

RISK LEADERS' COLLABORATION IN THE INDUSTRIAL 4.0 ERA

I Wayan Wahyudi Antara¹⁾, Anak Agung Ngurah Oka Suryadinatha Gorda²⁾

Universitas Pendidikan Nasional, Denpasar - Bali

E-mail: wayanbulbul@gmail.com¹⁾; okagorda@gmail.com²⁾

Abstract: *Commemorate the industrial 4.0 era, leaders are faced with new risks and challenges, ranging from adopting new technologies, and changing leadership styles to changing work environments that are increasingly digital and flexible. This research will focus on applying internet-based technology or the internet of things and the impact of risks on a leader in implementing his leadership in industrial 4.0. Seeing this as a unique phenomenon, researchers see a significant opportunity for risks that impact performance or affect one's activities as a leader in this industrial era 4.0. A research method is a qualitative approach with a purposive sampling technique. Data analysis in this study analyzes the results of observations, interviews, and documentation obtained from research using the Nvivo 12 Plus software. The data processing results in the study concluded that there were four primary nodes, namely Technology, Internet, Leaders, and IT Implementation Implications. In addition, primary Internet nodes are discussed most frequently in informant interviews. Good adoption and adoption, professional application processes, and wise and intelligent use can help reduce the risks and barriers to the application of internet technology to use its function positively to run and lead their respective companies.*

Keywords: *Industry 4.0, Internet, Leader, Technology, Risk.*

1. Introduction

The development of an increasingly fast and innovative era, directly and indirectly, has a broad impact on all parties from various walks of life. The changing times affect almost all sectors of life worldwide, especially in Indonesia. For example, the era of the Industrial Revolution 4.0 was marked by artificial intelligence, supercomputers, genetic engineering, nanotechnology, automatic cars, and innovation. These changes occur at an exponential rate that will impact the economy, industry, government, and politics (Wulandari et al., 2019). One of the sectors affected is organizations, whether in the form of social organizations, companies, to governments. We all know that every organization has several levels of management, ranging from the simplest to the most complex, depending on the organization's size. According to (Asbary et al., 2019), every organization needs leaders who have sufficient capabilities to transform the digitization of organizational structures and systems. In the 4.0 era, leaders are faced with new risks and challenges, ranging from adapting to new technologies, changing leadership styles, and changing work environments that are increasingly digital and flexible. According to (Mukhlisin, 2019), The era of the Industrial Revolution 4.0 was marked by artificial intelligence, supercomputers, genetic engineering, nanotechnology, automatic cars, and innovation. Industry 4.0, or the Fourth Industrial Revolution, is the creation of digital manufacturing companies that not only interconnect but also communicate, analyze and use the

information to drive further intelligent action in the physical world. (Sarjito, 2019). Technology leadership combines general leadership strategies and techniques but requires special attention to technology. In particular, it relates to access to equipment, updating technology, and making professional development and integration of constantly changing technology (Faridah & Mohd Izham, 2017).

According to (Shafiei & Mat Norwani, 2019), a person who becomes a leader needs to know how to influence his followers to achieve organizational goals. A leader with a powerful influence can bewitch his subordinates to follow his leader (Cahyadi, 2021). The factors that influence the creation of various new risks and challenges for leaders in the industrial era 4.0 are various, ranging from shifts that occur in companies and society shifting in the field of information technology, globalization issues, and diverse leadership characters. The industrial development of each era has a different focus and trend. So that each industrial era will have a different impact on the sectors in it, one of which is the leading sector. After seeing the changes, the author will relate it to leadership that is generally applied in organizations and private companies. Entering this industrial 4.0 era, leaders have access to and other options through the internet in carrying out their duties. Like how we can see technology combined with the internet of things can carry out essential activities that previously could only be done face-to-face and in the same place. With the proper use of networks and IoT, activities previously impossible to do at different times and places can now be appropriately realized. Leaders are led to be visionaries where leaders have long-term goals. They work not for something physical and temporary but the benefit of many people (Suryana, 2019).

(Irawan, 2019) states that technology is like two sides of a coin, technology facilitates human work, but on the other hand, technology is also able to erode human civilization. Every technology and change still carries risks that we cannot avoid, in this study, researchers will focus on these risks and look for elements of the same elements and how technology and the internet are applied in carrying out leadership. Sometimes technology, especially social media, keeps leaders busy observing various social phenomena, but sometimes they fall into anxiety, especially causing noise, chaos and crime. This is because the speed of information that has not been analyzed makes the leader panic (Usman et al., 2019). This research will focus on any element of the risks that arise or are faced by leaders in this 4.0 industrial era. If it has been found, the researcher will collaborate on the findings so that it is expected to be a study or learning for related parties, either directly or indirectly. The researchers chose this phenomenon because researchers are aware of the reality that is happening in people's lives today, especially in Indonesia and Bali, which are very dependent on the internet and IoT-based technology. Today's leaders must master this to sharpen their leadership abilities and strengthen power and time efficiency at work. So that before implementing industry 4.0 in the current leadership, the author will conduct this research to obtain valid and accurate data regarding the risks faced by leaders in the industrial era 4.0, which is mainly based on IoT. A good leader is a leader who has farsightedness, can anticipate the obstacles faced and finds essential (innovative) things that others cannot see or imagine as opportunities. A leader without insight will only be able to react to situations that arise instantly, and even then, it is often too late because he cannot read the signs of a change. (Indrawan, 2018).

