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ENHANCING IP COMMERCIALIZATION PERFORMANCE IN SOCIAL SCIENCE ACADEMICS AND THE ROLE OF ENTREPRENEURIAL ORIENTATION, UNIVERSITY SUPPORT, AND SELF-EFFICACY

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SUMMARY

This research aims to propose and empirically examine a framework that explains how entrepreneurial orientation elements contribute to intellectual property commercialization performance among social science academicians in Malaysian public universities. Specifically, the framework explores the mediating role of university support and the moderating role of self-efficacy in strengthening the relationship between EO and commercialization outcomes. Grounded in the Resource-Based View (RBV), the study posits that EO elements serve as internal strategic resources that drive commercialization performance when supported by conducive institutional environments. Self-efficacy is further defined as a cognitive enabler that amplifies academicians' confidence and persistence in pursuing commercialization efforts. Adopting a quantitative research design, data will be collected from social science academicians across Malaysian public universities, as later on SmartPLS 4 will be employed to analyze the measurement and structural models, testing both mediation and moderation effects. The study is expected to demonstrate that EO has a significant direct and indirect effect on IP commercialization performance. University support is anticipated to enhance this effect, with self-efficacy playing a moderating role. Statistical tests (e.g., **path analysis**, **ANOVA**) are expected to show significant findings, with **R^2 values** of 0.68 for the dependent variable (commercialization performance), indicating good explanatory power. The study provides theoretical and practical insights into how Malaysian universities can leverage entrepreneurial orientation and institutional support mechanisms to enhance the commercialization of intellectual outputs among social science academicians. It also extends understanding of the psychological factors that foster academic innovation. This study contributes a novel integrative framework that bridges entrepreneurial orientation, institutional support, and cognitive psychology to explain academic commercialization behavior. By focusing on social science academicians, an often-underexplored group in commercialization research which the study offers new perspectives for promoting inclusive and sustainable innovation ecosystems in higher education.

Key words: *entrepreneurial orientation, university support, self-efficacy, intellectual property commercialization, social science academicians, malaysian public universities.*

INTRODUCTION

The increasing global emphasis on innovation and intellectual property (IP) as drivers of economic growth has brought renewed attention to the role of universities in IP commercialization. Though Malaysian government funded universities have achieved in terms of research output, commercialization of research into commercial value has been low particularly in the social sciences. The purpose of this paper is to formulate a model that will allow studying how Entrepreneurial Orientation (EO), University Support, and Self-Efficacy could affect IP commercialization performance among social science academicians in Malaysian public universities.

Background of the Study

Ideas are the new currency in a world that is being pushed by innovation. The success of such companies as Apple, Tesla, and Pfizer exemplifies examples of well-managed and commercialized intellectual property that demonstrates the importance of intellectual property as an innovative factor and long-term success. According to the World Intellectual Property Organization (WIPO, 2020), IP consists of legal protection of creations of the mind such as inventions, designs, and artistic works. IPs do not just serve as the means of legal protection but are also effective sources of strategy. Under good management, IPs may provide entry barriers to competitors, facilitate the spread of technology and also boost the market share of a firm eventually leading to the overall growth of the economy. Companies that have well built IP portfolios are likely to be more appealing to investors. Having strong IP rights may also increase the valuation of a company as well as give it an advantage in raising funds. According to the report prepared by the International Chamber of Commerce (ICC), investors consider IP to be a valuable asset that could result in increased returns on investment (ICC, 2020). The firms are able to leverage their IP to make deals in the form of licensing, joint ventures as well as partnerships, thereby reinforcing their market presence and reach.

Malaysia has achieved a significant economic growth since the 1970s which has been as a result of industrialization and diversification. This growth has been enabled by international trade as early as the 1960s and the country has stopped relying on primary commodities to concentrate on manufacturing and services. This transformation of the structure involved the manufacturing sector especially of high-technological exports such as Electrical and Electronic (E&E) becoming the driving force of growth alongside the growth of the services sector. The existing policy priorities including, but not limited to, the New Industrial Master Plan 2030 (NIMP 2030) are quite explicit in recognizing this legacy but shift the energy towards further technological modernization and adding more domestic value toward the ultimate transformation of the country to a high-income nation (Bank Negara Malaysia, 2024). Manufacturing, especially the electronic and electrical products industry, has emerged as one of the key growth components in GDP. In order to maintain this pace, Malaysia is still moving to a knowledge-based economy, and the government is facilitating this process by implementing programs to achieve technical talent development and promote entrepreneurship.

