



Key Factors for University *Business Incubator Implementation* (UBI): Literature Review

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Abstract

Business and entrepreneurship are risky activities, especially for new business people. One of the ideal business incubators is the one created by the campus, which is referred to as the *University Business Incubator* (UBI). However, it is not easy to ensure that UBI successfully carries out its vision and mission, for that it is necessary to study *the Key Success Factors* (KPIs) of UBI's success. From the criteria set, 15 articles become the unit of analysis of this literature review research. The results of the review found 7 conclusions. First, there are 3 aspects in making UBI, namely organization, service, and measuring the success of UBI and tenants. Second, important organizational aspects are UBI management, capital support, technology, facilities, ideas, networks, strategies, as well as communication or promotion. Third, the aspect of services to be provided depends on the location of the country and the business character of the tenant. Fourth, the recommended physical services are office space and production space. Non-physical services recommended are training/ consulting/ assistance, capital support, technology, facilities and ideas, networks, strategies, and communication or promotion of tenant products. Fifth, the recommended training areas are business technical, marketing, finance and banking, export-import, law, human resources and product development. Sixth, the role of the academic community can be as experts, sources of business networks, and other support personnel. Seventh, UBI success measurement can be done using financial performance and can be combined with operational performance.

Keywords: Key Success Factors (KPIs), University Business Incubator (UBI), UBI organizational aspects, UBI service aspects, UBI success measurement aspects.

Introduction

The role of business and entrepreneurship in a country is very important, so the government will always try to create conditions that support business progress in the country (Alpenidze et al., 2019). Unfortunately, business activity is an activity that requires sufficient

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capacity and is risky, especially for new business people. They have to bet with other business people who are more experienced (Aramesh & Dehghani, 2019). Therefore, new business people need more support so they can survive and grow.

The unit that supports these new businesses is the Business Incubator. Business incubators are a key component in business ecosystems in all countries and can support economic growth (Siddiqui et al., 2021) in a sustainable manner (Ahmed et al., 2022) and innovation (Muslim Saraireh, 2021). The important role of business incubators is considered very crucial for business people who are in the start-up and growth phases (Alpenidze et al., 2019); (Aramesh & Dehghani, 2019). The important role of business incubators is the reason for the growth of research on business incubators (Alpenidze et al., 2019). Business incubators themselves have been highly developed in the world, with various forms and scopes of coverage provided (Aramesh & Dehghani, 2019). Business incubators will support accelerated business growth, support the economy, and save money and time in doing business (Alpenidze et al., 2019).

Research on business incubators is mostly conducted in North America, Europe, and developed countries such as East Asia. Relatively, there is still little research on developing country areas such as countries in Southeast Asia (Dahms & Kingkaew, 2016), including Indonesia. Whereas in developing countries the need for business incubators has proven to be important (Wang et al., 2020).

The important role of business incubators in Indonesia is also undeniable. The condition of the Indonesian workforce that has not worked much is one of the reasons for the need for the growth of new businesses and the role of business incubators (Solihin et al., 2020). In Indonesia itself as a developing country, this is a new concept (Dutt, N., Hawn, O., Vidal, E., Chatterji, A., McGahan, A., & Mitchell, 2016) so it needs special attention.

The incubator business itself can be carried out by various parties such as the government, private companies, NGOs, and campuses (Soltanifar et al., 2012). In addition, the campus is also expected to have a role in building a business incubator. Business incubators on campus are different from other business incubators (Redondo & Camarero, 2019). And this campus business incubator is considered the most important fact in the growth of business incubators in general (Siddiqui et al., 2021).

Unfortunately, Indonesia's current condition is still not ideal. The number of campuses in Indonesia that already have new business incubator units is around 80 universities serving 4504 new business people (Solihin et al., 2020). Universities are considered as one of the suitable units to manage an incubator business. First, Higher Education has lecturers who generally have the capacity to understand business (Adhana, 2020). The second, campus is a unit that produces new graduates who have the potential to become new business people. Third, universities and lecturers, especially in Indonesia, are required to undergo community service, one of which can be in the form of activities in business incubators. And fourth, campuses must conduct research, and business people need the results of this research (Hassan, 2020).