(Dahurandi, 2020) stated that the challenge of a leader in the 4.0 era is to adapt to the dilemmatic innovation movement so that the movement of the institutional wheel is more progressive according to the institution's goals. The leader's ability to adapt to this dilemmatic innovation situation is seen as part of the disruption in leadership. Therefore, researchers are interested and want to do research that will be carried out in the Ubud District area. The

researcher selected five leaders and informants from private organizations and/or companies. The leaders came from Kopernik, Ray White, Kamandhani Cottage and Serene Villas. Ubud became the place or location of research because researchers saw a lot of diversity in the backgrounds of leaders in private companies and organizations in Ubud. Ubud itself is one of the tourist centers in Bali, many companies in Ubud are led not only by residents or Indonesian citizens but also by citizens of other countries. Researchers see this phenomenon as a unique phenomenon that can describe the plurality of leadership in Ubud. It is hoped that this research can be helpful for various backgrounds of company leaders.

2. Literature Review

2.1 Leadership

Leadership is the activity or art of influencing others to work together which is making aware of that person's ability to guide others in achieving the goals desired by the group. The words and the meaning of leader and leadership are often considered the same by most people. The meanings of the two words are different. (Wijaya et al., 2105) defines a leader as someone who has superior intelligence and character in all aspects of his life.

2.2 Risk

(Susilo, 2018) stated that risk is the uncertainty that impacts the target with a note that the impact is a deviation from the expected target, either negative or positive. Understanding more will be described one by one as below:

- a. Target, intended in various forms and various organizations or companies. Risk describes the uncertainty that has an impact on goals.
- b. Uncertainty is defined as the lack of clear information about an event and how significant its impact is on that goal.
- c. In this case, the impact is a discrepancy or deviation that occurs from the targets set or expected.

From the description above, a risk is an event whose occurrence is uncertain, caused by humans or nature, where the magnitude of the impact on the target is also unclear. Therefore, the conclusions that can be drawn from the description above are as risk has an attribute of uncertainty which includes the likelihood of its occurrence and the magnitude of its impact; risk is an event that has not yet occurred and has a potential impact on the target; a reasonable risk has minimum completeness such as the source or cause of the risk, the risk event or occurrence and the impact of the risk on the target.

2.3 Industry 4.0

According to (Kemper et al., 2016), the Year 2011 marked the first official use of the term Industry 4.0. In 2013, the German manufacturing industry chose to invest in the Industry 4.0 process and the German government increased funding, which led to the creation of the Industry 4.0 platform. (Savitri, 2019) describes the era of the fourth industrial revolution marked by the emergence of technological breakthroughs in several fields. These areas include robotics, such as artificial intelligence, biotechnology, Internet of Things (IoT), Industrial Internet of Things (IIoT), fifth-generation wireless technology (5G), 3D printing and the fully autonomous vehicle industry.

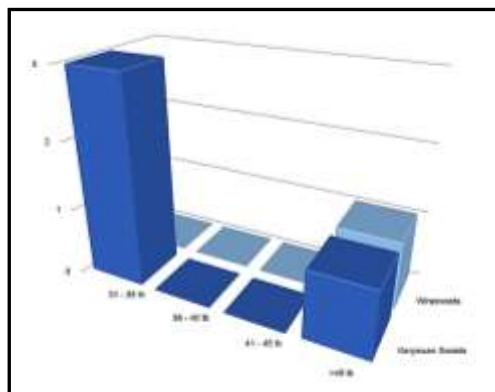
3. Research Method

This study uses a qualitative method research design with a case study approach. The informant collection technique in this study used the purposive sampling technique. This research wants to understand and understand the risk of leaders in the Ubud, Gianyar area in the industrial era 4.0. This research will be conducted in several companies in Ubud District, such as Kopernik, Kamandhani Cottage, Serene Villas, and Ray White. This location was chosen because researchers see Ubud as the most significant art city in Bali as well as a tourist center, where there is a plurality of leadership in various organizations that have the potential to risk the application of internet-based technology in it. In this study, researchers selected and focused on informants from the background of companies or private organizations with different business fields. The details informants are one company owner and four company managers. The data collection process was carried out utilizing in-depth interviews and direct observation at the research site and added to the process of analyzing the results of documents related to the research object. After the data collection process, the research continues to the data processing stage. This research uses qualitative research analysis software called Nvivo 12 Plus. According to (Sarmanu, 2019), the essential work of the Nvivo 12 plus application is to search for the exact words between one informant and another. Facilitate and increase efficiency in classifying and concluding long informant narratives. In this study, the validity of the data was tested using a triangulation technique of sources obtained from different informants in exploring the same topic and triangulation techniques using observation techniques, documentation analysis, and in-depth interviews.