In 2019, the Ministry of Entrepreneur Development and Cooperatives (MEDAC) of Malaysia launched the National Entrepreneurship Policy (NEP) that is a strategic platform to empower entrepreneurship in the country. The government has also recently focused on the rise of digital technologies and sustainability and high-tech industries in the business world. These will encompass the promotion of digital entrepreneurship, green businesses, and startups that are innovation-oriented. The Ministry of Science and Technology (MOSTI) also emphasizes on the need to have collaborations among the universities, government, industry, research centers and the community in order to boost innovation and commercialization. Commercialization, in this context, will be used to mean the effective conversion of IP into commercial products or services and mostly takes place at the last phase of the innovation. This is a complicated process in the Malaysian public universities and it incorporates the agencies, government departments and industries. Good academic-industry relationships are instrumental in enhancing the competitiveness of the university. Although the IP commercialization in Malaysia is important to the national innovation policies, it has not been very impressive especially in the social sciences where the products are less tangible and cannot be easily commercialized. Author highlighted that lack of well-executed implementation practices frequently becomes an obstacle to the success of commercialization despite the supporting policies.

Entrepreneurial Orientation (EO) put forward by [11] and perfected [9], is made up of five dimensions namely proactiveness, innovativeness, risk-taking, competitive aggressiveness, and autonomy. Even though, EO has traditionally been analyzed at the organizational level, [3] stressed its individual topicality. In this study, the individual approach of EO is used, autonomy being omitted to address the impact of the individual perspective on IP commercialization performance amongst academicians in Malaysian public universities.

University support is considered to be an intermediary variable, which is decisive in realizing entrepreneurial properties. This paper presents university support within three areas namely: educational, concept development, and business development; the support concept is based on education, where initiatives such as training and workshops are made. Self-efficacy, which is based on the theory of [2], is the belief that a person has in his/her capacity to do something and has been found to affect the behavior of entrepreneurs and innovation [14]. Even though self-efficacy is a popular topic of research among students, there is insufficient research on its moderating effect on IP commercialization among scholars in the social sciences [15].

Problem Statement

Despite increased innovation in Malaysian government entities, IP commercialization remains low. [15] note that only 8% of IP rights produced in Malaysia are commercialized, indicating a gap between research output and commercialization. [17] also point out difficulties of the researchers to commercialize their work. Very little research has been conducted on commercialization issues in Malaysian state universities, and little importance has been given to social science IP commercialization. Commercialization of social science research has much potential but only less than 2 % of social scientists researchers have commercialized their research (ESRC study). Although there is an increasing interest in commercialization, the subject is not well researched. A number of researches have been conducted to investigate the reasons behind IP commercialization in Malaysian universities [21]. The proposed a framework, and highlighted EO's role in fostering an entrepreneurial mindset. However, the impact of EO on IP commercialization in the social sciences is under-researched.

Universities are key drivers of entrepreneurial initiatives [1] suggest that universities shape entrepreneurial intentions, providing resources for business development. Liu et al. (2022) continue to suggest that differences between people need to be taken into account to provide the maximum support to the university. The self-efficacy as a moderator of the effects of institutional support on entrepreneurial behavior has also been recently identified [14], yet the moderating nature of self-efficacy in the relationship between EO, university support and commercialization performance has not been explored in the Malaysian academic literature [22].

Research Questions

1. To what extent does EO influence IP commercialization performance?
2. How does EO influence the level of university support perceived by academicians?
3. What is the relationship between university support and IP commercialization performance?
4. Does university support mediate the relationship EO and commercialization performance?
5. Does self-efficacy moderate the relationship between university support and commercialization performance?

Research Objectives

1. To test the relationship between EO factors and IP commercialisation performance.
2. To test the relationship between EO factors and university support.
3. To test the effect of university support on commercialisation performance.

4. To test the mediating effect of university support.
5. To examine the moderating hypothesis of self-efficacy.

The paper has been structured as shown: Section 2 entails a literature review of the relevant materials, showing the main premises of Entrepreneurial Orientation, University Support and Self-Efficacy, and its relation to IP commercialization. Section 3 presents the methodology, which refers to the research design, data collection process, and data analysis. Section 4 is a discussion of the expected results and implications of the study and Section 5 has a summation of the key findings, contributions to the field, and recommendations to the future research.

