Creative City Start-up Business Acceleration in the Metaverse Era: Entrepreneurial Leadership and Innovation

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ABSTRACT

The metaverse era has created a new economy amid digital innovation, which is significantly accelerated by the COVID-19 pandemic. Therefore, this study aims to identify the entrepreneurial leadership and business innovations carried out by the founders of Start-up Creative City in Indonesia in building a digital-based business. This is a qualitative study through Focus Group Discussion (FGD) with informants from the Bandung Start-up Community. Past studies have shown various points of view in measuring entrepreneurial leadership; hence this study aims to determine the dimensions relevant to the topic. The findings validate the dimensions of Entrepreneurial Leadership, namely framing challenges, absorbing uncertainty, underwriting, building commitment, defining gravity, opportunity identification and exploitation, orientation towards learning, and creative collective self-efficacy. In addition, the findings contribute to the measurement reference of Entrepreneurial Leadership related to the creative economy development in the metaverse era.

Keywords: Entrepreneurial Leadership, Innovation, Metaverse.

1. INTRODUCTION

Technological development is believed to be able to solve future problems, but it needs to be integrated with humans (Noah, 2020), even though it has positive and negative impacts on life. In addition to facilitating human work, digital technology seemed to have eliminated the boundaries of people's privacy. The impact of the digital technology depends on the reaction of Human Resources. Therefore, the usage has made the technology a medium that connects humans without limits of distance and time (Setiawan, 2017). Leadership has a role in organizational performance, especially in the digital era. This is driven by the COVID-19 pandemic which forces communication technology to play a significant role in organizations. Also, digital leadership experiences style adaptation with technological mediation which affects performance by overcoming problems and being sensitive to opportunities to achieve

competitive advantage (Mustajab *et al.*, 2020). Meanwhile, adaptive leadership plays an important role in innovation (Coulombe, 2015).

Metaverse is a virtual world concept that allows humans to act and interact appropriately in real life. Information technology can make this happen in the future, which is currently characterized by metaverse elements like virtual reality (VR), augmented reality (AR), lifelogging, and mirror world (Bridges *et al.*, 2007). Furthermore, technological developments have driven the digital transformation of society and business, which is projected through a push effect. These developments promote radical change and a pull effect related to the ideas that drive technological advancements. Therefore, the metaverse is a liaison that functions as a unifying platform and design space for applications with high added value (Rehm et al., 2015).

Several big cities in Indonesia have pioneered various metaverse-based businesses starting with Non-Fungible Token (NFT) activities. Although the number of IT-based start-up is not systematically recorded, the start-up community has built an ecosystem that supports each other.

Initial observations showed the development of a metaverse-based start-up is influenced by leadership factors and community support through the help of IT experts. Therefore, this factor needs to be analyzed in depth to support the development of a metaverse-based start-up business.

Entrepreneurial leadership is an essential factor in promoting company innovation, which can lead to an exceptional performance. Various studies on innovation and creativity mediate the relationship between leadership and performance variables (Sethibe and Steyn, 2015). In business organizations, innovation is described to mediate the relationship between strategic leadership and performance (Jansen, Vera and Crossan, 2009). Other studies also explained that leadership factors have an important role in forming an agile organization (Rzepka and Bojar, 2020). Therefore, this study aims to identify business acceleration in information technology-based start-up that lead to metaverse-based. This identification refers to the role of entrepreneurial leadership and organizational innovation.

2. LITERATURE REVIEW

2.1. Entrepreneurial Leadership

Entrepreneurial Leadership (EL), which consists of two concepts, causes a gap in its understanding. According to Coglycer (2004), EL is divided into Leadership and Practice as mentioned in most literature. It was first concluded that EL is a practice in entrepreneurial activity that depends on each leadership style (Leitch, Hill and Harrison, 2010). Also, Ruvio (2009) explained that the difference in leadership style is due to the various visions among entrepreneurs.

