AMERICAN UNIVERSITY OF BEIRUT

THE IMPACT OF STARTUP PROGRAMS ON THE SUCCESS OF LEBANESE ENTREPRENEURS

by
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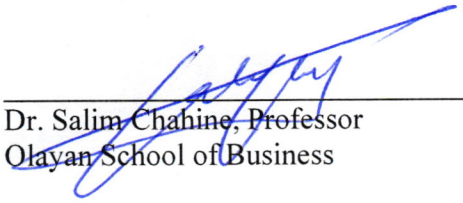

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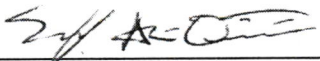

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ABSTRACT

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As more universities include entrepreneurship and innovation in their curriculum, and as the central bank and other governmental institutions begin to recognize entrepreneurship as a potentially strengthening and driving force to the Lebanese economy, data collection and analysis becomes more necessary to assess and improve startup programs that support and guide entrepreneurs. Unfortunately, the country is short of this data and many startup companies will close due to lack of effective support. When researching the status of the startup ecosystem in Lebanon, this lack of data was very evident and the shortage of structure and guidance was a motivator to further explore how startup programs work in Lebanon, what their impact is, and what their shortcomings might be. Data is collected from several local startup founders in interviews and later transcribed then analyzed via thematic analysis. The results show that the work of startup programs is limited and needs improvement in funding, frequency, and management to properly support local entrepreneurs

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CHAPTER I

INTRODUCTION

For the past couple of decades, and especially in the last few years, Lebanon has witnessed serious efforts to improve and energize its entrepreneurial landscape. These efforts intended to increase job creation, local investment, and the Lebanese GDP in general. The motivation behind this study is to better understand the entrepreneurial process in Lebanon and the emergent programs that aim to support the local startup ecosystem. What is the status, future promise, and impact of entrepreneurship programs?

The most significant and recent of the aforementioned efforts to encourage entrepreneurship in Lebanon comes from the Central Bank, Banque du Liban (BDL). In 2013, BDL issued Circular 331 which put aside 400 million dollars for potential investment in Lebanese startups. This money acted as a guarantee for up to 75% of the investments commercial Lebanese banks were encouraged to make in the startups that "contribute to innovation and new technologies". Another 200 million dollars were added in 2016 which illustrated BDL's commitment to supporting entrepreneurship (Domat, 2016).

Another entity that guaranteed 75% of loans was Kafalat. Kafalat is an organization owned by the National Institute for the Guarantee of Deposits and local banks. It provides guarantees of up to 200,000 dollars to small and medium-sized companies (SMEs) (The Daily Star, 2010). Kafalat's support differs from BDL's circular 331 in that it targets all SMEs and not only tech startups. It invests in agriculture, industry, and

tourism along with specialized technologies which received only 2.2% of guarantees in 2016 (Embin, 2017).

The Investment Development Authority of Lebanon (IDAL) is another state-run entity that supports startups. IDAL's job is to identify promising investment opportunities in Lebanon, and in addition to other economic sectors, IDAL does promote technology companies and startups in their pursuit of investment. (IDAL, 2017)

A general environment of support has been born along with these initiatives. Many other organizations have begun working to help launch and grow startups along all the stages. Incubators and accelerators (like AUB I-Park and Speed@BDD) help during early stages, other initiatives like Endeavor and Lebanon for Entrepreneurs (LFE) help during the early-to-growth stage, and SME institutionalization entities come into the picture during later stages (like LCGT and LTA). This is in addition to several entrepreneurship competitions and conferences (such as BDL Accelerate) which give startups a platform to prove themselves; the competitions include MIT Arab Business Plan Competition, ArabNet competitions, and others organized by universities (Ministry of Economy and Trade, 2014).

All these programs have been running for several years, but what impact are they having on Lebanese entrepreneurs? Research, such as the one conducted by Lyons and Zhang (2018), suggests that such programs are not studied closely resulting in scarce empirical evidence that would allow their evaluation. In Lebanon, these programs are the go-to starting point for entrepreneurs, and hence the goal of Lebanon becoming a regional hub for entrepreneurship is greatly affected by their quality and effectiveness.

A. Problem Statement

There are several startup programs in Lebanon, but their work is insufficient to adequately aid entrepreneurs and can be improved to achieve their purpose more effectively.

B. Objective of the Thesis

Due to a lack of existing data on the Lebanese tech startup ecosystem in general and startup programs in specific (Yan, 2018), research and data collection is needed to fill this gap in knowledge about the current state of tech-entrepreneurship in Lebanon. Initiatives were put in place over six years ago with great ambiguity surrounding their effectiveness due to this lack of data. Any information about the startup ecosystem and startup programs will provide new insight into this promising sector in Lebanon. The purpose is to study how startup programs operate in Lebanon, how effective they are, and how they can be improved.

The remainder of this thesis is organized as follows: A literature review section examines startup success factors, obstacles, funding, trends, launch approach, and programs. The Thesis Statement is then stated, and the Methodology is described with an explanation of how this study was conducted. The Results and Discussion section will analyze findings and discuss the results in detail. Future Work is suggested and the Implications of this research are laid out as part of the Conclusion section.

CHAPTER II

LITERATURE REVIEW

A. Startup Success

1. Success Factors

As startups continue to promote economic growth worldwide, more and more people are taking the leap into entrepreneurship. These startups create jobs, attract outside investment, and generate national revenue via exports. Their potential for innovation also helps enable the delivery of a wider range of goods and services along with an increase in competition on the national and international levels.

Song et al. (2008)'s research on success factors in new ventures helped them identify eight significant elements that correlate directly to a technology venture's performance. They performed a meta-analysis of existing literature on this subject and found 24 meta-factors of success from 11 different papers. They compared these 24 meta-factors according to performance correlation and arrived at a final eight "universal" factors:

1. Supply chain integration
2. Market scope
3. Firm age
4. Size of founding team
5. Financial resources
6. Founders' industry experience
7. Founders' marketing experience

8. Existence of patent protection

Supply chain integration is “a firm’s cooperation across different levels of the value-added chain” and is part of the startup’s resources along with patent protection, financial resources, firm age, and size of founding team. Industry and marketing experience are representative of the startup team’s knowledge whereas market scope describes the market and opportunity aspects. Startup strategy makes up with these three levels or aspects a framework which describes its performance. The study by Song et al. (2008) investigated the most important research related to new venture success factors until the year 2008. Other papers from around the same time or later are also considered here and all the consequent success factors are listed in Table 1 to show which are common between Song’s paper and the others described below.

Lasch et al. (2007) researched critical growth factors for ICT start-ups. Their research is relevant since this study will also focus on tech start-ups. It focused on 220 ICT start-ups that survived the first 3 years in France. They found that human capital and previous work experience were not significant deciding factors for success whereas financing and customer related aspects were (Lasch et al., 2007). The 5 factors defined in their research were:

1. Existing clients (already approached)
2. Amount of initial capital
3. Start-up size
4. Later stage capital
5. Number of clients over time.

Gao et al. (2010) researched the impact of initial conditions on new venture success and performance. The study looked at 92 new ventures in Beijing and the relevant conclusion they reached was that new ventures' performance was impacted by certain factors related to the venture's entrepreneurial characteristics and quality (Gao et al., 2010). Through their revision of 14 previous papers on this subject, they managed to identify 10 success factors which they tested:

1. Industry specific knowledge
2. Management experience
3. Amount of capital
4. Start-up size
5. Founding team
6. Later stage capital
7. Characteristics of the market(s)
8. Evolution of products (diversification/innovation)
9. Marketing skills
10. Quality of competition

Tipu and Arain (2011) researched success factors related to entrepreneurial behavior, focusing on developing countries which links well with this study which in turn will focus on Lebanon. They conducted interviews with 3 ventures in Pakistan and looked at 24 research papers to identify 6 success factors (Tipu and Arain, 2011):

1. Start-up planning
2. Managing risk (management experience)
3. Learning (training)

4. Networking (support of community/networks)
5. Managing human resources (management experience, founding team)
6. Managing finances (capital and financial changes)

Miskin et al. (2015) researched the impact of specific variables/factors relating to the entrepreneur, the context of the venture, and the offered product or service on a new venture's initiation and success. They surveyed 346 new business owners and found the following 5 factors to be influential to the venture's success (Miskin et al., 2015):

1. Previous experience (management experience)
2. Familiarity with the market (target market knowledge)
3. Family and friends support
4. Self-perception as entrepreneur
5. Evolution/development of the products

Abdulgani et al. (2016) used a meta-analysis of previous papers to identify "factors, issues and challenges related to technopreneurship environment" where they defined a technopreneur as "a person who destroys the existing economic order (creative destruction)" through the introduction of "new products and services by creating new forms of organizations and by exploiting new raw materials". (Abdulgani et al., 2016) They researched 22 papers and grouped all the found factors into 14 factor categories:

1. Individual characteristics factors (founding team)
2. Motivational factors
3. Situational factors (social pressure, task difficulty, etc.)
4. Exogeneous factors (lack of employment opportunities)
5. Social factors (family and friends support, training and expertise)

6. Financial factors (capital)
7. Non-financial assistance factors (community support, training, government support and policies)
8. Entrepreneurial and business skills (management experience, education)
9. Cultural factors (founding team)
10. Pull factors (relating to individual's motivations and aspirations/personality)
11. Push factors (also relating to individual's motivations and aspirations/personality)
12. Environmental factors (experience and supply chain integration)
13. Socioeconomic factors (community attitude toward entrepreneurship, role models, economic growth and funding availability)
14. Government policies

All the above-mentioned factors are organized in the Table 1 with the common success factors summed in the rightmost column. Subsequently, we arrive at 7 success factors that have the highest count:

1. Industry specific knowledge
2. Management experience
3. Capital (initial and later stage)
4. Firm size
5. Founding team
6. Target market knowledge and traits
7. Financial changes

They can be further grouped into 5 internal factors (industry specific knowledge, management experience, target market knowledge, founding team and firm size) and 3 external factors (capital, target market traits and financial changes).