On the other hand, higher education institutions and lecturers generally have limitations due to the characteristics of their expertise. Universities and lecturers have scientific characteristics that are thicker than practical business knowledge in the field. Indeed there are some campuses and lecturers who have the qualified practical scientific capacity, but in

general, this is not the case. On the other hand, tertiary institutions also have financial limitations, because in general they still have to prioritize teaching and research aspects.

This research was created to support the aspirations of campus business incubators throughout Indonesia, especially STIE IBS. This condition is the basis for studying the most important factors to further ensure the success of business incubator units organized by universities, especially the Indonesia Banking School. It is hoped that Universities and especially STIE IBS will not start from scratch, and will more quickly increase the effectiveness of the business incubator unit. STIE IBS or other campuses that have economics and business faculties will benefit more because they are considered to have a greater chance of success in holding campus business incubators (Elena, 2014).

Literature Review

Business Incubator Definition and Scope

The incubator business has been developing for the past fifty years (Alpenidze et al., 2019). In general, it is a unit that carries out processes to support clients to survive and develop themselves during the initial phases of patient behavior (Marlow, S., & McAdam, 2015); (Ayatse et al., 2017). The designation for businesses that are supported by their own business incubator units is called tenants, incubators, or clients. If a client no longer needs Business Incubator support, then the client can be considered a graduate. The period of being a client of the Business Incubator is called the incubation period.

In its development, the definition, form, and scope of business incubators have also developed. is an organizational unit that supports new companies and start-up companies in the form of management consulting services and office unit support (Alpenidze et al., 2019). Other researchers say that is to support, provide consultation, and networking (Carletto et al., 2017). Forms of support can be in the form of financial and non-financial support (Alpenidze et al., 2019). It can be seen that the scope of support provided by business incubator units can be diverse.

The new business incubator unit must determine the scope of services to be provided to its clients. There are 2 issues related to determining the scope of business incubator services, related to cost-benefit considerations. The first is from the aspect of benefits for the Client. It suddenly matters a certain type of service required by the client. For example office space services, meeting space, and the like. Do they really need it? Or they need more capital or legal aspects, for example. Both are from a perspective unit. Each service costs money for its implementation. Of course, the most ideal is a unit that is able to provide all the services needed by clients. As a one-stop service unit. However, limitations may force the business incubator unit to choose which services are most needed by the client and can be provided by the business incubator unit.

Business Incubator Performance Measurement

The attitude unit aims to support the client to survive and develop himself during the initial phases of the attitude (Marlow, S., & McAdam, 2015); (Ayatse et al., 2017). The

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assumption is that it is in this initial phase that the client needs external support. If you have been able to go through the initial phase, survive and grow, then the client can do business by relying on his own capacity.

In order for the objectives of the Business Incubator to be achieved reliably, measurement tools are needed regarding the performance of the Business Incubator. According to (Albort-Morant & Ribeiro-Soriano, 2016), there is no standard methodology for measuring business incubator performance. Research researchers still experience difficulties in answering questions regarding the positive impact of Business Incubators empirically (Alpenidze et al., 2019). The amount of information on this matter is also limited (Alpenidze et al., 2019).

On a practical level, all Business Incubators are required to have performance measures as their professional responsibility. The aspect that can be measured can be the performance of the Business Incubator unit itself, but can also measure the performance of the client. If you want to measure the performance of your own Business Incubator, is it operational performance or financial performance, or based on the level of client satisfaction? Operational performance measurements that can be carried out, for example, are the success of the Alpenidze & Sanyal training (Alpenidze et al., 2019). The balanced scorecard framework can be an alternative measurement.