Various literature presented dimensions for assessing Entrepreneurial Leadership. However, (Bagheri and Harrison, 2020) provided a compilation of several essential dimensions as follows:

 a) Framing challenges,

b) Absorbing uncertainty,

c) Underwriting,

d) Building commitment,

e) Defining gravity,

f) Opportunity identification and exploitation,

g) Orientation toward learning, and

h) Creative collective self-efficacy.

2.2. Organizational Innovation

Innovation is an endogenous variable of economic growth, which denotes being involved in using different methods in any economic life (Graen and Graen, 2013). All changes with the potential to generate wealth can become innovations (Seebode, Jeanrenaud and Bessant, 2012).

Choi and Lee (2015) used a dual-core model to explore the types of organizational innovation, from which the two dimensions "management innovation" and "technology innovation" were deduced.

1) Management innovation refers to the contributions of plans, organization, work, leadership, and control, which are purchased externally or already exist internally, affirmed by members of the organization.

2) Technological innovation implies the contribution of equipment, processes, and products, purchased externally or existing internally, which is confirmed by organization members.

This study used the Organizational Innovation Scale, which is measured by 10 adapted items from Al-Ansari (2014), covering the company's ability to find a better management and administration system, the internal culture, processes, products, services, supply chain, and marketing methods at a certain period.

2.3. Metaverse

Metaverse is a virtual world concept that permits people to act and associate suitably in real life. Therefore, information innovation can make it happen in the future, which is currently characterized by some components like virtual reality (VR), augmented reality (AR), lifelogging, and mirror world (Bridges *et al.*, 2007).

The Metaverse is based on advances that empower multisensory intelligence with virtual situations, as well as advanced objects and individuals. The representational devotion of the XR framework is empowered by stereoscopic shows that can communicate the recognition of profundity (El Beheiry *et al.*, 2019).

3. RESEARCH METHODOLOGY

This study used qualitative methods to explore data and information relevant to the variables. The quantitative data also supports the result of interviews to strengthen the arguments on the variables tested. The dimensions which build the variables become a reference in data collection and processing to answer the questions and objectives. Furthermore, interviews in FGD (Focus Group Discussion) are the method of data collection from resource persons who are start-up business owners in Bandung City, Indonesia. The selection of resource persons was determined based on membership and being active in the start-up community, especially in information technology which is currently leading to a metaverse-based business.

Triangulation of primary and secondary data was carried out to obtain results that answer the study questions. The results are preliminary for further research related to Entrepreneurial Leadership in a business context that leads to a metaverse-based approach. While quantitative data is processed to produce descriptive statistics so as to support the statements of the participants.

Table 1. Percentage of Participants

NO	ORIGIN	%
1	West Java	43
2	East Java	9
3	Central Java	5
4	Jakarta	17
5	Yogyakarta	2
6	Banten	8
7	Outside Java	2
8	Overseas	13
9	Unknown	1

The selected participants are metaverse-based start-up founders who come from various regions in Indonesia. Although the data did not find a structured database because the characteristic of this industry is that it is more flexible in the composition of business personnel, thus opening up opportunities for individuals and companies in the metaverse field to join the community.

Based on this data, the composition of metaverse-based start-up founders is dominated by West Java and Jakarta. However, the recorded big cities are quite representative of participants and respondents in Indonesia because the development of this metaverse-based start-up is still relatively limited.

4. FINDINGS

4.1. Leadership and Start-up

According to the data, Indonesian start-up in general can be identified based on the Ranking report which states that 2,346 start-ups are ranked in the top 5 (five) after the United States (US), India, United Kingdom, and Canada as presented in Figure 1.

Currently, a number of big cities in Indonesia have pioneered various metaverse-based businesses such as Bandung, Jakarta, Bali, and others, some of which are members of the start-up community. As previously explained, technological advancements have developed new business patterns based on virtual concept. Although there are 7 layers that provide a long journey in building a new digital world, many start-ups have entered the initial layer through NFT and Crypto.

