The Role of Information Literacy as Moderation Between Entrepreneurial Orientation and Innovation Performance

Yoke Ranlym Arifin¹, Prio Utomo², Julbintor Kembaren³

tyoke.ranlym@student.umn.ac.id¹, prio.utomo@umn.ac.id²,
julbintor.kembaren@lecturer.umn.ac.id³

Technology Management Department, Universitas Multimedia Nusantara¹, ², ³

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Abstract

Background research of this study aims to determine the role of information literacy (IL) on the relationship between Entrepreneurial Orientation and Innovation Performance at the Manufacturing Company. This research is considered important because the trend is growing rapidly so that it requires companies to innovate in order to survive in the face of various challenges in the future. Based on previous research, innovation grows because of the entrepreneurial spirit such as Risk Taking, Innovativeness and Proactiveness. The company should have Information Literacy (IL) in order to have a correct understanding of what is happening in society. This research can also be a reference for Manufacturing Company so that they can see opportunities from the role of Information Literacy and develop an entrepreneurial spirit in every employee who works so that they can produce Innovation Performance. The method / theory of this study used PLS SEM (Partial Least Square Structural Equation Modeling) with SmartPLS version 3.2.9. The author collects data from 150 respondents. The results of the study indicate that the entrepreneurial orientation of employees consisting of innovativeness, proactiveness and risk taking can help companies produce innovation performance. However, information literacy has not played a significant role as a moderator between intrapreneurial orientation and innovation performance. The conclusion of the research is that entrepreneurial orientation produces quality human resources because it can be a source of innovation.

Keywords: Information Literacy, Entrepreneurial Orientation, Innovation Performance, Innovativeness, Risk Taking.

I. INTRODUCTION

Companies can achieve success in terms of optimized resource utilization, reduction of costs, increased employee productivity and work efficiency, supply chain optimized, increased customer loyalty and satisfaction [1]. Human resources should be optimized because employees...
are the most important asset in the company [2]. Innovation companies need to survive in the face of the challenges that lie ahead. Companies such as Microsoft, eBay, Google, Amazon, Facebook, Twitter, Dropbox, Uber and Airbnb have made billions of dollars in profits by changing their business models [3]. Based on the data in Figure, there are 5 large companies in the Silicon Valley dominated the market in 2015. That means, these companies have succeeded in innovating so that they can survive and increase revenue from year to year.

![Figure 1](image-url) Large Companies Silicon Valley Dominating the Market (Rozalska, 2020)

The application of intrapreneurship has also been carried out at Apple since 1985 by Steve Jobs. The Macintosh team of about 20 people innovated products and services radically (radical innovation). They tend to ignore organizational rules and structures in order to achieve the desired vision [4]. Ignoring organizational rules means dealing with taking risk, which if positively transformed will provide new ways and discoveries. There is no doubt that Entrepreneurial Orientation is one of the important factors that integrates and builds competence between internal and external to cope with a rapidly changing environment. Risk taking is one of the characteristics of entrepreneurial orientation besides innovativeness and proactiveness [5]. Even well-established companies must also have entrepreneurial abilities so that they have an open mentality like start-ups [6]. Increased entrepreneurial cognition with past experiences can be translated into more innovative business ideas [7]. From this, it becomes a company bait that employees who already have an Entrepreneurial Orientation can also be a source of innovation. From the results of the Global Preferences Survey [8] conducted on about 80,000 respondents in 76 countries, it shows that Indonesia is included in the category of countries with low risk taking.
Entrepreneurship and innovation are related to economic and social development. From the data and research results, it adds to the understanding that the character entrepreneurial orientation in Indonesia still needs to be developed [9].

One of the manufacturing companies in Indonesia experienced a decrease in revenue from the existing business. The company needs to make various innovations so research is needed to determine whether the character entrepreneurial orientation is important for companies in improving innovation performance. Information literacy results in balanced decisions, and paves the way for knowledge creation, learning and innovation [10]. As a company that continues to innovate and expand into various fields, especially in the world of education, all those who are part of the company should have Information Literacy (IL) in order to have a good understanding true to what is happening in society. IL can move on a global concept that can help the nation's growth in socio-cultural, economic and political life [11]. That means, the more people who have a correct understanding of the information they receive, the more it shows an educated nation.