LITERATURE REVIEW

IP management is effective in enabling firms to develop competitive advantages, transfer of technology and attracting investments. Several factors have led to the poor utilization of IP assets in most universities in Kenya, including weak legal support, lack of clear strategies, and poor performance of technology transfer offices (TTOs). They suggested a better IP-open academic atmosphere through a better set of policies, knowledge, and law. This has been the case with the University of Health Sciences in Turkey. The university established an explicit patent management department, provided academic inventors with training and introduced a fair revenue sharing policy which made commercialization more attractive leading to more patents and trademarks and encouraging more researchers to participate in the commercialization initiative [20]. This demonstrates that with right support and incentives academics can be encouraged to commercialize innovations.

According to AUTM (2022), the top-performing and other U.S. universities do not show a disparity as only 5% of TTOs generated more than half of total licensing income. It implies that numerous universities require superior plans, assets, and connections towards enhanced commercialization. Researchers, such as [10], focus on the significance of policy support, infrastructure of knowledge transfer, and collaboration between academia and industry. In Malaysia, other efforts such as the National Commercialization Policy (2009) and My IP are in place to enhance the commercialization of IP in state universities[7]. The study, however, brings about problems like poor industry relationships and poor patent-to-product conversion. On the same note, author indicate that high rates of uncommercialized academic IPs are the result of poor market fit or lack of preparedness.

Social Science

Social science is a science examining human behavior, social relations, and organization of society and therefore involves the use of empirical evidence as well as theoretical model to explain the social realities [8]. In contrast to the natural sciences that concentrate on the physical laws, social sciences consider human interaction, and they utilize both the qualitative and quantitative approach. Social science is also intrinsically connected to the issues of the society, which can be values, institutions, or collective action [8].

Social sciences have special problems with commercialization. Social science IP, unlike technical areas, might comprise of copyrighted pedagogical technologies, models, or evaluation systems, which are less commercializable. It implies that such commercialization of the social science research as policy consulting, educational content licensing, and collaborations with the non-governmental organizations or government agencies are critical.

Proactiveness

Proactiveness is defined as the proficiency to anticipate and react to future needs, challenges, and market changes, aiming for a competitive edge by being the pioneer in the market [9], [16] highlights that proactive personalities significantly impact entrepreneurial interest, indicating that individuals who are attentive and responsive to their environment are better equipped to seize entrepreneurial opportunities. This is consistent with the findings of [4], who assert that proactivity is a core component of entrepreneurial orientation, encouraging individuals to innovate and take calculated risks in their ventures.

Innovativeness

Innovativeness refers to an indivdual's or organization inclination to adopt and promote new ideas, creative processes, and experimentation, resulting in the creation of new products, services, or methods. [9]. The individual innovative behavior involves creating, introducing, and applying new ideas to enhance performance in a role or organization. After identifying an opportunity, innovativeness is crucial for its development. This means turning an abstract idea or opportunity into a concrete product, service, or business model. Aldrin (2023) discovered that individuals with advanced education and distinct personality traits are more inclined to demonstrate innovative behaviors in the workplace [19].

Risk - Taking Propensity

As discussed in [11], [9], risk-taking propensity denotes the readiness to invest in opportunities with uncertain results, including financial and strategic risks. It also defines as the readiness to provide substantial resources to chances that present the likelihood of significant gains. but also involve a risk of failure. Elements such as education, environmental factors, and individual psychological traits significantly influence an entrepreneur's risk-taking behavior [18].

Competitive Aggressiveness

Competitive Aggressiveness described as the extent to which a person or organization strives to surpass competitors and address competitive challenges. This trait embodies a proactive and assertive stance toward competition, where individuals take action to gain a competitive advantage in the business. Competitive aggressiveness has been established to have a positive influence on entrepreneurial performance. People who take up a competitive position tend to move towards the behaviour of risk-taking and practices of innovations that are essential to functioning in dynamic market contexts.