Figure 1. Top Start-up in The World
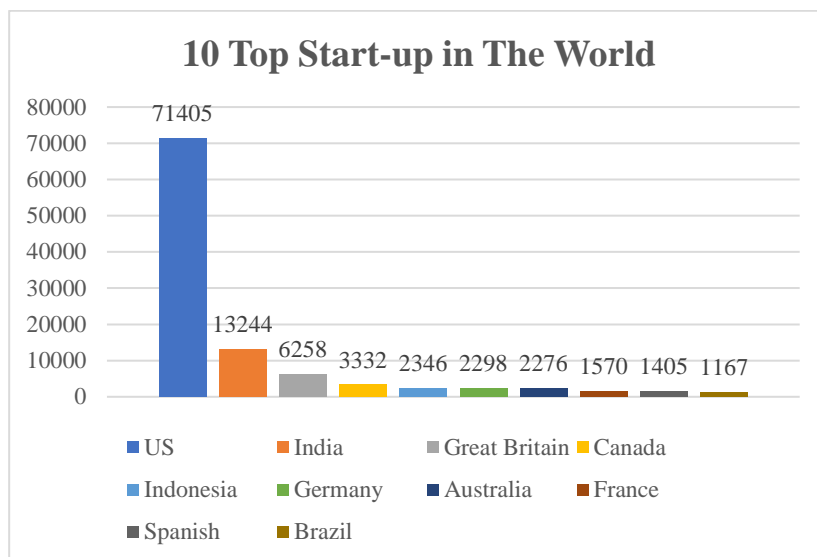
Source: Start-up Ranking (2022)

Based on the grouping in Figure 2, e-commerce start-up businesses constitute 36%, while other fields make up 54%. Metaverse-based start-up falls into another category whose exact numbers cannot be detected because of the community base that has free opportunities and is not administratively recorded.

Figure 2. Start-up Indonesia
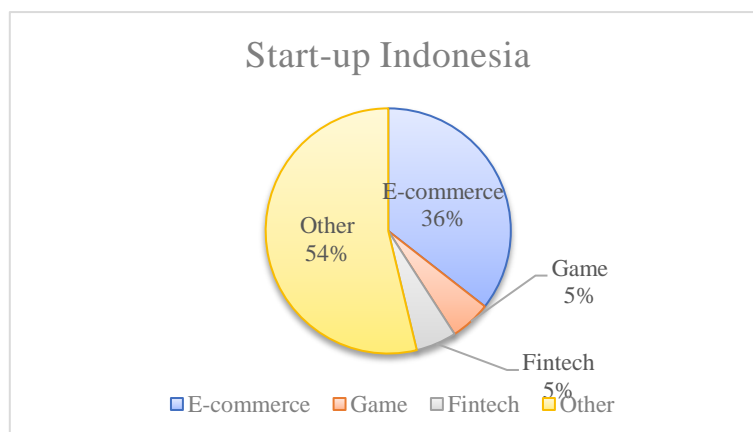
Source: Indonesia Digital Creative Industry Society (2019)

The Bandung Start-up Community has sheltered hundreds or even thousands of businesses from various fields. The exact number of memberships cannot be ascertained because, like the community in general, which is open, it has a very high and dynamic turnover. However, the "seniors", which denotes active business actors, can represent the role of the community in business growth and the development of contributive leadership.

Interviews in the Focus Group Discussions (FGD) explore information and experiences of business actors in interpreting the role of Entrepreneurial Leadership in promoting company innovation. The result refers to the business acceleration in the metaverse era, especially in Start-up in the Creative City of Bandung.