In Table 1, these results are aligned with the only found literature which studies entrepreneurial barriers in Lebanon which concluded the following factors: social network, lack of funding, risk and hard work tolerance, and economic and political stability (El Nemar, 2016).

Success Factor	(1)	(2)	(3)	(4)	(5)	(6)	Count
Industry Specific Knowledge			x		x	x	3
Management Experience		x	x	x	x	x	5
Training			x	x			2
Existing Clients (approached)	x						1
Capital (initial)	x	x	x	x	x	x	6
Firm Size	x				x	x	3
Founding Team			x	x	x	x	4
Capital (later stage)	x		x	x	x	x	5
Number of clients over time	x						1
Evolution of Products (diversification/innovation)		x			x		2
Cooperation (R&D)						x	1
Self-perception as entrepreneur/Motivation		x		x			2
Target Market Knowledge and traits		x			x	x	3
Financial Changes			x	x		x	3
Support of Family and Friends		x		x			2
Support of Community/Networks			x	x			2
Marketing Skills					x		1
Exogenous (few employment opportunities)				x			1
Governmental Policies, Patents				x		x	2
Supply Chain Integration				x		x	2
Quality of competition					x		1

(1) Lasch et al (2007) - (2) Miskin et al (2015) - (3) Tipu et al (2011) - (4) Abdulgani et al - 2016 - (5) Gao et al (2010) - (6) Song et al (2008)

Table 1 Success Factors Summary

2. Funding Startups

A key aspect of startup success is funding. Financing a startup can be a difficult deed especially since it needs to be done several times as the startup passes through its lifecycle stages: seed, startup, growth, expansion, and maturity/exit. New ventures naturally do not start out as profitable nor do they have tangible assets, and although debt financing could still be an option, it is usually not preferred. Denis (2004) explored alternative sources of capital for technology startups and found that the three basics are venture capital, angel investors, and corporate investors. Venture capital funds are "limited partnerships in which managing partners invest on behalf of the limited partners", angel investors are "high net worth individuals that invest their own funds in a small set of companies", and corporate investors are corporations that "invest on behalf of their shareholders for financial and/or strategic reasons". Because an angel investor's funding come from individuals, it is comparably small. Hence, angel investors usually fund early-stage startups, giving them the needed starter boost and do not typically get involved in the startup's operations and support. Venture capitalists, on the other hand, invest greater amounts and generally provide monitoring services to keep tabs on their more sizable investment. They also support these new ventures by guiding their company policies when it comes to human resources, stock option plans, and general strategy and internal organization. Another role that venture capitalists can play is as a certifying agent. When the venture capitalist puts its reputation at stake by backing a startup at high risk (a costly risk that might exceed its investment), then this will help the startup in acquiring additional funds from other sources. Corporate investors may face structural and business conflicts as corporations' investment strategies may lack the needed commitment and vision, and they could be reluctant to

share profits earned. Also, conflicts of interest can arise if the startup they invest in offers alternative products to its own, and they can become potential competitors to them. This makes independent venture capitalists the preferred source of funding (Denis, 2004).

Mitter and Kraus (2011) continued the research on entrepreneurial finance and gave new insight into the matter. They saw that venture capital accounts for only around 1% of the private equity market. They supported Denis' idea that financial contracting could be a solution to investor concerns when it comes to misallocation of funds by the entrepreneur (moral hazard due to entrepreneurs leaning toward benefitting themselves rather than investors) (Mitter and Kraus, 2011). However, although Denis stated that VCs would ask for preferred securities which would link the entrepreneur's financial gain to the company's success (Denis, 2004), Mitter and Kraus found that this should not be generalized, at least not for new ventures outside the US where this trend is not always visible compared to common securities for example. They also defined 5 possible sources of funding (Mitter and Kraus, 2011).

The first source is capital of the founder, family, and friends. Since track record and collateral are usually non-existent for new start-ups, they usually rely on their own capital at the early stages of their venture as even creditors might not be confident enough to provide the entrepreneur with finances (Mitter and Kraus, 2011). The second source, which usually comes after founder/family/friends' resources are used up, is angel investors. As described by Denis, angel investors are usually wealthy individuals who invest in startups and offer networking opportunities as well. Venture capitalists are the third source and usually come in place of or after angel investors. They are

private or public companies that “not only allocate equity but also take over value adding duties.” Their aim is to increase the firm’s value so that they can benefit when they decide to exit, and therefore they put effort and offer strategic and mentorship services to the startup (Mitter and Kraus, 2011). The fourth source is bank finance which is seen as a more common source of funding than venture capital especially in industries that are not considered high growth (telecommunication, biotechnology, and software). Here, the startup borrows money from the bank which they need to pay back with added interest. Banks can even obtain some influence in the company by receiving stock options or board seats (covenants) although this is not commonplace. It is tech startups that generally face issues when looking to obtain bank loans; these loans require collateral and tech startups have mostly intangible assets (especially for software companies). For this reason, bank financing is seen as an early-stage funding source where the entrepreneur can use his/her personal assets as collateral (Mitter and Kraus, 2011). The fifth and final source is consumer and supplier credit whereby firms receive prepayments for the product or service they will provide the customer or can receive supplies and services from suppliers beforehand. This is not popular because of its high interest rate (Mitter and Kraus, 2011).

When the abovementioned investors fund startups, they opt to buy stock options in the startup. Equity financing flourishes when the country in question has a developed and stable stock market. Initial Public Offerings (IPO) play a key role as financing contracts use them to give the entrepreneur a chance to get control back from the investor, and they give the investor the opportunity to exit or return capital. Also, the country’s legal system plays a significant role in encouraging investment in startups;

laws need to support and protect investment in startups by protecting both the investor and entrepreneur (Denis, 2004).

3. Funding in MENA Region

Stock markets play an important role in startup funding, but they are undeveloped in the MENA region. This has forced many startups to seek debt financing especially during initial stages. Oukil (2011) studied technology-based entrepreneurship in the MENA region. He found that countries in the MENA region generally rely on oil as their primary export but are trying to diversify and achieve more growth and technological development. His paper looked at what role can be played by the private sector to help these countries. MENA is a region where investment in manufacturing is very weak as it represents less than 1% of total exports at most in these countries. When it comes to entrepreneurship, the trend followed in MENA has been more of imitation of existing foreign products or ideas. Innovation is considered the key to true growth and the focus on education can help reach that along with brain gain (return of abroad graduates). Also, private firms are increasingly investing in technology, and this tech-centered mentality is key.

A major obstacle facing this study is the lack of accurate data which is characteristic of the Arab world. Also, the private sector in most of the MENA countries is much weaker than the public one and much less supported financially. Furthermore, widespread corruption in most of these countries could be considered the biggest enemy of entrepreneurs who will face a steeper uphill challenge trying to fend off all the unnecessary complications that come with corrupt policies and officials. Education is

already greatly invested in, but as the paper mentions, specific educational support for innovation and entrepreneurship focused material needs to be increased (Oukil, 2011).

Oukil's research is corroborated by others as well. Eid also found that financing startups in the MENA region has been reliant on the public sector and public markets, but some positive trends toward private equity have started to appear (Eid, 2006). Recent research in 2017 showed that the top 100 startups in MENA managed to raise over 1.4 billion dollars in funds: amounting to around 500,000 dollars per startup (Arabianbusiness.com, 2017). As per a report published by Orient Planet Group, several governments (like KSA, Dubai, and Egypt) have committed sizable amounts of funding to startups. The report also mentioned the growing trend of private financing where international players are starting to look to MENA startups for potential investments; an example is the recent acquisition of Souq.com by huge US company Amazon (Arab finance, 2017).

4. Funding in Lebanon

The case is similar in Lebanon where the most recent IPO was in 1999, but fortunately, several incubators and accelerators have also started efforts to provide more equity capital options. Although it is still early to properly gauge this effort's effectiveness, their increasing number and reach does inspire some optimism. As for the legal aspect, laws in Lebanon do present an obstacle and hence a repelling factor for investors (especially from outside the country). Judicial slowness, shortage of judges, weak creditor protection, uninviting homogeneous taxation, and corruption are

examples of legal issues that contribute to this obstacle (Ministry of Economy and Trade, 2014).

