Chapter 2
Literature Review

Abstract This chapter systematically reviews the literature on business incubators and business incubation. Focusing on the primary research orientations—i.e. studies centering on incubator development, configurations, development, incubator-incubation impacts, and theorizing about incubators-incubation—problems with extant research are analyzed and opportunities for future research are identified. From our review, it is clear that research has just begun to scratch the surface of the incubator-incubation phenomenon. This chapter discusses the main results from the international cases studies and provides the conceptual framework and a thorough review of the international literature.

Keywords Innovation · Entrepreneurship · Incubators · Literature review · Conceptual framework

Innovation centers provide entrepreneurs with expertise, networks, and tools they need to make their ventures successful, Al-Mubaraki and Busler [22] discussed European models based on their adoption as case study examples: the United Kingdom, France, and Germany. They account for 83 % of all the incubators located throughout Europe today.

Innovation plays an important role in generating policy-related information about innovation processes, behaviour, and performance. Innovation is persistent in every phase of life, but its significance becomes clearer when observed in the perspective of economic development. Incubator programs in the developing and restructuring countries are naturally focused on technology ventures. The incubation process that was developed has included services for on-the-spot diagnosis and treatment of business problems, dramatically lowering the usual early stage failure rate.

Innovation is one of the main drivers of sustained economic growth from practitioner perspectives such as governments, policy maker and funded foundation and academic institution. In addition, innovation indicators consist of basic research, applied research, development, and commercialization which contributed

H.M. Al-Mubaraki et al., *Innovation and Entrepreneurship*,
SpringerBriefs in Business, DOI 10.1007/978-3-319-13683-7_2

to economic benefits includes productivity improvements and economic growth [30, 31, 46]. Furthermore, innovation system is an important tool for governments and commonly used performance indicators are R&D intensity and GDP per capita [50–52]. Another study used the combination of science, technology and innovation (STI) as an indicators and the used of science and technology can contributed positively on the social and economic which business competition is increasingly based on innovation [44, 45, 69]. Moreover, European countries used innovation indicators as methodology, for example, European Innovation Index have been published [38–41, 65]. Finally, Japan used S&T activities includes inputs in R&D, staff, output and number of scientific paper citations as ranking multiplicity of indicators [54, 63, 64].

Al-Mubaraki and Busler [14] indicated that innovation programs 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, business incubators are particularly valuable in helping to develop local economies, promote technology transfer, create new enterprises, and generate jobs. These outcomes are used to make recommendations for maximizing the success of incubators. Successful innovation systems merge economic, social, political, organizational, and institutional elements, while supporting the development and diffusion of new technologies in compliance with governmental initiatives.

The European Business and Innovation Network [37] indicates the percentages of the groups of innovation as divided in Europe into three groups: technological innovation 51.49 %, non-technological innovation 38.34 % and non-innovation 10.16 %. The main focus of business innovation centers (BICs) was to support start-ups firms. In fact, BICs supported 2,491 companies and requested 666 patents for companies and entrepreneurs, resulting in a 307 granted patents.

Al-Mubaraki and Busler [5] studied incubator programs in France, Spain, Netherlands, Luxemburg and Portugal. They utilized a SWOT analysis to reflect the strengths of each program according to their compliance with their missions and objectives, opportunities for future plans, and the performance of each program.

A business incubator (Business and Innovation Center) is a physical facility aimed at promoting economic development of its community by supporting start-up companies and their business development. Business incubator programs, often called “new entrepreneur creation projects” help extend new entrepreneurs and support them to start businesses and be better able to survive on a longer-term sustainable basis. Typical business incubators include small entrepreneurs that want to develop new businesses and those who would like to expand their talent and ideas or engage in the transfer of technology. Its measures indicate economic growth within the community rather than outside of it [1, 56, 57, 59, 67].

Al-Mubaraki and Busler [5] considered innovation centers as cost-effective economic development processes. Innovation could be an effectual driver for economic development at appreciably higher cost than originally anticipated unless a thorough and objective feasibility study is planned, performed, and best-practice is applied.

Business incubators can play an active role in local, regional, and national economic development efforts. However, business incubators cannot transform an economy and must be integrated into broader economic policy reform infrastructure [27]. Innovations that are novel to the world are predominantly found in the progressive economies and are based on research and development at the frontiers of global knowledge. In developing countries far removed from the international technological boundary, innovations tend to be new to the market or new to the firm. Innovations new to the market in developing countries refer to the international diffusion and absorption of technology.