Figure 3. Origin of Community Member
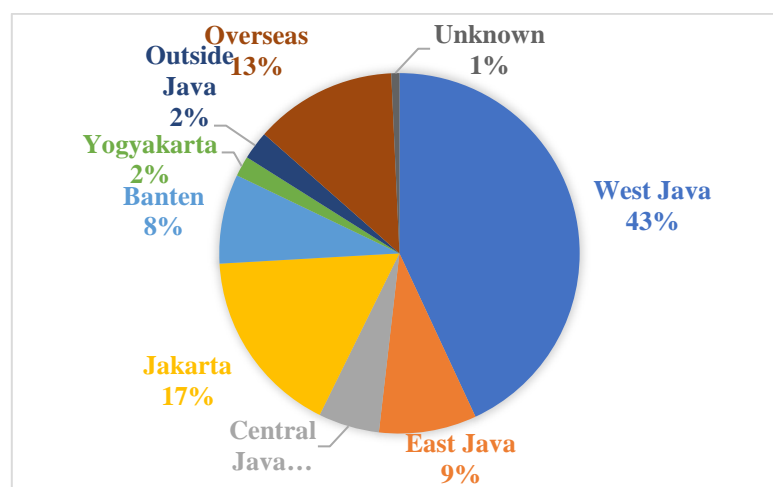
Source: Start-up Bandung Community (2022)

Start-up community membership can represent big cities in Indonesia. Although they are not systematically recorded, the level of activity through their presence in community events is considered good. Figure 3 shows the origin of the members of the start-up community. However, based on observations, the domicile of the members is not essential because in a metaverse-based business, it almost reduces distance, physical space, and time. The leadership factor is one of the key areas that will be discussed further in this study.

The interviewees agreed that leadership has an essential role in business because it is related to something that is not visible in the future, namely dreams, vision, and mission. Even information technology (IT)-based businesses are not always led by IT experts. This implies the leaders of IT-based companies are majorly those with a business mindset, while IT experts are reliable product developers. Another research explains that there are essential factors in the digital entrepreneurship ecosystem, namely explicit legitimacy and implicit norms, digital platforms, infrastructure, digital content, Fintech, digital literacy, and digital ecosystems (Purbasari, Muttaqin and Silvya Sari, 2021). Hence, a digital entrepreneur needs to optimize the use of opportunities to obtain digital skills, financial literacy, and digital content.

It was also agreed that the community has a vital role in business development because it provides a supportive atmosphere. In addition, the leaders are not meant to dominate the business, but to surf the organization to the community and collect useful ideas.

The findings of this study refer to the dimensions of entrepreneurial leadership and innovation variables. The discussion on these two variables is presented in the following section.

4.2.   Entrepreneurial Leadership

Qualitative methods through interviews were used to explore Entrepreneurial Leadership variables in metaverse-based start-up founders. In the FGD activity, the founders were asked about the dimensions of Entrepreneurial Leadership in 5 scales.

Quantitative data support the participants' statements in assessing entrepreneurial leadership in metaverse-based businesses. Table 1 shows supporting data collected from key participants of start-up founders.

Table 2. Data Display

GROUP	Framing Challenges (Xa)	Absorbing Uncertainty (Xb)	Underwriting (Xc)	Building Commitment (Xd)	Defining Gravity (Xe)	Opportunity Identification and Exploitation (Xf)	Orientation Toward Learning (Xg)	Creative Collective Self-Efficacy (Xh)
A	5	4	4	3	4	4	5	4
B	4.8	4	5	4	4	4	5	5
C	4.8	4	4	4	4	4	5	4
D	4.75	4	4	3	4	4	5	5
E	4.5	4	4	4	4	4	5	4
F	5	4	5	3	3	5	5	4

Based on the statistically analyzed data, descriptive statistics were obtained (see table 3). The average rating on the Entrepreneurial Leadership dimension is in the very good category. However, in the aspect of building commitment (Xd) it gets the lowest rating. These results support the statement of the informants that the metaverse business is quite dynamic, including the change of team members who tend to be flexible.

Meanwhile, the mean value of the data obtained is also in the same relative number. The trend values that appear frequently (modes) show similar results, namely the highest value on the dimensions of framing challenges and opportunity identification and exploitation and the lowest value on building commitment.