Traditional funding sources that were discussed above can be found in Lebanon such as angel investors, venture capital firms, accelerators, competitions, bank loans and investment, and public and NGO funding. (Banque Du Liban, 2016). Unfortunately, despite all these options, Lebanon remains a heavily debt driven market where commercial banks emerge as the dominant source of funding (Ministry of Economy and Trade, 2014). One alternative can be crowdfunding. Crowdfunding can be defined as "the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the Internet, without standard financial intermediaries" (Mollick, 2014). It thus presents a disruptive method of funding, particularly for new ventures. There seems to be low awareness and understanding of this funding method in Lebanon due to a mistrust of conducting business online (Saleh and Kinaan, 2020). However, Saleh and Kinaan's (2020) paper showed a positive outlook for the future of crowdfunding in Lebanon which might lead to motivated crowdfunding platforms to appear and succeed in the Lebanese market.

B. Global Entrepreneurship Trends

After considering what makes a startup successful, we will explore where real-world startups are heading and focus on their situation in the MENA region. When CIO Magazine's James Martin researched the biggest trends for tech startups in 2017, he found that 8 main categories got the most focus; he reached these categories by conducting interviews with experts and used journalist-source connecting websites like "Help a Reporter Out" (Martin, 2016).

- The first category was artificial intelligence (AI) and machine learning. AI leads to smarter technology with better predictive abilities which is why Salesforce's Ludo Ulrich says that large companies began to invest in AI. As for smaller companies, Ludo believes they are becoming more and more able to play a role in this category as this technology continues to advance with universities already starting to give courses related to it. Among the fields expected to benefit from this advancement in AI and machine learning are physical devices like robotics and electronics, software apps and services like virtual personal assistants/advisors, cybersecurity, and big data which needs such technology to brush through data patterns and trends.
- The second category is chatbots. Chatbots are used in customer service; they interact and provide information to customers via text. Chatbots would therefore decrease cost and add reliability which has made investment in them favorable.
- The third category is cybersecurity. Hacking and cyberterrorism is an ongoing threat in today's world and companies will look to improve their defensive abilities in this respect. That is why investment in cybersecurity startups, which provide managed services more than endpoint solutions, is expected.
- The fourth category is digital transformation and the cloud. Companies worldwide are already moving toward cloud technology and it is predicted that two thirds of IT spending will go to cloud technology.
- The fifth category is augmented reality (AR) and virtual reality (VR). The research firm IDC predicts that 30% of consumer-oriented Global 2000 companies will experiment in AR and VR for marketing purposes.

- The sixth and seventh categories are marijuana and innovative wearables startups. These two subjects are becoming more and more popular as seen in 2015 and 2016. Legislation legalizing marijuana was passed in several US states and major phone companies like Samsung and Apple already started releasing wearables products.
- The eighth category is intelligent things. The internet of everything is a term that has been gaining popularity for some time and is expected to continue trending in 2017. Gartner says that the internet of things will use AI and machine learning to "deliver advanced behaviors and interact more naturally with their surroundings and with people". (Martin, 2017)

KPMG's Startup Trends Index is a real-time indexing software that reviews news and information patterns from more than a million online sources. According to this index, the 8 most trending technologies are:

i. Cloud computing:

Cloud computing is defined as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction" (Mell, 2011). Therefore, resources are set in a remote location (on servers) and are used and shared by several people (personal PCs) or other servers. According to Business Insider, 3 top examples of cloud computing startups are Asana, Greenhouse Software and WalkMe. Asana is a project management tool that helps people organize project tasks and roles by displaying everything on user friendly dashboards turning conversations into instant tasks, along with several other features to help customize and optimize

each team member's work (Asana, 2017). Greenhouse Software is a recruitment software that helps with tracking applications and data driven hiring decisions (Greenhouse Software, 2017). WalkMe is a tool that gives users a personalized online experience by spotlighting, explaining, and giving each user a walkthrough of any new website, thereby eliminating user confusion and helping website owners show all the site's features and capabilities (WalkMe, 2017).

ii. Internet of Things:

The internet of things (IoT) was born when different devices were connected by sensors that communicated via the internet. Therefore, embedded computers placed in these devices communicate with each other using their sensors with or without the help of humans via the internet (Mulani, 2016). AdhereTech is one example of IoT; it is a pill bottle that uses sensors to check how much medication is being taken by a patient (if any), and it will notify/remind the user of their schedule via phone calls, text messages, and on-bottle lights (Vance, 2014). This pill bottle will hence communicate with software over the internet and with the patient's phone to fulfill its purpose. Another IoT startup is Chiu. Chiu is a physical security system that relies on smart facial recognition. Their product will detect a person's face and will give programmed faces defined access. It will also document the face of visitors, adapt to facial changes with age, send notifications to home and business owners, and permit them to live chat with visitors (Vance, 2014). Hence, Chiu will communicate with a property's security system and the owner's phone or computer to give or revoke access based on facial recognition.

iii. Autonomous Vehicles:

Self-driving cars use artificial intelligence (AI) and machine learning to develop driver-free cars that can maneuver using sensors and GPS along our streets. Cruise Automation, Waymo and Argo AI are examples of top autonomous vehicle startups that were rapidly bought up by automotive industry giants General Motors, Fiat Chrysler, and Ford respectively (DeBord, 2017). This is a very appealing startup topic since these companies are being bought up very early for hundreds of millions of dollars despite the expensiveness of this technology and its proper development.

iv. Digital Payments:

The current payments trend has moved from the days of "cash or check" and even "credit or debit" to reach the age of digital payment. E-cash and e-check are the new forms of financial transactions. Due, a digital payment startup, provides a platform for such payments. Its platform makes life easier for customers and more profitable for business by offering more convenient means of payment. Cheddar Up is another startup that allows online payments between friends, family and business associates that are not in physical proximity. It can be linked to a person's bank account or PayPal account and all payments will be made remotely via this digital payment platform (Daisyme, 2016).

v. Big Data and Analytics:

Big data and analytics software checks through huge amounts of information found in emails, social media posts, blogs, and videos to find useful information. The possibilities are instant, and big companies like Google and Facebook are known to use this technology for their products. Hadapt is a new startup that

combines the popular database language SQL with Hadoop, an established big data analysis software, to give customers personalized product possibilities. DataGravity is another startup that embeds big data technology into storage systems which helps midsize companies access these capabilities at affordable prices (McLaughlin, 2013).

vi. Robotics:

Robots and artificial intelligence technology are increasingly being using in many different industries to provide a vast array of services more accurately and at higher strength capabilities. Blue Workforce is one startup working on such technology; they develop pick-and-place robots in industrial settings for effective and efficient packing, manufacturing, sorting and other services. Transcend Robotics is another startup which develops robots that can climb stairs and maneuver obstacles; this is helpful in dangerous situations like bomb threats and mines where human life loss should be avoided (Clifford, 2016).

vii. Cybersecurity:

Cybersecurity startups are on the rise due to the increase in the number of worldwide cyberattacks and the severity of the damage they have caused. Private investor funding has reached a record high in 2016 with $3.1 billion invested in 279 cybersecurity startup companies. Examples are Quanergy Systems, which focuses on the autonomous driving market, and Meta Company, which focuses on the augmented reality market (Chapman, 2017).

viii. Virtual Reality:

Virtual Reality (VR) can be defined as “interactive immersive experience generated by a computer”. It immerses the user in a three-dimensional virtual

space, by means of a headset covering the eyes, for example, and provides him/her with a more interactive experience where the user can look around the new space and explore all the information freely. One of the first VR headsets was developed by the startup Oculus which has become a top player in the VR market with Google, Samsung and other tech giants quickly developing their own products to rival it (Ruyg, 2014). These headsets are still relatively expensive and new so the potential for improvement and further development is encouraging for new entrepreneurs.

C. MENA Region Trends

According to ArabNet, an organization that promotes the growth of new tech businesses and digital knowledge economy, the MENA region shares the VR/AR trend described above. 3D printing (for the health industry) and smart transport are also hot topics along with social and real estate applications (Bizri, 2017).

Entrepreneurs, in the MENA region, seem to lean more toward software rather than hardware startups. There is a lack of local investment in hardware startups in the Middle East mostly due to the high costs involved. For example, when a startup wants to perform a proof of concept and build a prototype, they will need several physical components to be shipped from abroad, and any one of these components might be very expensive, or the addition of MENA's high customs charges would make the total very high. This has motivated many startups to go for software applications and solutions since this would present them with a much better chance of success when starting out in the Middle East. The alternative would be for the startup to move outside the Middle East at a later stage when cost becomes an obstacle (Chaaya, 2015).

According to a list compiled by AltCity, a Beirut based startup support community, among the most successful MENA region startups are Yamli, Fetchr, Laundrybox, Careem, and Souq.com (AltCity, 2016).

Yamli is a website and search engine started by Lebanese entrepreneurs that transliterates words from Latin characters to their equivalent in Arabic. Since its launch, it has become a popular destination for Arabic speakers, helping them search through the internet more easily (Gulf News, 2012).