If you want to measure based on client success, one of the issues raised is measuring the time the Business Incubator benefits to clients. Is the focus during the incubation period or should it be extended until the client has graduated. Generally, the incubation period is 2 to 3 years. And if the Business Incubator wants to know the performance and survival rate of clients who have graduated, the Business Incubator has to wait up to 4 to 5 years after the client graduates (Dutt, N., Hawn, O., Vidal, E., Chatterji, A., McGahan, A., & Mitchell, 2016).

Another interesting issue is the condition of the Business Incubator itself. When it was just founded, the Business Incubator was actually a new entity that was still learning. If not managed properly, the Business Incubator may not run. Does a new Business Incubator need to be incubated by a more experienced Business Incubator?

Internal Aspects of the Business Incubator

This internal aspect of the Business Incubator plays a key role in supporting the success of the Business Incubator, particularly in relation to its resources and capabilities (Alpenidze et al., 2019). The capacity possessed must be able to provide the facilities and training programs or consultations needed by clients (Alpenidze et al., 2019).

This internal aspect is closely related to the scope, type, and number of services provided by a particular Business Incubator. The wider and deeper a service, the more internal capacity of the Business Incubator is required. For example, if you want to provide services related to accounting. Does the Business Incubator service provide accounting software, or provide special access to certain accounting software developers, or is it just accounting training or accounting consulting? Likewise with support for other aspects such as legal aspects for example. As with the accounting aspect example, the Business Incubator must decide whether to provide only legal training modules or provide a network of notaries and lawyers, or just general legal advice.

Research methods

The form of this scientific article is a literature review. This literature review is said to be increasingly relevant in current conditions, especially in the field of business research (Snyder, 2019). Current conditions require perspectives from various fields of science so that they are closer to actual business conditions.

There are 3 types of Literature Review namely systematic approach, semi-systematic approach, and integrative approach. Each approach has different objectives, characteristics, and methods. This study uses a systematic approach. According to (Snyder, 2019), a systematic approach is an approach to knowing something (what is it?) and under what conditions can something be used (when should we use it?).

1. Awakening Goals

The purpose of this Literature Review is to find the factors needed so that the implementation of Business Incubators by Universities in Indonesia can run well. In the current conditions, Indonesia urgently needs a business incubator, and universities are one of the parties that can be relied on to create business incubator units. Unfortunately, the condition of business incubators in developing countries, including Indonesia, is still in its early stages (Dutt, N., Hawn, O., Vidal, E., Chatterji, A., McGahan, A., & Mitchell, 2016). Business incubators organized by universities are still not massive (Solihin et al., 2020). So that guidance or knowledge is needed to support the implementation of Business Incubators by universities to run well.

2. Research question

The general question that this Literature Review wants to answer is how the key success factors are needed so that Business Incubators organized by Universities can run well. A literature review with a systematic approach looks for more specific research questions. The above factors are made more specific, namely:

- What is the best form of Business Incubator organizational unit by College? Is it within the structure, or is it a semi-autonomous body? Or is it an autonomous body? What internal aspects should a Business Incubator have? Have competency expertise, IT support, and aspects of financial capital.
- Widespread surprise how deep of support or service a Business Incubator will choose?
- How to measure the success of a Business Incubator? Search strategy and sample characteristics.

3. Search strategy dan Sample characteristics

The strategy for searching journal articles with a systematic approach must also be systematic. For that, the keywords from the start have been determined. The keywords used are “university business incubator” as well as “best practice principle business incubator”, with coverage areas around the world. However, priority will be given to the Analysis, namely, Business Incubators owned by Universities, Business Incubators from Indonesia, Developing Countries, and the world. Articles are searched using Google Academic.

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The current business conditions are changing rapidly and moving. Because of that, the condition of the knowledge needed must also be more up-to-date, so that it can be more relevant to current conditions. Therefore, the articles that will be reviewed are newly published articles. The time criteria for publishing articles are articles in 2020, 2019, and 2018.