Table 3. Descriptive Statistics

	Xa	Xb	Xc	Xd	Xe	Xf	Xg	Xh
Mean	4.8	4.0	4.3	3.5	3.8	4.1	4.3	4.1
Minimum	4.5	4	4	3	3	4	5	4
Maximum	5	4	5	4	4	5	5	5

Based on statistical tests on the data obtained (tables 2 and 3), the results shown in table 4 mean that the mean values are significantly different across each dimension of Entrepreneurial Leadership.

Table 4. Independent Samples Test

	Mean	**Sig. (2-tailed)**	**Result**
Xa	4.8	0.000	Significantly
Xb	4	0.000	Different
Xa	4.8	0.060	
Xc	4.3	0.076	
Xa	4.8	0.000	
Xd	3.5	0.001	
Xa	4.8	0.000	
Xe	3.8	0.001	
Xa	4.8	0.006	
Xf	4.1	0.010	
Xa	4.8	0.048	
Xg	4.3	0.042	
Xa	4.8	0.005	
Xh	4.1	0.008	

A more detailed explanation is described in the discussion of each dimension based on the results of interviews with the informants who are respondents in the quantitative data collection of this study.

The resulting numbers describe the scale given by the founders for the Entrepreneurial Leadership dimension in their metaverse-based start-up circle. Therefore, the aspects of framing challenge and orientation toward learning receive the highest attention on the role of the leader towards team members and the future of the business. However, they agreed on all aspects of Entrepreneurial Leadership to be the key to business success in their IT field. Although it is known that the aspect of building commitment obtained the lowest scale even though it is in a good category. This is because, in a dynamic business, it is possible to change personnel at any time, but the commitment of the leader is the main key.

Table 5. Coding Result

No	Dimension	Discussion Frequency	%
1	Framing Challenges (Xa)	15	14%
2	Absorbing Uncertainty (Xb)	12	12%
3	Underwriting (Xc)	14	13%
4	Building Commitment (Xd)	10	10%
5	Defining Gravity (Xe)	13	13%
6	Opportunity Identification and Exploitation (Xf)	11	11%
7	Orientation Toward Learning (Xg)	15	14%
8	Creative Collective Self-Efficacy (Xh)	14	13%

The coding data shows that the most discussed dimensions are framing challenges (14%) and orientation toward learning (14%). These results are relevant to the results of the Entrepreneurial Leadership variable assessment which shows that the two-dimensional scale gets the highest rating. The detailed description of each dimension was further discussed through interviews and FGDs. The results of interviews and FGDs are descriptively presented in the following discussion.

Framing Challenges. This dimension directs the identification of business leaders' goals and performance standards both on an individual and corporate scale. Rapid changes in information technology and business demand continuous performance improvement through organizational development. Start-up face considerable challenges in the business industry such as finance, human resources, and production. In the leadership aspect, it is possible to change quickly and often due to changes in priorities.

Leaders are considered the spearhead of innovation and the company's future because they can spot opportunities than others. This future perspective is obtained from the ability to listen to the members and the community environment. Meanwhile, IT experts as developers support the action of realizing new things such as product creation and development.

A clear vision and mission leads the leader to carry out an effective division of tasks to achieve target goals. It also promotes the flexibility of the company's membership which can change, decrease, and increase as the situation adjusts. It is therefore important to adhere to the company's goals, and regardless of the personnel, the goal remains the same.

As an adaptive business in the era of high-level IT, organizational development continues to be carried out through the processes of "listening", "imagining", "discussing", "inferring", and "realizing". This process is speedy and frequent. With the rapid development of IT, start-up is currently far from entering the "metaverse" at a deep layer.

Absorbing Uncertainty. The leader is fully responsible for the company's activities, and have the authority to make decisions and give instructions. For start-up, the leader's "dream" is the key to business development by taking advantage of opportunities in a future full of uncertainty. The leader's beliefs and goals strongly influence the team members and give confidence in the company's targets.

The leaders often hold discussions in the community to obtain new ideas and input that can be adapted to their business. They can communicate visionary ideas to the development team and members to set common goals.