Fetchr is a new delivery service specifically tailored for the Middle East. It uses mobile GPS locations to schedule pickups and deliveries in countries where physical addresses are difficult to communicate and work out (TCA Regional News, 2016).

Laundrybox is a service whereby computerized lockers are placed in residential buildings from which laundry is picked up and dropped off. This service became popular in the MENA region, especially in the Gulf where laundry services are in high demand (TradeArabia, 2014).

Careem is a car service app, like Uber, started in 2012. It provides chauffeur-driven cars to urban-area customers in a safe and affordable manner and has managed to spread to over 20 countries in the Middle East (Dorbian, 2015).

Souq.com is an online retailer that started in 2005. It has since become the largest online retail platform in the region with “more than 8.4 million products across 31 categories”. In 2017, global retailing giant Amazon announced it will acquire Souq.com which is a first for MENA startup companies (Business Wire, 2017).

D. Trends in Lebanon

Based on a search of Lebanese startups on the AngelList website (angel.co), an online "platform for startups to raise money online, recruit employees, and apply for funding", there are very few listed active hardware startups. It is for this reason that this thesis focuses on software startups.

Lebanon ranks 88th on the Global Innovation Index of 2019. The major strengths found by the report are relatively low salaries, pupil-teacher ratio, tertiary inbound mobility, domestic credit to private sector, venture capital deals, ICT services, and creative goods and services. The major weaknesses found by the report are political instability, rule of law, expenditure on education, global R&D companies, general infrastructure, minority investor protection, university-industry research collaboration, and high-tech imports (GII, 2019). This report gives us a general idea about the potential for innovation and all the aforementioned factors affect tech startups in Lebanon. The Global Entrepreneurship Index of 2017 ranked Lebanon 61st, falling behind 7 other countries from the MENA region (headed by Israel, UAE and Qatar). The strengths and weaknesses in this report are the same as the other (GEDI, 2017). Educated and competent workers at a relatively low labor cost add to the geographic location and multi-market reach of the country. Funding and facilitators are being worked on to help and support tech startups, but the obstacles the country faces are still heavily felt.

Table 2 contains 16 promising Lebanese startups which were featured in BDL Accelerate 2016's Startup Guide report. The table gives us an idea about the trend of startups in the country which are mostly software based (Banque Du Liban, 2016).

Startup	Description	Category
E24	Energy conversion technology: effective stocking and managing of electrical power	Hardware / Software
White Lab	Biotechnology and healthcare analytics: helps manage allergy symptoms	Software
Makerbrane	Open construction toy platform: combine physical and digital components	Software
Feedeed	Accelerate growth of small businesses by providing top experts	Software
Ounousa/Sohati	Community websites	Software
Eddress	App for location and address clarification services	Software
Band Industries	Music technology like RoadieTuner which automatically tunes guitar	Software
Chefxchange	Online platform that connects chefs and foodies	Software
Etobb	App to facilitate interaction between doctors and patients	Software
Scriptr.io	Cloud platform to help solve internet of things interoperability challenges	Software
Myki	App for corporate digital workspace management	Software
Ihjoz	Ticketing platform and marketplace for event ticketing, distribution and payment	Software
SerVme	Advanced data analytics software for restaurant and club guest studying	Software
Brate	App that helps customers find nearby product locations when the search online	Software
Raghunter	App that locates unique local fashion stores and designers worldwide	Software
Cardiodiagnostics	Data analytics medical technology: to alleviate impact of cardiac disease	Software

Table 2 BDL Accelerate 2016 Featured Startups

E. Startup Programs

The role of startup programs is increasing in importance for entrepreneurial ecosystems. They provide key services and guidance to help startups succeed (Cohen, 2019). These startup programs take many forms such as acceleration programs, coworking spaces, active seeds, competitions, incubators, courses, etc.

They offer startups the following:

i. **Networking**

Entrepreneurs make use of networking opportunities for personal and professional development, in addition to finding supportive individuals/organizations that might help them solve more specific challenges they are facing. Mentors, experts, and experienced peers provide startup founders with valuable lessons and tips (Cohen, 2019).

ii. **Workspace**

Offered workspaces can be permanent, temporary, event spaces, meeting rooms, or common room areas. Such areas provide founders with internet connectivity, electricity, and a place to meet, work, and collaborate effectively (Cohen, 2019).

iii. **Funding**

Funding can be reached via the provided access to investors through networking, sponsored competitions/events, pitching to investors on demo days, or direct funding by the programs (Cohen, 2019).

iv. Educational Programs

For accelerators, educational programs are more extensive that those of incubators (Cohen, 2019).

Accelerators and incubators are usually associated with direct funding in return for equity or future revenue, but some restrictions may apply (Cohen, 2019). Entrepreneurship programs have been garnering increased interest as of late since these programs are considered effective in developing entrepreneurial ability (Lyons and Zhang, 2018). Research, such as the one conducted by Lyons and Zhang (2018), shows that people without previous startup experience can be trained in entrepreneurship, thus implying that well-structured and well-managed startup programs can have a key role in creating success stories and helping a nascent startup environment, such as the one in Lebanon, develop into an attracting hub for the region (Lyons and Zhang, 2018).

F. Launching Startups in Lebanon

1. *BDL's Approach*

In 2013, the central bank in Lebanon, Banque Du Liban (BDL), promised to provide a guarantee of $400 million for investment in the knowledge economy; this promise formally became circular 331. To encourage banks to invest and make funds available to tech startups and relevant venture funds, BDL provided them with a 75% guarantee, and in return, sale of shares would be split equally between BDL and the commercial bank making the investment. As explained in the report of Mulas et al. (2017) for the World Bank on Beirut's tech startup ecosystem:

> *"Local banks receive a seven-year interest-free credit from BDL, which can be invested in treasury bonds with an interest rate of 7 percent. In return, the bank commits to investing in the knowledge economy. Local banks can invest up to 3 percent of their capital in start-up support entities, funds, or directly into start-ups. BDL guarantees 75 percent of the investment, derisking it by mitigating the potential losses and reducing them to a mere 25 percent. Circular 331 is*

designed to diminish risk for the conservative local banks and does so by dictating the banks' portfolio diversification. A bank can invest up to 10 percent (of its 3 percent) in any one start-up, thus spreading the risk. BDL takes on 75 percent of the risk and only 50 percent of any profit made, making it attractive for local banks".

In 2016, BDL bolstered this promise with an additional $200 million after the original $400 million was allocated with $70 million trickling down to local companies; the circular's reach was around 100 startups according to BDL (Domat, 2016).

Since 2013, BDL has launched several support initiatives like BDL Accelerate. BDL Accelerate is an annual conference launched in 2014 that brings together entrepreneurs, investors and support institutions from Lebanon, the region and beyond. This conference includes key-note speakers, exhibitions of startups and new technologies, workshops, and competitions (National News Agency, 2015). The latest of these conferences, BDL Accelerate 2016, published a Startup Guide for Lebanese entrepreneurs. This guide highlighted the steps an entrepreneur/startup should take in the Lebanese market and all the relevant information that relates to the local ecosystem.

As shown in Figure 1, a startup entering the Lebanese ecosystem should go through the following stages or steps:

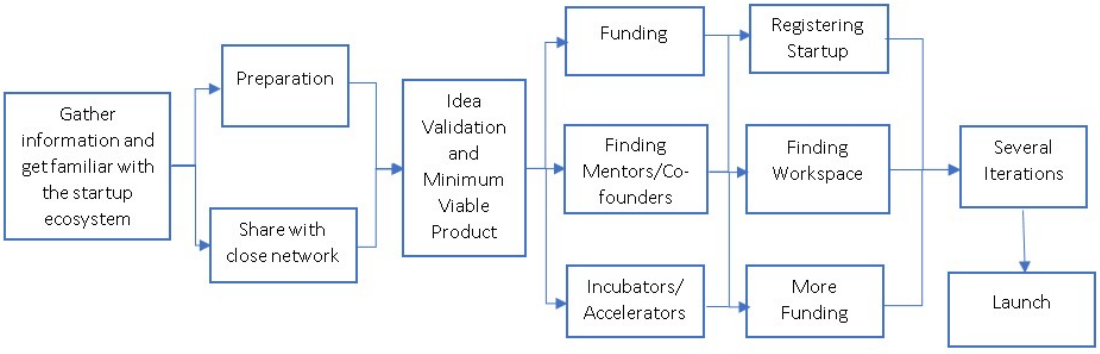


Figure 1 BDL Startup Guide

a. Gather information and get familiar with the startup ecosystem

After the various success stories that came from Silicon Valley in the United States, the idea of a startup ecosystem that offers a support community for startups became very popular. This ecosystem gathers people of talent and capital in one place in which good service infrastructure and educational/research institutions are available. With all these facilitations, startups would be able to focus on innovation and would more easily find customers for their innovation in this ecosystem (ICSB, 2015). Many are trying to recreate the success of Silicon Valley via new startup ecosystems around the world. The same is for Lebanon where several innovation clusters have started to operate. An example of these clusters is the Beirut Digital District (BDD) which aims to "fuel the growth of over 10,000 dynamic and creative individuals, through smart offices spaces, unparalleled infrastructure, healthy environments, topped off with valuable services." (Beirut Digital District, 2020). In Lebanon, gathering information can be achieved through research and attending startup events such as the ones frequently hosted by these clusters, accelerators, and incubators. There, entrepreneurs get some visibility and networking opportunities that may become valuable later (Banque Du Liban, 2016).

