

Influential Article Review - Enabling a Knowledge-based Economy with the Help of Innovation and Incubators

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This paper examines economics and innovation. We present insights from a highly influential paper. Here are the highlights from this paper: The purpose of this research is to analyze and identify the challenges and opportunities of innovation and incubators programs and their potential use worldwide. Discussed innovation and incubators as a powerful tool for knowledge-based economy from different perspectives using different criteria to measure the key performance indicators of best practices for innovation in the United States (US), United Kingdom (UK), and Gulf Cooperation Council States (GCC). The results are part of the ongoing research project funded by a grant from the Kuwait Foundation for Advancement of Sciences (KFAS-2012-1103-01). The methodology is based on quantitative approach (survey questionnaire) and literature review. This paper provides several recommendations for the international implementation of innovation and incubators outcomes. This paper provides value-added knowledge for both academics and practitioners who are interested in the successful adaptation of innovation and incubators. The authors believe that this paper demonstrates an added value to the current literature on innovation and incubators and fills the gap in the case studies in the literature of developed and developing countries and presents a more comprehensive analysis of progress and challenges to knowledge-based economies. For our overseas readers, we then present the insights from this paper in Spanish, French, Portuguese, and German.

Keywords: Innovation, Incubators, Technology transfer, Developed countries, Knowledge-based economy, Quantitative

SUMMARY

- First dimension: incubator characteristics. Table 2 shows the highest percentage of incubator characteristic includes: incubator services; goals; and type. The overview of the responses of 93 innovation centers and incubators in the survey sample. In addition, more than half presented incubator goals of fostering an entrepreneurial climate. Furthermore, the highest services offered by incubators focused on strong tangible and specialized services. Finally, the majority of incubators type focused on technology incubators.

- Second dimension: incubators outcomes. Table 4 demonstrates highest incubators outcomes include: number of jobs created; number of graduate companies; number of tenants; and survival rate. First, most incubators created more than 50 jobs per incubator program . Second, less than half had graduated in the range of 6–25 companies. Third, the highest of the programs reported that the number of tenants inside the incubation program was in the range of 6–25 . Fourth, less than half indicated that the survival rate for the companies was in the range of 81–90%.
- Table 5 shows lowest incubator outcomes include: number of jobs created; number of graduate companies; number of tenants; and survival rate.
- Third dimension: financial. Table 6 shows the overview of highest incubators financial data includes: annual turnover growth; incubator income; and growth of revenue. First, the majority of annual turnover growth for most programs indicated less than \$999,000. Second, more than half of revenue presented less than \$999,000. Third most of the program income was indicated as low income .
- Table 7 shows the overview of lowest incubators financial data includes: annual turnover growth; incubator income; and growth of revenue. First, the lowest of annual turnover growth for most programs responded in the range of \$5–10 million. Second, less than one-quarter of revenue presented as high. Third, lowest response of the program was indicated as high income .
- Table 8 shows the ranking dimensions of incubators include three dimensions, with incubator goals such as entrepreneurial climate indicating the highest ranking followed by second rank of incubator services including strong tangible and specialized services. This was followed by the third rank as number of jobs created was over 50 jobs per year. In addition, the fourth rank was technology incubator types and the fifth rank was annual turnover growth less than \$1 million dollars. The sixth rank was growth of revenue less than \$1 million dollars and the seventh rank indicated the number of tenants inside the incubator as less than 25 companies per year. Furthermore, the eighth rank was survival rate < 90%, the ninth rank was incubator income, and the last rank was number of graduate companies from incubators at less than 25 companies per year.
- The evidence from another study indicated that the vital goals of incubation programs are job creation, engaging the entrepreneurial climate, diversifying local economies, and accelerating growth in a local industry.

HIGHLY INFLUENTIAL ARTICLE

We used the following article as a basis of our evaluation:

Al-Mubarak, H. M., & Busler, M. (2017). Challenges and opportunities of innovation and incubators as a tool for knowledge-based economy. *Journal of Innovation and Entrepreneurship*, 6(1), 1–18.

This is the link to the publisher's website:

<https://innovation-entrepreneurship.springeropen.com/articles/10.1186/s13731-017-0075-y>

INTRODUCTION

Most popular international organizations include United States (US) National Business Incubator Association (NBIA, 2007), United Kingdom UK Business Incubation (UKBI, 2007), InfoDev—an arm of the World Bank Group (InfoDev, 2009), Organisation for Economic Cooperation and Development (OECD, 1997), The European Business and Innovation Network, and European Commission (EC 2002) focused on the execution of incubation and innovation programs to strengthen the successful growth of economic and social development.

Several research studies on incubators have been defined. The Business and Innovation Center is a physical place aimed at economic development through supporting start-up companies and their business

development as well as existing small and medium companies (InfoDev, 2009). There are other definitions for business incubation as effective talent links, technology transfer organizations, capital movement systems, and technical know-how groups for leveraging entrepreneurial talent and accelerating the development of new companies (Kuratko & LaFollette 1987). Hackett and Dilts (2004a, 2004b) define business incubation as shared services such as office-space facility that seeks to provide its incubatees with a strategic, value-adding intervention system of monitoring and business assistance.

Further, the authors defined several key words such as: innovation is the process of making change, difference, and novelty in the products, services, add value, and business practices to create economic and social benefit (EC, 2010). The OECD (2010) defines innovation as the implementation of a new or significantly improved product, service, process, a new marketing method, or a new organizational method in business practices, workplace organization, or external relations. Technology transfer can be defined as the development of technologies through research programs of universities including research tools and formal licensing of inventions and software (Hardy, 2010). A developed country can be defined as a highly developed economy, high industrial base with advanced technological infrastructure, and a high Human Development Index (O'Sullivan et al., 2003).

The knowledge based on an economy defined by Campbell and Carayannis (2014) is a process of economic learning to catalyze and accelerate the sustainability of economic growth.

The objective of this research is to analyze and identify the challenges and opportunities of innovation and incubator programs and their potential use worldwide. The remainder of the paper is as follows: "Literature review" provides a thorough review of the literature; in "Research methodology," the authors briefly discuss the research methodology used to facilitate the objectives; "Results" shows the findings of an international survey conducted by the authors; and "Conclusion" is the conclusion of the study.

Literature review

Many scholars discussed the importance of the incubator process (Al-Mubarak, 2008; Barse 1998a; Culp, 1996; Kuratko & LaFollette 1987; Lumpkin & Ireland, 1988; Merrifield, 1987). Also, Wagner (2006) confirmed the positive impact of business incubators on job creation. In addition, McAdam and McAdam (2008) indicated the most important element of incubators in the early stages is tangible incubator services and networking. Another study (Mian, 1996b) demonstrates the added value of incubator services including tangible services such as shared offices, assistance grants, marketing, accounting, university labs, and infrastructure.

Further, Smilor (1987), Campbell et al. (1985), and Merrifield (1987) indicated that several success factors from different perspectives such as: Community: entrepreneurial community support, networking, education, and linkage with university; Incubator: success indicators, finance, follow-up for incubatees, managerial support, clear policies of entry/exit; Incubatee: business awareness and success rate. Moreover, according to Cooper and Park (2008), incubators can be provided innovation through: (1) shaping entrepreneurs' market experience; (2) generating social capital; (3) providing information on the existence; and (4) availability of technological solutions.

Al-Mubarak et al. (2014) identified the strength of incubators in developed and developing countries: (1) incubator dependence on the government as main sponsors to meet self-sustainability goals; (2) most incubators supporting the entrepreneur successfully through providing a wide range of services, focusing on intangible and intangible services; (3) developed countries indicated a high influence level of cultural indicators such as innovation, creativity, entrepreneurship digital growth, skills, and world-class education. However, in developing countries most cultural indicators were modest to low level. (4) In developing countries, the policy implication act strongly forms different perspectives such as government and university role in incubator management and funding; however, developing countries indicated a medium level of policy implication.

Al-Mubarak et al. (2015a) concluded their study that successful implementation of the incubators and innovation programs can be expected to result in: (1) enhanced economic development through job creation; (2) a stronger entrepreneurship climate; (3) technology commercialization and transfer for graduated companies; (4) sustainability of graduated companies in the market with high rate of survival; (5) innovation

acceleration with smart product and services; and (6) diversification of the economy from companies' outcomes such as innovation and technology.

Al-Mubarak and Schrödl (2011) indicated a model for measuring the effectiveness of business incubation. This developed model supports the work of incubator managers, policy makers, researchers, practitioners, stakeholders, and government parties for the effective execution of business incubation enterprises. This model included four dimensions: (1) the number of businesses graduated over a period of time; (2) the number of businesses still in business over a period of time; (3) jobs created by incubator clients; and (4) salaries paid by incubator clients. In another study, Al-Mubarak et al. (2012) concluded that the financial indicators are highest priority in ranking the incubators worldwide which reflect positive impact on the economic development in job creation.

Al-Mubarak and Busler (2013) indicated that successful adaptation of innovation programs leads to: (1) a high rate of networking and outcomes; (2) high potential financing and strategic planning; (3) fostering entrepreneurship and innovation, research commercialization, and supporting technological entrepreneurship; (4) high number of jobs created; and (5) successful start-up companies with high survival rates. Al-Mubarak and Busler (2010a, 2010b, 2010c) presented incubator guidelines such as incubators acting as sustainable dynamic models, fostering, supporting enterprise and innovation, and generating jobs. Al-Mubarak, Muhammad, and Busler (2015b) recommended that innovation programs strengthen tools for the modern economy based on the knowledge towards smart growth. Al-Mubarak and Busler (2014) concluded a study that incubators can be contributed to the international economy and could be played a vital role but also in smart and economic growth.

Some researchers have argued that incubator objectives can be summarized as follows: (1) economic growth; (2) commercialize technology and transfer; (3) fostering entrepreneurship climate; and (4) job creation (Abetti, 2004; Adegbite, 2001; Akçomak & Taymaz, 2007; Allen and McCluskey, 1990; Allen & Rahman, 1985; Al-Mubarak, 2008; Al-Mubarak and Busler, 2010a, 2010b, 2010c, 2011a, 2011b, 2011c, 2011d; Frenkel, Shefer, & Miller, 2008; Hannon, 2005; Hansen, Chesbrough, Norhoa, & Sull, 2000; Hughes et al. 2007; Lalkaka, 2002; McAdam & McAdam, 2008; McAdam, Galbraith, McAdam, & Humphreys, 2006; Mian, 1994a, 1994b, 1996a, 1996b, 1997; Phillips, 2002; Rothaermel & Thursby, 2005a, 2005b; Smilor & Gill, 1986; Sweeney, 1987; Thierstein & Wilhelm, 2001).