Underwriting. The founder's interpersonal skills determine the ideas and innovations produced by the company. This relationship promotes team members' confidence in the company's innovation. Many virtual innovations are involved in the metaverse-based information technology business, which are different from natural and tangible products. Many times, the concept of virtual product innovation is not clearly understood before a prototype is provided. Hence, the virtual innovation undergoes process stages from idea to finished product.

Interpersonal communication in business is a crucial activity to strengthen the company's goals. The applied interaction pattern does not distinguish a rigid organizational structure, therefore all team members can empathize with each other. The leader's profile serves as a guide for members to express opinions and propose ideas for the business.

Building Commitment. Start-up founders believe that they can't work alone. Companies that are in their early stages or have grown larger consist of parts of work played by their respective experts. It is good for all tasks to have a person in charge. Although, at the beginning, it would be very natural for the founder and team to carry many things (two jobs) because the work and human resources are still limited. This is a classic problem that all start-up experience.

Changes in team personnel are common, but in the recruitment of employees, it is necessary to ensure that they are in line with company goals. However, working in a business that is still being pioneered with swift changes requires a lot of patience and commitment. The founders say their dreams are still the same as those of 5-7 years ago. The company's goals are not achieved in a short time.

Founders believe that team members are optimistic about the company's goals not because of themselves but because of the leader's beliefs. The point is that the attitude and views of the founder will determine how the members will behave and work. But on the other hand, the members are given the freedom of opinion to feel they own the business and participate in its developing.

Defining Gravity. Although still at the outermost layer, entering a metaverse-based business requires integration between humans in the real world and a set of tools to realize products in the virtual world. This is why dreams and visions of the future supported by information technology is an exciting collaboration. It is important to make decisions and ideas quickly to keep up with the pace of technological change. Often, businesses fail to thrive because they miss the momentum which should be a leap that takes the company to the next level.

However, as start-up that is still far from the set goals, both founders and members need to understand the company's strengths and weaknesses to work effectively. In the era of practical and lean work, the built work culture needs to be minimalist. The founder has a reasonably strategic and technical roles because the business is still moving to the next level.

Opportunity Identification and Exploitation. In this aspect, the founders believe that the community plays an important role. The atmosphere created within the start-up community has nurtured the resilience of the business and sent a signal for growth. Non-Fungible Tokens (NFT) and crypto activities that are rapidly growing in recent times have opened up unlimited discussion spaces through digital communication. It is even more fun because the "seniors" who have already developed their business in NFT and crypto openly share their experiences and knowledge to motivate newbies to try new things.

People can know market insights and business competition through this community because metaverse-based businesses are still relatively limited. Besides being a new innovation, sometimes the concept is not easily understood, but knowledge about the metaverse is still very common to the general public.

The virtual business shows there will be a shift in product value starting from physical to virtual. Therefore, individuals who play in this business certainly have the same understanding and aspirations for the future. Communication through discussion and listening to many opinions and inputs is the main activity to get something new for the business.

Orientation Toward Learning. The founders thought every start-up should have a mentor, especially in information technology-based businesses and the virtual world. The population playing in it is relatively limited compared to other sectors. However, in Bandung, known as the Creative City, it is easy to find a creative community that accommodates various business fields. The Bandung Community consists of multiple start-ups, even those from outside the region. Meanwhile, crypto and NFT start-ups that are developing toward the metaverse form a separate group that discusses various business developments.

In addition to the open discussions in digital media forums, the community also helps founders develop themselves through online training, and opinion polls with team members. Some also receive coaching through a business incubator and mentoring assistance. These are essential because mentors usually help start-up optimize their potential to take advantage of available opportunities. The business incubator accompanies are more "systematic" by fulfilling critical aspects of the business formation, such as legality, product licensing, security aspects, and other elements that strengthen the organization and market.

Creative Collective Self-Efficacy. When the founders believe in the goal of a future full of uncertainty, then they know that their present resources are precious. Human resources are assets capable of developing others through problem-solving and bright ideas.

