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The importance and effectiveness of assistance programs in a business incubator

Abstract

This research was conducted to examine the importance and effectiveness of assistance programs in a business incubator. Business incubation is a process aimed at supporting the development of growth orientated, early stage business enterprises. This process provides entrepreneurs with a supportive environment to assist with the reduction of costs associated with a start-up business, increases the confidence of the entrepreneur, assist in developing a network and link the entrepreneur to resources required to scale up his/her enterprise. The business assistance programs offered characterize incubators. The business assistance programs are facility related services, counseling related services and networking services. The quality of these services is critical for the success of start-up enterprise and could be central to an improved set of services offered by an incubator program.

Despite the popularity of incubators, limited research has been conducted on the tenant's perspective on the importance of the business assistance services and how effective the incubator management is in providing these services. This study provides evidence that the tenants have varied levels of importance and effectiveness of the business assistance programs offered. In addition, the study reveals that selected services are more favored while some services are regarded as unimportant. It is evident that some tenants rate the importance of some services high but the effectiveness of the incubator management as low in providing these services. A clearer understanding of the tenant's requirements will allow for better utilization of resources, resulting in a more focused incubator program leading to more business skilled tenants graduating from the incubator program.

Keywords: business incubator, importance, effectiveness, assistance programs, incubator management, tenants, services.

JEL Classification: O1.

Introduction

Since the early 1980's, business incubation programs have been developed as an important economic strategy in both developed and less developed countries for enterprise development (Adegbite, 2001). Many start-up enterprises fail during the first five years due to various factors such as insufficient capital, lack of managerial and entrepreneurial skills, limitations in the technical field, and competition (Welsh and White, 1981; Martin and Staines, 1994; Chetty, 2003). According to Rice (2002) and Lalkaka and Bishop (1996), potential start-up enterprises are selected to become successful by providing them with a wide range of business assistance services and programs and within an agreed time period, these enterprises graduate from the incubator to become more independent and self-sustaining enterprises in the business community.

These assistance programs and services can be grouped into three groups. The first group, the facility related services group, relates to the office equipment, shared office equipment, affordable and flexible space and credibility and visibility. The second group, business related services consists of a research and development programme, training,

financial management, employment assistance, sales and marketing, business and strategic planning, general counselling, mentoring and the development of entrepreneurial skills. The third group comprises of services related to information sharing, business with other tenants and access to external networks (Abduh et al., 2007).

However, despite the increase in the number of business incubators and academic literature on business incubators, literature on this study topic has been limited (Allen and McCluskey, 1990; Abduh et al., 2003). There is limited research that provides insights from tenants on their perception of the importance and effectiveness of these services (Abduh et al., 2007). The incubator concept has its merits, but it is critical to measure the importance and effectiveness of incubator services as it reflects the success of incubator's offering. The quality of these services would be critical for the success of start-up enterprise and could be central to an improved set of services offered by an incubator programme. This could be translated into an improved skill sets leading to increased employment, increased innovation and taxes into the economy. Studies of a similar nature have been conducted in Australia (Abduh et al., 2007) and in China (Xu, 2010).

The study provides insights into the tenant's perceptions of the importance and effectiveness of the three groupings of business assistance services provided by an ICT Business Incubator, based in Durban, South Africa.

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1. Literature review

Business incubators nurture young enterprises by assisting them to survive and grow during the most vulnerable start-up period (Aernoudt, 2004). Business incubation is a process aimed at supporting the development of growth orientated, early stage business enterprises. This process provides entrepreneurs with an enabling environment to assist with the reduction of costs associated with a start-up business, increases the confidence of the entrepreneur, assist in developing a network and link the entrepreneur to resources required to scale up his enterprise (Khalil & Olafsen, 2009).

The National Business Incubation Association (NBIA) defines an incubator as a “business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its network of contacts. A business incubator’s main goal is to produce successful firms that will leave the program financially viable and freestanding. These incubator graduates have the potential to create jobs, revitalize neighborhoods, commercialize new technologies, and strengthen local and national economies” (www.nbia.org/resource_library/what_is/).