Many international organizations serving business incubators in the United States, such as the National Business Incubation Association (NBIA, 2012), demonstrated the highest percentage of incubator characteristics such as: (1) incubator type indicated (54%) as mixed-use type; (2) incubator goal includes job creation and fostering entrepreneurial climate; and (3) incubator services such as (i) help with business basics, (ii) high-speed Internet access, (iii) marketing assistance, and (iv) networking activities. Hughes et al. (2007) demonstrate that the successful firms' based on the strategic networking do not depend on the incubator tenancy period.

Lastly, Al-Mubarak, Ahmed, and Al-Ajmei (2014) summarized the key findings of incubators in developed and developing countries. See Table 1.

CONCLUSION

Incubators and innovation programs have become an important topic worldwide and have contributed positively to economic growth. This paper is based on quantitative methods such as international survey, which provided a deeper insight and understanding into the phenomenon under investigation. The selection of programs was made from successful incubators and innovation centers worldwide.

In addition, the descriptive analysis of the survey results in a convenient sample of 93 incubators and innovation programs worldwide with a response rate of about 47%, which leads to the adaptation of incubators and innovation programs worldwide.

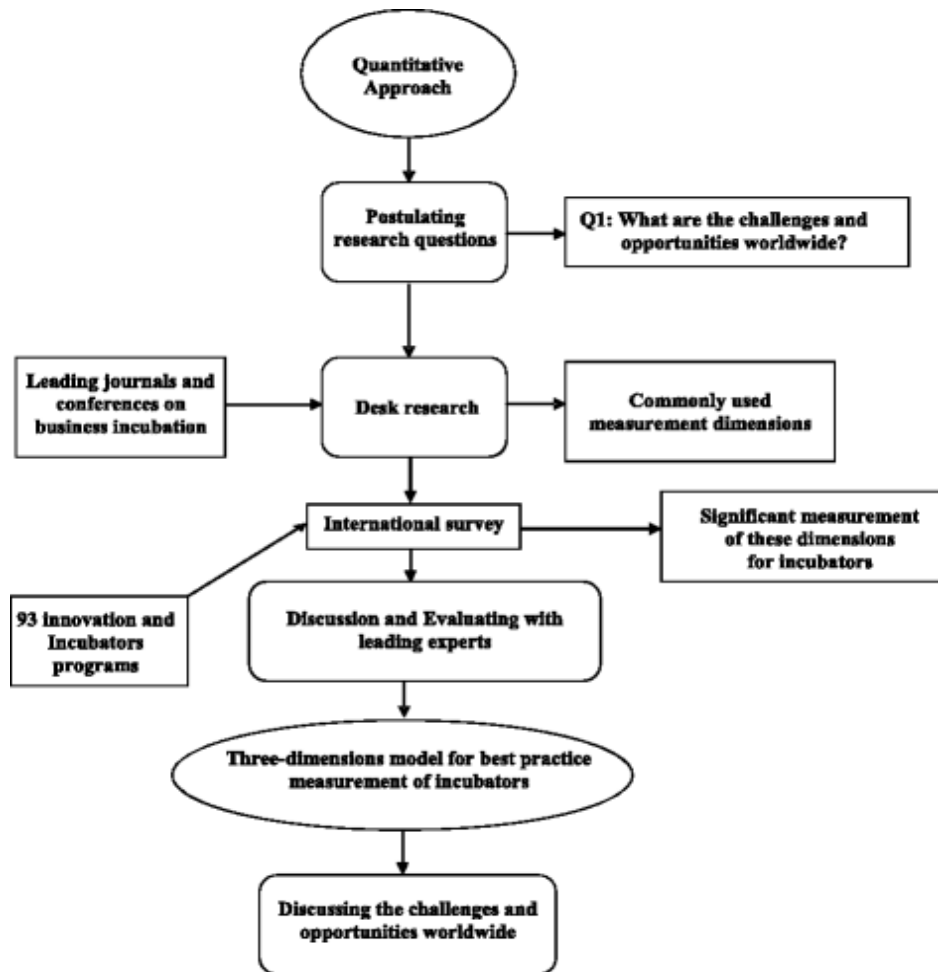
The study indicated two challenges: (1) incubator models indicated as high technology incubator types contributed positively to the extension of technology sectors in each country with new product and new services; and (2) fostering and supporting enterprise and innovation to create the best environment for growth of businesses to start-up and accelerate smart growth.

However, the two opportunities could indicate that: (1) the sustainability of incubation and innovation programs is based on the high survival rate (81–90%) of small- or medium-sized firm per fiscal year; and (2) the sustainability of incubation and innovation programs is based on the high jobs creation over 50 jobs per year and high number of graduate and client companies of around 25 companies per year.

In conclusion, the successful adaptation of the incubators and innovation programs leads to high outcomes when reaching a higher stage of economic growth based on the development of the number of graduate companies, client companies with high survival rates, and high added value for innovative products and services, as well as fostering an entrepreneurship environment, and commercializing technology transfer. This evidence comes from worldwide successful implementations in developed and developing countries.

APPENDIX

**FIGURE 1
THE PROCESS OF DEVELOPING A RESEARCH METHODOLOGY**



**TABLE 1
INCUBATORS: EVIDENCE FROM THE LITERATURE**

Year	Citations, year of publication	Findings
1988–2000	<ul style="list-style-type: none"> • Hisrich, 1988 • Campbell et al., 1985 • Smilor, 1987 • Autio & Klofisen, 1998 • Smilor, 1987 • Smilor, 1987 • Campbell et al., 1985 • Merrifield, 1987 • Culp, 1996 • Lumpkin & Ireland, 1988 • Merrifield, 1987 • Kuratko & LaFollette, 1987 • Bearse 1998a • Allen & Rahman, 1985 • Campbell, 1989 • Temali & Campbell, 1984 • Plosila & Allen, 1985 • Brooks, 1986 • Temali & Campbell, 1984 • Allen & Rahman, 1985 • Mian, 1994b • Allen & Rahman, 1985 • Fry, 1987 • Allen & McCluskey, 1990 	<p>Incubators in each community should be designed in consideration of the community's cultural values and in dialogue with community leaders to provide value.</p> <p>The value of the incubator to the incubatee relies on a needs analysis of incubatees, incubatee selecting and monitoring, access to capital, availability of network expert/support help, and more immediate learning for solutions to problems.</p> <p>The value of the incubatee to the community and incubator includes technology diversification, economic development, job creation, viable firms, and profits from successful products.</p> <p>There are several success factors from different perspectives, such as from the community standpoint: entrepreneurial community support, networking, education and linkage with universities; the incubator perspective: success indicators, finance, follow-up for incubatees, managerial support, clear policies of entry/exit; and for the incubatee: business awareness and success rate.</p> <p>These authors highlight the importance of appropriate incubatee selection, which is viewed as a process.</p> <p>The value at the community level lies in a protected environment where new ventures are able to develop, provided by incubators, and this leads to economic growth and investment in local communities. BIs will be part of a larger economic development plan, and although incubator net job creation is low, it is still significant.</p> <p>The focus of incubators could be a classification based on the nature of their primary sponsors or the focus of the incubatees. The key characteristics of incubators are low-priced rents, shared services, and the existence of entry/exit policies and university networking and support.</p> <p>The benefits from the incubatee from the incubator's perspective include the importance of incubatees paying rent at below-market prices for office space, incubatees supporting each other, including purchasing, as each of the incubatees must have all aspects of business consulting services available to them. Incubatees in university technology businesses incubators are influenced positively by that environment.</p> <p>Although 87% of entrepreneurs would have embarked on their enterprise, they agree on the usefulness of physical services, advertising and marketing, and risk management, insurance, and government grants that are available in an incubator.</p> <p>There are several services offered by incubator management such as planning, for example, business planning, mission statements, strategic plans and budgets, and only half of the incubator managers participate in the planning process.</p> <p>The occupancy rates show that 50% of incubators do not present as real estate ventures. Incubators with established expertise are the most successful. Incubators whose focus is light manufacturing tend to have more success in job creation. Job creation and firms that have graduated were not significantly impacted by the business support services.</p>

	• Mian, 1996a	Tangible services such as shared offices are more successful. Less useful services include assistance grants, marketing, accounting, etc. Due to the availability of student employees, university labs, and infrastructure, a university's image is a significant benefit to incubator firms. Added value contributions are influenced by incubator services.
	• Mian, 1996b	Within four years, firms' sales increased approximately tenfold and hiring increased fourfold. The university infrastructure offers many benefits such as employing students part-time and faculty consultations. Growth and survival of tenant firms are positively influenced by the provided university incubator services.
	• Mian, 1997	The four incubation programs indicate a high rate of sales and a high rate of employment (150% and 35%, respectively). A university's image enhances incubator firms and press coverage and university campus visits impact public attention. The most beneficial aspect for firms is the availability of student employees.
	• Autio & Klofsten, 1998	The analysis of success stories will be helpful in future implementation and practitioners should adopt the policies based on the landscape of the country.
2001–2012	• Thierstein & Wilhelm, 2001	The main goal of incubators is economic development, for example, in Switzerland, incubators are mostly privately owned.
	• Adegbite, 2001	The primary goals were not met in business or technology incubators. Insufficient support services and lack of objectivity in admission contributed to weaknesses in incubators operating under the Ministry and poor funding added to their organizational hardship.
	• Shefer & Frenkel, 2002	In the last three years, 86.4% of the projects graduated from the program and the success rate shows that 78% obtained financial support after graduation. Managing the selection and overseeing of projects and the skills of the incubator are critical for success.
	• Colombo & Delmastro, 2002	The incubator case studies in Italy represent highly skilled entrepreneurs. The case study shows no significant differences between on- and off-incubator firms regarding their innovative output. The outcomes were job creation, education, support of EU-sponsored projects, and networking.
	• Hsu, Shyu, Yu, You, & Lo, 2003	In comparison, tenants in ITRI incubators are more satisfied than firms in other offices. The development of incubators is reflected in industrial development leading to economic development.
	• Abetti, 2004	The study obtained survival rates of around 95% in Finland. The study shows the cost per job is €6450, with average sales growth rising by 160% per year during and after incubation. The government contribution will be less for funding incubators.
	• Chan & Lau, 2005	What are essential for entrepreneurs are rental subsidies for office space in addition to training programs. However, clustering does not benefit firms.
2001–2012	• Pena, 2004	The significant impact of incubators will be reflected in high sales and employment growth. Most services offered by incubators have no impact on the performance indicators.
	• Lee & Osteryoung, 2004	The comparative study between US and Korean respondents shows the role of incubator strategies such as goals, management, entry/exit policies, and business plans. The US respondents give more importance to these factors. The critical two factors are financial support and business networking.