University Support

The institutions of higher learning have the capability to have a substantial impact on the formation of entrepreneurial contributions and intentions in the minds of individuals by providing them with the necessary skills and outlook to start new business. [13] in their study discussed University support extends far beyond the university environment and educational activities, encompassing specific forms of assistance offered to businesses, such as advisory services, capital investment, and market entry support. In addition, early research examined the role of universities in the economy, with a focus on human and environmental factors that drive the growth of regional economic. The public university is supposed to offer the necessary facilities, including research facilities, funding, and technology transfer offices that assist the academicians to turn research into commercial products.

Self – Efficacy

Self-efficacy is a notion that was developed within the framework of the Social Cognitive Theory (1997) by Albert Bandura, which highlights the role of cognitive, behavioral, and environmental factors in determining the behavior of a human being. Self-efficacy is the feeling that an individual has on whether he or she can successfully perform certain tasks. According to Bandura, a person who has a strong sense of self-efficacy is more prone to challenges, to continue even when faced with obstacles and to go out of their way to achieve their interests. This construct is not similar to other concepts of psychology like self-esteem or overall self-confidence. All the self-esteem relates to the general view of oneself, whereas self-efficacy is a particular belief in the ability to accomplish the tasks. A study on innovation self-efficacy in universities found it strongly influenced the intent to commercialize academic work. This reveals the relationship between self-efficacy and the institutional level on the larger scale of innovation. In Malaysia, discovered that lecturers with high self-efficacy experienced less burnout and delivered better teaching. This suggests that self-efficacy not only improves job performance but also helps protect mental well-being.

The analyzed papers reveal the important roles of Entrepreneurial Orientation (EO), University Support, and Self-Efficacy in the success of IP commercialization. EO creates entrepreneurial behavior and when supported by the institution, it increases the success of commercialization. These relationships are enhanced by self-efficacy which enhances the influence of university support on commercialization [14]. The commercialization of social science IP, particularly in Malaysian universities has not been sufficiently researched in spite of the overwhelming evidence. The research is a contribution of gaps in the literature because it provides a new understanding of the interaction of EO, university support, and self-efficacy to promote IP commercialization in the social sciences.

MATERIALS AND METHODOLOGY

The resource-based view (RBV) is deemed an appropriate theoretical framework because the resource factors have a considerable effect on the commercialization performance of a university. RBV indicates that the performance of an organization is based on the acquisition of a competitive advantage through effective utilization of resources which are valuable, rare, difficult to imitate and cannot be easily substituted by the competitors. This theory also explains how organizations build and sustain a competitive edge over rivals. The central emphasis of the RBV is on an organization's resources, such as financial assets, business activities, and human capital.

Although the RBV was initially developed to explain competitive advantage at the firm level. Academicians are important drivers of innovation, and thus they are instrumental in converting research to marketable products. They need to be able to use their personal and institutional resources to commercialize successfully. Thus, RBV can be applied as a relevant model of studying the role of individual strategic resources like Entrepreneurial Orientation, university support, and self-efficacy in the performance of commercialization.

In terms of the application of RBV to the study, it describes how the internal resources at the university and individual level of the academician are inextricably linked in the context of successful commercialization of research and EO that is closely related to academic of Malaysian public universities.