4. Results and Discussion

4.1. Demographic Analysis

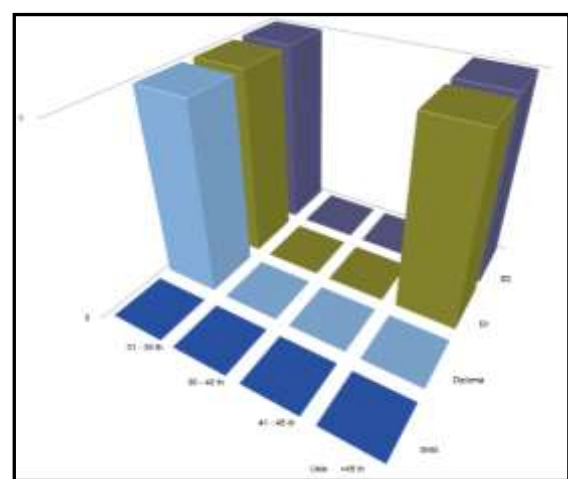
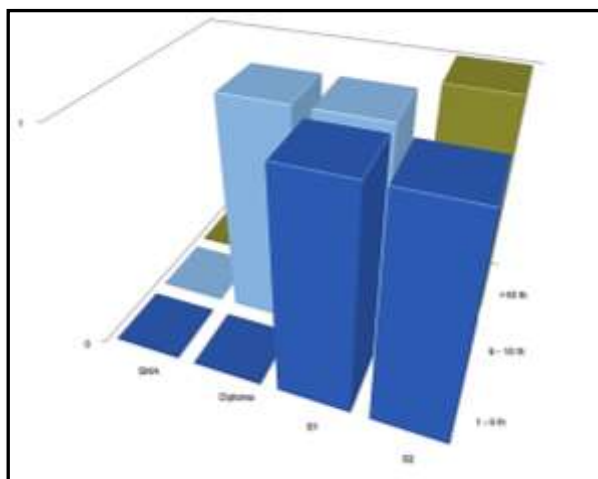
Based on informants who have been interviewed in-depth, it can be seen that a total of 5 informants are all male and are leaders of the company or organization. Each informant has an age of 31, 34, 35, 48 and 58 years. It can be seen that the informants who dominate are informants aged 31-35 years as many as three people, it can be seen in terms of age that the majority of the informants have a mature age, this strengthens the provision of information because they are considered capable enough in terms of age in running a business/organization. The informants professionally came from the private sector, both as entrepreneurs and as private employees. This can be seen in Figure 1 below:



Source: Ouput NVivo 12 Plus.

Figure 1. Age comparison with the profession

Figure 1 above also shows that most informants have professions as private employees, as many as four people and one person works as an entrepreneur. If viewed based on the period of service, there are two informants with a working period of 1-5 years, then two others have a working period of 6-10 years and one person has a working period of more than ten years, namely 30 years. Judging from the educational background, it can be seen that one informant has the latest education Diploma, two informants have the latest education bachelor's and the remaining two people have educational background postgraduate. Information based on age with educational background shows that three informants aged between 31 to 35 years each have a Diploma, bachelor and postgraduate educational background. Two informants aged over 40 years have an educational background. Bachelor and postgraduate. This can be seen in Figures 2 and 3 below:

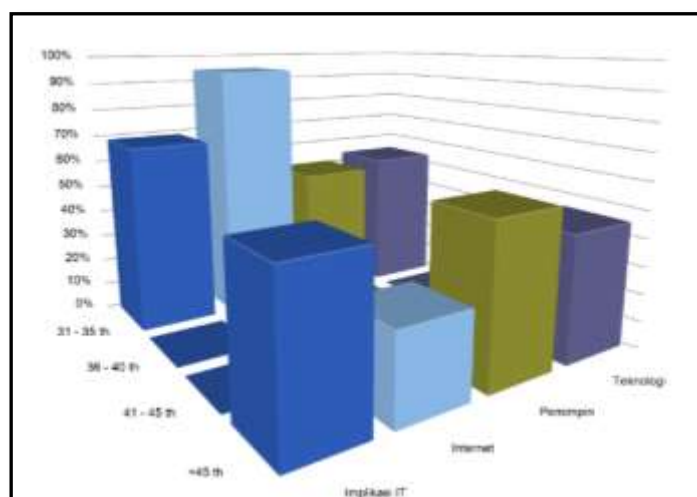


Source: Ouput NVivo 12 Plus.

Figure 2. Working years vs. education

Figure 3. age vs. education

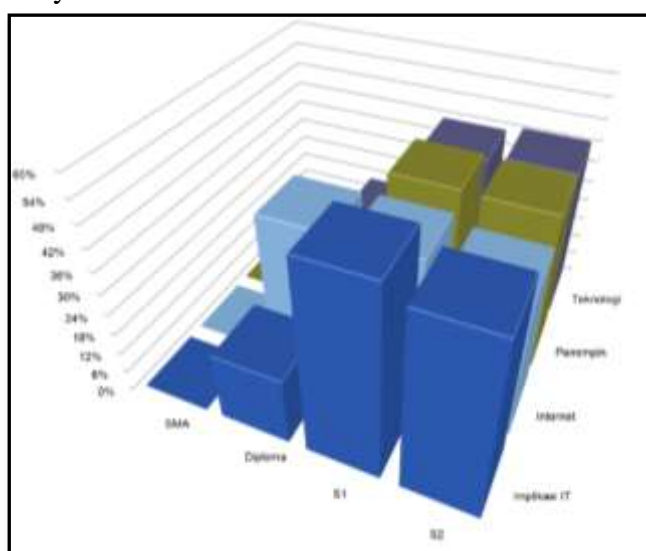
4.2 Matrix Coding Query (Attribute VS Nodes)



Source: Ouput NVivo 12 Plus.