b. Preparation

Entrepreneurs at this very early stage are urged to reflect on their capabilities and work toward improving any weak areas. This can be achieved by self-learning or educational organizations like Amideast Entrepreneur Institute, Injaz

Lebanon, Torch, and others that provide soft and technical skills training (Banque Du Liban, 2016). This is especially true for tech startups since their work requires a lot of technical know-how and high-level knowledge and skills. These technologies are also very dynamic and are always changing and evolving which drives the need for lifelong learning. Training also provides entrepreneurs with increased insight and self-esteem along with the gained skills and knowledge, thus better positioning them for future success in their new ventures (Jusoh, 2011).

c. Share with close network

The next step is to share the concept or idea for the startup with family, friends and others in the nearby network. Mainly, this can help with early funding and morale boosting by finding a support system or financial dependents in case the entrepreneur needs to quit a fulltime job (Banque Du Liban, 2016). According to Pittaway et al., the main benefits of networking are "risk sharing; obtaining access to new markets and technologies; speeding products to market; pooling complementary skills; safeguarding property rights when complete or contingent contracts are not possible; and acting as a key vehicle for obtaining access to external knowledge". Therefore, firms will gain access to more resources through their established networks along with simpler forms of help like ideas, advice, and information; an emotional support system can also be established for entrepreneurs through their networking. But of course, the biggest benefit must be access to product-related resources and markets which can be directly linked

to the startup's success (Pittaway et al, 2004). This adds to the importance of startup ecosystems that was explained in the previous stage since ecosystems facilitate networking.

d. Idea Validation and Minimum Viable Product

Validation can be achieved by testing on family and friends, researching the competition, checking with industry professionals, focus groups, mentors, and businesses. One can also approach incubators and competitions at this stage and even potential customers. All the feedback gathered in this stage should be filtered and analyzed. The startup might decide to pivot (realign the product with customer preferences/demands), or it can go ahead and begin building the minimum viable product (MVP) (Banque Du Liban, 2016). The product that the startup ends up delivering needs to solve the issue they set out to address (Value: customer-side) and achieve a return on investment (Growth: investor-side); all is to be achieved with scarce resources especially at the beginning. Therefore, validation comes via the MVP proving value and growth potential. The first MVP needs to show customers and investors that this startup is on the right track with further testing and versions only adding details and complexity to that preliminary MVP (Moogk, 2012).

e. Funding

The funding sources illustrated in this guide are the following (Banque Du Liban, 2016):

i. Savings:

   Basic tasks like market research and first prototypes can be achieved by tapping into personal savings. This is sustainable only for the short-term.

ii. Friends and family:

   Friends and family might provide funds for the pursuit of the entrepreneurs, especially if engaged in the previous stage.

iii. Revenues:

   This only applies to some startups that have a revenue generating business model.

iv. Angel investors:

   One or more wealthy individuals may be willing to invest in return for shared ownership.

v. Venture capital:

   Venture capital firms may also be willing to invest in return for equity but usually in later stages.

vi. Accelerators:

   Accelerators provide workspace, guidance, and possible mentorship to the startup along with funds in return for equity.

vii. Competitions:

   While pushing idea and product development, competitions' prizes can be a funding source.

viii. Public and NGO funding:

   Governmental initiatives and relevant NGOs may provide funding.

ix. Bank loans:

Debt financing is a big option in Lebanon and organizations like Kafalat help in this regard by providing guarantees to banks

x. Bank investment via BDL circular 331:

Like Kafalat's work but focusing on tech startups, the Central Bank of Lebanon gave guarantees to commercial banks who provide loans.

xi. Crowdfunding:

Crowdfunding websites provide a venue for people to invest in startups and ideas online. Enthusiasm in a project usually dissipates after a while though.

f. Finding mentors and/or co-founders

Mentors can provide guidance, introduction to new important professional networks, and advice on soft skills. As for co-founders, they can share the day-to-day stress and responsibilities while providing support, skills, experiences, and new networking capabilities as well. Another motivation for finding mentors and/or co-founders is that investors are generally more comfortable with startups that have several committed people to it (Banque Du Liban, 2016). Lack of experience and competency have been identified as being some of the main factors for new startup failures. The amount of experience that a new entrepreneur might gain during the earliest stages of a startup are critical for its survival, and mentoring provides him/her with personalized learning to develop the required management skills. The discussions that the entrepreneur has with

an experienced mentor will save time spent mulling over issues and will even help the entrepreneur learn about how to approach problems and how to think about their solutions. Also, if this relationship is successful, then future business opportunities can arise either with the mentor or with the mentor's connections/professional network (St-Jean, 2012).

g. Incubators and/or Accelerators

Incubators and accelerators are support organizations that guide entrepreneurs through the business learning process and provide them with new connections for their network. Incubators are usually for early-stage startups whereas accelerators' role comes in later stages. Incubators can help with accounting, locating funding, defining objectives, and developing plans, managing HR, soft skills, legal counsel, and networking. Examples of Lebanese incubators are Berytech, BIAT and South BIC. Accelerators take on startups in batches for specified periods of time and provide them with training, workspace, mentorship, and more networking opportunities. Examples of Lebanese accelerators are AltCity (Bootcamp-LB), Endeavor Lebanon, Speed@BDD and UK Lebanon Tech Hub (Banque Du Liban, 2016). Basically, both incubators and accelerators help in startup growth via the guidance they provide but at different stages. Incubators foster the startup from its very early stages and teach its founders how to navigate it in this sensitive period. This takes a lengthy process with long-term goals that are mainly centered around the economic development of the venture and could take years. Accelerators' role comes afterward, and their work is limited to months with only short-term goals

centered around return on investment and growth/scaling. Entrepreneurs need to research an incubator or accelerator's mission and sector focus before choosing one. Depending on which stage the startup is at, the choice between incubator or accelerator is made, but choosing between the many incubators and accelerators present in the ecosystem needs to take into consideration the services they provide and the potential gain in network support and partners (Isabelle, 2013).

h. Registering Startup

The exact timing for incorporating a startup is debatable. The BDL guide suggests that it would be best to incorporate as soon as the idea is considered as having good potential. This is because a startup needs to be incorporated to receive investments, "hire employees, register patents and launch products for sale." The recommendation is for the startup to be registered as a joint stock company (S.A.L.) where shareholders' liability "limited to the amount of their capital contributions" (also circular 331 benefits S.A.L. startups only). Under Lebanese law, all S.A.L. companies need to hire a lawyer who will handle all the required legal steps for incorporating the startup. Among the main requirements is that $20,000 in capital must be paid into a bank account in LBP (Banque Du Liban, 2016).

i. Finding Workspace

In the very initial stages, startup workspace is more than usually in one of the founders' apartment. This is a good strategy as it keeps costs down in these critical early stages and avoids risk for the idea failing. Workspaces for startups

in Lebanon are becoming more common from office buildings to repurposed apartments. The suggestion is to keep things conservative and consider some basic factors that would be essential to the startup's operations like internet access, amenities (like conference rooms), location, parking availability, time of day access, networking and education opportunities, security, and culture. Examples given of workspace providers are AlKindy, Antwork, Beirut Digital District (BDD), Berytech Digihive, and The Submarine (Banque Du Liban, 2016).

j. More funding

Another round of funding is suggested to occur around this time to further support the startup and its increased expenses (Banque Du Liban, 2016).

k. Several Iterations (Competitions, Accelerators, Viable Products)

After reaching the stage where the startup is incorporated and additional funding is being sought out, application to more competitions and accelerators is suggested. The exposure, networking and further funding that comes from this will help in developing more iterations of the minimum viable product (Banque Du Liban, 2016).

l. Launching

After developing a minimum viable product, some users will already be testing it, but for launching, the startup would use several marketing techniques to reach the largest possible number of users and customers. The testing users will help

the startup improve and refine the product until the startup believes it can provide a satisfactory product or service at a larger scale. If the financial aspect of the product also works, i.e., the revenues from one customer cover the cost of reaching him/her, then the product is ready for launch. After product launch, the startup will arrive at a whole new phase in its growth. Now, the startup must focus on further development of the product, reaching newer markets and strengthening their brand, acquiring more funding, and growing the team stronger with the correct hires. The startup will look at the competition (if present) and check on feedback to choose the aspects to focus on (Banque Du Liban, 2016).

5. Local Accelerator Programs' Approach

To study the local accelerator program's approach, an active startup accelerator program called Flat6Labs was chosen. Flat6Labs operate regionally after their launch in Cairo in 2011 with current offices in Lebanon, Egypt, Saudi Arabia, Bahrain, Tunisia, and the UAE, as per their website (Flat6Labs, 2018).