According to Gassmann and Becker (2006), an incubator offers tangible and intangible business support. The most important tangible service offered by the incubator program, is access to an operating space and shared facilities. The intangible services offered by the incubator comprises of advice and guidance that assists start-up companies to manage their businesses. The guidance and advice is related to management, marketing services, strategic planning and product development. It is generally recognized that few businesses succeed in their early years due to management issues and under-capitalization reasons (Allen & Rahman, 1985; Aernoudt, 2004). According to Allen and Rahman (1985), entrepreneurs may have considerable knowledge about market niches because of their previous experience in larger firms that usually involves related products but often lacks full array of business skills.

It is in the provision of tangible and intangible services that an incubator facilitates a functional and critical role. An incubator assists to fill in the knowledge gaps, reduces operational costs at the early stage of business such as rental and service fees, and establishes a supportive network (Allen & Rahman, 1985; Khalil & Olafsen, 2009). An incubator influences the entrepreneurial environment

and the main objective of an incubator is to produce successful firms that will exit the incubator program financially viable and free standing within a time period (Aernoudt, 2004). Incubators can be categorized into three groups of aims, firstly, to accelerate the development of firms; secondly, improve the rate and quality of wealth of firms and job creation; and thirdly, to provide opportunities for enterprise development in the wider community (Hannon & Chaplin, 2003).

However, any incubator program has to offer the correct assistance programs to be able to produce successful firms. The correct assistance programs can be established by understanding the effectiveness and importance of the programs as perceived by the tenants (Stel et al., 2005).

1.1. Business assistance services. The reasoning for the business assistance services by incubators is due to the fact that a large percentage of start-up businesses do not have the necessary resources and skill factors to prevent them from failing (Rice & Matthews, 1995; Peters et al., 2004; Buys & Mbewana, 2007; Niamen & Niewenhuizen, 2009). Entrepreneurial start-ups do not have sufficient knowledge about business competencies to operate a business resulting in dealing with critical problems during their start-up period (Studdard, 2006). Incubators provide a supportive role in providing assistance programs and services (Studdard, 2006) that assist tenants to overcome these critical problems. Business incubators offer tangible and intangible services and these services are grouped into three main groups. They are (1) facility related services, (2) business assistance services and counseling and (3) accessibility to incubator networks (Abduh et al., 2007).

1.2. Facilities related services. Facility related services refer to affordable rent, flexible space and shared office equipment and services. Affordable rent and office equipment and services are the initial start-up costs for SMMEs and are a major expense to any start-up business (Hannon & Chaplin, 2003; Xu, 2010).

The most unique characteristic of incubators is the provision of facilities at a lower price compared to the market place. Incubators provide tenants with rentals below market rate and flexible space when a tenant requires it. Tenants are also provided with shared office services and equipments that they would not be able to afford as a start-up which is critical for their survival. This practise of services at reduced prices provides opportunities to reduce expenses (Porter, 1985; Govindaranjan & Fisher, 1990; Abduh et al., 2007).

1.3. Business assistance related services.

Counselling and business assistance include a range of business development assistance services. These services include support in strategic planning, developing a business plan, financial management, sales and marketing services, accounting, legal services, and education on government regulations, employment services and product development. Incubators also offer seminars, short educational and training courses. Incubators also assist tenants to obtain capital by acting as facilitators between the tenant and the potential investor or a financial institution, or a government development agency. The benefits of these services may increase entrepreneurial and management skills, a shorter learning period, access to more business information, increase confidence, reduce business costs, and most important, accelerate the development of the business (Lalkaka, 2002; Abduh et al., 2007).

1.4. Accessibility to internal and external incubator networks.

A tenant accepted into an incubator is provided with a wide access to the incubator’s network to extend the sources of information, transmitting information between tenants, reducing business costs, and building markets (Hansen et al., 2000). An incubator creates opportunities and a conducive environment by locating tenants under one physical establishment with common facilities like a cafeteria

and meeting rooms. This allows tenants to communicate, share information and resources and experiences and communicate with each other about the difficulties and success of their ventures (Lichtenstein & Lyons, 1996; Molnar et al., 1997).