The main sample characteristics to be reviewed are quantitative samples. However, qualitative articles will also be used as additional references.

Results and Discussion

Found 176 articles that met the search criteria with the keywords "university business incubator" and "best practice principles business incubator" with the year 2019-2021. Of the 176 articles, there were 15 articles that met the criteria for use. Articles that cannot be used are generally because they are not relevant to the research question or are not empirical research.

15 The article is:

1. Mavi, RK, Gheibdoust, H., Khanfar, AA, & Mavi, NK (2019). Ranking factors influencing strategic management of university business incubators with ANP. *Management Decision*, 57(12), 3492-3510.
2. Wolniak, R., Grebski, ME, & Skotnicka-Zasadzień, B. (2019). Comparative analysis of satisfaction levels with services received at business incubators (Hazleton, PA, USA and Gliwice, Poland). *Sustainability*, 11(10), 2889.
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5. Ahmed, N., Li, C., Qalati, SA, ur Rehman, H., Khan, A., & Rana, F. (2020). The impact of a business incubator on sustainable entrepreneurial growth with a mediating effect. *Journal of Entrepreneurship Research*, 1 (before printing).
6. Klonaridis, R. (2020). Comparison Between South African Service Industry Sector Requirements From University Business Incubators. *International Journal of Business and Management Studies*, 12(1), 225-240.
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10. Wu, W., Wang, H., & Wu, YJ (2020). Internal and external networks, and incubation performance in dynamic environments: mediating effects of entrepreneurial learning. *Journal of Technology Transfer*, 1-27.

11. Hou, B., Hong, J., & Yang, Y. (2020). Geographic aggregation and incubator graduation performance: the role of incubator assistance. *European Journal of Innovation Management*.
12. Bose, MS, & Goyal, D. (2019). Critical factors for the success of agribusiness incubators and their impact on business. *Custos E Agronegocio On Line*, 15(1), 352-378.
13. Zhang, L., Gao, P., Zhou, Y., Zhang, Y., & Wang, J. (2019). Survival through Incubation Based Entrepreneurial Human Resource Development: The Role of Moderating Tenant Network Engagement. *Sustainability*, 11(10), 2866.
14. Osiobe, EU, & Winingham, K. (2020). Why do Universities Create and Foster Business Incubators?. *Journal of Small Business and Entrepreneurship*, 8(1), 1-12
15. Ahmed, Li, Khan, Qalati (2020). Structure of Entrepreneurial Growth Opportunities: The Mediation and Moderation Role of Business Incubators and Government Regulation. *Pacific Business Review International*, 12(7), 114-131.

Organizational aspects of Business Incubators by Universities

University Business Incubator (UBI) needs to prepare conditions that support its success. Several things were conveyed by previous studies. These critical success factors are actually general factors, which also apply to other organizations or companies.

The first factor that is important for IBU to have is the quality of UBI Management (Kiani Mavi et al., 2019); (Bose et al., 2019). One thing that is important to note is the quality of the Management at IBU. Managers who are able to work well will be able to prepare other factors needed to support the success of UBI. This factor is a factor that is generally accepted, for UBI, other business incubators, companies, or other organizations.

The second factor is the support of capital, technology, facilities, and ideas (Kiani Mavi et al., 2019). In fact, this factor can still be said to be a general factor. Without adequate capital, the organization cannot run. While technology is an important factor to increase the effectiveness and efficiency of processes in the organization. UBI's facilities are also important. Not only for the UBI operation itself but also related to the services needed by tenants. Tenants, for example, need office support, both virtual and physical offices.

The third important factor owned by UBI is Network (Bose et al., 2019); (Zhang et al., 2019). This third factor is also generally needed by organizations and companies in general. Companies need a network to be able to access raw materials and sell their products. However, specifically for the Business Incubator or UBI, the network war is more important. This is because one of the main services of UBI must be supported by a qualified network.