Figure 4. Coding by the informant: Age

Figure 4 above shows that the informants provided the most data about the internet at 94.49%, which was started by informants aged 31 to 35. Furthermore, data regarding IT Implications is the second dominant data of 68.88% provided by informants of the same age, namely 31-35 years and also followed by informants over 45 years, equivalent to the Leader information provided by informants aged over 45 years. , where data on leaders is the third-largest data at 56.23% after the Internet and IT Implications. Furthermore, the latest data provided by the informant is data regarding the technology of 54.22%, where this data is stated by informants aged 31-35 years.

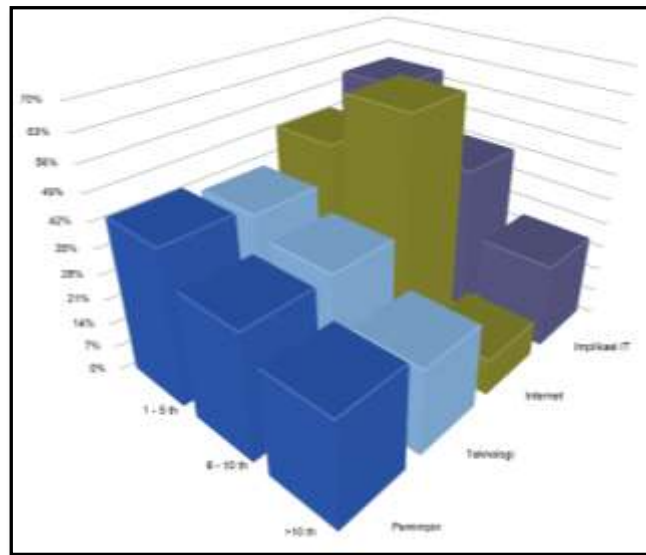


Source: Ouput NVivo 12 Plus.

Figure 5. Coding by the informant: Education Background

Figure 5 above shows coding based on educational background, the majority of information is provided by informants with S1 and S2 backgrounds. The highest information is in the IT Implications data given by informants with an undergraduate educational background of 54.64%, then followed by the second data regarding 45.46% which informants also gave with an undergraduate educational background, then in the third position there was information about technology, which is 42.65%, is given by informants who have a master's education background and in the last position is information data about the internet of 42.57% provided by informants who have an undergraduate educational background.

If you trace all the primary nodes according to the length of service of the informants, the most information is obtained about the primary nodes of the internet by 64.60% which is obtained from informants with a working period of 6 to 10 years. Furthermore, the second most information was obtained about the primary nodes. For example, the implications of implementing IT were 59.06%, obtained from informants with a working period of 1 to 5 years. While the other primary nodes, namely Leaders and Technology in receiving information, are dominated by informants with a working period of 1-5 years, which are 43.20% and 40.61%. Furthermore, the data of all informants as a whole provides information about all the primary nodes in this study. On the other hand, informants with a working period of more than ten years contributed little information compared to other informants, this can be seen in Figure 6 below.

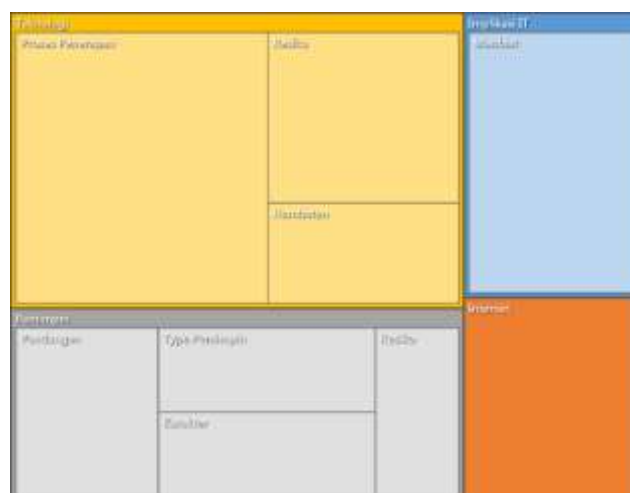


Source: Ouput NVivo 12 Plus.

Figure 6. Coding by the informant: Working years

4.3 Hierarchy Diagram Analysis

The results of in-depth interviews and observations in the field and complemented by supporting data were processed using the Nvivo 12 QSR program, after the coding stage was carried out based on the theme, the researchers removed some nodes that had no meaning and the results of the nodes could be seen. Based on the hierarchy chart above, it can be concluded that the information and data obtained by the researchers explored more of the primary nodes of technology with a total of 43.32% consisting of 24.60% IT application process 11.76% Risk subnodes and 11.76% Barriers subnodes. 6.95%, followed by the leader primary nodes with a total of 28.34% consisting of 9.09% Leader View subnodes, Character subnodes and Leader Type subnodes with the same percentage of 6.95% and Leader Risk subnodes 5,35%, followed by the primary nodes of IT Implementation Implications with benefits of 16.58% and primary internet nodes of 11.76% which is illustrated in the hierarchical diagram in Figure 7 below.



Source: Ouput NVivo 12 Plus.

Figure 7. Hierarchy Diagram by Nodes

4.4 Content Analysis (Word Frequency Query and Word Cloud)

Based on the word frequency result, there are 8,138 words, the researcher eliminates words that have no meaning and are unrelated to the topic. This shows that the informants emphasized and gave essential things in this research.