1.5. Framework for estimating tenant’s effectiveness and importance levels of services offered.

Due to the exploratory nature of the study, the researchers adapted the SAMAT framework developed by Abdul (2007). The framework developed by Abdul (2007) is a matrix comprising of the horizontal axis, which represents the tenant’s perceived importance of the service offered by the incubator program and the vertical axis represents the effectiveness of the incubator management in providing the service.

Abdul (2007) defines importance as the tenant’s expectation “in terms of how much importance is attached to the services as a whole.” In this research study, importance is defined as the tenant’s perception of how important a service is to his/her business environment. The vertical axis represents the tenants’ perceptions in terms of the effectiveness of the services as offered by the incubator management. The framework (Figure 1) has four cells representing the levels of the tenant’s importance and effectiveness with the services offered by the incubator program.

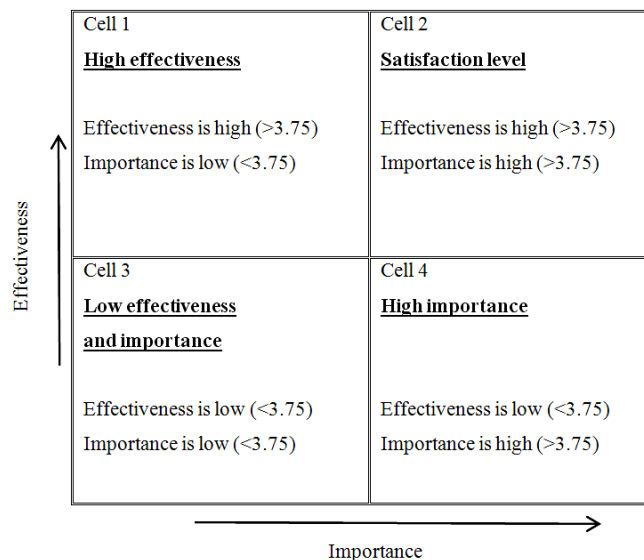


Fig. 1. Modified SAMAT model

Cell 1 reflects a situation where tenants rated the effectiveness of the incubator management as high in offering a service but rated the importance of the service as low. Cell 2 represents a situation where tenants rated the importance as high and the effectiveness of the incubator management as high in offering a service. Cell 3 represents a situation where tenants have rated the effectiveness and importance as low. Cell 4 represents a situation

where tenants have rated the service as important but rated the incubator’s management effectiveness in providing this service as low.

2. Research methodology

2.1. SmartXchange. SmartXchange is a not for profit technology incubator located in Durban, South Africa. At the time of the research, the incubator population was 48 tenants. It runs a

structured Entrepreneur Support Program to provide business support and services to resident and non-resident entrepreneurs.

2.2. Population size. All forty-eight tenants companies are in the professional service businesses and are connected to the ICT infrastructure. Twenty are residential incubator tenants and twenty-eight are virtual incubator tenants and reside off premises. Virtual tenants are no longer tenants at the SmartXchange building but are active in the incubator program. Tenant companies are a mix of contract development firms and those having developed proprietary solutions and are marketing them to a wide range of domestic and international clients. Since the population size was low (48 tenants), it was decided to target all the tenants at SmartXchange and therefore a census was carried out to collect data.

2.3. Questionnaire. A quantitative study was conducted using a questionnaire to collect data. The first part of the questionnaire consisted of questions pertaining to the company’s profile. The second part of the questionnaire comprised of questions relating to the services and facilities offered by the incubator. The respondent was requested to indicate the following:

- ◆ Have you utilized this facility or service?
- ◆ How does the respondent rate the importance of the facility or service?
- ◆ Has the facility or service been effective in growing the respondent’s business?

The respondents were requested to indicate their rating of the importance and effectiveness using a five point Likert scale. For the purpose of the study, the facilities and services programs were grouped into three groups – namely, facility related services, counselling related business incubation services and services and networking services.

Table 1. Grouping of services

Groups	Services or programs offered by the incubator
Facility related business incubation services	1. Office equipment and shared office services. 2. Affordable/flexible space and building services. 3. Credibility and visibility
Counseling related business incubation services	1. Research and development 2. Training and equipment 3. Financial management 4. Employment assistance 5. Sales and marketing 6. Business planning and strategic planning 7. General counselling and mentoring 8. Increased entrepreneurial skills
Networking related services	1. Information sharing 2. Business with other tenants 3. Access to external networks

2.4. Ethical clearance. Ethical approval was obtained from the University of KwaZulu-Natal Research Committee. Respondents approached to participate in the survey were requested to complete an informed consent document outlining the details of the study and their rights as respondents.