• Peters, Rice & Sundararajan, 2004	The rates for the graduation of companies are higher in incubators that offer coaching such as training, and in those that provide access to networking, e.g., consultants, scientists, customers, and other business firms. The number of graduation companies in the non-profit incubator type will be higher than in for-profit incubators.
• Rothschild & Darr, 2005	Entrepreneurs' benefits from the incubators include reputation, credibility to the firm, and access to funding and business networking.
• Etzkowitz, Carvalho de Mello, & Almedia, 2005	The incubators in Brazil create a low establishment-development cost and utilize the advantages of academic resources.
• Totterman & Sten, 2005	The incubator offered services such as support and networking. The incubator management team should focus on strategic business networking rather than on providing tangible services.
• Rothaemel & Thursby, 2005a	The failure rate will be decreased when linked to a university providing services such as licensed technology, faculty as senior management and informal links. The impact will affect the inventor positively.
• Rothaemel & Thursby, 2005b	This study focused on two mechanisms: transfer by a license to a university and backward citations of incubator firm patents to university patents or publications. The firm survival rate will be higher when holding a license. The firm absorptive capacity is measured by backward citations rather than firm performance.
• Wynarczyk & Raine, 2005	The incubators play an active role in nurturing businesses and creating jobs. The managerial advisors' support will provide strong options for survival during the early stages of the start-up companies.
• Von Zedtwitz & Grimaldi, 2006	The relationship between the incubator objectives and incubator services should be clear to obtain the desired outcomes. The experience of the incubator manager is an essential support for the incubatee.
• Kim & Ames, 2006	The qualifications of incubator managers should match with the requirements of the client companies such as support services and networking. Increments in incubator growth could negatively affect the success of incubators.
• Studdard, 2006	The incubator manager requires knowledge to interact with new product development, technological competence, and sales cost awareness. The firm's reputation requires increased credibility and marketing avenues.
• Gassmann & Becker, 2006	In the incubator's initial phase, information flow is essential for both the incubator and the ventures. In the second phase, from the intangible services, knowledge comes from the for-profit incubators and the firms.
• Chandra and Fealey 2009	The government funds most large incubators and high-tech-oriented incubators are dependent on government funding, which weakens their capability toward market-oriented incubation.
• Avnimelech, Schwartz, & Bar-EI, 2007	Closure rates for firms are less (19% compared with 36%) for firms that received seed funding and were established in an incubator. The failure rate of VC firms is lower than for incubator firms.

	<ul style="list-style-type: none"> • Aerts, Matthyssens, & Vandenbempt, 2007 	<p>The survival rate of tenants is positively correlated with the availability of a more balanced screening process. The screening process consists of market, financial, and management screening and it contributes positively with respect to failure rate. The critical role of incubators is to support the survival of the entrepreneurial spirit.</p>
	<ul style="list-style-type: none"> • Hytti & Maki, 2007 	<p>Younger firms demonstrate more growth-potential benefit from incubator services. However, older firms demonstrate less satisfaction with services. The tenancy duration for incubation must be optimal and flexible with respect to firm needs.</p>
	<ul style="list-style-type: none"> • Hughes et al., 2007 	<p>The study classified firms into four groups based on their capabilities, determination to access resources, to acquire knowledge, and strategic networking. The most critical aspect is strategic networking.</p>
	<ul style="list-style-type: none"> • McAdam & Marlow, 2007 	<p>Of importance for tenants are the facilities offered by the incubator, its credibility, and networking opportunities. A critical factor is the trust that allows information exchange. In some cases, firms were hesitant in sharing sensitive information, such as secrecy and copying ideas, due to their close proximity to each other.</p>
	<ul style="list-style-type: none"> • Akçomak & Taymaz, 2007 	<p>The main differences between on- and off-incubator firms are the sales and employment, but not innovation. The tangible services offered by incubators and funding can explain the differences.</p>
	<ul style="list-style-type: none"> • McAdam & McAdam, 2008 	<p>The most important element of incubators in the early stages is tangible incubator services. Networking and clustering are the most important factors behind firm success.</p>
	<ul style="list-style-type: none"> • Schwartz & Hornych, 2008 	<p>The survival of media firms depends on the availability of specialized equipment and facilities including knowledge and know-how. The competition between companies in the same sectors leads to limitations in networking.</p>
2001–2012	<ul style="list-style-type: none"> • Frenkel et al., 2008 	<p>In the USA, private and public technology incubator firms promoted technological entrepreneurship among the immigrants in the USA and those from the former USSR. In private incubators, firms tend to benefit more from networking with international strategic partners and academia. However, the private incubator firms cannot fully replace public incubators.</p>
	<ul style="list-style-type: none"> • Duff, 2004 	<p>This study looks in depth at eight case studies of leading BI programs to provide a detailed appreciation of program design and incubator operations. Four of these programs are Australian and four are drawn from the United States.</p> <p>The study finds that incubation programs that add value most effectively are those that adopt a pro-active business-development stance based on a sound appreciation of the business needs of their clients' characteristics in these pro-active, direct intervention systems.</p>
	<ul style="list-style-type: none"> • Chandra & Fealey, 2009 	<p>This study describes the incubation landscapes of the United States, China, and Brazil, noting the similarities and differences in incubation approaches among the three countries. The key performance indicators for the comparison are based on the incubator's sponsorship/ financial model and its impact on strategy, its service mix with an emphasis on financial services, along with key environmental/contextual influences. The role of governments and their impact on incubator strategy in the three country contexts is discussed along with policy implications.</p>

- Akçomak, 2009	<p>Drawing lessons from country experiences, the appropriateness of incubators as a tool for entrepreneurship promotion in developing countries is assessed. The main weaknesses of incubators in developing countries are: (1) their focus on tangible services rather than intangible services; (2) their dependence on governments; (3) a lack of management and qualified personnel; and (4) a lack of incubator planning and creativity in solving problems.</p>
- Atherton & Hannon, 2006	<p>Seven generic incubation strategies were identified and developed. Four focus on a premises-driven approach to incubation and three on a more process-based approach. All seven strategies represent opportunities for tailored, and hence, targeted approaches to the development of incubators and incubation services.</p>
- Schwartz and Hornych 2008	<p>This study examines the survival of 352 firms from five German BIs after their graduation. The findings suggest that graduation causes an immediate negative effect on survivability that lasts up to three years after leaving the incubators. Furthermore, heterogeneous patterns of post-graduation exit dynamics between the BIs were observed. It was also found that performance during the incubation period is an indicator of the propensity for business closure after graduation.</p>
- Woisey, Gornall, Jones, & Thomas, 2006	<p>The study finds that if incubation facilities are to receive continuing support, the measurement of success needs to be broader than a set of statistical outputs. Applications for public funding in support of BIs as part of an overall economic regeneration strategy should be able to provide a wider evaluation of effectiveness and the paper seeks to develop a model for this purpose to assist the ongoing development of incubator facilities in Wales.</p>
- Al-Mubarak & Busler, 2010a	<p>The study indicated BIs can help young firms to survive and grow during their start-up years, and can play a key role in the economic development of a community or region. In developing countries, including Kuwait and the other GCC member states, BIs can be particularly valuable in helping to develop local economies, promote technology transfer, create new enterprises, and generate jobs. In addition, the survey results are used to make recommendations for how to maximize the success of incubators, including matching services offered to the needs of clients and involving a range of community stakeholders in the development of their programs. A number of options are proposed for developing and expanding the BI concept in Kuwait and the GCC member states.</p>
- Al-Mubarak & Busler, 2010b	<p>Three practical business incubation European models are discussed based on their adoption as case study examples: the UK, France, and Germany. These three countries contain approximately 83% of all the incubators located throughout Europe today. This study focused on: (1) the nature of incubator financing; (2) the incubator's mission and strategy; and (3) graduation that it, in turn, offers its incubatee clients. The SWOT analysis of each case study reflects the strengths of each program and complies with its mission and objectives, showing great opportunity with the future plans and performance of each program. BIs contribute to the international economy and play a vital role not only in economic recovery, but also in economic development. International adaptation leads to the support of diverse economies, the commercialization of new technologies, job creation, and wealth building. In addition, more than 7000 incubation programs worldwide are engaged in supporting the development of new high-growth businesses. Today, Europe has funding in incubators with the goal of job creation and economic recovery.</p>

• Al-Mubarak & Busler, 2011b	The case study of ten incubator organizations in developing countries is examined. The findings of this study indicate BIs are an effective and innovative tool for supporting start-up businesses. The empirical results highlight some implications for successfully developing and implementing the best practices of business incubation programs. This study makes a contribution to knowledge about the process of business incubation.
• Al-Mubarak & Busler, 2011c	This paper is based on a mixed-methods approach. This study has clearly stated that business incubation is tool for economic development based on economic indicators from incubation outcomes such as: (1) entrepreneurs; (2) companies created; (3) jobs created; and (4) incubator companies. This is evident in both the United States and the developed countries, but is still taking shape in the developing countries such as the GCC member states.
• Al-Mubarak & Busler, 2012b	The results show quantitative and qualitative responses used to determine success rates and key indicators of incubators in various countries. The best practice model based on the lessons learned from case studies indicates that the success of incubatees in terms of sustainable graduation is reliant upon: (1) clear objectives; (2) incubator location; (3) access to services; (4) employment creation; and (5) an economic development strategy. When accomplished, the best practice model can lead to a 90% survival rate for companies and reflects sustainability in the market.
• Al-Mubarak & Busler, 2012c	The four strategic outcomes of the research findings are: (1) entrepreneurial climate (62%) was the primary purpose of the incubator, (2) commercialization technologies stood at 55.5%; (3) employment at 51.6%; and (4) innovation and diversifying local economies at 46.1%. The research adds value to the current literature on the sustainability of incubators and on outcomes. It provides a useful roadmap to both academicians and practitioners through experiences of worldwide incubator implementations.
• Al-Mubarak & Schrödl, 2012a	The study proposed measurement models in the international context. The four measured indicators are: (1) the graduation of businesses that were incubated; (2) the success of businesses that were incubated; (3) jobs created by incubation; and (4) salaries paid by incubator clients. The recommendations from the study could help to develop business incubation guidelines for best practices in the GCC, which will lead to economic development worldwide and in the GCC.
• Al-Mubarak & Schrödl, 2012b	The four dimensions discussed in the study determined the effectiveness of BIs individually and as an industry. The study recommended that: <ol style="list-style-type: none"> 1. Further research in this area should focus on the four dimensions discussed in this paper: (1) the number of businesses that have graduated over a period of time; (2) the number of businesses still in business over a period of time; (3) jobs created by incubator clients; and (4) salaries paid by incubator clients. 2. As the industry grows, new and existing incubators around the world should continue to track these measures of effectiveness in order to empirically demonstrate the value of business incubation. 3. Independent researchers, incubator funders, and governments should cooperate with practitioners in obtaining data related to these four measures of success.