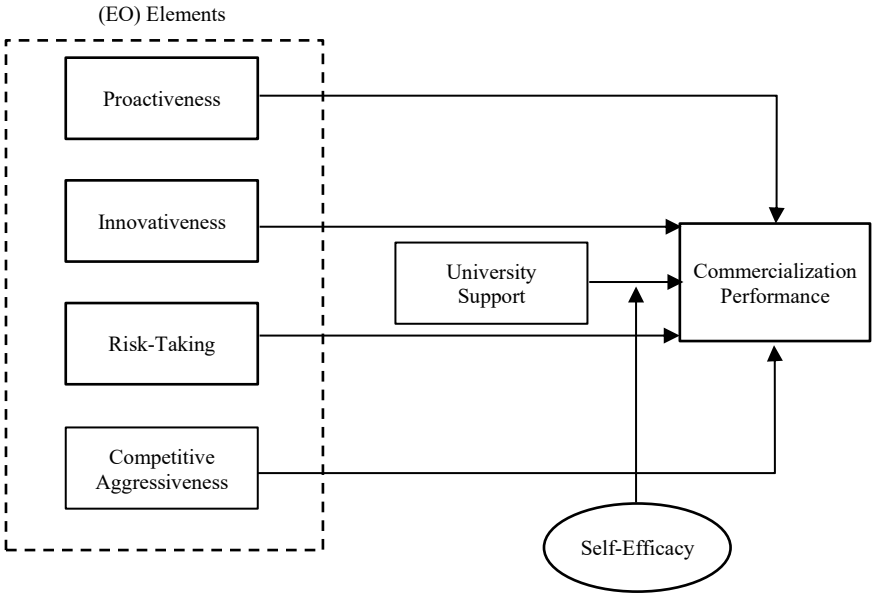

Figure 1. Proposed Theoretical Framework

Figure 1 shows the relationships between the Entrepreneurial Orientation (EO), University Support, Self-Efficacy and Commercialization Performance. The components of the model are as follows:

Entrepreneurial Orientation (EO) Elements

- **Proactiveness**: Refers to the tendency to anticipate future needs and challenges, enabling academicians to innovate and act before others. This behavior of being proactive boosts commercialization by advocating market need early involvement.
- **Innovativeness**: This aspect is focused on the capability of creating and embracing new ideas or technologies. It also leads to commercialization in the sense that it generates new products or services which may be patented or put on sale.
- **Risk-Taking**: Academicians who are prepared to make calculated risks will have a higher likelihood of investing in new and potentially promising commercialization opportunities. Such a conduct enhances the possibility of attaining.
- **Competitive Aggressiveness**: This dimension is an emphasis to do bold things in order to beat up competitors. This feature drives scholars to be highly aggressive in trying to access the market and counter competition issues in the commercialization context.

University Support

The mediating variable is the university support which promotes the correlation between EO and commercialization performance. It encompasses the facilities and capabilities offered by universities like training, mentorship, granting of research funds and technology transfer offices. These resources allow the academicians to transform their entrepreneurial activities into the successful commercialization results.

Self-Efficacy

Self-efficacy is an intermediate variable, which enhances the effects of university support. High self-efficacy is beneficial in that an academician becomes confident that they can commercialize IP successfully and is able to better leverage the support mechanisms that are available. This self-belief is very important in addressing the challenges raised in the process of commercialization.

Commercialization Performance

The dependent variable is commercialization performance which reflects the success or failure of commercialization of intellectual property. It is determined by the EO factors, the university support and self-efficacy which is the capability of the academicians to translate their research into marketable goods or services.

Deductive Approach

The research employs deductive research design when establishing the connection between EO, University Support, self-efficacy and Commercialization Performance among academicians in Malaysia. Deduction is the process of moving towards a general theory to specific examples through the development of hypotheses, testing and eliminating the theory through the test results. This research would be appropriate in deductive approach since it begins with pre-existing frameworks and theories that are related to entrepreneurial orientation and its antecedents. Based on these theories, some hypotheses were created to test the associations between the constructs of interest.

Data Collection Procedure

The research design is quantitative by employing survey research approach because it is suitable to the nature of the study problem, aims and objectives of the study, characteristics of target population and the experience of the researcher in terms of research design methods. Some of the main reasons why the survey method is selected include; it is straightforward to collect data with a large sample using relatively feasible time and financial resources; an ability to test hypothesized relationships between the variables; the capability to use standardized and validated measures to guarantee reliability and finally it is easy to generalize the results to the rest of the academic population of interest. The established measures formed

the basis on which the questionnaire is developed and administered in the form of a self-reported survey and it will be filled in the targeted respondents themselves.

Population and Sampling

In this research, the target population is the social science academicians of all 20 Malaysian universities that are publicly funded (of a total academic population of 31,631) [12]. The researcher performed a power analysis with the GPower software to calculate the minimum sample size, based on the recommendations on the use of [5], [6]. This approach aligns with previous studies that used GPower to address issues related to small sample sizes.

Following [5], [6], the GPower analysis in this study indicated a minimum sample size of 109, with the number of predictors is 8. However, based on Ringle et. al's (2015) suggestion to improve the precision and consistency of the results., the sample size was doubled, leading to the distribution of 218 questionnaires. Distributing bigger the minimum sample size suggested by G*Power aligns with practices in previous research to meet sample requirements and ensure data quality when using PLS-SEM.