2.5. Data analysis. Data were entered into an Excel spreadsheet (Microsoft 2011 for Apple Mac computers). The proposed modified SAMAT model by Abduh et al. (2007) was utilized to understand the importance and effectiveness of the programs by employing two sequential approaches:

1. Calculation of the mean value of the perceived effectiveness of each service to determine the specific zone the service was to be classified into.
2. A comparison between the mean values of the perceived importance of the service and the perceived effectiveness of providing the service to determine the specific cell where the program or service is to be classified.

3. Findings and discussion

The results are presented as groupings of services. Forty-eight questionnaires were forwarded and thirty-two responses were received representing 66.66% response rate.

3.1. Facility related services. The participation levels of all tenants and their perceived importance and effectiveness of the facility related services offered by the incubator are presented in Table 1. The highest participation level was in the affordable, flexible and building facilities service with 96.67% participation. There was a 96.43% participation level in the shared office equipment and shared offices program followed by a lower participation level of 76% in the credibility and visibility programme. Abdul et al. (2010) study indicated 86% participation for affordable and flexible services; 69% participation for shared office equipment and 64% for credibility and visibility. It could mean that the tenants in Abdul et al. (2010) study, possessed more office equipment than SmartXchange’s tenants, thereby, reducing their dependency on the incubator management in providing the necessary equipment.

Table 2. Facility related services

Type of service	Service offered yes	Participation level	Participation %	Perceived importance	Perceived effectiveness
Affordable and flexible space and building facilities	28	27	97%	4.27	4.2
Shared office equipment and shared offices	30	29	96%	4.1	4.13
Credibility and visibility	25	19	76%	3.52	3.29

The shared office equipment and shared offices services received the highest importance rating value of 4.27 and effectiveness rating of 4.2. It is followed by the affordable and flexible building services with a rating value of 4.1 for importance and 4.13 for effectiveness. The credibility and visibility service received the lowest importance rating of 3.52 and the lowest effectiveness rating of 3.29 by the tenants.

The understanding could be that office equipment and building facilities are the most expensive items in a start-up business, hence the high importance rating. These services are critical for their initial establishment and survival. Abdul et al. (2007) and Xu (2010) highlight the relationship between the lack of capital and the importance rating of these services. The high effectiveness values for the shared office equipment, affordable and flexible space services indicate that the incubator management is highly capable of providing these services.

3.2. Business assistance related services. Table 3 presents the participation level of all tenants and their perceived importance and effectiveness in terms of the counselling and business related services. The data are presented in descending order of perceived importance. The data reveal high levels of participation in all eight services. The participation levels in Abdul's (2007) study indicate participation levels below 30% except for the services of general counselling and mentoring (70%). Xu's (2010) study also reflects a very poor participation levels for all services except for the sales and marketing service at 82% and 52% for employment services. His study indicates the participation across the other services is below 26% participation levels. In comparison to these two studies, there is a very high participation level by the tenants of SmartXchange. The high participation levels could indicate the tenant's need for these services as to develop or upscale these business skills. The alternative that can be drawn is that, since these services are new to them, hence the greater participation levels.

Table 3. Counselling services

Type of service	Service offered yes	Participation level	Participation %	Perceived importance	Perceived effectiveness
Training and education	31	31	100%	4.58	4.55
Business and strategic planning	26	26	100%	4.13	4.13
General counselling and mentoring	27	24	89%	4.13	4.07
Increased entrepreneurial skills	30	29	96%	4.1	4.13
Sale and marketing	22	20	91%	4.03	3.9
Financial services	25	24	96%	4.00	4.10
Employment services	22	22	100%	3.83	3.76
Research and development	18	18	100	3.65	3.63

Six of the eight services received highly importance rating of 4 and above. Two services, employment and the research and development services, received a rating below a mean of 4. This indicated that the tenants do not regard these two services as being important for their organizations as compared to the other services in this grouping. The possible reasons for the low ratings in the employment services could be that tenants would prefer securing his or her own staff through his network or does not need additional staff. As for the research and development service, it could indicate that the organization has not reached the level of conducting research and development. Alternatively, they have not initiated a research and development program in their organization.