Sourcer: Ouput NVivo 12 Plus.

Figure 8. Word Cloud

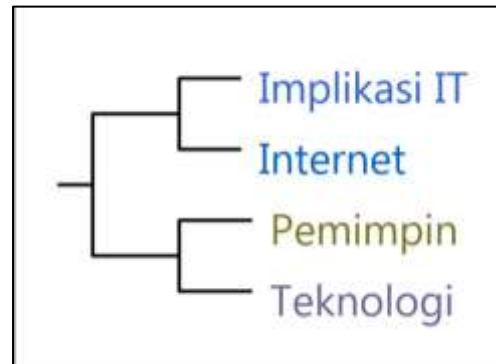


Figure 9. Word Frequency Query

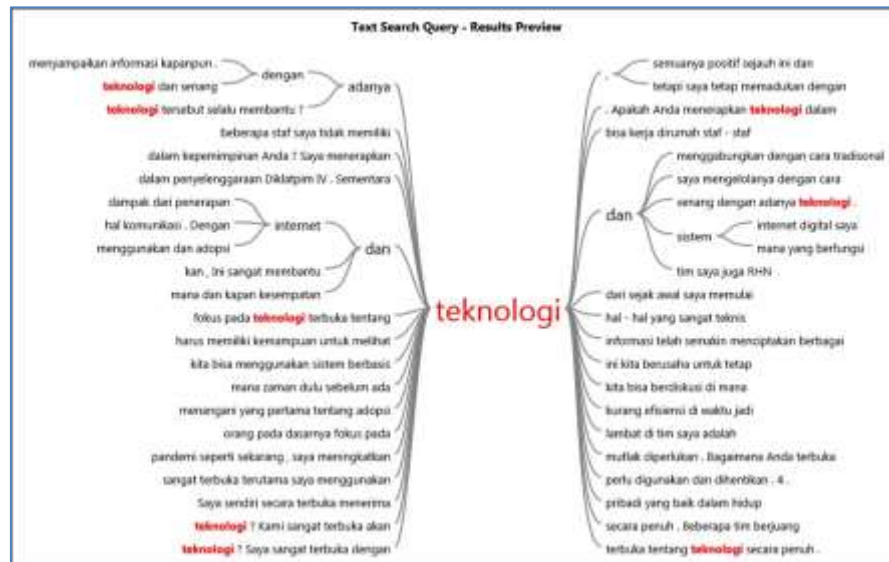
Figure 8 shows the display in the word cloud and Figure 9 displays the Word Frequency Query using Nvivo 12 on the results of interviews and supporting documents. Informants emphasize technology, the Internet, Leaders and Implications of IT Implementation, where the emphasis is the main node in this study.

In the word cloud image above, it states that the word Internet is most often discussed in interviews with informants, besides that there are also several supporting words generated from the auto code of the nvivo 12 plus program such as Technology, Leaders, Risks, Companies, software, systems and Jobs. Researchers set a minimum of 5 letters in 1 word to display the word cloud in Figure 8 above. While the word frequency query displayed in Figure 9 above states that the link between the primary nodes in coding shows the main node relationship cluster generated in the data coding process in the nvivo 12 plus program. It can be seen that the primary nodes of technology have a parallel relationship with the main nodes of the leader, besides that the primary nodes of IT implications are also parallel to the primary nodes of the internet.

4.5 Text Search Query (Word Tree)

From various data sources through the Text Search Query feature, it can be seen to understand the use of these words. In this study, it is necessary to understand the use of the word 'technology' which is a word that often appears in various sources of research data. The search results are presented in the Word Tree in Figure 10.

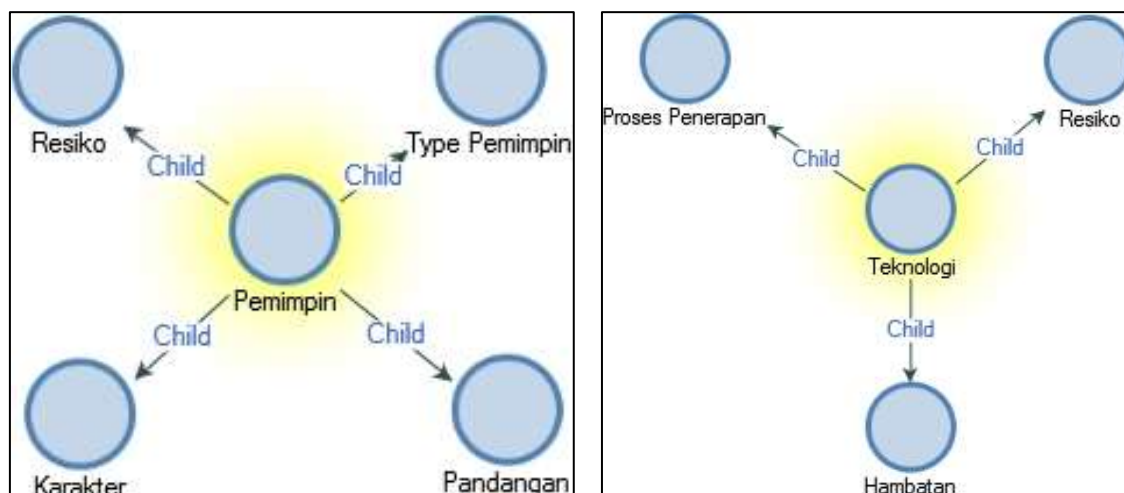
The word tree data below concludes that technology plays a vital role in the process of managerial activities in a company. Especially the millennials who currently dominate the adoption of technology in various aspects of daily life. In applying technology at the research site, the general use of technology provides good benefits and can provide work efficiency and effectiveness that can improve employee performance. The application of technology also helps organize and control the operational process by being facilitated by a smooth and stable internet provider. However, implementing technology is also inseparable from risks and obstacles. In this study, the informants also provide data dealing with risks and obstacles in applying the information technology era.