From the results of research (Kemkominfo, 2020) has conducted research in 34 provinces in Indonesia to 1670 respondents. The results of this study formulate that the digital literacy index in Indonesia has not achieved a "good" score (4.00), but Indonesia is in a "medium" score (3.47). This indicates that Indonesia still needs the development of information literacy to achieve a better score. In this Covid-19 pandemic, information and media literacy is becoming more critical than ever because the current digital era is combined with people accessing it from home and working remotely so that it consumes news and information through digital platforms (UNESCO, 2020). The Covid-19 pandemic shows that the world's fast and uncertain changes have made many people adapt to technology and information. In this study is to find out whether information literacy can affect entrepreneurial orientation so that it can produce innovation performance. Through this research, it is expected to find results that show that an office environment that supports entrepreneurial orientation can provide new and broader things so that it can provide benefits for employees in improving their ability to innovate.

II. LITERATURE REVIEW

1. Logic and Analytics

The theories reviewed are innovation management, entrepreneurial, information literacy, innovativeness, proactiveness, risk taking, innovation performance and perceived innovation performance. In the journal "Factors influencing willingness to consume GMF in Chinese population: the moderating role of Information Literacy" [12], innovation management has integrated elements, such as strategic planning, organization for innovation, tools for developing and evaluating products. new and new businesses, competitive intelligence systems, structuring
the learning process, structuring an innovative and stimulating environment for creativity, developing information systems for innovation, systems that monitor innovation and performance, and implementing technology [13]. Entrepreneurial Orientation helps companies see the market developments that continue to advance rapidly, as well as increase the company’s sensitivity to market/community needs. Then entrepreneurial orientation helps companies to make product innovations, as well as being able and daring to make decisions [14].

A study conducted [15] in the journal “Individual entrepreneurial orientation and intrapreneurship in the public sector”, explains that the beginning of the intrapreneurial process at the employee level shows that risk taking and proactiveness are important factors that lead to exploration activities so as to create opportunities for companies. The Innovation is the result of risk taking and proactiveness. So that this study produces a research model which shows that Entrepreneurial Orientation has the characteristics of risk taking, Proactiveness and Innovativeness. The result of this research is that the higher the characteristics of Individual Entrepreneurial Orientation (risk taking, innovativeness, and proactiveness), the higher the value of exploration, but the lower the value of exploitation.

2. Intrapreneur Intention

The results of intrapreneurial behavior to organizations are new product/innovation, new business venturing and self-renewal, so that the research results in organizational performance [16]. In this study, the authors use innovation performance to show the innovation of employees who have an entrepreneurial orientation. The mindset of innovativeness in business should be a promotion of the development of technical skills and knowledge to be effective in dealing with unexpected market situations [17]. Attitude proactiveness also appreciated in any environment when it can take on new projects proposed or generate their own ideas, especially working in long distance [18]. In previous research, proactiveness can create new opportunities for companies because employees can provide innovation.

The right action can result in an understanding of innovation significantly [19]. For example, identifying new ideas or new products for the company can be a motivation for the company environment. In this study, the authors use perceived innovation performance as the outcome measure of innovation performance. In the journal “Factors influencing Willingness to Consume GMF in Chinese Population: the Moderating of Information Literacy”, showing positive results of Information Literacy as moderation between Perceived Benefits and Willingness to Consume [12]. This shows that the existence of information literacy can influence the people around them to try new things. In that research, it can bring benefits to the company.

A study from the Journal of Media Literacy Education [20] conducted on youth in the Middle East, stated that education media literacy can be a necessity and has a lot of potential if it is developed, participatory and enhances their involvement. This can have a positive impact on self-
improvement and social life. In the company, the proactiveness of employees based on an understanding of media literacy (which is part of information literacy) is expected to be an opportunity to create new ideas. Social media involvement is becoming increasingly influential for risk taking [21]. From this the author realizes that an understanding of media literacy which is part of information literacy can influence a person to make decisions. Using media can hone creativity, but it is also necessary to have an understanding of the use of technology that is developing rapidly to anticipate various risks [22].

The following is the seven hypothesis: 

H1: There is an influence of innovativeness on innovation performance.; 
H2: There is an effect of Proactiveness on Innovation Performance.; 
H3: There is an effect of Risk Taking on Innovation Performance.; 
H4: There is Innovation Performance influencing Perceived Innovation Performance; 
H5: There is Information Literacy that can affect Innovativeness on Innovation Performance.; 
H6: There is Information Literacy that can affect Proactiveness towards Innovation Performance. ; 
H7: There is Information Literacy that can affect Risk Taking on Innovation Performance.