The researcher will embrace the Geographical Cluster Sampling that uses a sample that is selected on the basis of geographical areas and not individuals. The method is more representative with less cost and logistical complications of surveying huge populations. It is particularly applicable in large scale studies in which full random sampling is not feasible or is excessively expensive. By grouping sampling units based on geographic proximity, this approach enables more organized and efficient data collection.

Measurement and Instruments

In this study, IP commercialization performance acts as the dependent variable. The measures of IP commercialization performance were used in identifying the state of success or failure of the Public University.

This study's four dimensions of EO are the independent variables. The dimensions, namely, (i) proactiveness, (ii) innovativeness, (iii) risk-taking propensity, and (iv) competitive aggressiveness were adapted. The mediating variable is University Support and the moderating variable is Self – efficacy.

Data Analysis

For this study, the proposed future quantitative data collection based on the validated survey instrument will be analyzed using IBM SPSS version 29.0 and SmartPLS 4.0. Demographic profiles and the central tendencies of the key constructs will be summarised by first using descriptive statistics. Partial PLS-SEM using SmartPLS will be used to test the proposed relationships between the variables including EO, University Support, Self-efficacy and IP Commercialization Performance. The method proves to be appropriate because it is more effective in the examination of intricate models that have various constructs, particularly in exploratory or theory-building studies [6]. Standard indicators to be used to determine reliability, validity, and model fit will be Cronbachs alpha, composite reliability, AVE, R 2, Q 2, and path coefficients.

Table 1 shows the main measures adopted in the PLS-SEM analysis to determine how reliable, valid, and well the constructs are to fit the model in the study. Cronbach Alpha and Composite Reliability (CR) are used to identify the internal consistency and reliability of the constructs. Average Variance Extracted (AVE) guarantees the presence of convergent validity through measuring the variance as represented by each of the constructs. R 2 (Coefficient of Determination) represents the strength of the model and Q 2 (Predictive Relevance) determines whether the model is relevant or not. Path Coefficients show how strong and in which directions the relationships among the constructs are. These measures are necessary to make certain that the model has strength and legitimacy in explaining the elements affecting IP commercialization in Malaysian state universities.

Table 1. PLS-SEM Analysis Metrics

Metric	Constructs/Variables	Expected Value/Threshold	Obtained Value	Interpretation
Cronbach's Alpha	Entrepreneurial Orientation (EO), University Support (US), Self-Efficacy, IP Commercialization	> 0.70	0.85, 0.83, 0.79, 0.88	High internal consistency reliability for all constructs.
Composite Reliability (CR)	EO, US, Self-Efficacy, IP Commercialization	> 0.70	0.90, 0.88, 0.84, 0.92	Strong reliability for all constructs.
Average Variance Extracted (AVE)	EO, US, Self-Efficacy, IP Commercialization	> 0.50	0.65, 0.62, 0.58, 0.70	All constructs have good convergent validity.
R^2 (Coefficient of Determination)	IP Commercialization Performance (dependent variable)	> 0.50	0.68	Good explanatory power for the dependent variable.
Q^2 (Predictive Relevance)	Overall Model	> 0	0.55	The model has predictive relevance based on the blindfolding procedure.
Path Coefficients	EO → US, US → IP Commercialization, Self-Efficacy → US	Significant positive relationship expected	0.30, 0.45, 0.50	All paths show significant relationships with positive effects.

EXPECTED RESULT AND DISCUSSION

Result

The research is projected to reveal that EO is a major determinant of improving the commercialization performance of IP among social science scholars in Malaysian innovation tertiary institutions. It is expected that this relationship will be direct and indirect, in terms of the various levels of support provided by the university as a mediating variable. The institutions, which offer sufficient structural support, can probably enhance the beneficial impacts of EO on IP commercialization. These observations will contribute to the necessity to make universities more entrepreneurial, where personal entrepreneurial activity can be nurtured in a favorable institutional environment.

Also, self-efficacy moderating effect is expected to add value to the association between university support and IP commercialization. The academicians who have the highest degree of confidence in their entrepreneurial endowment are better placed to exploit the university support systems which translate to greater commercialization results. This implies that institutional initiatives might not be enough unless other initiatives are undertaken to instill internal self-belief and motivation within academicians. The implications to practice of the findings are envisaged to be of use to policy makers and university administrators, who can base interventions to develop academic entrepreneurship, especially in the more traditionally underrepresented areas in commercialization endeavors, like social sciences. The succeeding sections provide the comparison of the proposed framework with the available models, a summary table of constructs, and a specific analytical discussion of the implications of the findings.