Source: Output NVivo 12 Plus.
 Figure 10. Word Tree of Technology

4.6 Project Map Leadership and Technology

Based on the project map results from the nvivo 12 plus program, which focused on the primary nodes of Leaders and Technology, it was found that several subnodes were indeed the factors that formed the primary nodes. This can be seen in Figures 11 and 12 below.



Source: Output NVivo 12 Plus.

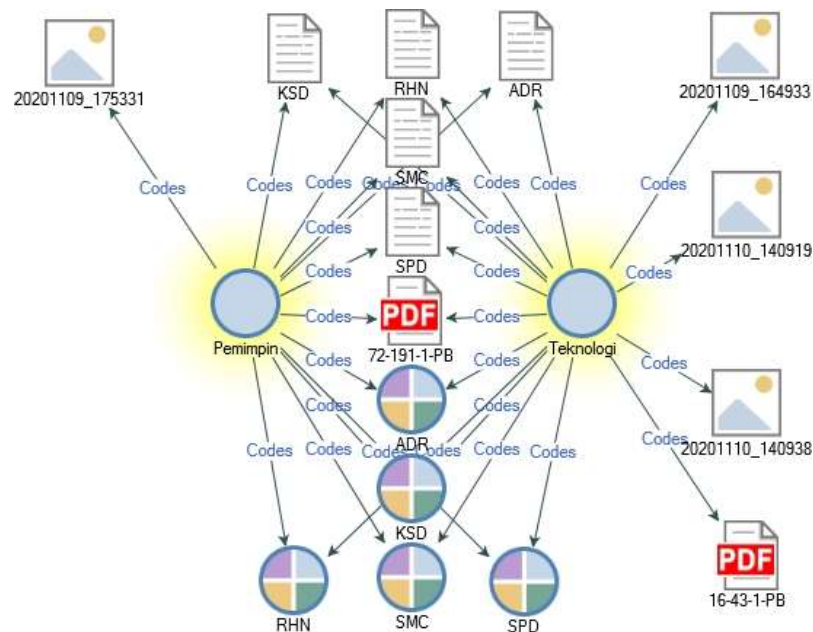
Figure 11. Project Map of Leaders Figure 12. Project Map of Technology

Figure 11 above shows that the primary Leader nodes have four sub-nodes that are suspected to be the trigger for the formation of the primary Leader nodes, these subnodes are the Leader Views, Leader Character, Type and Risk Leaders. These sub-nodes describe how the leader's view of the way of leadership, what characteristics and types a leader must have and what risks will be faced in leading. In addition, the central technology nodes in Figure 12 also have three subnodes, namely the Application Process, Barriers and Risks subnodes, in this case the researcher receives information from informants based on the primary nodes of technology that discuss the process of implementing technology in running a business, what obstacles are

encountered naturally in the process of adopting technology in the process of work activities and what risks will be faced if the technology is applied.

4.7 Explore Comparison Diagram

Based on the results of the text search query above, it can be seen that this research focuses on how collaborating technology in leadership minimizes the risks that will be faced. Hence, the researchers focus on variables that play an essential role in achieving the application of the technology. These variables are Leaders, Technology, Implications of IT and Internet Implementation, which are the dominant primary nodes obtained from internal and external sources and can be seen in the explored comparison diagram in Figures 13 and 14 below.