This network includes networks with internal resources, as well as with external resources (Wu et al., 2021). The external network that UBI is expected to have, for example, is a network of professionals (Wolniak et al., 2019). Related to networks, the more number of Incubator businesses in an area, the more it will support the success of the Incubator business as a whole (Hou et al., 2022). This is because the greater the number of incubators, the greater the opportunity for networks to form.

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To expand the network, especially for lecturers, students, and volunteers, it is necessary to understand their motivation to join. The three things that motivate them generally are gaining professional experience, networking with professionals, and increasing self-satisfaction (Wolniak et al., 2019).

The fourth factor is related to the UBI strategy aspect. UBI must have a clear mission, which forms the basis for the formation of UBI (Bose et al., 2019). Without a clear vision and understanding by UBI management, business processes will become unfocused and inconsistent. UBI must also be able to prepare strategies that suit the needs of tenants, for example inserting more flexible consulting service times (Dhochak et al., 2019). UBI should also focus more on the incubation period, not on the pre-incubation or post-incubation periods (Dhochak et al., 2019). Besides that, UBI is also reminded that it is able to maintain business secrets from its tenants.

The fifth factor that is also important for UBI is the process of communication or promotion with prospective tenants and other parties. For this reason, it is recommended that UBI use the media, namely business meetings, and references, take a direct approach, use educational institutions, and finally use mass media (Dhochak et al., 2019).

UBI service aspects

The UBI services reported to have been carried out or expected by tenants were quite varied. This variation is caused, for example, by the country in which UBI operates (Wolniak et al., 2019). This research, which was conducted in the USA and Poland, found that the business situation between countries is different so the support needed by start-up businesses is also different. Apart from that, it was also emphasized that UBI services must take into account the type of industry that will be supported (Klonaridis, 2020). Each industry has unique service needs (Klonaridis, 2020), and also has different business "target markets", the size and capabilities of businesses are different .

It is implied that UBI is better off specializing in serving tenants who are in the same industry. Especially if UBI's resources are limited. On the other hand, it is also implied that each UBI is in their respective country, and operates in a particular industry, it is necessary to know the services that are most needed by prospective tenants. UBI cannot copy services from other UBIs directly. Must consider and consider the location of the country and the type of industry chosen.

However, in general, services from UBI consist of two groups, namely services that are physical and those that are non-physical. The physical services delivered are offices or production spaces, including the administration/management of these offices or production spaces (Muslim Saraireh, 2021); (Wolniak et al., 2019). Even research by Dhochak, Acharya, & Sareen, (2019) in the USA found that the most important service during the incubation period in America was office space.

The most frequently mentioned non-physical services are training, consulting, and assistance for tenants (Muslim Saraireh, 2021);(Wolniak et al., 2019); (Dhochak et al., 2019); (Siddiqui et al., 2021); (Ahmed et al., 2022); (U. Osiobe & Winingham, 2020). The importance

of training, consultation, and assistance even applies to the pre-incubation phase, the incubation period, and after incubation (Dhochak et al., 2019).

The next issue to be discussed is what type of training/consultation/assistance is required of the tenants. The types of training/consultation/assistance mentioned are for example regarding business technical factors (Muslim Saraireh, 2021), marketing including market analysis (Wolniak et al., 2019); (Dhochak et al., 2019). Finance and banking (Wolniak et al., 2019); (Dhochak et al., 2019), export and import (Wolniak et al., 2019), law (Wolniak et al., 2019), as well as other business aspects such as HR and product development (Dhochak et al., 2019).

The following service that is generally important for business incubators to have is financial support (Muslim Saraireh, 2021); (Ahmed et al., 2022); (Li et al., 2020); (U. Osiobe & Winingham, 2020); (Dhochak et al., 2019); (Siddiqui et al., 2021), business network support (Wolniak et al., 2019); (Ahmed et al., 2022); (Li et al., 2020); (U. Osiobe & Winingham, 2020); (Dhochak et al., 2019); (Redondo & Camarero, 2019); (Siddiqui et al., 2021). And support related to legal issues (Wolniak et al., 2019) especially for campus business incubators, it was also conveyed that services from UBI must include the academic community, starting from lecturers, students, and alumni. Both as experts and HR as other supports (Wolniak et al., 2019).