• Al-Mubarak & Busler, 2012d	The authors investigate the incubation models in Europe and the Middle East. The study finding concludes that incubators play an important role in nurturing businesses, creating jobs, and producing high graduation rates of incubatee firms, especially from programs that offered strong tangible and intangible services. Within this landscape, incubator firms are able to achieve their primary goal of economic development, technology transfer, fostering entrepreneurship, and job creation.
• Al-Mubarak & Busler, 2012e	This study has clearly stated that innovation programs are designed to accelerate the successful development of entrepreneurial companies through an array of business support resources and services. The adaptation leads to: (1) the age of the innovation program producing a high rate of networking and outcomes; (2) the government as a stakeholder giving high potential financing, strategic planning, and international marketing services; (3) a clear program goal fostering entrepreneurship and innovation, research commercialization, and support for technological entrepreneurship; (4) a high number of jobs being created, which leads to economic growth; and (5) advisory and mentoring services producing successful start-up companies with high survival rates.

**TABLE 2
HIGHEST RESPONSE**

No.	Survey questions	Highest response (%)	
1	Services of incubator	Strong tangible and specialized services	67.0
2	Goals of incubator	Entrepreneurial climate	73.0
3	Type of incubator	Technology incubators	60.7

**TABLE 3
LOWEST RESPONSE**

No.	Survey questions	Lowest response (%)	
1	Services of incubator	Intangible	5.7
2	Goals of incubator	Diversifying local economy	40.4
3	Type of incubator	Manufacturing incubators	6.7

**TABLE 4
HIGHEST RESPONSE**

No.	Survey questions	Highest response (%)	
1	Jobs created from the incubator (n)	>50	63.2
2	Graduate companies from incubator (n)	6–25	36.0
3	Tenants inside the incubator (n)	6–25	48.3
4	Survival rate of tenants (%)	81–90	47.7

**TABLE 5
LOWEST RESPONSE**

No.	Survey questions	Lowest response (%)	
1	Jobs created from the incubator (n)	1-5	9
2	Graduate companies from incubator (n)	1-5	30.2
3	Tenants inside the incubator	1-5	16.1
4	Survival rate of tenants (%)	<80	26.1

**TABLE 6
HIGHEST RESPONSE**

No.	Survey questions	Highest response (%)	
1	Incubator income	Low	44.2
2	Annual turnover growth	\$100,000-999,000	54.4
3	Growth of revenue	\$100,000-999,000	50.6

**TABLE 7
LOWEST RESPONSE**

No.	Survey questions	Lowest response (%)	
1	Incubator income	High	5.9
2	Annual turnover growth	\$5-10 M	9.1
3	Growth of revenue	\$5-10 M	20.9

**TABLE 8
RANKING DIMENSIONS**

No.	Survey questions	Highest response (%)	Rank	
First dimension: incubator characteristics				
1	Incubator services	Strong, tangible, and specialized services	67.0	2
2	Incubator goals	Entrepreneurial climate	73.0	1
3	Incubator type	Technology incubators	60.7	4
Second dimension: incubator outcomes				
1	Jobs created from the incubator (n)	>50	63.2	3
2	Graduate companies from incubator (n)	6-25	36.0	10
3	Tenants inside the incubator (n)	6-25	48.3	7
4	Survival rate of tenants (%)	81-90	47.7	8
Third dimension: financial				
1	Incubator income	Low	44.2	9
2	Annual turnover growth	\$100,000-999,000	54.4	5
3	Growth of revenue	\$100,000-999,000	50.6	6

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TRANSLATED VERSION: SPANISH

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSION TRADUCIDA: ESPAÑOL

A continuación se muestra una traducción aproximada de las ideas presentadas anteriormente. Esto se hizo para dar una comprensión general de las ideas presentadas en el documento. Por favor, disculpe cualquier error gramatical y no responsabilite a los autores originales de estos errores.

INTRODUCCIÓN

Las organizaciones internacionales más populares incluyen la asociación nacional de incubadoras de empresas de los estados unidos (ee.uu.) (nbia, 2007), united kingdom uk business incubation (ukbi, 2007), infodev-an arm of the world bank group (infodev, 2009), organisation for economic cooperation and development (oecd, 1997), the european business and innovation network y european commission (ce 2002) se centraron en la ejecución de programas de incubación e innovación para fortalecer el crecimiento exitoso del desarrollo económico y social.

Se han definido varios estudios de investigación sobre incubadoras. El centro de negocios e innovación es un lugar físico orientado al desarrollo económico a través del apoyo a las empresas emergentes y su desarrollo empresarial, así como a las pequeñas y medianas empresas existentes (infodev, 2009). Existen otras definiciones para la incubación empresarial como vínculos de talento efectivos, organizaciones de

transferencia de tecnología, sistemas de movimiento de capital y grupos de conocimientos técnicos para aprovechar el talento empresarial y acelerar el desarrollo de nuevas empresas (kuratko & lafollette 1987). Hackett y dilts (2004a, 2004b) definen la incubación empresarial como servicios compartidos como la instalación de oficinas y espacios que busca proporcionar a sus incubadoras un sistema estratégico de intervención de valor agregado de monitoreo y asistencia empresarial.

Además, los autores definieron varias palabras clave como: la innovación es el proceso de hacer cambios, diferencias y novedades en los productos, servicios, agregar valor y prácticas comerciales para crear beneficios económicos y sociales (ce, 2010). La ocde (2010) define la innovación como la implementación de un producto, servicio, proceso, un nuevo método de comercialización o un nuevo método organizativo en las prácticas empresariales, la organización del lugar de trabajo o las relaciones externas. La transferencia de tecnología puede definirse como el desarrollo de tecnologías a través de programas de investigación de universidades, incluidas herramientas de investigación y licencias formales de invenciones y software (hardy, 2010). Un país desarrollado puede definirse como una economía altamente desarrollada, una base industrial alta con infraestructura tecnológica avanzada y un alto índice de desarrollo humano (o'sullivan et al., 2003).

El conocimiento basado en una economía definida por campbell y carayannis (2014) es un proceso de aprendizaje económico para catalizar y acelerar la sostenibilidad del crecimiento económico.

El objetivo de esta investigación es analizar e identificar los desafíos y oportunidades de los programas de innovación e incubadora y su uso potencial en todo el mundo. El resto del documento es el siguiente: "revisión de la literatura" proporciona una revisión exhaustiva de la literatura; en "metodología de investigación", los autores discuten brevemente la metodología de investigación utilizada para facilitar los objetivos; "resultados" muestra los hallazgos de una encuesta internacional realizada por los autores; y "conclusión" es la conclusión del estudio.

Revisión de la literatura

Muchos eruditos discutieron la importancia del proceso de incubadora (al-mubaraki, 2008; bearsco 1998a; culp, 1996; kuratko & lafollette 1987; lumpkin e irlanda, 1988; merrifield, 1987). Además, wagner (2006) confirmó el impacto positivo de las incubadoras de empresas en la creación de empleo. Además, mcadam y mcadam (2008) indicaron que el elemento más importante de las incubadoras en las primeras etapas son los servicios tangibles de incubadora y el trabajo en red. Otro estudio (mian, 1996b) demuestra el valor añadido de los servicios de incubadora, incluidos los servicios tangibles, como oficinas compartidas, subvenciones de asistencia, marketing, contabilidad, laboratorios universitarios e infraestructura.

Además, smilor (1987), campbell et al. (1985) y merrifield (1987) indicaron que varios factores de éxito desde diferentes perspectivas como: comunidad: apoyo a la comunidad empresarial, redes, educación y vinculación con la universidad; incubadora: indicadores de éxito, finanzas, seguimiento de incubaciones, apoyo gerencial, políticas claras de entrada/salida; incubar: conciencia empresarial y tasa de éxito. Además, según cooper and park (2008), se puede proporcionar innovación a las incubadoras a través de: 1) la conformación de la experiencia de mercado de los empresarios; 2) generar capital social; 3) proporcionar información sobre la existencia; y (4) disponibilidad de soluciones tecnológicas.

(2014) identificaron la fuerza de las incubadoras en los países desarrollados y en desarrollo: 1) la dependencia de la incubadora del gobierno como principales patrocinadores para cumplir los objetivos de autosostenibilidad; 2) la mayoría de las incubadoras que apoyan al empresario con éxito mediante la prestación de una amplia gama de servicios, centrándose en los servicios intangibles e intangibles; 3) los países desarrollados indicaron un alto nivel de influencia de los indicadores culturales, como la innovación, la creatividad, el crecimiento digital del emprendimiento, las habilidades y la educación de clase mundial. Sin embargo, en los países en desarrollo la mayoría de los indicadores culturales eran de nivel modesto a bajo. 4) en los países en desarrollo, el acto de implicación de la política constituye con gran medida diferentes perspectivas, como el papel gubernamental y universitario en la gestión y financiación de la incubadora; sin embargo, los países en desarrollo indicaron un nivel medio de implicación política.

(2015a) concluyeron su estudio de que cabe esperar que la aplicación exitosa de las incubadoras y los programas de innovación dé lugar a: 1) un mayor desarrollo económico mediante la creación de empleo; 2)

un clima de emprendimiento más fuerte; 3) comercialización y transferencia de tecnología para empresas graduadas; 4) sostenibilidad de empresas graduadas en el mercado con alta tasa de supervivencia; 5) aceleración de la innovación con productos y servicios inteligentes; y (6) diversificación de la economía de los resultados de las empresas, como la innovación y la tecnología.

Al-mubarakí y schr-dl (2011) indicaron un modelo para medir la eficacia de la incubación empresarial. Este modelo desarrollado apoya el trabajo de los gerentes de incubadoras, los responsables políticos, los investigadores, los profesionales, las partes interesadas y los partidos gubernamentales para la ejecución efectiva de las empresas de incubación de empresas. Este modelo incluía cuatro dimensiones: (1) el número de empresas graduadas durante un período de tiempo; 2) el número de empresas que siguen en el negocio durante un período de tiempo; 3) puestos de trabajo creados por clientes de incubadora; y (4) salarios pagados por clientes de incubadoras. En otro estudio, al-mubarakí y otros (2012) concluyeron que los indicadores financieros son la prioridad más alta en la clasificación de las incubadoras en todo el mundo que reflejan un impacto positivo en el desarrollo económico en la creación de empleo.

Al-mubarakí y busler (2013) indicaron que la adaptación exitosa de los programas de innovación conduce a: (1) una alta tasa de redes y resultados; 2) financiación de alto potencial y planificación estratégica; 3) fomentar el emprendimiento y la innovación, la comercialización de la investigación y el apoyo al emprendimiento tecnológico; 4) un elevado número de puestos de trabajo creados; y (5) empresas emergentes exitosas con altas tasas de supervivencia. Al-mubarakí y busler (2010a, 2010b, 2010c) presentaron directrices de incubadoras como incubadoras que actúan como modelos dinámicos sostenibles, fomentan, apoyan la empresa y la innovación, y generan empleos. Al-mubarakí, muhammad y busler (2015b) recomendaron que los programas de innovación fortalecieran las herramientas para la economía moderna basadas en el conocimiento hacia un crecimiento inteligente. Al-mubarakí y busler (2014) concluyeron un estudio en el que se llegó a un estudio en el que se indicaba que las incubadoras pueden contribuir a la economía internacional y podrían desempeñarse un papel vital, pero también en el crecimiento inteligente y económico.