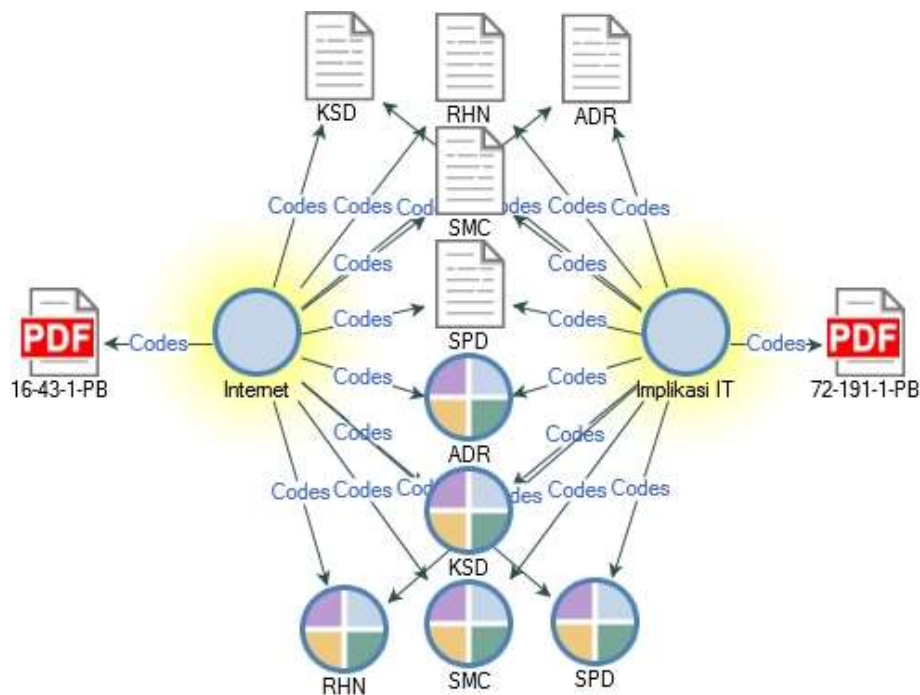


Source: Output NVivo 12 Plus.

Figure 13. Explore Comparison Diagram by Leader and Technology nodes

Based on the diagram above, it can be seen that the information data obtained regarding Leaders and Technology were obtained through 5 informants, namely ADR, KSD, SMC, SPD and RHN and one reference article simultaneously. Especially on the central nodes Leaders can also be obtained through 1 image or photo documentation, especially on the primary nodes. On the primary nodes, technology can also be obtained from 3 documentation photos and an additional one other reference. Based on the data above, it can be seen that all informants in this study provided dominant information about the two primary nodes above.

As for the other primary nodes, the researcher also obtained information on the results of the primary nodes of the internet and the implications of IT implementation. Data from various sources provide information for the two primary nodes from interviews with five informants: ADR, KSD, RHN, SMC, and SPD. Each primary node is also obtained from 1 different reference article. But both mani nodes are not supported or got from photo documentation. This states that all primary nodes are given in full by all informants, where all of these informants have valid and accurate data in the application of IT technology that adopts internet technology to support leadership and reduce risks, be it the leader's risk or other risks that can hinder the course of activities organization, this can be seen in Figure 14 below.

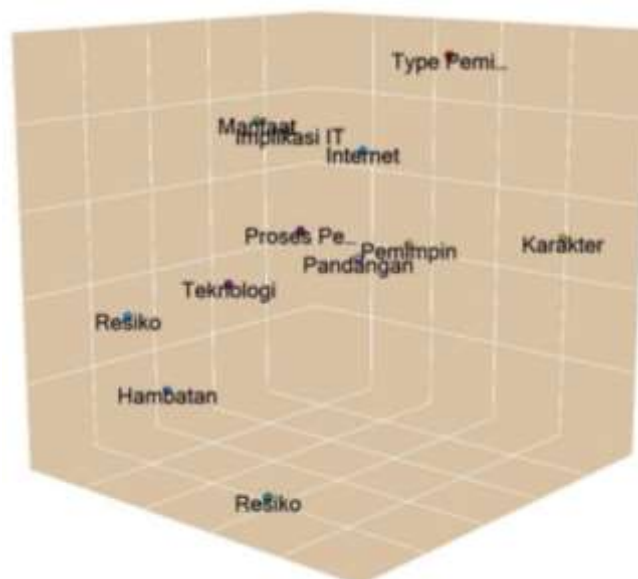


Source: Ouput NVivo 12 Plus.

Figure 14. Explore Comparison diagram by internet and IT implication nodes

4.8 Cluster Analysis

The relationship between the primary nodes and subnodes in this study can be seen in Figure 15, which is the output of the cluster analysis model below.



Source: Ouput NVivo 12 Plus.

Figure 15. Cluster Analysis

Based on the coefficient values in table 1 above, the strength of the relationship between the primary nodes and subnodes is a strong, powerful, perfect relationship. This is natural

because the primary nodes and subnodes mostly talk about a leader's condition and reality in applying information technology to his daily leadership activities and reducing the risks that occur in achieving organizational goals.

4.9 Finding

A. Leader Formation

Leaders of private companies come from various age, educational and working backgrounds. Several factors outside the demographic background influence the process of forming a leader itself. This study found that the formation of a leader is strongly influenced by the leader's views, the leader's character, and the leader's type and risk. This finding describes how leaders view their leadership style, what character and type a leader should have and what risks will be faced in leading. These findings are in line with and support the author's theory in describing the understanding of leaders described in the literature review. This research also finds out the risk of being part of the formation of a leader, and how the leader of a private company sees risk as part of the process.

B. Leaders and Technology

In addition to the formation of leaders, this research found that the current leaders who carry out their leadership in the industrial era 4.0 are very closely related to internet-based technology. This research shows how the technology is formed through the Application Process, Barriers and Risks, in this case the researcher receives information from informants based on the primary nodes of technology, discussing more the process of implementing technology in running a business, technical and non-technical barriers experienced in the process of adopting technology in the process of work activities and the positive and negative risks that leaders face when the technology is applied. All of the leaders in this study applied technology in their leadership and in carrying out their duties in their respective companies. The application of internet-based technology for leaders is in line with and supports the industrial 4.0 theory which states that the industrial era 4.0 is the era of the internet of things.