Figure 2 Accelerator Journey

As shown in Figure 2, an entrepreneur's journey with Flat6Labs begins with:

a. Interviews:

An online application which is followed by a multiple stage screening process and interviews.

b. Bootcamp:

The chosen candidates attend a five-week bootcamp then get screened again by a Selection Committee.

c. Company Registration:

Before the start of the cycle, term papers and legal agreements are signed along with the company being registered.

d. Cycle Program:

The registered startups begin the four-month acceleration program.

e. Demo Day:

Startups present their work at the end of the cycle in Demo Day events.

f. Grow:

Follow-on funding and further assistance with finances.

a. AltCity's Bootcamp

The first major step in the accelerator program journey is the Bootcamp. This bootcamp was described in an info-session I attended which was hosted by AltCity, a startup support community and incubator based in Beirut's BDD. This info-session preceded their Bootcamp program which helps entrepreneurs move from idea to funding with step-by-step training and supervision (Bootcamp by AltCity, 2017). A presentation was given by its cofounder, Samer Azar, where he described their model for startups as beginning with three main stages:

i. **Idea:**

At this initial stage, the entrepreneur is urged to research market sectors and make sure he/she is moving in the right direction in that regard. Samer cited the Blue Ocean Strategy which is a marketing strategy where you create available

low-competition market space and avoid high competition ones. This strategy tells the entrepreneur to Eliminate no-value industry factors, Reduce overserving factors that increase cost for no gain, Raise factors that increase a buyer's compromises, and Create new-value adding factors (Kim, 2004). Afterwards, the suggestion is to mix and match industries and business models until the right fit is found (Bootcamp by AltCity, 2017).

ii. **Validation:**

It is difficult to compare ideas and businesses when it comes to innovation. AltCity's approach takes inspiration from the Lean Model Canvas which aims to increase the efficiency of the production process by reducing wasteful factors (Muller et al., 2012). Entrepreneurs are encouraged to seek:

- Unique value proposition: the benefits of their product, how they will solve a certain problem and how their solution is different
- Early Adopters: identify who their customers will be (and early adopters if possible)
- Customer requirements and existing alternatives: list their problems, find potential solutions and then alternative solutions
- Channels: consider channels to reach customers
- High-level concept: research and develop plans for the revenue stream, model, and pricing
- Key metrics: identify key metrics of the product
- Unfair advantage: identify the unique advantage or differentiating factor their product will have

After the lean model canvas is prepared, the entrepreneurs are encouraged to talk to people and discuss their idea; be it via friends, social media, online videos, crowdfunding, etc. Then, it would be time to start the company (Bootcamp by AltCity, 2017).

iii. **Funding**

AltCity identified several means to get funding, most of which were discussed previously. When an entrepreneur or team enters the Bootcamp program, AltCity takes 2% in equity. Then the startup is aided in the funding search where several entities are potentially approached. Kafalat could provide $5,000-15,000 with only a startup idea. AltCity's Elevate or the Nucleus program could provide up to $20,000 in return for some more equity. Speed@BDD could provide $30,000 for a 10% stake. Berytech Agrytech and Seeders Angels could provide $40,000 or up to $150,000, respectively. Other VCs are also available for later stages when larger amounts of funding are needed. Other sources of funding are private banks (supported by BDL circular 331) and several accelerators (Bootcamp by AltCity, 2017).

b. Startup Program Offerings

After being screened and selected from the Bootcamp, startups go through company registration and proceed with the cycle program. Flat6Labs offers several services to its startups as part of its program. These offerings include:

i. Office Space

- Co-working and Incubation Space

ii. **Training**

- Bootcamp:

  The screened and chosen candidates attend a five-day bootcamp five weeks before the cycle starts. The bootcamp is an intensive workshop whereby the entrepreneurs test out their idea and give the Flat6Labs team a better understanding of it. A detailed explanation of an AltCity (a similar startup accelerator) bootcamp is provided in the next section.

- Partners, Academic, and Industry Experts Training

iii. **Networking and Exposure**

- Demo Day:

  Demo Days occur at the end of each cycle whereby startups present their work to potential investors and media outlets.

- Startup Events and Business Networking Events:

  Events are hosted to provide networking opportunities between founders and potential business partners and clients.

iv. **Legal Support:**

- Legal Advice
- Company Registration

v. **Mentorship:**

- Coaching
- Regularly hosted Dinners with industry experts, investors, journalists, etc.
- One-on-one Mentoring Sessions

vi. Funding

- Seed Funding in exchange for equity
- Follow-on Funding after Demo Day

vii. Other Services

- Several online service subscriptions including MailChimp, Bayt.com, AWS, etc.

(Flat6Labs, 2018)

G. Lebanese Startup Ecosystem

1. Obstacles in Lebanon

The obstacles facing Lebanese start-ups can be divided into four levels: Entrepreneur, Enterprise, Industry, National. (Ministry of Economy and Trade, 2014)

The Entrepreneur Level is mostly concerned with the entrepreneurial culture present in the country. Most small businesses in the country are family owned and run, and these families refuse to share control of their company and prefer to manage the company themselves which is very limiting for growth as compared to professional and corporate management. Furthermore, these family run businesses transfer ownership almost exclusively by kinship which is limiting for capital and financing as well. Finally, Lebanon has huge untapped potential in the form of women who can join the workforce as entrepreneurs. Almost half the Lebanese population is not supported and even sometimes prevented from entering the workforce for cultural reasons (Ministry of Economy and Trade, 2014).

The Enterprise Level has to do with Capabilities and Capital. Lebanese companies, and particularly start-ups, suffer from the increasing rates of emigration of talented individuals. Even those who remain lack the technical specialization required by the market which leaves an unfulfilled demand for highly skilled workers, and the supply is mostly made up of entry-level or limited-specialization workers (Ahmed, 2012). As for Capital, taxation policies work against the development of startups and restrict debt financing, and this adds to the greater issue of limited capital supply where only capital dependent on debt and not equity remains (Ministry of Economy and Trade, 2014). Furthermore, Lebanese companies appear to be unenthusiastic about foreign

investment; foreign investment which is already not supported by the present financial instruments with the lack of equity financing being a clear example of this. Moreover, Lebanon's security reputation already makes it difficult to attract foreign investment with Lebanon ranking 96/141 in "Security" in the World Economic Forum's 2019 Global Competitiveness Report (Schwab, 2019).

The Industry Level is concerned with the market's structure, taxation and other regulations, and the state of research and innovation in the country. Lebanon's market greatly relies on imports and this is further encouraged by the lack of efficient or well-planned trade agreements (Ministry of Economy and Trade, 2014). Old laws add to the startups' struggle with competition-hindering laws that give agencies exclusivity in monopolized areas could be entered into by startups. An inefficient judicial system plagues Lebanon's companies leading to costly and long contract enforcement, and when it comes to insolvency, the process is lengthy with poor recovery rates causing Lebanon to rank 85/141 in insolvency recovery rate (Schwab, 2019). This goes without mentioning corruption and bureaucratic inefficiencies where Lebanon ranks 116/141 in ethics and corruption (Schwab, 2019). Taxation is uniform for all companies which puts startups at a huge disadvantage especially when competing with exports. As for research and innovation, although Lebanon is ranked 88th in the global innovation index (Global Innovation Index, 2019), a lot of potential is still untapped. This is due to weak Intellectual Property protection (with Lebanon ranked 120/141 in IP Protection) which discourages innovators and difficulty in finding reliable market information which leads to poor planning by startups (Schwab, 2019).

The National Level has to do with labor force, the financial market and the country's infrastructure. When it comes to the Lebanese labor force, the available size is decent with flexible hiring and firing policies. The issues arise with the fact that the National Social Security Fund (NSSF) requires 21.5% of wages as compensation, and this figure is uniform for all companies including startups which again puts them at a disadvantage especially that these companies resort to freelancing in attempts to lower fixed costs (Ministry of Economy and Trade, 2014). This reality is discouraging for potential employees which seek formal employment for its benefits, and foreign labor, on the other hand, is out of reach as there are no special provisions for highly skilled foreign workers. As for the financial market, equity capital markets are not liquid with meager trading in the stock market. The lack of large investors and the discussed reluctance to lose control of family businesses also discourage work on the stock exchange with the last initial public offering dating back to 1999 (Ministry of Economy and Trade, 2014). Finally, poor infrastructure, exemplified by poor roads, ICT, and supply of basic needs like electricity, works against startups and all Lebanese companies in general, particularly when it comes to regional and international competitiveness. Lebanon ranks 89/140 in Infrastructure with all countries in the region surpassing it (Schwab, 2019).

Serious efforts and governmental intervention are needed in each of these four levels to properly support Lebanese startups and effectively create an encouraging environment for them in which they can strive and grow. Before thinking about reaping economic benefits, governmental and non-governmental agencies need to address all these obstacles and begin to put plans for positive change which in turn need to be followed through until implementation. With the threat of Lebanese brain drain and unhealthy inflation, the Lebanese government needs to be motivated to end the ongoing

stagnation in this regard and make the first steps toward the attainable goal of creating this startup supporting environment must be taken as soon as possible.