Algunos investigadores han argumentado que los objetivos de la incubadora pueden resumirse de la siguiente manera: (1) crecimiento económico; 2) comercializar tecnología y transferencia; 3) fomentar el clima de emprendimiento; y 4) creación de empleo (abetti, 2004; adegbite, 2001; aksomak & taymaz, 2007; allen y mccluskey, 1990; allen & rahman, 1985; al-mubarakí, 2008; al-mubarakí y busler, 2010a, 2010b, 2010c, 2011a, 2011b, 2011c, 2011d; frenkel, shefer, & miller, 2008; hannon, 2005; hansen, chesbrough, norhoa, & sull, 2000; 2007; lalkaka, 2002; mcadam & mcadam, 2008; mcadam, galbraith, mcadam, & humphreys, 2006; mian, 1994a, 1994b, 1996a, 1996b, 1997; phillips, 2002; rothaermel & thursby, 2005a, 2005b; smilor & gill, 1986; sweeney, 1987; thierstein & wilhelm, 2001).

Muchas organizaciones internacionales que prestan servicios a incubadoras de empresas en los estados unidos, como la asociación nacional de incubación de empresas (nbia, 2012), demostraron el mayor porcentaje de características de incubadoras como: (1) tipo de incubadora indicado (54%) como tipo de uso mixto; 2) el objetivo de la incubadora incluye la creación de empleo y el fomento del clima empresarial; y (3) servicios de incubadora tales como i) ayudar con los conceptos básicos de las empresas, ii) acceso a internet de alta velocidad, (iii) asistencia de marketing y iv) actividades de creación de redes. (2007) demuestran que las empresas de éxito basadas en las redes estratégicas no dependen del período de arrendamiento de la incubadora.

Por último, al-mubarakí, ahmed y al-ajmei (2014) resumían las principales conclusiones de las incubadoras en los países desarrollados y en desarrollo. Véase el cuadro 1.

CONCLUSIÓN

Las incubadoras y los programas de innovación se han convertido en un tema importante en todo el mundo y han contribuido positivamente al crecimiento económico. Este documento se basa en métodos

cuantitativos, como la encuesta internacional, que proporcionó una visión y comprensión más profundas del fenómeno que se está investigando. La selección de programas se hizo a partir de incubadoras de éxito y centros de innovación en todo el mundo.

Además, el análisis descriptivo de la encuesta da como resultado una práctica muestra de 93 incubadoras y programas de innovación en todo el mundo con una tasa de respuesta de alrededor del 47%, lo que conduce a la adaptación de incubadoras y programas de innovación en todo el mundo.

El estudio indicó dos desafíos: 1) los modelos de incubadora indicados como tipos de incubadoras de alta tecnología contribuyeron positivamente a la extensión de los sectores tecnológicos en cada país con nuevos productos y nuevos servicios; y (2) fomentar y apoyar la empresa y la innovación para crear el mejor entorno para el crecimiento de las empresas y acelerar el crecimiento inteligente.

Sin embargo, las dos oportunidades podrían indicar que: (1) la sostenibilidad de los programas de incubación e innovación se basa en la alta tasa de supervivencia (81-90%) de pequeñas o medianas empresas por ejercicio fiscal; y (2) la sostenibilidad de los programas de incubación e innovación se basa en la alta creación de puestos de trabajo de más de 50 puestos de trabajo al año y un alto número de empresas de posgrado y clientes de alrededor de 25 empresas al año.

En conclusión, la adaptación exitosa de las incubadoras y los programas de innovación conduce a altos resultados al alcanzar una etapa más alta de crecimiento económico basada en el desarrollo del número de empresas de posgrado, empresas cliente con altas tasas de supervivencia y alto valor añadido para productos y servicios innovadores, así como el fomento de un entorno de emprendimiento y la comercialización de la transferencia de tecnología. Esta evidencia proviene de implementaciones exitosas en todo el mundo en los países desarrollados y en desarrollo.

TRANSLATED VERSION: FRENCH

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSION TRADUITE: FRANÇAIS

Voici une traduction approximative des idées présentées ci-dessus. Cela a été fait pour donner une compréhension générale des idées présentées dans le document. Veuillez excuser toutes les erreurs grammaticales et ne pas tenir les auteurs originaux responsables de ces erreurs.

INTRODUCTION

Les organisations internationales les plus populaires sont la National Business Incubator Association (NBIA, 2007), UK UK Business Incubation (UKBI, 2007), infodev– une branche du Groupe de la Banque mondiale (infodev, 2009), l'Organisation de coopération et de développement économiques (OCDE, 1997), le Réseau européen des entreprises et de l'innovation et la Commission européenne (CE 2002) se sont concentrés sur l'exécution de programmes d'incubation et d'innovation visant à renforcer la croissance réussie du développement économique et social.

Plusieurs études de recherche sur les incubateurs ont été définies. Le Business and Innovation Center est un lieu physique axé sur le développement économique en soutenant les start-up et leur développement commercial ainsi que les petites et moyennes entreprises existantes (infodev, 2009). Il existe d'autres définitions de l'incubation d'entreprises comme des liens efficaces avec les talents, des organismes de transfert de technologie, des systèmes de mouvements de capitaux et des groupes de savoir-faire techniques pour tirer parti des talents entrepreneuriaux et accélérer le développement de nouvelles entreprises (Kuratko et lafollette, 1987). Hackett et Dilts (2004a, 2004b) définissent l'incubation des entreprises comme des

services partagés tels que les bureaux-espaces qui cherchent à fournir à ses incubates un système stratégique d'intervention à valeur ajoutée de surveillance et d'assistance aux entreprises.

En outre, les auteurs ont défini plusieurs mots clés tels que : l'innovation est le processus de changement, de différence et de nouveauté dans les produits, les services, la valeur ajoutée et les pratiques commerciales pour créer des avantages économiques et sociaux (EC, 2010). L'OCDE (2010) définit l'innovation comme la mise en œuvre d'un produit, d'un service, d'un processus, d'une nouvelle méthode de marketing ou d'une nouvelle méthode organisationnelle en matière de pratiques commerciales, d'organisation en milieu de travail ou de relations extérieures. Le transfert de technologie peut être défini comme le développement de technologies par le biais de programmes de recherche d'universités, y compris des outils de recherche et des licences formelles d'inventions et de logiciels (Hardy, 2010). Un pays développé peut être défini comme une économie très développée, une base industrielle élevée avec des infrastructures technologiques de pointe et un indice de développement humain élevé (O'Sullivan et al., 2003).

Les connaissances basées sur une économie définie par Campbell et Carayannis (2014) sont un processus d'apprentissage économique pour catalyser et accélérer la durabilité de la croissance économique.

L'objectif de cette recherche est d'analyser et d'identifier les défis et les possibilités des programmes d'innovation et d'incubateur et leur utilisation potentielle dans le monde entier. Le reste de l'article est le suivant : « Examen de la littérature » fournit un examen approfondi de la littérature ; dans « Méthodologie de recherche », les auteurs discutent brièvement de la méthodologie de recherche utilisée pour faciliter les objectifs; « résultat » montre les résultats d'une enquête internationale menée par les auteurs; et « conclusion » est la conclusion de l'étude.

Revue de littérature

De nombreux chercheurs ont discuté de l'importance du processus d'incubateur (Al-Mubarak, 2008; Bearse, 1998a; Culp, 1996; Kuratko et Lafollette, 1987; Lumpkin et Irelande, 1988; Merrifield, 1987). De plus, Wagner (2006) a confirmé l'impact positif des incubateurs d'entreprises sur la création d'emplois. De plus, McAdam et McAdam (2008) ont indiqué que l'élément le plus important des incubateurs au début est les services d'incubateurs tangibles et le réseautage. Une autre étude (Mian, 1996b) démontre la valeur ajoutée des services d'incubateur, y compris les services tangibles tels que les bureaux partagés, les subventions d'assistance, le marketing, la comptabilité, les laboratoires universitaires et l'infrastructure.

De plus, Smilor (1987), Campbell et coll. (1985) et Merrifield (1987) ont indiqué que plusieurs facteurs de réussite de différents points de vue tels que : la communauté : le soutien à la communauté entrepreneuriale, le réseautage, l'éducation et le lien avec l'université; Incubateur : indicateurs de réussite, finances, suivi des incubates, soutien de la direction, politiques claires d'entrée/sortie; Incubatee : sensibilisation des entreprises et taux de réussite. De plus, selon Cooper and Park (2008), les incubateurs peuvent être mis à l'innovation en 2008 en essuonnant l'expérience du marché des entrepreneurs; (2) générer du capital social; (3) fournir des informations sur l'existence; et (4) la disponibilité de solutions technologiques.

Al-Mubarak et coll. (2014) ont identifié la force des incubateurs dans les pays développés et en développement : (1) la dépendance des incubateurs à l'égard du gouvernement en tant que principaux commanditaires pour atteindre les objectifs d'autodétermination; (2) la plupart des incubateurs qui soutiennent avec succès l'entrepreneur en fournissant un large éventail de services, axés sur les services immatériels et matériels; (3) les pays développés ont indiqué un niveau d'influence élevé des indicateurs culturels tels que l'innovation, la créativité, la croissance numérique de l'entrepreneuriat, les compétences et l'éducation de classe mondiale. Toutefois, dans les pays en développement, la plupart des indicateurs culturels étaient modestes à faibles. (4) Dans les pays en développement, la loi sur les implications politiques forme fortement des perspectives différentes telles que le rôle du gouvernement et des universités dans la gestion et le financement des incubateurs; toutefois, les pays en développement ont indiqué un niveau moyen d'implication politique.

Al-Mubarak et coll. (2015a) ont conclu leur étude selon laquelle on peut s'attendre à ce que la mise en œuvre réussie des incubateurs et des programmes d'innovation se traduise par : (1) un développement économique accru par la création d'emplois; (2) un climat d'entrepreneuriat plus fort; (3) la

commercialisation et le transfert de technologie pour les entreprises diplômées; (4) la durabilité des entreprises diplômées sur le marché avec un taux de survie élevé; (5) l'accélération de l'innovation avec des produits et services intelligents; et (6) la diversification de l'économie par suite des résultats des entreprises tels que l'innovation et la technologie.