Al-Mubaraki and Busler [6] found that business incubators are innovative tools in supporting start-up businesses. Their empirical results highlight implications for successfully developing and implementing best practices of business incubation programs that contribute to knowledge about the process of business incubation.

Al-Mubaraki and Busler [7] used a mixed-method approach to study business incubation as a 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.

Al-Mubaraki and Schrödl [23] evaluated aspects of innovation centers or business incubation that can be used to measure the effectiveness of business incubation. Their study used a multi-method approach combining desk-research, interviews, and a multi-case study of five incubator organizations in the GCC member states. From these findings, a model for measuring the effectiveness of business incubation in a standardized way was developed. The developed model supports the work of incubator managers, policy makers, researchers, practitioners, stakeholders, and government parties for effective execution of business incubation enterprises. The researchers were able to determine the effectiveness of business incubators (or innovation centers) individually and as an industry using four dimensions for gauging the health of programs: (1) the number of businesses graduated over a period of time, (2) the number of businesses still in business over a period of time, jobs created by incubator clients, and (3) salaries paid by incubator clients.

Al-Mubaraki and Wong [25] studied innovation centers in Europe and developed countries. Incubators are used as much for spurring regional economic progress and establishing industry clusters as they are for revitalizing urban environments and industry. The study describes the important role and the impact of incubation on the economic development process of GCC countries.

Business innovation centre's goals are to produce successful businesses that will leave the program financially viable and freestanding. They create jobs, revitalize communities, commercialize new technologies and create wealth for local and national economies [8].

Al-Mubaraki and Busler [9] summarized 40 innovation centers in the Middle East according to seven categories: (1) type, (2) financial model, (3) services, (4) objectives, (5) number of clients, (6) number of graduates, and (7) jobs creation with a description of each incubator. In addition, chain incubators program created greater than 61 (20 %) jobs with a total number of graduated companies greater than 14 (40 %). Furthermore, the number of the client companies inside

the incubators greater than 21 (45 %), the percentage of financial model of not-for profit incubators 80 % and the 98 % of incubators in Middle East have as their main objectives the support of entrepreneurship and profitable enterprises.

Al-Mubaraki and Busler [10] applied a mixed-method approach, which states that the business incubation is a tool for economic development with typical outcomes such as assisting entrepreneurs, starting new companies, and creating new jobs. It was proved in both the United States and developed countries, but is still taking shape in the developing countries such as the GCC member states.

Al-Mubaraki and Busler [11] compared the research grounded on a mixed-method style using both qualitative and quantitative methods. The exploration indicates the incubator or innovation program is a place where the incubation activities are carried out, and where the would-be entrepreneurs and the existing SMEs find a suitable place, in terms of facilities and expertise, to address their needs and develop their business ideas, and transforms them into sustainable realities.

Al-Mubaraki and Busler [12] present innovation programs as effective tools for technology transfer, innovation, new technology, and research incentive. The findings of the study included: (1) Technology commercialization from the university innovation programs leads to economic development based on the technology transfer license income and the high rate of total royalty income of $1.3 B; (2) Innovation incubators increased the research incentive fund to $4.5 M; (3) Innovation based on the university incubators produced over 8,000 inventions; and (4) The new technology adds value to the market with an accumulative total $878 M.

Al-Mubaraki and Wong [25] present four reasons for why some incubators or innovation program perform better than others: (1) incubators may differ in terms of their size, (2) the services provided by each incubator may not be the same, (3) incubators may differ in their focus of services, and (4) the source of sponsorship differs across different incubators.

Anderson and Al-Mubaraki [2] pinpointed the key components for developing a successful business incubator as an effective tool for economic development, based on the case study of an unsuccessful effort. Examination about the short life of a highly anticipated business incubator in an area of Southern California, Gateway Innovation Center was reported. It sought to foster new businesses and create jobs in a region of relatively high unemployment. They explored various missteps in the formation of the Gateway Innovation Center and provided a better understanding of key issues in developing successful incubators. The lack of success was attributed to five features: function following form; lack of planning; lack of expertise; lack of due diligence; and being placed in a market area that would not support a technology incubator.

Al-Mubaraki et al. [28] ranked business incubators according to four key indicators, such as financial data, mission, size, and obstacles, using mathematical techniques which can contribute to the acceleration of the economic development process of incubators within business incubation programs.