C. Application of Internet of Things Technology in Leadership

Industry 4.0 marks an era where all sectors of life apply internet-based technology. The results of this study support the theory and find that of the five informants who are leaders of private companies, consisting of one business owner or entrepreneur and the other four leaders are company leaders at the manager and director level applying internet-based technology in their respective companies, and this implies the internet in his duties as a company leader. The study also obtained information on the results of the internet and the implications of its application. This states that all of the data provided in full by all informants, where all of these informants have valid and accurate data in the application of internet-based technology and adapt it to support leadership and reduce risks, be it the leader's risk or other risks that can hinder the organization's activities or the companies they lead.

5. Conclusion

The formation of company leaders in the industrial era 4.0 is influenced by the character, type, and how the leader sees the risks involved in implementing the internet-based technology. Technical risks and obstacles to its implementation persist and influence the leader's decision to adopt the internet-based technology. This research shows that company leaders continue to apply and adopt internet technology in leading the company. Good adoption and adoption, professional implementation processes, and wise and intelligent use can help reduce the risks and barriers of implementing these internet technologies so that their function can be used positively to run and

lead their respective companies. For future research, it is expected to increase the number of informants and cover two research sectors, namely leadership in private companies and leadership in government.

Reference

- Asbari, M., Santoso, P. B., & Purwanto, A. (2019). Pengaruh Kepemimpinan dan Budaya Organisasi Terhadap Perilaku Kerja Inovatif pada Industri 4.0. *JIMUPB Jurnal Ilmiah Manajemen*, 8(1), 7–15. <https://doi.org/10.33884/jimupb.v8i1.1562>
- Cahyadi, O. F. (2021). Kepemimpinan Transformatif, Keputusan Inovatif dan Era Disrupsi. *Seminar Nasional Magister Manajemen Pendidikan UNISKA MAB.*, 1(1), 177–184.
- Dahurandi, K. (2020). Gaya Kepemimpinan Kelembagaan di Era Disrupsi (Tinjauan dari Perspektif Manajemen). *Jurnal Alternatif*, X(1), 139–170.
- Faridah, J., & Mohd Izham, M. H. (2017). Kepimpinan teknologi pengetua dan hubungannya dengan prestasi akademik sekolah di Malaysia. *International Journal of Education, Psychology and Counseling*, 2(5), 215–230. <http://www.ijepc.com/PDF/IJEPC-2017-05-09-17.pdf>
- Indrawan, J. (2018). Kepemimpinan Berbasis Pemberdayaan Dalam Alih Teknologi: Sebuah Upaya Meningkatkan Kualitas Sdm Pertahanan Indonesia. *Jurnal Pertahanan & Bela Negara*, 5(1), 63–88. <https://doi.org/10.33172/jpbh.v5i1.349>
- Irawan, I. K. A. (2019). Persona Pemimpin Muda Di Era Revolusi Industri 4.0 I. *Prosiding Seminar Nasional Institut Agama Hindu Negeri Tampung Penyang Palangka Raya*, 1–69.
- Kemper, H.-G., Lasi, H., Fettke, P., Feld, T., & Hoffmann, M. (2016). Industry 4.0. *Business & Information Systems Engineering*, 6(4), 239–242. <https://doi.org/10.1007/s12599-014-0334-4>
- Mukhlisin, A. (2019). Kepemimpinan Pendidikan di Era Revolusi Industri 4.0. *Jurnal Tawadhu*, 3(1), 674–692.
- Sarjito, A. (2019). Model Kepemimpinan Militer Digital Di Era Revolusi Industri 4.0. *Manajemen Pertahanan*, 5(2), 49.
- Sarmanu. (2019). *Dasar Metodologi Penelitian kuantitatif, kualitatif & Statistika*. Airlangga University Press.
- Savitri, A. (2019). *Revolusi Industri 4.0: Mengubah Tantangan Menjadi Peluang di Era Disrupsi 4.0*. Penerbit Genesis. <https://books.google.co.id/books?id=dSvTDwAAQBAJ>
- Shafiei, M. F., & Mat Norwani, N. (2019). Kepimpinan Dalam Era Revolusi Industri 4.0. *Jurnal Dunia Pengurusan*, 1(3), 1–8.
- Suryana, S. (2019). Pentingnya Kecerdasan Emosi bagi Kepemimpinan yang Efektif di Era Milenial Revolusi 4.0. *Jurnal Inspirasi*, 10(1), 78–97. <https://doi.org/10.35880/inspirasi.v10i1.72>
- Susilo, L. J. (2018). *Manajemen Risiko Berbasis ISO 31000:2018 : Panduan untuk Risk Leaders dan Risk Practitioners*. Gramedia Widiasarana Indonesia.
- Usman, A. R., Azman, & Zulyadi, T. (2019). Komunikasi Pemimpin Pusat-Daerah Di Era

Revolusi Industri 4.0. *Jurnal Peurawi*, 2(2), 91–103.

Wijaya, A., Purnomolastu, N., & Tjahjoanggoro, A. . (2105). *Kepemimpinan Berkarakter untuk Pemimpin dan Calon Pemimpin Edisi 2*. Surabaya: Brilian Internasional.

Wulandari, F., Febriansyah, D., Salwa, & Sulaiman, R. M. (2019). Kepemimpinan Kepala Sekolah di Era Revolusi Industri 4.0 Dalam Meningkatkan Akreditasi Sekolah. *Prosiding Seminar Nasional Pendidikan Program Pascasarjana Universitas PGRI Palembang*, 308–312.