Al-Mubarai et Schröder (2011) ont indiqué un modèle pour mesurer l'efficacité de l'incubation des entreprises. Ce modèle élaboré soutient le travail des gestionnaires d'incubateurs, des décideurs, des chercheurs, des praticiens, des parties prenantes et des partis gouvernementaux pour l'exécution efficace des entreprises d'incubation d'entreprises. Ce modèle comportait quatre dimensions : (1) le nombre d'entreprises diplômées sur une période de temps; 2) le nombre d'entreprises encore en activité sur une période de temps; (3) les emplois créés par les clients des incubateurs; et (4) les salaires versés par les clients de l'incubateur. Dans une autre étude, Al-Mubarai et coll. (2012) ont conclu que les indicateurs financiers sont la priorité absolue dans le classement des incubateurs dans le monde entier qui reflètent un impact positif sur le développement économique de la création d'emplois.

Al-Mubarak et Busler (2013) ont indiqué que l'adaptation réussie des programmes d'innovation conduit à : (1) un taux élevé de réseautage et de résultats; (2) le financement et la planification stratégique à fort potentiel; 3) favoriser l'esprit d'entreprise et l'innovation, la commercialisation de la recherche et soutenir l'entrepreneuriat technologique; (4) le nombre élevé d'emplois créés; et (5) des entreprises en démarrage prospères dont les taux de survie sont élevés. Al-Mubarak et Busler (2010a, 2010b, 2010c) ont présenté des lignes directrices sur les incubateurs tels que des incubateurs agissant comme des modèles dynamiques durables, favorisant, soutenant l'entreprise et l'innovation, et générant des emplois. Al-Mubarak, Muhammad et Busler (2015b) ont recommandé que les programmes d'innovation renforcent les outils pour l'économie moderne basés sur les connaissances vers une croissance intelligente. Al-Mubarak et Busler (2014) ont conclu une étude selon laquelle les incubateurs peuvent contribuer à l'économie internationale et pourraient jouer un rôle vital, mais aussi dans la croissance intelligente et économique.

Certains chercheurs ont fait valoir que les objectifs de l'incubateur peuvent être résumés comme suit : (1) la croissance économique; (2) commercialiser la technologie et le transfert; (3) favoriser le climat d'entrepreneuriat; et (4) la création d'emplois (Abetti, 2004; Adegbite, 2001; Akçomak et Taymaz, 2007; Allen et McCluskey, 1990; Allen et Rahman, 1985; Al-Mubarak, 2008; Al-Mubarak et Busler, 2010a, 2010b, 2010c, 2011a, 2011b, 2011c, 2011d; Frenkel, Shefer et Miller, 2008; Hannon, 2005; Hansen, Chesbrough, Norhoa et Sull, 2000; Hughes et coll. 2007; Lalkaka, 2002; Mcadam et Mcadam, 2008; Mcadam, Galbraith, Mcadam et Humphreys, 2006; Mian, 1994a, 1994b, 1996a, 1996b, 1997; Phillips, 2002; Rothaermel & Thursby, 2005a, 2005b; Smilor & Gill, 1986; Sweeney, 1987; Thierstein et Wilhelm, 2001).

De nombreuses organisations internationales au service d'incubateurs d'entreprises aux États-Unis, comme la National Business Incubation Association (NBIA, 2012), ont démontré le pourcentage le plus élevé de caractéristiques d'incubateur telles que : (1) type d'incubateur indiqué (54 %) comme type à usage mixte; (2) l'objectif de l'incubateur comprend la création d'emplois et la promotion du climat entrepreneurial; et (3) les services d'incubateur tels que i) aider à l'élaboration des activités, (ii) l'accès internet haute vitesse, (iii) l'aide au marketing et (iv) les activités de réseautage. Hughes et coll. (2007) démontrent que les entreprises prospères fondées sur le réseautage stratégique ne dépendent pas de la période de location de l'incubateur.

Enfin, Al-Mubarai, Ahmed et Al-Ajmei (2014) ont résumé les principales découvertes des incubateurs dans les pays développés et en développement. Voir tableau 1.

CONCLUSION

Les incubateurs et les programmes d'innovation sont devenus un sujet important dans le monde entier et ont contribué positivement à la croissance économique. Ce document est basé sur des méthodes quantitatives telles que l'enquête internationale, qui a fourni un aperçu plus approfondi et la compréhension du phénomène à l'étude. La sélection des programmes a été faite à partir d'incubateurs et de centres d'innovation à succès dans le monde entier.

En outre, l'analyse descriptive de l'enquête se traduit par un échantillon pratique de 93 incubateurs et programmes d'innovation dans le monde entier avec un taux de réponse d'environ 47%, ce qui conduit à l'adaptation des incubateurs et des programmes d'innovation dans le monde entier.

L'étude a révélé deux défis : (1) les modèles d'incubateurs indiqués comme des types d'incubateurs de haute technologie ont contribué positivement à l'extension des secteurs technologiques dans chaque pays avec de nouveaux produits et de nouveaux services; et (2) favoriser et soutenir l'entreprise et l'innovation afin de créer le meilleur environnement propice à la croissance des entreprises pour démarrer et accélérer la croissance intelligente.

Toutefois, les deux possibilités pourraient indiquer que : (1) la durabilité des programmes d'incubation et d'innovation est fondée sur le taux de survie élevé (81–90 %) de petites ou moyennes entreprises par exercice; et (2) la durabilité des programmes d'incubation et d'innovation repose sur la création élevée d'emplois de plus de 50 emplois par an et sur le nombre élevé d'entreprises diplômées et clientes d'environ 25 entreprises par an.

En conclusion, l'adaptation réussie des incubateurs et des programmes d'innovation conduit à des résultats élevés lorsqu'il atteint un stade plus élevé de croissance économique en fonction du développement du nombre d'entreprises diplômées, des entreprises clientes ayant des taux de survie élevés et une valeur ajoutée élevée pour des produits et services novateurs, ainsi que la promotion d'un environnement entrepreneurial et la commercialisation du transfert de technologie. Ces données proviennent de mises en œuvre réussies dans le monde entier dans les pays développés et en développement.

TRANSLATED VERSION: GERMAN

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

ÜBERSETZTE VERSION: DEUTSCH

Hier ist eine ungefähre Übersetzung der oben vorgestellten Ideen. Dies wurde getan, um ein allgemeines Verständnis der in dem Dokument vorgestellten Ideen zu vermitteln. Bitte entschuldigen Sie alle grammatikalischen Fehler und machen Sie die ursprünglichen Autoren nicht für diese Fehler verantwortlich.

EINLEITUNG

Zu den beliebtesten internationalen Organisationen gehört die National Business Incubator Association (NBIA, 2007), Vereinigtes Königreich UK Business Incubation (UKBI, 2007), infodev – ein Arm der Weltbankgruppe (infodev, 2009), Organisation für wirtschaftliche Zusammenarbeit und Entwicklung (OECD, 1997), The European Business and Innovation Network und Europäische Kommission (EG 2002) konzentrierten sich auf die Durchführung von Inkubations- und Innovationsprogrammen, um das erfolgreiche Wachstum der wirtschaftlichen und sozialen Entwicklung zu stärken.

Es wurden mehrere Studien über Inkubatoren definiert. Das Business and Innovation Center ist ein physischer Ort, der auf wirtschaftliche Entwicklung ausgerichtet ist, indem Start-up-Unternehmen und deren Geschäftsentwicklung sowie bestehende kleine und mittlere Unternehmen unterstützt werden (infodev, 2009). Es gibt andere Definitionen für die Unternehmensgründung als effektive Talent-Links, Technologietransfer-Organisationen, Kapitalbewegungssysteme und technische Know-how-Gruppen zur Nutzung unternehmerischer Talente und zur Beschleunigung der Entwicklung neuer Unternehmen (Kuratko & lafollette 1987). Hackett und Dilts (2004a, 2004b) definieren Die Inkubation von Unternehmen als Shared Services wie Büroflächen, die ihren Inkubaten ein strategisches, wertschöpfendes Interventionssystem der Überwachung und Unterstützung von Unternehmen bieten wollen.

Darüber hinaus definierten die Autoren mehrere Schlüsselwörter wie: Innovation ist der Prozess der Veränderung, Desdifferenz und Neuheit in den Produkten, Dienstleistungen, Mehrwert und Geschäftspraktiken, um wirtschaftlichen und sozialen Nutzen zu schaffen (EG, 2010). Die OECD (2010) definiert Innovation als die Implementierung eines neuen oder deutlich verbesserten Produkts, einer Dienstleistung, eines neuen Prozesses, einer neuen Marketingmethode oder einer neuen Organisationsmethode in Geschäftspraktiken, Arbeitsorganisation oder Außenbeziehungen. Technologietransfer kann definiert werden als die Entwicklung von Technologien durch Forschungsprogramme von Universitäten, einschließlich Forschungstools und formaler Lizenzierung von Erfindungen und Software (Hardy, 2010). Ein entwickeltes Land kann definiert werden als eine hochentwickelte Wirtschaft, eine hohe industrielle Basis mit fortschrittlicher technologischer Infrastruktur und einen hohen Index für menschliche Entwicklung (O'Sullivan et al., 2003).

Das Wissen, das auf einer von Campbell und Carayannis (2014) definierten Wirtschaft basiert, ist ein Prozess des wirtschaftlichen Lernens, um die Nachhaltigkeit des Wirtschaftswachstums zu katalysieren und zu beschleunigen.

Ziel dieser Forschung ist es, die Herausforderungen und Chancen von Innovation und Inkubatorprogrammen und deren einsetzwirtschaftspotenzial weltweit zu analysieren und zu identifizieren. Der Rest des Papiers ist wie folgt: "Literaturrezension" bietet eine gründliche Überprüfung der Literatur; In "Forschungsmethodik" diskutieren die Autoren kurz die Forschungsmethodik, die zur Erleichterung der Ziele verwendet wird; "Ergebnisse" zeigt die Ergebnisse einer internationalen Umfrage der Autoren; und "Schlussfolgerung" ist das Ergebnis der Studie.

Literaturkritik

Viele Gelehrte diskutierten die Bedeutung des Inkubationsprozesses (Al-Mubarak, 2008; Bearse 1998a; Culp, 1996; Kuratko & lafollette 1987; Lumpkin & Ireland, 1988; Merrifield, 1987). Wagner (2006) bestätigte auch die positiven Auswirkungen von Gründerzentren auf die Schaffung von Arbeitsplätzen. Darüber hinaus wiesen McAdam und McAdam (2008) darauf hin, dass das wichtigste Element von Gründerzentren in den frühen Stadien greifbare Inkubatordienste und Vernetzung sei. Eine weitere Studie (Mian, 1996b) zeigt den Mehrwert von Inkubatordiensten, einschließlich greifbarer Dienstleistungen wie Shared Offices, Unterstützungsstipendien, Marketing, Buchhaltung, Universitätslabore und Infrastruktur.