The effectiveness of these programs as perceived by the tenants, received ratings above 4 except for three services, sales and marketing (3.9), employment services (3.76) and research and development (3.63) programs. This indicated that the tenants are not satisfied with the incubator's ability in providing these services. Abdul et al. (2007) suggested the possible reason the research and development service in his study received a low rating for effectiveness, is that it requires outside equity to fund these research project.

The high ratings across the other services indicate that the tenants are satisfied with the program and services offered by the management. In comparison to Abdul et al. (2007) study, all services in his study received a low level of effectiveness except the training and education services. However, these tenants indicated a high importance to these services and a low level of effectiveness. This indicated that they were unsatisfied with the level of the service provided by the incubator management.

The tenants of SmartXchange have indicated their importance ratings (4.03) for the sales and marketing program but rated the effectiveness low (3.9), thereby, indicating that the incubator management team is not providing an adequate service. However, the management team at SmartXchange cannot provide individual sales and marketing services to the tenants due to funding constraints. However, they are capable of providing a broad spectrum of sales and marketing concepts for companies in a similar information and technology grouping. Hence, the lack of providing tailor made sales and marketing programs may attract a lower effectiveness rating.

3.3. Business networking services. Table 4 presents the tenant's participation and their perceived importance and perceived effectiveness in terms of the business networking services. The data is presented in descending order of perceived importance. The service, access to external related people has the highest participation level (92.3%), followed by information sharing (76.92%) and

business with tenants received the lowest rating of 68%. The study by Xu (2010) indicated, access to external related people (89%), information sharing (82%) and (49%) for business with tenants. Abdul et al. (2007) study reflected the following results; (70%) for information sharing, (62%) business with tenants and (54%) for access to external related people.

Table 4. Business networking services

Type of service	Service offered yes	Participation level	Participation %	Perceived importance	Perceived effectiveness
Access to external related people in business, community, industry and universities	26	24	92%	4.13	3.81
Business with tenants	25	17	68%	3.61	3.43
Information sharing	26	20	77%	3.58	3.52

The access to external people is tenants networking with potential customers and investors, hence the high participation level. The services, business with tenants and information sharing holds great value as it allows tenants to work as a collective and allow for innovation development. However, it does require the sharing of customers' information and intellectual property. Some tenants would regard this as exposing their business and allowing the other tenants to explore their customer database and relationships and utilize their intellectual property.

The service, access to external people, received the highest perceived importance rating of 4.13, while business with tenants, received a rating of 3.61.

Lastly, the information sharing service received the lowest importance rating of 3.58. This effectively means that the tenants rated this service as irrelevant. The possible reason for high importance rating for the access to external people is the expansion of the tenant's network of potential customers. The low value for business with tenants and the information sharing service could be as a result of trust factors between tenants.

In all three services, the effectiveness rating is low. The tenants attached an effectiveness rating between 3.43 and 3.81 for these services. A comparison with Abdul's (2007) study, these services received a poor rating for effectiveness. The service, access to external persons received the lowest rating of effectiveness in Abdul's (2007) study, while in this study, it received the highest rating for this service grouping. These low ratings of effectiveness reflect that the tenants are not satisfied with the incubators management's in providing these services.

3.4. Modified SAMAT model for ICT incubator.

Figure 2 illustrate the SAMAT model for the ICT incubator. Of the three facility related services, the tenants have indicated a level of satisfaction for two services and a low effectiveness and low importance for the credibility and visibility service. The tenants have indicated a low effectiveness and low importance rating for this service indicating that they are not satisfied with the incubator's management in offering this service and do not regard this service as important.