2. State of the Lebanese Ecosystem

Mulas et al. (2017) prepared a report on the Lebanese tech startup ecosystem for the World Bank. Despite its limitations which include that their dataset covered SMEs that were once startups in the years that predate startup programs in Lebanon, it still provides a rare insight into the state of the Lebanese ecosystem by surveying 142 startups. Their findings included insights about the following areas:

a. Funding

Twice as many startups that received funding had not participated in accelerators, and only three received investment more than once (Mulas et al., 2017).

b. Network

It is difficult for startups to find venture funding without joining an accelerator program and joining an accelerator does not improve a startup's quality when compared to an unaccelerated one, especially in the context of the ability to secure investment (Mulas et al., 2017). In terms of mentorship, only 20% of surveyed startups received mentorship which was one-on-one (Mulas et al., 2017). In terms of network size, Beirut's ecosystem was low density with limited clusters which makes it difficult to find needed knowledge, resources, and support like investment and mentorship (Mulas et al., 2017).

c. Management of Programs

Existing startup programs do not seem to provide services of sufficient quality to support sustainable startups. A lack of experienced entrepreneurs and quality

mentors are stated as being contributing factors (Mulas et al., 2017). There was also concern about a potential bubble of "start-up ventures being funded by the abundance of available seed funding, which may be distorting the ability of the ecosystem to select the best start-ups and generate success stories that are sustainable over time" (Mulas et al., 2017). The sustainability of these programs was also put into question due to their reliance on BDL Circular 331 funding as this funding would not be ensured if the circular is phased out (Mulas et al., 2017).

3. Potential Solutions

The following initiatives were suggested by the Ministry of Economy and Trade in their 2014 SME Strategy book:

1. Evolve Business Leaders
    a. Develop mentorship networks
    b. Launch Entrepreneurship Centers at local universities
2. Improve Access to Market
    a. Activate the Lebanese Export Promotion Agency (LEBEX)
    b. Improve market competitiveness
3. Develop a conductive business environment and national infrastructure
    a. Twin IPPO with an international counterpart
    b. Upgrade IP framework and patenting process
    c. Update, ratify, and implement pending laws related to code of commerce, insolvency, public procurement, domestic and foreign investment, and labor
    d. Adapt judicial system to meet innovation requirements

    e. Attract and facilitate access to skilled labor

4. Ensure coherence and effective coordination
    a. Set up an observatory
    b. Create a full-fledged portal for entrepreneurs

(Ministry of Economy and Trade, 2014)

In addition to the above initiatives, Mulas et al. (2017) suggested the following policy recommendations for the Lebanese tech startup ecosystem:

1. Strengthen coordination mechanisms and ecosystem support programs for stakeholders.
2. Increase absorption by the ecosystem of international talent and improve connectivity with domestic corporate non-tech sectors.
3. Expand practical education in universities and through rapid skills training and public education programs.
4. Increase capability of mentors in accelerators and attraction of international talent (as mentors, entrepreneurs, or capacity builders) to the ecosystem.
5. Address processes constraints (Reduce constraints for start-ups incorporation and operationalization).

(Mulas et al., 2017)

H. Lebanese Startup Clustering

The amount of support and resources dedicated to tech startups had been and needs to continue growing year by year, and businesses are increasingly leaning toward innovation. This can be seen in the spread of incubators, accelerators, and venture funding companies in the country, and especially in Beirut where most resources and best infrastructure are located. A tech startup ecosystem is beginning to take shape and if we check the geographic location of entrepreneurial initiatives inside Beirut, we can see a pattern. The following is a map of Beirut with red dots representing the location of significant startup incubators and accelerators.

Figure 3 Lebanese Startup Clustering

In Figure 3, a clear clustering of startups can be seen in the Bachoura area, close to Downtown Beirut. This is where the biggest entrepreneurial initiative is located, Beirut

Digital District, and within it, several startup incubators, accelerators, and venture capital firms have taken up workspaces. BDD is also still growing and adding more buildings in the vicinity with other initiatives following their lead and taking root in that area. These factors show the potential birth of a tech startup ecosystem in that area.

I. Ecosystem Comparison

1. Comparison with Georgia

In 2014, Lebanon was at the early stages of the central bank's initiatives to promote and support entrepreneurship. Lebanon's rank in the World Bank's Global Innovation Index was 77th (Global Innovation Index, 2014). Five years later, this rank has increased to 88th (Global Innovation Index, 2019).

Georgia, on the other hand, also began serious efforts to promote entrepreneurship in 2014 and improved their rank from 74th in 2014 to 48th in 2019 (Global Innovation Index, 2014) (Global Innovation Index, 2019). How did Georgia achieve this significant improvement?

As per Georgia's Innovation and Technology Agency website, this agency was created by the Georgian Ministry of Economy and Sustainable Development in 2014 to promote the field of technological innovation and development (gita.gove.ge). In 2016, the agency carried out several steps in line with its purpose:

- "Implementation of legal reform in innovation sphere"
- "Creation and development of innovation infrastructure"
- "Implementing educational activities to support innovations and entrepreneurship"
- "Technical support for innovation and entrepreneurship"

- “Support access to finances”
- “Research and promotion of development (R & D) sector”
- “International cooperation in establishing innovations for technologies’ and research development”

  (gita.gove.ge)

Such initiatives and reforms have benefitted Georgia’s economy especially in innovation relative to its GDP thus "catching up with innovation leaders more quickly", as per the UN's Global Innovation Index 2019 (Georgia, 2019).

2. Comparison with Greece

Following economic difficulties of the late 2000s, Greece’s economy has recovered, and the government has begun its digital transformation journey through partnerships with public European and private entities. A partnership between Greece’s Foundation accelerator and EIT Digital, a leading European digital innovation and entrepreneurial education organization, provides needed support to local startups. In addition, the Greek government set up the Equifund which includes funding by the Greek government, the European Investment Bank, and private sector investors. The Equifund will then provide over 300 million euros of funding to Greek startups of all lifecycle stages in specified funding windows to ensure the availability of funds throughout their startup journey (Startups in Greece Report 2019). This initiative bears resemblance to the BDL initiative in Lebanon but with the added feature of including private investor funds and ensuring funding windows for different stage startups.

CHAPTER III

THESIS STATEMENT

There are several startup programs in Lebanon, but their work is insufficient to adequately aid entrepreneurs and can be improved to achieve its purpose more effectively.

CHAPTER IV

METHODOLOGY

A. Research Design

Interviews are conducted with founding members of Lebanese startups who have experience with startup programs. These interviewees represent the primary data sources as the information used in this research is first-hand accounts by direct contact with startup founders. The literature review section of this paper provide the basis on which the interview questions were planned and prepared. Thematic Analysis is used to process and analyze the data: “a method for identifying, analyzing, and reporting patterns (themes) within data” (Braun and Clarke, 2006).

B. Sampling

Startup companies of different stages and backgrounds that had experiences with startup programs are chosen to participate in the interviews. This thesis, and hence the sample, is restricted to Lebanon and Lebanese tech startup founders who have contacted startup programs or completed one or more of these programs. The chosen startups were also currently or recent active (active within 3 years) and shared experiences in the earlier stages of their startup lifecycle.

Personal contacts, referrals, online research, and contact with local accelerators are the methods for choosing the participating startup founders.

C. Data Collection

Data is collected during interviews in person, by phone call, or by live messaging applications to accommodate the participants' schedules and encourage their participation. Voice or data records were transcribed into text for the purpose of analysis.

The interview questions enclosed in the appendix were prepared based on the research in the literature review section and the set of interview questions used by Ramadas (2018). The compiled interview questions were used to guide the conducted interviews and ensure the collection of the required data for later analysis.

Approval was given by the Institutional Review Board at the American University of Beirut for this interview-based research, the interview guide (questions), the consent form, and the invitation script. These approved forms are enclosed in Appendix C of this thesis.

D. Data Analysis

The chosen analysis method is thematic analysis. Braun et al. describe thematic analysis as "a method for identifying, analyzing, and reporting patterns (themes) within data" (Braun and Clarke, 2006).

Thematic Analysis can be used for qualitative analysis in any area where "general qualitative research questions about experience, understanding, social processes, and human practices and behavior make sense" (Terry et al., 2017). By searching for themes or patterns in collected data, thematic analysis can provide the researcher with important insights, and this has motivated researchers in the fields of technological innovation and entrepreneurship to rely on thematic analysis in their studies.

Some examples include Ramadas (2018) who used thematic analysis when studying the impact of acceleration programs on early-stage tech startups, Song (2020) who used thematic analysis when exploring the role of digital technologies in managing knowledge for innovation in Chinese SMEs, and Irene (2019) used thematic analysis when studying the challenges presented to women in developing economies when making strategic business decisions.

The steps in Thematic Analysis are discussed in detail later in this chapter. Thirteen interviews have been conducted and analyzed whereby thematic analysis was chosen due to its flexibility and ability to provide a rich and detailed account of data (Braun and Clarke, 2006). After the transcription and initial analysis of further interviews, other qualitative analysis techniques which are based on the same principles as thematic analysis might be used, like template analysis:

- Template Analysis: "a form of thematic analysis which emphasizes the use of hierarchical coding but balances a relatively high degree of structure in the process of analyzing textual data with the flexibility to adapt it to the needs of a particular study" (Brooks, 2015).