![Research Framework](image)

**Figure 2.** Research Framework

### III. RESEARCH METHODS

The type of research used in this research is quantitative research. Quantitative research is research by measuring and analyzing variables to obtain results and involves the use and analysis of numerical data using statistical techniques to explain a problem or phenomenon through data...
collection in numerical form [23]. Quantitative research methods are defined as research methods that try to make accurate measurements of behavior, knowledge, opinions, or attitudes [24]. The object of research is the nature of the state of an object, person or the center of attention. The object of research is an attribute or nature or value of people, objects or activities that have certain variations that are determined by researchers to be studied and then conclusions are drawn [25]. This research was conducted in a manufacturing company in Indonesia.

Samples were taken from the population of employees in the office environment so that they could represent the research. Samples were taken from a minimum of 150 respondents in this manufacturing company. In this study, using convenience sampling because the author is one of the employees who work in the manufacturing company so that this method is considered the easiest and closest method for the author. The research variable is an attribute or nature or value of a person, object, or activity that has a certain variation determined by the researcher to be studied and then drawn conclusions [25]. Indicator variables are latent variable constructs that cannot be measured directly. If the causal relationship that occurs involves three latent variables, the third latent variable can be a moderator or mediator in the relationship between two other latent variables [26]. Moderator variables are variables that affect the strength of the relationship between the dependent variable and the independent variable [27]. Based on previous research, the authors make the variable information literacy as a moderator variable that affects the relationship between entrepreneurial orientation and innovation performance.

If there is a need to have respondents to be directed to one side, then a 6-point scale is the most suitable [28]. Therefore, the Likert scale used in this study to measure the variables is a 6-point scale with responses strongly agree (6 points), agree (5 points), somewhat agree (4 points), disagree (3 points), disagree (2 points) and strongly disagree (1 point). The type of data source is direct source (primary data). Data collection instrument / tool used to collect data is GoogleForm.

In this study, the application used to assist the measurement of research pre-test is the Statistical Package for the Social Science (SPSS) version 26. so that the results of data analysis will be in the form of tables. The SPSS application is used to generate validity and reliability tests for each variable. For the main-test, the researcher uses the PLS-SEM (Partial Least Squares - Structural Equation Modeling) method and uses the SmartPLS 3.2.9. PLS is a method of solving SEM that has a high degree of flexibility between theory and data and can explain whether there is a relationship between latent variables [29]. When estimating the moderating effect on the PLS-SEM method, researchers can choose from various approaches to test the moderator effect on the relationship between two constructs by producing different interactions [30].

IV. FINDINGS AND RESULTS
This study succeeded in getting 150 respondents through distributing questionnaires in the period January 2021 to May 2021. In Perceived Innovation Performance, the conclusions that can be drawn (total mean 4.17) from most of the respondents stated that they somewhat agree that the innovation they provide can provide revenue for the company’s progress. Innovation Performance (total mean 4.29), respondents stated somewhat agree that they have done various ways to find solutions in the work environment. For the results obtained from the respondents’ assessment of Information Literacy (total mean 4.83) they have, respondents agree that there is always a way to obtain information and there is a need for analysis in retrieving the information obtained. In Risk Taking (total mean 4.16) and Proactiveness (total mean 3.88), the respondents stated that they quite agree. There are two variables that are lower than the other variables, but indicate an indication that entrepreneurial orientation still has an influence on perceived innovation performance. Information literacy shows that respondents positively accept things that can provide sources of information so that respondents have the ability to adapt to changes that occur. However, to prove whether information literacy affects entrepreneurial orientation and innovation performance, further research is needed.

![Figure 3. Research Result Framework](image-url)

**Figure 3.** Research Result Framework

**Table 1.** Hypothesis Test Result
**Table 2. Hypothesis and Implication**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Result</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovativeness – Innovation Performance</td>
<td>Supported</td>
<td>The age range of respondents is very diverse, understanding of innovativeness can differ from one another, but employees agree that they always have a way of getting their work done. Therefore, it can bring a team culture that collaborates with each other.</td>
</tr>
<tr>
<td>Proactiveness – Innovation Performance</td>
<td>Supported</td>
<td>The proactiveness of Kompas Gramedia Group of Manufacture employees can be seen from responding to diverse customer demands by developing new products that suit market needs.</td>
</tr>
<tr>
<td>Risk Taking – Innovation Performance</td>
<td>Supported</td>
<td>An office culture that supports discussion, sharing experiences and has a high tolerance between levels and age differences makes employees not reluctant to implement risk taking so that employees can continue to explore.</td>
</tr>
</tbody>
</table>
Employees quite agree that the innovations they provide can have a positive impact on the company such as increasing company revenue. From the survey results of 150 respondents, on average each respondent produces 2-3 innovations (421 total innovations).