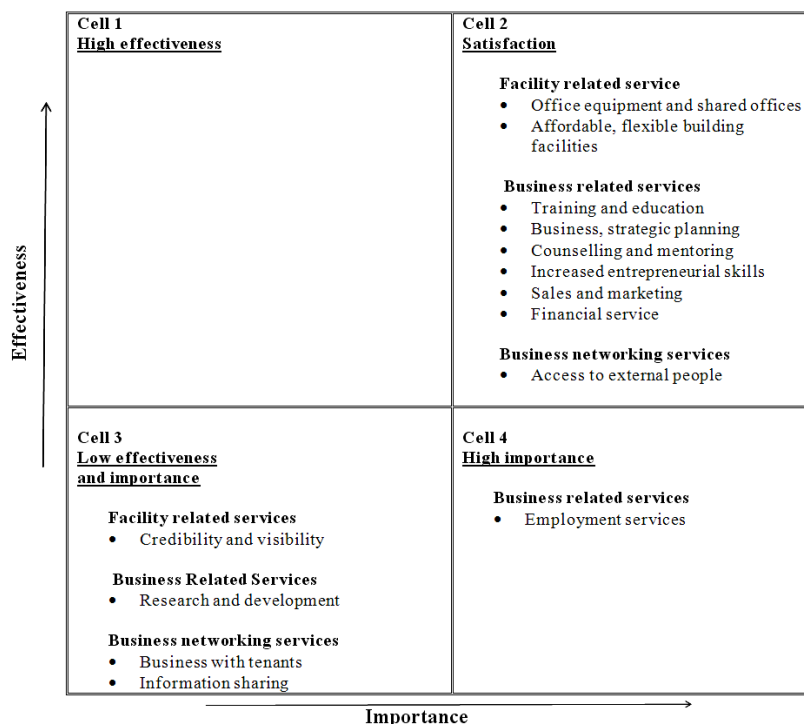


Fig. 2. Modified SAMAT model for ICT incubator

Of the eight counselling and business assistance related services, the tenants have rated six services as highly satisfied services, the research and development service as low importance and effectiveness and the employment services as important but not an effective service provided by the incubator management. The research and development service received a low importance and effectiveness rating indicates that the tenants do not regard this service as important and also the incubator's management lack in providing a service, which is effective. However, for the employment services, they have indicated a high level of importance and a low effectiveness of the incubator management in providing this service.

As for the three business networking services, the tenants have rated two of the services as low importance and low effectiveness and one as satisfied. The two services are related to tenants sharing information and transacting with other tenants. The low rating of importance and effectiveness of these two services indicate that the tenants do not regard this service as important and the incubator management has not been able to create an effective service.

4. Recommendations and conclusion

The information sharing and business with tenants service received low ratings from all tenants in the incubator programme. This indicates that the tenants are reluctant to share information and conduct transactions amongst themselves. The incubator management should investigate developing programmes highlighting the benefits of collaboration and competitive collaboration. The management should draw examples from the business world where information sharing has led to profitability for all organisations. This is particular important for companies in the information computer technology sector. Hence information sharing can help promote synergies between organisations thereby enabling the creations of new services to customers.

The incubator management should focus on the research and development programme. Results of this programme are linked to innovation and should

receive extra attention as it contributes to the technology economy. The management should try to create an atmosphere by providing information on how to register and patent new innovate products in South Africa and worldwide. Furthermore, the management should publicize new innovations developed by the tenants. A reward base concept should be introduced for tenants with the intention to promote research and development. Private and public listed organisations should be encouraged to support these innovations either through investments, procuring the services of these companies and offering advice emerging from their experience.

In conclusion, it is recommended that the management examine services and engage tenants to understand their challenges to develop suitable solutions. Some of the documented and non-documented challenges emerging needs to be examined and possible solutions identified. A greater understanding of these challenges will assist the management to either, remove services as a resource saving measure, or introduce additional services and programs, to enhance the effectiveness and importance of services offered by the incubator management.

Limitations and future research

The limitation in this research, conducted at an Information Computer Technology incubator, could have produced different results if the research was conducted at another type of incubator program or a grouping of different incubators. Incubator programs are industry related and hence the results could vary across the various incubator programs. Businesses have different service requirements depending on their stage of growth and this was lacking from this study.

Further research could be conducted on a grouping of similar incubators tenants as well as on the grouping of varied incubators to determine the importance and effectiveness of services. An additional component of research could measure the importance and effectiveness of business assisted programs to the stage of growth of a tenant in an incubator program.