UBI and tenant success measurement

The third thing discussed is about measuring the success of UBI. The research results of (Dhochak et al., 2019). Revealed that the measurement of UBI's success is based on financial performance, followed by the number of tenants served, the number of tenant graduates per year and new jobs generated by tenants.

Other researchers specifically convey UBI success indicators for various factors owned by UBI (Siddiqui et al., 2021). These factors and indicators are:

1. *Competency Development: Hours of coaching and mentoring*
2. *Access to Funds: Attractive total investment*
3. *Competency Development: Total service and support*
4. *Incubator Governance: Experienced incubator manger*
5. *Economic Boost: Number of jobs created*
6. *Access to Funds: Interested average investment*
7. *Entry Criteria: Number of advanced technology projects*
8. *Improved Economy, Total revenue for the project*
9. *Incubator Governance: University links*
10. *Access to Funds: The attractiveness of early funding*
11. *Talent retention: An effective start for graduates*
12. *Alumni Engaged: Number of companies with high growth rates*
13. *Economic Improvement: Number of graduates*
14. *Shared Services: The importance of business services*
15. *Shared Services: The importance of professional business*
16. *Shared Services: The importance of management assistance*

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- 17. Talent Retention: Continuous improvement for graduates*
- 18. Alumni Engaged: Number of Attraction Programs*
- 19. Alumni Engage: Alumni engagement per support*
- 20. Access to Network: Number of events performed*
- 21. Engaged Alumni: Project survival rate in the first year*
- 22. Alumni Engaged: The number of interested sponsors*
- 23. Engaged Alumni: Five-year project survival rate*
- 24. Access to the Network: Number of partners*
- 25. Entry Criteria: Able to pay operational costs*
- 26. Entry Criteria: Affiliated with university*
- 27. Entry Criteria: Deadline for renting*
- 28. Economic Boost: Number of IPOs*

Conclusion

From the results of a literature review that has been carried out on 15 articles that meet the criteria, there are several conclusions:

1. In general, there are three factors that need to be considered in making a *University Business Incubator* (UBI), namely organizational aspects of business incubators by universities, aspects of UBI services, and measuring the success of cassava and tenants.
2. Important organizational aspects for UBI are UBI management, capital support, technology, facilities and ideas, network, UBI strategy, and communication or promotion.
3. The recommended service aspect for UBI depends on the location of the country and the character of the business being run by the tenant.
4. The general service aspects that are recommended are physical and non-physical services. The recommended physical services are office space and production space, including the cargo inside. Recommended non-physical services are training/consulting/assistance, capital support, technology, facilities and ideas, networking, UBI strategy, and communication or promotion.
5. Recommended training areas are business technical, marketing, finance and banking, import and export, law, HR, and product development.
6. There is a specificity of UBI compared to other business incubators, namely that UBI has the role of the campus academic community, namely lecturers, students, and alumni. The role of the academic community at UBI can be as experts, business networks, or other support staff.
7. Measurement of the success of UBI can be done using financial performance and can be combined with operational performance.

Recommendation

From the results of the literature review that has been carried out, the following are suggestions that can be considered for implementation:

1. For Universities that wish to establish UBI, it is necessary to determine the objectives and capacities of the campus. This is the basis for the scope fee that will be owned by UBI.

2. The campus needs to strengthen the UBI organization that will be built, by assigning reliable management, and adequate capital, including networks to support the success of UBI.
3. UBI needs to study the specifications of the business to be served. The business character will determine the type of service that will be provided by UBI.
4. UBI needs to prepare a method for measuring the success of UBI. UBI performance measurement results can be considered for the next purchasing strategy.

Declaration of conflicting interest

The authors declare that there is no conflict of interest in this work.

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