational support) and the control group (which did not). The path coefficient indicates that the relationship between academic entrepreneurship achievement and entrepreneurial inclination is affected by organizational assistance. The path coefficient of EO → AEP in the treatment group is β = 0.342, statistically significant at a 99% confidence level. The path coefficient in the control group is β = 0.391, with a 99% confidence level. This result supports H3.

In the treatment group, the path coefficient of RI→AEP was β = 0.259, statistically significant at a 99% confidence level. Conversely, in the control group, the path coefficient of RI→AEP was β = 0.446, which was likewise significant at a 99% confidence level. This discovery supports H4. The findings suggest that the extent of company assistance affects the correlation between entrepreneurial orientation and role integration. The relationship between academic entrepreneurial performance and entrepreneurial orientation is substantially affected by organizational support. The treatment group has an effect size of 0.295, whereas the control group demonstrates an effect size of 0.385. Studies indicate that organizational assistance enhances the correlation between academic entrepreneurship performance and entrepreneurial orientation. Consequently, augmenting organizational support for entrepreneurial orientation and role integration may enhance the performance of academic entrepreneurship at Indonesian public universities.

4. DISCUSSION

The increasing importance of knowledge and technology transfer, together with research commercialization, underscores the need to acknowledge the entrepreneurial attitude of scholars. This study indicates that the entrepreneurial approach significantly influences the performance of academic entrepreneurship in universities (H1). By adopting an entrepreneurial mindset, academics can leverage scientific knowledge and research findings to monetize their research through patents and licenses, establish start-ups based on their research, and foster collaborations with industry. This strategy seeks to advance the implementation of academic entrepreneurship inside higher education. The discovery indicates that scholars significantly contribute to advancing academic entrepreneurship inside higher education. The ability of academics to efficiently convey information is essential for achieving the goals of university entrepreneurship (D. Miller, 1983; K. Miller et al., 2018). This finding aligns with other research highlighting individual entrepreneurial attitude as a critical factor influencing entrepreneurial performance (Al-Kwifi et al., 2023; Covin et al., 2020). Entrepreneurial orientation is crucial for academics to foster innovative behavior, proactivity, risk-taking ability, autonomy, and a competitive impetus to capitalize on research prospects. Academic entrepreneurship denotes the participation of scholars as critical contributors to the generation of academic entrepreneurial outcomes. The plethora of research discoveries across several academic disciplines allows scholars to develop an entrepreneurial mindset, generating economically relevant research outputs that provide sustainable benefits to society and industry. Ismail et al. (2015) demonstrated that academics' entrepreneurial mindset substantially impacts the effectiveness of research commercialization. Additional research also affirms that this attitude has a notable impact on the success of academic entrepreneurship in higher education (Miranda et al., 2017; Wang et al., 2022). The entrepreneurial viewpoint enables institutions to improve research commercialization and boost academic entrepreneurship performance.

Academics who engage in academic entrepreneurship must integrate their jobs to align their responsibilities as academics and entrepreneurial academics in higher education. Lecturers with entrepreneurial roles actively participate in the utilization of research for the benefit of society. They collaborate with industry to facilitate the transformation of research into marketable products, services, or technologies. This shows that role integration significantly influences academic entrepreneurship performance (H2). Role integration allows academics to engage in activities

promoting entrepreneurial ideals, such as knowledge transfer and research focused on meeting innovative demands that benefit the sector (Fischer et al., 2019). In order to reconcile their positions as academics and entrepreneurial academics in higher education, academics require role integration. According to prior research, academics require role integration in order to align their various roles (O'Kane et al., 2019; Fini et al., 2020). Furthermore, role integration has been shown to enhance academics' ability to participate in academic entrepreneurship (Wang et al., 2022). This suggests that consolidating roles will enable scholars to improve their research outcomes. Chang et al. (2016) indicate that role integration positively influences the performance of academic entrepreneurship. This is due to its alignment of norms, methods, and outputs related to academic and entrepreneurial identities, boosting overall efficacy. Further research findings indicate that integrating roles significantly influences academic entrepreneurship's performance (O'Kane et al., 2019; Guo et al., 2019).

The university institution is crucial in facilitating successful academic entrepreneurship. H3 findings indicate that organizational support enhances the correlation between entrepreneurial inclination and academic achievement. Facilities, commercialization support institutions, funding support, and entrepreneurial culture can strengthen academics' entrepreneurial orientation. This aligns with research suggesting that access to financing as organizational support enhances the connection between entrepreneurial orientation and academic entrepreneurship achievement (Buli & Yesuf, 2015). Organizational assistance, such as leadership support, policies, and methods, enhances the connection between entrepreneurial orientation and academic entrepreneurship performance (Singh et al., 2015). Additional research findings have also indicated that regulations and incentives can help academics explore the potential for commercialization and participation in the entrepreneurial ecosystem (Hayter et al., 2018). Organizational support enhances the connection between role integration and the performance of academic entrepreneurship (H4). Supportive systems and governance, the function of technology transfer officers, sufficient facilities, incentives, and an entrepreneurial culture that fosters an entrepreneurial environment enhance the connection between lecturers' roles in knowledge exploration and exploitation and the performance of academic entrepreneurship in higher education. Organizational culture and environment are forms of support inside an organization that influence the performance of academic entrepreneurship. Huyghe et al. (2014) indicated that organizational culture and a conducive environment significantly impact academic entrepreneurship achievement. Organizational support is crucial for the presence of a university's entrepreneurial mission, reward system, environment, entrepreneurial climate, and technological transfer officer.

This study emphasizes the significance of internal support mechanisms in facilitating successful commercialization activities and entrepreneurial endeavors within institutions. Clayton et al. (2018) stated that the structure and existence of associated institutions influence universities' success in entrepreneurship. This illustrates that internal intermediates inside institutions favorably influence the enhancement of academic entrepreneurship success. Effective collaboration between universities and businesses is crucial for transforming academic research into practical applications, promoting entrepreneurial initiatives, and delivering economic and social benefits. The results indicate that organizational support for role integration moderates the impact of entrepreneurial attitude on academic entrepreneurship performance. The efficacy of academic entrepreneurship significantly enhances the advancement of research and technology and the progression of higher education in the future.

CONCLUSION

This study examines how organizational support affects the relationship between entrepreneurial orientation and role integration on academic entrepreneurship performance at state universities in Indonesia. The findings indicate that organizational support enhances the influence of entrepreneurial orientation and role integration on boosting academic entrepreneurship success by acting as a moderating factor. The entrepreneurial orientation of state institutions considerably affects their academic entrepreneur-

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ship performance, with organizational support exhibiting the most pronounced moderating influence. Organizational support is essential in alleviating the effects of entrepreneurial orientation and role integration on improving the academic entrepreneurship performance of public universities in Indonesia.

This study introduces an innovative approach to improve the effectiveness of academic entrepreneurship in public universities in Indonesia. The results of this study can function as a practical manual for universities to enhance their performance in academic entrepreneurship and transform themselves into institutions that not only prioritize teaching and research but also embrace academic entrepreneurship principles to drive innovation in the future. This study is subject to many constraints. Firstly, it only examines eleven public universities in Indonesia. Additionally, the factors that were evaluated are similarly limited in scope. Hence, additional investigation can examine the ethical aspects of academic entrepreneurship and consider additional variables such as interdisciplinary collaboration, policy and regulatory frameworks, and government support.

AUTHOR CONTRIBUTIONS

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