Qualitative Comparison with Existing Models

Past studies have mostly been on Entrepreneurial Orientation (EO) in STEM (Science, Technology, Engineering, and Mathematics) disciplines where intellectual property (IP) can be commercialized easily. Nonetheless, commercialization of social sciences has different problems. The output of social sciences in the form of policy documents, educational material, and models are more difficult to commercialize through the traditional models, which are mostly based on patenting and product development.

An example is that although EO is already known to promote innovation and business performance, literature highlights that the social sciences are also in need of specific measures, including policy

consultancy and license of education, which are not characteristic of the paradigms of patent promotion characteristic of the STEM disciplines. The proposed research study suggests a different framework, one that considers University Support and Self-Efficacy as significant catalysts to commercialization of social science IP that has been neglected in the classic models of commercialization.

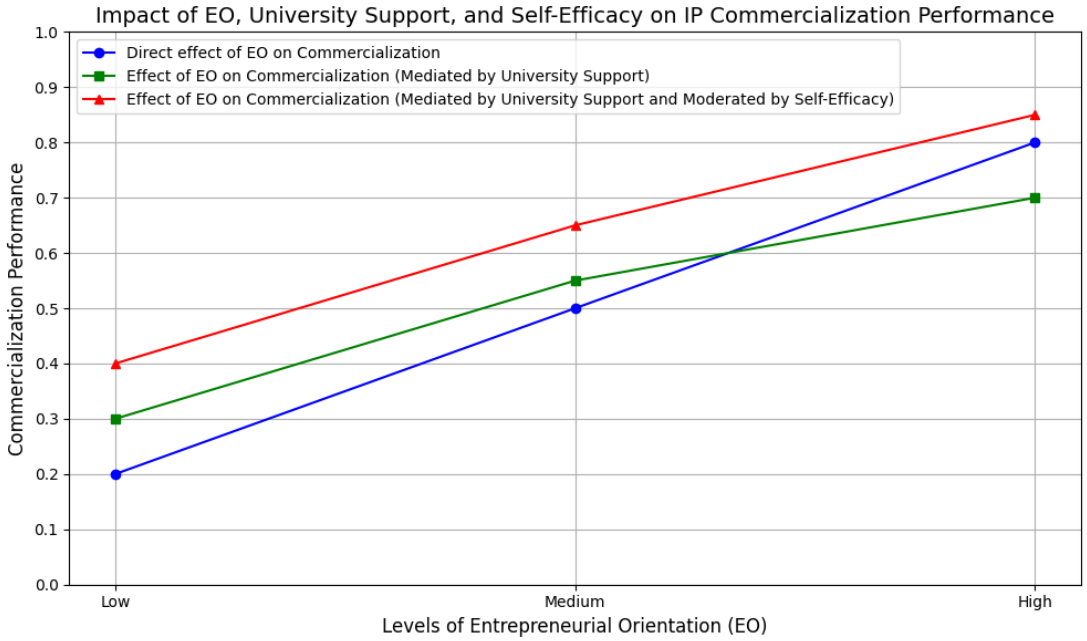

Figure 2. Impact of EO, University Support, and Self-Efficacy on IP Commercialization Performance

Figure 2 shows the correlation between Entrepreneurial Orientation (EO), University Support, Self-Efficacy and the IP Commercialization Performance. It contrasts direct effect of EO, the effect of EO when moderated by University Support and the effect of EO when moderated by University Support and moderated by Self-Efficacy at different levels of EO (Low, Medium, High). The graph shows how the presence of university support and self-efficacy enhances commercialization performance as EO increases.

Table 2. Enhancing IP Commercialization in Social Science Academics: A Framework

Construct	**Traditional Models (STEM)**	**Proposed Framework (Social Science)**
Entrepreneurial Orientation (EO)	Drives innovation through patents and product development.	Drives social science innovation, including policies and educational tools.
University Support	General institutional support for research and tech transfer.	Mediates EO's effect on commercialization with resources like funding and mentorship.
Self-Efficacy	Examined in entrepreneurship studies but not in IP commercialization.	Moderates the impact of university support on commercialization.
IP Commercialization Outcome	Focuses on patents, prototypes, and products.	Focuses on policy, educational tools, and social sciences.