Smilor (1987), Campbell et al. (1985) und Merrifield (1987) wiesen darauf hin, dass mehrere Erfolgsfaktoren aus verschiedenen Perspektiven wie: Unterstützung der unternehmerischen Gemeinschaft, Vernetzung, Bildung und Verknüpfung mit der Universität; Inkubator: Erfolgsindikatoren, Finanzen, Follow-up für Inkubaten, Unterstützung durch Führungskräfte, klare Ein-/Ausstiegspolitik; Inkubate: Unternehmensbewusstsein und Erfolgsquote. Darüber hinaus können Laut Cooper und Park (2008) Gründerzentren Innovationen vermittelt werden, indem sie die Markterfahrung von Unternehmern gestalten; (2) Schaffung von Sozialkapital; (3) Bereitstellung von Informationen über das Bestehen; und (4) Verfügbarkeit technologischer Lösungen.

Al-Mubarak et al. (2014) identifizierten die Stärke von Gründerzentren in Industrie- und Entwicklungsländern: (1) die Abhängigkeit von der Regierung als Hauptsponsoren zur Erreichung der Selbsterhaltungsziele; (2) die meisten Gründerzentren, die den Unternehmer erfolgreich durch die Erbringung einer breiten Palette von Dienstleistungen unterstützen, wobei der Schwerpunkt auf immateriellen und immateriellen Dienstleistungen liegt; (3) Die Industrieländer wiesen auf einen hohen Einfluss von kulturellen Indikatoren wie Innovation, Kreativität, digitales Unternehmertum, Kompetenzen und erstklassige Bildung hin. In den Entwicklungsländern waren die meisten kulturellen Indikatoren jedoch bescheiden bis niedrig. (4) In den Entwicklungsländern sind die politischen Implikationen stark von der Perspektive geprägt, wie die Rolle der Regierung und der Universitäten bei der Verwaltung und Finanzierung von Gründerzentren. Die Entwicklungsländer wiesen jedoch auf eine mittlere politische Implikation hin.

Al-Mubarak et al. (2015a) kamen zu dem Schluss, dass eine erfolgreiche Umsetzung der Inkubatoren und Innovationsprogramme zu folgenden Ergebnissen führen kann: (1) Verbesserung der wirtschaftlichen Entwicklung durch Schaffung von Arbeitsplätzen; (2) ein stärkeres unternehmerisches Klima; (3) Technologievermarktung und -transfer für abgestufte Unternehmen; (4) Nachhaltigkeit von graduierten

Unternehmen auf dem Markt mit hoher Überlebensrate; (5) Innovationsbeschleunigung mit intelligenten Produkten und Dienstleistungen; und (6) Diversifizierung der Wirtschaft von den Ergebnissen der Unternehmen wie Innovation und Technologie.

Al-Mubarakı und Schrödl (2011) zeigten ein Modell zur Messung der Wirksamkeit der Unternehmensinkubation an. Dieses entwickelte Modell unterstützt die Arbeit von Inkubatormanagern, politischen Entscheidungsträgern, Forschern, Praktikern, Stakeholdern und Regierungsparteien für die effektive Durchführung von Unternehmen, die Unternehmen in der Unternehmensgründung ausführen. Dieses Modell umfasste vier Dimensionen: (1) die Zahl der Unternehmen, die über einen bestimmten Zeitraum abgeschlossen wurden; (2) die Zahl der Unternehmen, die über einen bestimmten Zeitraum noch im Geschäft sind; (3) Arbeitsplätze, die von Gründerzentren geschaffen werden; und (4) Gehälter, die von Inkubatorkunden gezahlt werden. In einer anderen Studie kamen Al-Mubarakı et al. (2012) zu dem Schluss, dass die Finanzindikatoren höchste Priorität bei der Einstufung der Gründerzentren weltweit haben, die positive Auswirkungen auf die wirtschaftliche Entwicklung bei der Schaffung von Arbeitsplätzen widerspiegeln.

Al-Mubarakı und Busler (2013) wiesen darauf hin, dass eine erfolgreiche Anpassung von Innovationsprogrammen zu: (1) einer hohen Rate von Netzwerken und Ergebnissen; (2) hohe Finanzierungsmöglichkeiten und strategische Planung; (3) Förderung von Unternehmertum und Innovation, Kommerzialisierung der Forschung und Förderung des technologischen Unternehmertums; (4) hohe Zahl der geschaffenen Arbeitsplätze; und (5) erfolgreiche Start-up-Unternehmen mit hohen Überlebensraten. Al-Mubarakı und Busler (2010a, 2010b, 2010c) präsentierten Inkubatorrichtlinien wie Gründerzentren, die als nachhaltige dynamische Modelle fungieren, Unternehmen und Innovation fördern, unterstützen und Arbeitsplätze schaffen. Al-Mubarakı, Muhammad und Busler (2015b) empfahlen, dass Innovationsprogramme Die Instrumente für die moderne Wirtschaft auf der Grundlage des Wissens für intelligentes Wachstum stärken sollten. Al-Mubarakı und Busler (2014) kamen zu dem Schluss, dass Gründerzentren zur internationalen Wirtschaft beigetragen werden können und eine entscheidende Rolle spielen könnten, aber auch für intelligentes und wirtschaftliches Wachstum.

Einige Forscher haben argumentiert, dass die Inkubatorziele wie folgt zusammengefasst werden können: (1) Wirtschaftswachstum; (2) Kommerzialisierung von Technologie und Transfer; (3) Förderung des Unternehmertumsklimas; und (4) Schaffung von Arbeitsplätzen (Abetti, 2004; Adegbite, 2001; 2007; Akomak & Taymaz Allen und mccluskey, 1990; Allen & Rahman, 1985; Al-Mubarakı, 2008; Al-Mubarakı und Busler, 2010a, 2010b, 2010c, 2011a, 2011b, 2011c, 2011d; Frenkel, Shefer, & Miller, 2008; Hannon, 2005; Hansen, Chesbrough, Norhoa, & Sull, 2000; Hughes et al. 2007; Lalkaka, 2002; mcadam & mcadam, 2008; mcadam, Galbraith, mcadam,& Humphreys, 2006; Mian, 1994a, 1994b, 1996a, 1996b, 1997; Phillips, 2002; Rothaermel & Thursby, 2005a, 2005b; Smilor & Gill, 1986; Sweeney, 1987; Thierstein & Wilhelm, 2001).

Viele internationale Organisationen, die Gründerzentren in den Vereinigten Staaten bedienen, wie die National Business Incubation Association (NBIA, 2012), wiesen den höchsten Prozentsatz an Inkubatormerkmalen auf, wie z. B.: (1) Inkubatortyp angegeben (54%) als Gemischtgebrauchstyp; (2) das Inkubatorziel umfasst die Schaffung von Arbeitsplätzen und die Förderung des unternehmerischen Klimas; und (3) Inkubatordienste wie (i) Hilfe bei den Grundlagen der Unternehmen, (ii) Hochgeschwindigkeits-Internetzugang, (iii) Marketingunterstützung und (iv) Netzwerkaktivitäten. Hughes et al. (2007) zeigen, dass die erfolgreiche Firmen, die auf der strategischen Vernetzung basieren, nicht von der Inkubatormietdauer abhängen.

Schließlich fassten Al-Mubarakı, Ahmed und Al-Ajmei (2014) die wichtigsten Erkenntnisse von Gründerzentren in Industrie- und Entwicklungsländern zusammen. Siehe Tabelle 1.

SCHLUSSFOLGERUNG

Inkubatoren und Innovationsprogramme sind weltweit zu einem wichtigen Thema geworden und haben positiv zum Wirtschaftswachstum beigetragen. Dieses Papier basiert auf quantitativen Methoden wie der

internationalem Erhebung, die einen tieferen Einblick und Einblick in das untersuchte Phänomen lieferte. Die Auswahl der Programme erfolgte aus erfolgreichen Gründerzentren und Innovationszentren weltweit.

Darüber hinaus ergibt die beschreibende Analyse der Umfrage eine praktische Stichprobe von 93 Gründerzentren und Innovationsprogrammen weltweit mit einer Ansprechrate von etwa 47%, was zur Anpassung von Gründerzentren und Innovationsprogrammen weltweit führt.

Die Studie zeigte zwei Herausforderungen auf: (1) Inkubatormodelle, die als Hochtechnologie-Inkubator Typen angegeben wurden, trugen positiv zur Ausweitung der Technologiesektoren in jedem Land mit neuen Produkten und neuen Dienstleistungen bei; und (2) Förderung und Unterstützung von Unternehmen und Innovationen, um das beste Umfeld für das Wachstum von Unternehmen zu schaffen, um ein intelligentes Wachstum zu gründen und intelligentes Wachstum zu beschleunigen.

Die beiden Möglichkeiten könnten jedoch darauf hindeuten, dass (1) die Nachhaltigkeit von Inkubations- und Innovationsprogrammen auf der hohen Überlebensrate (81–90%) basiert. Von kleinen oder mittleren Unternehmen pro Geschäftsjahr; und (2) Die Nachhaltigkeit von Inkubations- und Innovationsprogrammen basiert auf der hohen Schaffung von mehr als 50 Arbeitsplätzen pro Jahr und einer hohen Zahl von Absolventen und Kundenunternehmen von rund 25 Unternehmen pro Jahr.

Zusammenfassend lässt sich sagen, dass die erfolgreiche Anpassung der Gründerzentren und Innovationsprogramme zu hohen Ergebnissen führt, wenn ein höheres Wirtschaftswachstum erreicht wird, das auf der Entwicklung der Anzahl von Hochschulunternehmen, Kundenunternehmen mit hohen Überlebensraten und einem hohen Mehrwert für innovative Produkte und Dienstleistungen sowie der Förderung eines unternehmerischen Umfelds und der Kommerzialisierung des Technologietransfers basiert. Diese Erkenntnisse stammen aus weltweit erfolgreichen Implementierungen in Industrie- und Entwicklungsländern.

TRANSLATED VERSION: PORTUGUESE

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSÃO TRADUZIDA: PORTUGUÊS

Aqui está uma tradução aproximada das ideias acima apresentadas. Isto foi feito para dar uma compreensão geral das ideias apresentadas no documento. Por favor, desculpe todos os erros gramaticais e não responsabilize os autores originais responsáveis por estes erros.

INTRODUÇÃO

As organizações internacionais mais populares incluem a United States (EUA) National Business Incubadora Association (NBIA, 2007), Incubação de Empresas do Reino Unido (UKBI, 2007), infodev-um braço do Grupo Banco Mundial (infodev, 2009), Organização para a Cooperação e Desenvolvimento Económico (OCDE, 1997), Rede Europeia de Negócios e Inovação e Comissão Europeia (CE 2002) focada na execução de programas de incubação e inovação para fortalecer o sucesso do crescimento económico e social.