Al-Mubaraki and Busler [13] compared incubator programs in the US and Brazil. There are six key findings: (1) The strategic focus in both countries is economic development, technology transfer, and job creation. (2) Entrepreneurship is

very active in both the U.S. and Brazil. (3) For incubator funding, the stakeholders are mainly the government, businesses and universities. (4) Incubator services in both countries include both tangible and intangible services. (5) The culture in the U.S. is more risk-taking whereas Brazil is more risk-averse. (6) Innovation is very active in both the U.S. and Brazil.

Al-Mubaraki and Busler [14] conducted a quantitative and qualitative study of success rates and the key indicators of incubators in several countries. They then used their insights to develop a model of best practices learned from case studies. The model suggests that an incubatee's progress to sustainable graduation depends on: (1) clear objectives, (2) the incubator's location, (3) access to services, (4) employment creation, and (5) economic development strategy. Moreover, when followed, the best practice model can lead to a 90 % survival rate of companies and replicates sustainability in the market.

Al-Mubaraki and Busler [15] specified innovation and entrepreneurship as critical drivers of social and economic development. They found evidence of increasing global awareness of the importance of incubators, especially in developing countries such as Asian countries, for the purpose of promoting innovation and entrepreneurship, which was reported by 96 % of those surveyed. Moreover, policymakers and other stakeholders increasingly view business incubation as an important tool to create sustainable jobs (60 %), with youth (90 %) and technology sectors (82 %) being common targets.

Al-Mubaraki and Busler [16] used a SWOT analysis to evaluate innovation systems models and their potential use worldwide. The study adds new and useful knowledge for both academics and practitioners who are interested in systems innovation. Five European case studies: France, Spain, Netherlands, Luxemburg, and Portugal were chosen based on their successful innovation centers throughout Europe. Five criteria used to evaluate the European case studies were: (1) the legal status, (2) target market, (3) stakeholders, (4) entrepreneurship, and (5) job creation. All the criteria are related to the economic development of European countries.

Al-Mubaraki and Busler [19] gave a solid base of evidence to support recommendations of forward-looking strategy measures to advance the rate of successful commercialization in Latin America through a more focused framework for business and technology incubation activities and organizations.

Al-Mubaraki and Busler [20] investigated the youth entrepreneurship dimension as an outcome from business incubation program. The empirical results highlight some implications for successful development and implementation of best practices for creating an entrepreneurial generation to support economic development. The work contributes to the knowledge about the youth entrepreneurship.

Al-Mubaraki and Hamad [21] concluded that the incubator organizations or innovation programs are model accelerator tools for the 21st century. This study has clearly stated that business incubation programs are designed to accelerate the successful development of entrepreneurial companies through an array of business support resources and services, developed by incubator management.

Al-Mubaraki and Schrödl [24] identified and assessed critical dimensions of business incubation with focus on the GCC. These are suitable to measure the

effectiveness of business incubation to support startup and entrepreneurial businesses by providing a number of services and resources to the clients. Their proposed model is suitable in more highly developed economic regions and helps practitioners and government parties with future implementation of incubators program. Furthermore, it adds new knowledge for the academic literature on a commonly agreed model for effective measurement of business incubators.

Al-Mubaraki et al. [17] provide useful implementation guidelines to both academics and practitioners involved with incubators worldwide. They focused on six key success indicators and pointed out proposed incubators model in the years to come. The design methodology is based on survey and interviews of 100 selected incubators. The research findings indicate the similarities of incubator programs that are (1) creating jobs, (2) enhancing the community's entrepreneurial climate, and (3) providing tangible services. Differences noted were (1) Incubator's type, (2) Financial status, and (3) Incubator's age.

Al-Mubaraki and Busler [18] categorized the impact of innovation and entrepreneurship as a tool for a dynamic economic model based on the successful practice of innovation program case studies. They found that the adoption 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. The empirical results highlight implications for practitioners such government and academic institution and makes a contribution to knowledge about the innovation and entrepreneurship in developing countries.

http://www.springer.com/978-3-319-13682-0

Innovation and Entrepreneurship
Powerful Tools for a Modern Knowledge-Based Economy
Al-Mubaraki, H.; Muhammad, A.; Busler, M.
2015, XV, 76 p. 44 illus. in color., Softcover
ISBN: 978-3-319-13682-0