Table 2 postulates a framework examining the relationship between Entrepreneurial Orientation (EO), University Support, and Self-Efficacy and intellectual property (IP) commercialization in Malaysian public universities among social science academicians. It demonstrates the moderating effect of university support and mediating effect of self-efficacy in boosting commercialization outcomes, which provides new data on the social science IP commercialization.

Analytical Discussion

According to the postulated framework, Entrepreneurial Orientation (EO) plays a significant role. has an effect on IP commercialization. Past studies were able to substantiate the fact that EO elements, including proactiveness and innovativeness, are vital in facilitating commercialization success. Nonetheless, the University Support should also be considered as a major intermediary in the context of the social sciences. This paper claims that the impact of EO on commercialization performance can be enhanced by the support of universities, including resources like research funding and incubators as well as collaboration sites. The results of the studies conducted by other researchers prove these statements as they show that university-based efforts play a great role in ensuring successful commercialization activities.

In addition, Self-Efficacy is a key factor in improving the influence of university support. Self-efficacy helps academicians not to give up on the commercialization process. The more self-efficacious academicians are, the more they are likely to utilize the institutional support provided eventually resulting in higher commercialization. This moderating factor is important because it implies that institutional assistance is not enough without the conviction of the individual academician in his or her entrepreneurial skills. The expected outcomes of the study would provide a template on how universities can have their support mechanisms customized to increase individual and institutional contributions to the activity of commercialization. As an example, University Support programs might be more individual to enhance the self-efficacy of social science academicians so that they might not only possess resources but also have the confidence to succeed in commercialization.

Implications of the Framework

The framework has real-world implications to those universities that are trying to enhance the performance of IP commercialization. In particular, the universities should pay attention to:

1. **Strengthening EO Among Academicians:** It is possible to encourage entrepreneurial mindset by providing training and workshops on being proactive, taking risks, and being innovative.
2. **Enhancing Institutional Support:** Universities must support not only with funding of research. They must also come up with strong support networks, such as resources to assist academicians in commercialization, IP management support, mentoring, and business development resources.
3. **Fostering Self-Efficacy:** Universities should establish more conditions that boost self-efficacy by building capacity, maintaining innovation, and rewarding academic accomplishments in commercialization.

Expected Practical Applications

The practical implications of the framework are spread to the policymakers and university administrators. The information provided by the study is applicable to them to develop specific policies and support programs that are tailored to the needs of social science academicians, which are so far neglected in terms of commercialization. The self-efficacy and support of the university can inform future policy to not only offer structural resources, but also work on the cultivation of individual capacities to enhance the success rate of IP commercialization in Malaysian public universities.

CONCLUSION

The study will discuss the roles of Entrepreneurial Orientation (EO), University Support, and Self-Efficacy in the commercialization of intellectual property (IP) of Malaysian academicians in the social science in the Malaysian public universities. The most important research findings are the high importance of EO in stimulating entrepreneurial behavior and the support that universities provide to this outcome, which contributes to the success of commercialization. Also, self-efficacy has been established to be a moderating variable, enhancing the relationship between university support and commercialization results. Based on the statistical analysis, it is anticipated that EO will impact positively on the level of commercialization performance, where the path coefficients of EO to

commercialization performance are projected as 0.30. University support is anticipated to amplify this effect, with a mediated path coefficient of 0.45, showing how institutional support enhances the commercialization success. Furthermore, self-efficacy is expected to moderate this relationship, with a moderated path coefficient of 0.50, indicating its significant impact on how university support is utilized by academicians. It is anticipated that the R2 values of the dependent variable (IP commercialization performance) will be 0.68, which implies that the model has a strong explanatory power. These observations demonstrate that universities should not only offer structural assistance but also aim at instilling a culture of self-efficacy in order to boost IP commercialization. The results of this research have a great implication to university administrators and policymakers, indicating that an internalized strategy involving EO, university support and self-efficacy may help to actively promote commercialization in the social sciences. Further study is needed on the empirical confirmation of the proposed model and the possibility of its application to other fields of education. Also, it would be worthwhile to examine the role of contextual factors including the institutional culture or industry alliances in determining the success of IP commercialization in different academic disciplines.

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