Brilliant ideas do not always fit the market, but they show that the organization lives on with the growing ideas. One of the start-ups based on NFT in Bandung stated that the founder leads the organization and plays an essential role. However, members' contribution is significant in carrying out the vision and mission to be achieved as one of Indonesia's work cultures, namely cooperation, denoting to bear work as a shared responsibility. In this culture, there is a mutual trust, where each individual has a contribution to solving problems and generating ideas.

4.3. Entrepreneurial Leadership on Innovation Metaverse-based Start-up

Innovation refers to novelty and improvement in various aspects of an organization, such as management and administration systems, internal culture, processes, products/services, distribution channels, and marketing segments (Al-Ansari, 2014). Most crypto and NFT start-ups are still speculating about the possibilities of the future, and moving towards a higher metaverse level.

As a business growing in the era of accelerated virtual communication, management is carried out virtually due to the COVID-19 pandemic. It is dominated by young people which resulted in a more relaxed work culture, but still prioritizes creativity. Therefore, the community plays a critical role in following the development of this sector's business.

Bandung, as a creative city, has relatively fast and comprehensive access to the development of innovative businesses, one of which is based on digital information technology. Creative resource support increases business start-up both in quantity and quality, fostering entrepreneurial leadership to thrive. One of the facilitation provided by the Government to support digital development is through the Bandung Sadayana application, which is home to all applications in the city. This aims to promote digital literacy for the community.

Additionally, before the COVID-19 pandemic, Bandung was known to have many open spaces that facilitated the community, including young people, to discuss and be creative. These are a manifestation of the government's concern for the creative potential of the city. After being hit by the COVID-19 pandemic, communication and coordination were facilitated using digital communication media, which brings them to virtual mentors. This factor has also accelerated the business development in the sector. At this time, metaverse-based businesses develop, such as crypto and NFT, as a gateway to enter the true metaverse.

Based on observations, no start-up has entered the metaverse at another level. Nevertheless, more start-ups are entering the crypto and NFT business, especially in 2021. Radoff (2021) explained that there are seven layers of metaverse, where experience is the outermost, and infrastructure is the innermost

4.4. Discussion

Based on a qualitative approach, it can be stated that leadership in business start-up has an essential role in reaching uncertainty in a metaverse-based business. This is viewed from the aspect of entrepreneurial leadership that results in innovation in the organization. This is reinforced by research showing that innovation and creativity mediate the relationship between leadership and performance variables (Sethibe and Steyn, 2015). In summary, it can be explained that Entrepreneurial Leadership is needed in business to promote organizational learning and creativity.

This pattern may be found in other sectors, but it suggests some specific conclusions within the start-up community based on the metaverse. The development of a metaverse-based business at the entry-level is strengthened by a community and open information traffic between companies and individuals. The community base with

no strata and no strict boundaries makes communication in sharing information, experiences, and knowledge more acceptable to members.

Although the metaverse is closely related to digital information technology, this study focuses on entrepreneurial leadership and its role in creating corporate innovation. The aspects of business leaders have been identified based on dimensions that build variables (Bagheri and Harrison, 2020). This includes how leaders view organizational goals and work standards. They can communicate openly to the team and boost creativity to promote business growth.

Further research will be carried out with a more comprehensive approach to quantitatively investigate the variables associated with organizational performance. Initial and follow-up research contributes to the literature and policy relating to leadership, especially in metaverse-based businesses.

5. CONCLUSION

The results of this study showed several conclusions regarding Entrepreneurial Leadership in promoting metaverse-based business innovation at Bandung Creative City Start-up, including:

- Community factors and virtual mentors support the practice of Entrepreneurial Leadership through digital media communication. This results in open communication and unlimited creativity.

- Founders who are dominated by young people with leadership and communication styles, as well as the ability to "listen" more openly promote the creativity of team members to contribute to business innovation.

- The founders agreed that the leader profile has a more critical role than the IT development function because it is a vision and a growth mindset that drives technological progress.

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