References

1. Abduh, M., D'Souza, C., Quazi, A. & Burley, H.T. (2007). Investigating and classifying client's satisfaction with business incubator services, *Managing Service Quality*, 17(1), pp. 4-91.
2. Adegbite, O. (2001). Business Incubators and Small Enterprise Development, The Nigerian Experience, *Small Business Economics*, 17(3), pp. 157-66.
3. Aernoudt, R. (2004). Incubators: Tool for Entrepreneurship, *Small Business Economics*, 23(2), pp. 127-35.
4. Allen, D.N. & Rahman, S. (1985). Small Business Incubators: A Positive Environment for Entrepreneurship, *Journal of Small Business*, pp. 12-22.
5. Allen, D.N. and McCluskey, R. (1990). Structure, policy, services, and performance in the business incubator industry, *Entrepreneurship: Theory & Practice*, 15(2), pp. 61-77.
6. Buys, A. & Mbewana, P. (2007). Key Success factors for business incubation in South Africa: the Godisa case study, *South African Journal of Science*, (103), pp. 356-58.

7. Chetty, S. (2003). Explosive international growth and problems of success amongst small to medium-sized firms, *International Small Business Journal*, 21(1), pp. 5-27.
8. Gassmann, O. & Becker, B. (2006). Towards a Resource-based View of Corporate Incubators. *International Journal of Innovation Management*, 10(1), pp. 19-45.
9. Govindaranjan, V. & Fisher, J. (1990). Strategy Control, Systems, and Resource Sharing: Effects on Business-Unit Performance, *Academy of Management Journal*, 33(2), pp. 259-85.
10. Hannon, P.D. & Chaplin, P. (2003). Are incubators good fro business? Understanding incubation practice – the challenges for policy, *Environment and Planning c: Government and Policy*, 21, pp. 861-81.
11. Hansen, M.T., Cresbrough, H.W., Nohria, H. & Sull, D.N. (2000). Net worked Incubators: Hothouses of the New Economy, *Harvard Business Review*, September.
12. Khalil, M.A. & Olafsen, E. (2009). *The Innovation fro Development Report 2009-2010*. Palgrave Macmillan.
13. Lalkaka, R. & Bishop, J. (1996). *Business Incubators in Economic Development*, UNDP-UNIDO-OAS, New York.
14. Lalkaka, R. (2002). Technology business incubators to help build an innovation-based economy, *Journal of Change Management*, 3(2), pp. 167-76.
15. Lichtenstein, G.A. & Lyons, T.S. (1996). *Incubating New Enterprises: A Guide to Successful Practise*. The Aspen Institute.
16. Martin, G. and Staines, H. (1994). Managerial competences in small firms, *The Journal of Management Development*, 13(7), pp. 23-34
17. Niamen, G. & Niewenhuizen (2009). *Entrepreneurship a South African perspective*, Pretoria: Van Schaik.
18. Peters, L., Rice, M. & Sundararajam, M. (2004). The Role of Incubators in the Entrepreneurial Process, *Journal of Technology Transfer*, 29, pp. 83-91.
19. Porter, M. (1985). *Competitive advantage*. New York: Free press.
20. Rice, M. & Matthews, P. (1995). *Growing New Ventures, Creating New jobs: Principals & Practises of Successful Business Incubation*. Westport: Quorum Books.
21. Rice, M.P. (2002). Co-production of business assistance in business incubators an exploratory study, *Journal of Business Venturing*, 17, pp. 163-87.
22. Stel, A., Carree, M. & Thurik, R. (2005). The Effect of Entrepreneurial Activity on National Growth, *Small Business Economics*, 24(3).
23. Studdard, N.L. (2006). The effectiveness of entrepreneurial firm's knowledge acquisition from a business incubator, *International Entrepreneurial Management Journal*, 2, pp. 211-25.
24. Welsh, J.A. and White, J.F. (1981). A small business is not a little big business, *Harvard Business Review*, 59(4), pp. 18-27.
25. Xu, L. (2010). Business incubation in China, *Management Research Review*, 33(1), pp. 90-99.
26. What is Business Incubation? (2015, January 14). Available at: http://www.nbia.org/resource_library/what_is/.