Foram definidos vários estudos de investigação sobre incubadoras. O Centro de Negócios e Inovação é um local físico que visa o desenvolvimento económico através do apoio às empresas em fase de arranque e ao seu desenvolvimento de negócios, bem como às pequenas e médias empresas existentes (infodev, 2009). Existem outras definições para a incubação de negócios como ligações de talento eficazes,

organizações de transferência de tecnologia, sistemas de movimento de capital e grupos de know-how técnicos para alavancar o talento empresarial e acelerar o desenvolvimento de novas empresas (Kuratko & lafollette 1987). Hackett e Dilts (2004a, 2004b) definem a incubação de negócios como serviços partilhados, como instalações de espaço de escritório que procuram fornecer às suas incubações um sistema estratégico de intervenção de valor acrescentado de monitorização e assistência empresarial.

Além disso, os autores definiram várias palavras-chave como: inovação é o processo de mudança, diferença e novidade nos produtos, serviços, valor acrescentado e práticas empresariais para criar benefícios económicos e sociais (CE, 2010). A OCDE (2010) define a inovação como a implementação de um produto novo ou significativamente melhorado, serviço, processo, um novo método de marketing, ou um novo método organizacional em práticas empresariais, organização no local de trabalho ou relações externas. A transferência de tecnologia pode ser definida como o desenvolvimento de tecnologias através de programas de investigação de universidades, incluindo ferramentas de investigação e licenciamento formal de invenções e software (Hardy, 2010). Um país desenvolvido pode ser definido como uma economia altamente desenvolvida, uma base industrial elevada com infraestruturas tecnológicas avançadas, e um elevado Índice de Desenvolvimento Humano (O'Sullivan et al., 2003).

O conhecimento baseado numa economia definida por Campbell e Carayannis (2014) é um processo de aprendizagem económica para catalisar e acelerar a sustentabilidade do crescimento económico.

O objetivo desta investigação é analisar e identificar os desafios e oportunidades dos programas de inovação e incubadora e o seu potencial uso em todo o mundo. O restante do trabalho é o seguinte: "Revisão da literatura" fornece uma revisão completa da literatura; em "Metodologia de Investigação", os autores discutem brevemente a metodologia de investigação utilizada para facilitar os objetivos; "Resultados" mostra as conclusões de um inquérito internacional realizado pelos autores; e "Conclusão" é a conclusão do estudo.

Revisão literária

Muitos estudiosos discutiram a importância do processo de incubadora (Al-Mubarakí, 2008; Bearse 1998a; Culp, 1996; Kuratko & lafollette 1987; Lumpkin & Irlanda, 1988; Merrifield, 1987). Além disso, Wagner (2006) confirmou o impacto positivo das incubadoras de empresas na criação de emprego. Além disso, Mcadam e Mcadam (2008) indicaram que o elemento mais importante das incubadoras nas fases iniciais são os serviços de incubadora tangíveis e a ligação em rede. Um outro estudo (Mian, 1996b) demonstra o valor acrescentado dos serviços de incubadora, incluindo serviços tangíveis, tais como escritórios partilhados, bolsas de assistência, marketing, contabilidade, laboratórios universitários e infraestruturas.

Além disso, Smilor (1987), Campbell et al. (1985) e Merrifield (1987) indicaram que vários fatores de sucesso de diferentes perspetivas, tais como: Comunidade: apoio à comunidade empresarial, networking, educação e ligação com a universidade; Incubadora: indicadores de sucesso, finanças, acompanhamento de incubadoras, apoio à gestão, políticas claras de entrada/saída; Incubatee: consciência do negócio e taxa de sucesso. Além disso, de acordo com Cooper e Park (2008), as incubadoras podem ser fornecidas inovação através de: (1) moldar a experiência de mercado dos empreendedores; (2) geração de capital social; (3) fornecer informações sobre a existência; e (4) disponibilidade de soluções tecnológicas.

Al-Mubarakí et al. (2014) identificaram a força das incubadoras nos países desenvolvidos e em desenvolvimento: (1) a dependência da incubadora do governo como principais patrocinadores para cumprir os objetivos de autossustentabilidade; (2) a maioria das incubadoras que apoiam o empresário com êxito através da prestação de um vasto leque de serviços, com enfoque em serviços intangíveis e intangíveis; (3) Os países desenvolvidos indicaram um elevado nível de influência de indicadores culturais como a inovação, a criatividade, o crescimento digital do empreendedorismo, as competências e a educação de classe mundial. No entanto, nos países em desenvolvimento, a maioria dos indicadores culturais eram modestos a baixos níveis. (4) Nos países em desenvolvimento, a lei de implicação política constitui perspetivas diferentes, tais como o papel do governo e da universidade na gestão e financiamento das incubadoras; no entanto, os países em vias de desenvolvimento indicaram um nível médio de implicação política.

Al-Mubarakí et al. (2015a) concluiu o seu estudo segundo o facto de que se pode esperar que a implementação bem sucedida das incubadoras e dos programas de inovação resulte em: (1) um desenvolvimento económico reforçado através da criação de emprego; (2) um clima de empreendedorismo mais forte; (3) comercialização e transferência de tecnologia para empresas licenciadas; (4) sustentabilidade das empresas graduadas no mercado com elevada taxa de sobrevivência; (5) aceleração da inovação com produtos e serviços inteligentes; e (6) diversificação da economia a partir dos resultados das empresas, como a inovação e a tecnologia.

Al-Mubarakí e Schrödl (2011) indicaram um modelo para medir a eficácia da incubação empresarial. Este modelo desenvolvido apoia o trabalho de gestores de incubadoras, decisores políticos, investigadores, praticantes, partes interessadas e partes governamentais para a execução efetiva de empresas de incubação de empresas. Este modelo incluiu quatro dimensões: (1) o número de empresas graduadas durante um período de tempo; (2) O número de empresas ainda em atividade durante um período de tempo; (3) postos de trabalho criados por clientes de incubadoras; e (4) salários pagos por clientes de incubadoras. Num outro estudo, Al-Mubarakí et al. (2012) concluiu que os indicadores financeiros são a maior prioridade na classificação das incubadoras em todo o mundo, que refletem um impacto positivo no desenvolvimento económico na criação de emprego.

Al-Mubarakí e Busler (2013) indicaram que a adaptação bem sucedida de programas de inovação leva a: (1) uma elevada taxa de networking e resultados; (2) financiamento e planeamento estratégico de elevado potencial; (3) fomentar o empreendedorismo e a inovação, a comercialização da investigação e o apoio ao empreendedorismo tecnológico; (4) um elevado número de postos de trabalho criados; e (5) empresas de arranque bem sucedidas com elevadas taxas de sobrevivência. Al-Mubarakí e Busler (2010a, 2010b, 2010c) apresentaram diretrizes de incubadoras como incubadoras que atuam como modelos dinâmicos sustentáveis, fomentando, apoiando a empresa e a inovação, e gerando empregos. Al-Mubarakí, Muhammad e Busler (2015b) recomendaram que os programas de inovação reforcem as ferramentas para a economia moderna com base no conhecimento para um crescimento inteligente. Al-Mubarakí e Busler (2014) concluíram um estudo segundo o apoio de incubadoras para a economia internacional e que poderia ser desempenhado um papel vital, mas também no crescimento inteligente e económico.

Alguns investigadores argumentaram que os objetivos da incubadora podem ser resumidos da seguinte forma: (1) crescimento económico; (2) comercializar tecnologia e transferência; (3) fomentar o clima de empreendedorismo; e (4) criação de emprego (Abetti, 2004; Adegbite, 2001; Akçomak & Taymaz, 2007; Allen e mccluskey, 1990; Allen & Rahman, 1985; Al-Mubarakí, 2008; Al-Mubarakí e Busler, 2010a, 2010b, 2010c, 2011a, 2011b, 2011c, 2011d; Frenkel, Shefer, & Miller, 2008; Hannon, 2005; Hansen, Chesbrough, Norhoa, e Sull, 2000; Hughes et al. 2007; Lalkaka, 2002; mcadam & mcadam, 2008; mcadam, Galbraith, mcadam, & Humphreys, 2006; Mian, 1994a, 1994b, 1996a, 1996b, 1997; Phillips, 2002; Rothaermel & Thursby, 2005a, 2005b; Smilor & Gill, 1986; Sweeney, 1987; Thierstein & Wilhelm, 2001).

Muitas organizações internacionais ao serviço de incubadoras de empresas nos Estados Unidos, como a National Business Incubation Association (NBIA, 2012), demonstraram a maior percentagem de características da incubadora, tais como: (1) tipo de incubadora indicado (54%) como tipo de utilização mista; (2) O objetivo da incubadora inclui a criação de emprego e o fomento do clima empresarial; e (3) serviços de incubadora, tais como (i) ajuda com o básico das empresas, (ii) acesso à Internet de alta velocidade, (iii) assistência ao marketing e (iv) atividades de networking. Hughes et al. (2007) demonstram que as empresas de sucesso baseadas na rede estratégica não dependem do período de arrendamento da incubadora.

Por último, Al-Mubarakí, Ahmed e Al-Ajmei (2014) resumiram as principais descobertas das incubadoras nos países desenvolvidos e em desenvolvimento. Ver tabela 1.

CONCLUSÃO

As incubadoras e os programas de inovação tornaram-se um tema importante a nível mundial e contribuíram positivamente para o crescimento económico. Este trabalho baseia-se em métodos quantitativos, como o inquérito internacional, que forneceu uma visão mais profunda e uma compreensão

sobre o fenómeno sob investigação. A seleção de programas foi feita a partir de incubadoras de sucesso e centros de inovação em todo o mundo.

Além disso, a análise descritiva do inquérito resulta numa amostra conveniente de 93 incubadoras e programas de inovação em todo o mundo com uma taxa de resposta de cerca de 47%, o que leva à adaptação de incubadoras e programas de inovação em todo o mundo.

O estudo indicou dois desafios: (1) os modelos de incubadoras indicados como tipos de incubadoras de alta tecnologia contribuíram positivamente para a extensão dos sectores tecnológicos em cada país com novos produtos e novos serviços; e (2) fomentar e apoiar as empresas e a inovação para criar o melhor ambiente para o crescimento das empresas para iniciar e acelerar o crescimento inteligente.

No entanto, as duas oportunidades podem indicar que: (1) a sustentabilidade dos programas de incubação e inovação baseia-se na elevada taxa de sobrevivência (81-90%) das pequenas ou médias empresas por ano fiscal; e (2) a sustentabilidade dos programas de incubação e inovação baseia-se na elevada criação de empregos por ano e no elevado número de empresas licenciadas e clientes de cerca de 25 empresas por ano.

Em conclusão, a adaptação bem sucedida das incubadoras e programas de inovação conduz a resultados elevados ao atingir uma fase mais elevada de crescimento económico assente no desenvolvimento do número de empresas de pós-graduação, empresas clientes com elevadas taxas de sobrevivência e elevado valor acrescentado para produtos e serviços inovadores, bem como fomentar um ambiente de empreendedorismo e comercializar transferência de tecnologia. Esta evidência provém de