Information literacy plays a small role in influencing the character of innovativeness to be able to produce innovation performance.

Information literacy can increase employee proactiveness towards innovation performance slowly.

Information Literacy does not significantly affect risk taking on innovation performance. The possibility of this is because employees have an understanding that the impact of failure from risk taking with or without IL is not permanent so they can continue to produce IP.

Representation of moderator analysis results using Simple Slope Analysis as provided by SmartPLS. The Simple Slope Analysis diagram shows that there is a moderation in information literacy between innovativeness and innovation performance, but it is not significant. This shows that the higher the information literacy possessed by the respondents, the higher the influence of innovativeness on innovation performance. That is, respondents assume that information literacy has a role in generating innovation.

**Figure 4.** Simple Slope Analysis IL moderates PROACT and IP
The Simple Slope Analysis diagram shows that there is a moderation in information literacy between risk taking and innovation performance, but it is also not significant. The diagram shows that the higher the information literacy of the respondents, the lower the risk taking. This means that respondents are still careful in making decisions by considering the risks that can be caused so that they need to analyze the information properly.

![Figure 5. Simple Slope Analysis IL moderates RT and IP](image1)

The Simple Slope Analysis diagram shows that there is a moderation of information literacy between proactiveness and innovation performance, but it is also not significant. The diagram shows that the higher the information literacy of the respondents, the lower the proactiveness. This means that information literacy does not yet have an important role between proactiveness and innovation performance for respondents to take more initiative in their work.

![Figure 6. Simple Slope Analysis IL moderates PROACT and IP](image2)

V. DISCUSSION

Based on the results of the study, the ability of intrapreneurial orientation in employees consisting of innovativeness, proactiveness and risk taking can help companies in producing innovation performance. However, information literacy has not played a significant role as a moderator between intrapreneurial orientation and innovation performance. The implications
found in the recruitment of employees who will later join the company are expected to have intrapreneurial orientation and information literacy. Of course, the information literacy possessed by prospective employees must lead to positive things in order to produce reliable and trustworthy human resources. Understanding of information must be traced correctly, not just knowing and disseminating.

Although information literacy has not been a moderator between intrapreneurial orientation and innovation performance, digitalization in the external environment will never stop and continue to change from time to time. This is a challenge for companies to keep pace with changes that occur outside the company. Although according to a survey conducted by Kominfo in November 2020, it showed that digital literacy in Indonesia is still said to have not reached a good level, companies should be able to take lessons from this to start developing and mobilizing information literacy within the company.

VI. CONCLUSION

Through this research, it is expected that the company can maintain and improve the information facilities and technology needs so that employees can keep abreast of the times so that the company does not only have human resources but in the future can become a source of information. Quality information can provide inspiration, become a science and motivation for fellow employees, so as to create a positive work environment and culture. Of course, the existence of information literacy cannot be separated from an understanding of technology.

Company which has employees with various age ranges can be an advantage. It is hoped that by collaborating with each other between ages, positions/positions and career paths, there will be an engagement in sharing experiences, knowledge and information. This is to prepare for technological changes that are so rapid that they require new skills. In the future, information literacy research should not stop here and can be developed in more detail because the concept of information literacy is not only information literacy, but there is still digital literacy, network literacy, media literacy and computer literacy.

Information is more easily obtained through networks, media and digital devices so that employees have many choices of references to support the implementation of new ideas. For employees who act as mentors or seniors, sharing knowledge is easier because access and learning formats are more diverse. Collaboration between divisions is also enriched by working on projects together. For example, the Information Technology division cooperates with the Marketing and Business Development divisions to create a project in the form of a digital application. The involvement of various parties produces more opportunities and ideas due to the exchange of information. Every individual in the office environment also needs to understand that information literacy is a lifelong learning, it will always be updated with the times. The mechanism should be made in accordance with mutual agreement. Of course, each division can provide
evaluations to each other so that the results of innovation are as planned and information literacy is used effectively and actually.

REFERENCES


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