Since startup programs in Lebanon is an under-researched area, I have chosen to provide a rich thematic description of the whole data set from which several themes were found; a theme "captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set" (Braun and Clarke, 2006).

Using this approach, more insights might be discovered regarding the Lebanese startup ecosystem and particularly the activity of startup program. This also means that an inductive and experiential thematic analysis approach were undertaken:

- Inductive approach: whereby data is coded without preconceptions but rather based on the interview data from which themes were found. This helps in identifying the more information about startup programs without any restrictions to preconceived certain aspects.
- Experiential approach: whereby interviewees could freely speak, express their ideas, and share their experiences as long as the previously set interview questions are answered. This provides a potentially wider data set to analyze and hopefully provide more relevant themes beyond that which the set interview questions would have found.

3. Thematic Analysis Steps

As mentioned, the interviews were transcribed into text and sections of interviews are categorized into themes, and these themes are elaborated upon to provide relevant insights.

Thematic Analysis was conducted as per the following guidelines which were described by Braun and Clarke (2006):

a. **Familiarize with the data:**

Each transcribed interview text is individually and thoroughly read with items of interest noted on the side. The texts are read several times in an active manner (while looking for meanings and patterns).

b. **Generate initial codes:**

A code is a label which captures something interesting in the data. Therefore, parts of the interview transcripts, which are relevant and of interest, are highlighted and then extracted. Coding is to be performed comprehensively and systematically so it covers all the data. Afterward, codes are clustered based on their meaning and context.

c. Search for themes:

After initial coding of all data, the long list of codes is sorted into potential themes with each code noted under its relevant theme, and each theme is given a font or highlight color for differentiation. Potential themes are found by:

- **i.** Promoting an important code to a potential theme
- **ii.** Clustering similar codes together
- **iii.** Reviewing initial codes and finding potential themes based on their context

The relationships between different codes and main and sub-themes are evident at this stage. The thematic map in the results section shows the themes and sub-themes found based on the conducted interviews.

d. Review themes

Each theme is reviewed along with its related codes. Some themes are removed for lack of sufficient supporting codes and others are consolidated into one overarching theme or broken down into two more specific ones:

i. First, coded extracts are reviewed to check if they provide a coherent pattern

ii. Second, each theme's validity is evaluated along with the thematic map

e. Define and naming themes

The context of each theme is defined and what aspect of the data each captures. A detailed analysis of each theme is conducted and described while linking its context to the overall context of the study. Names or titles are then set for each theme.

f. Produce the report

When a final set of themes is reached, the final analysis and subsequent write-up can begin. Here, the "story" can be weaved from the analysis and interpretation of the collected data. Supporting data extracts are to be provided as validation of each theme and the final analysis is related to the research question, literature, and wider context.

(Braun and Clarke, 2006)

CHAPTER V

RESULTS AND DISCUSSION

A. Interviewee Profiles

Thirteen interviews were conducted for this study. Thematic Analysis can be conducted for samples of any size, from one or two case studies to large interview studies with more than 60 participants (Clarke and Braun, 2017). Guest et al. (2006)'s research on data saturation and variability found that saturation was mostly reach at 12 interviews. Additionally, Crouch and McKenzie (2006)'s work found that a sample size under 20 "will facilitate the researcher's close association with the respondents, and enhance the validity of fine-grained, in-depth inquiry in naturalistic settings". Accordingly, the chosen sample size of 13 interviews is sufficient for this study which aims to provide clarity and insights about startup programs in Lebanon where such information is not available in existing searchable or non-searchable databases (Yan, 2018).

The following Table 3 includes profile information about each interviewee including business model, location, age, gender, previous startup experience, educational background, startup programs attended and their types, number of programs attended, stage entered and exited, startup brief, and the startup's industry.

#	Business Model	Location	Age	Gender	Previous Startup Experience	Educational Background	Startup Program	Program Type	Number of Programs	Stage Entered	Stage Exited	Startup Brief	Industry
1	Online - Web	Lebanon	28	Female	No	Marketing	None	None	0	Idea	Idea	Equity crowdfunding	Finance
2	Online - Software App	Lebanon	25	Male	No	Mechanical Engineering	SmartESA AltCity Flat6Labs	Accelerator Accelerator Accelerator	3	Idea Early MVP Functional MVP	Early MVP Functional MVP Growth	Online investment advisory	Finance
3	Software and Hardware	Lebanon	47	Male	No	Mechanical Engineering	Flat6Labs	Accelerator	1	Idea	Early MVP	Hybrid Electric Power Solution	Energy
4	Hardware	Lebanon	36	Male	No	Business Agriculture	UKTechHub Agrytech Flat6Labs	Accelerator Accelerator Accelerator	3	Early MVP Functional MVP Growth	Functional MVP Growth Growth	Agriculture Technology	Agriculture
5	Online - Software App	Lebanon	25	Male	Yes	Software Engineering	SmartESA	Accelerator	1	Functional MVP	Growth	Educational Technology	Education
6	Online - Software App	Lebanon	25	Male	No	Computer Engineering	Flat6Labs	Accelerator	1	Idea	Early MVP	Employee Management and Scheduling	Business Management
7	Online - Software App	Lebanon	25	Female	No	Public Administration	Startup Scouts	Accelerator	1	Idea	Early MVP	Urban Parking Locator	Transportation
8	Online - Software App	Lebanon	25	Female	No	Architecture	AltCity UKTechHub TEC Cewas Flat6Labs	Accelerator Accelerator Incubator Accelerator Accelerator	5	Idea Early MVP Early MVP Functional MVP Growth	Early MVP Early MVP Functional MVP Growth Growth	Cultural Preservation - Wellness Products	Cultural
9	Activities Program - Software App	Lebanon	30	Female	Yes	Architecture	MakeSense Startup Scouts	Bootcamp Accelerator	2	Early MVP	Growth	Artisans and Craftsmen Platform	Cultural
10	Online - Software App	Lebanon	21	Male	No	Computer Science	Startup Scouts	Accelerator	1	Idea	Early MVP	Gardening App	Agriculture
11	Activities Program - Software/ Hardware	Lebanon	24	Female	No	Psychology Business	Startup Scouts AltCity	Accelerator Accelerator	2	Idea Early MVP	Early MVP Growth	Preschooler Psychological Development	Psychology
12	Online - Software App	Lebanon	28	Male	Yes	Environmental Health	SmartESA Speed	Accelerator Accelerator	2	Early MVP Growth	Functional MVP Growth	Online Fashion Design Marketplace	Fashion
13	Online - Software App	Lebanon	26	Male	No	Computer Engineering	CREN Hult	Incubator Accelerator	2	Idea Growth	MVP Growth	Renewable Energy Solutions	Energy

Table 3 Interviewee Profiles

The interviewee profiles presented in Table 3 show us the following:

- Interviews provided data about 12 different startup programs in Lebanon.
    - The interviews give insight into several different programs.
- As shown in Figure 4, only 3/13 interviewed startups are working on Hardware products.
    - Software startups are easier to start and fund especially in Lebanon where funding is lacking, and high customs charges might also be an obstacle.

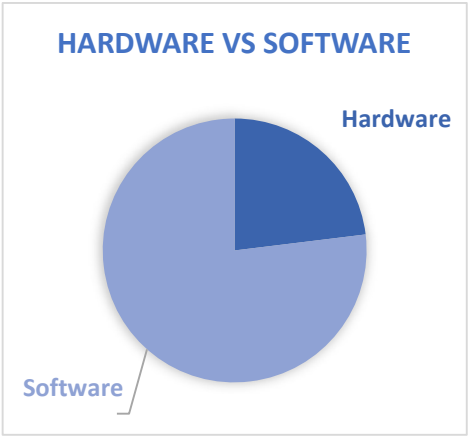


Figure 4 Hardware vs Software Startups Distribution

- As shown in Figure 5, the average age of the interviewed entrepreneurs is 28 with the youngest being 21 and the oldest 47 when they started working on their startup.
    - The startup ecosystem began to take shape starting 2014 with BDL's circular 331. This aligns with the idea that most participating entrepreneurs are in their 20's as fresh graduates were the first to get involved in the ecosystem.

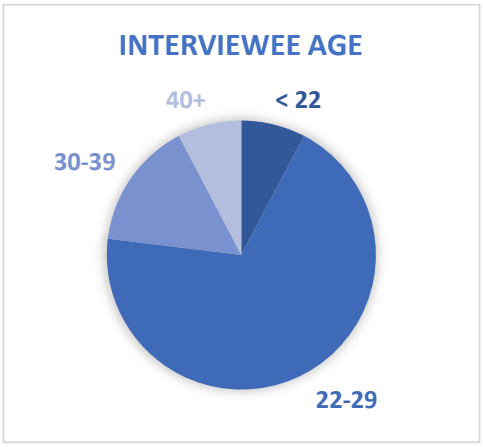


Figure 5 Interviewee Age Distribution

- As shown in Figure 6, 5 Females and 8 Males were interviewed.
    - Participating entrepreneurs are closely split between male and female.

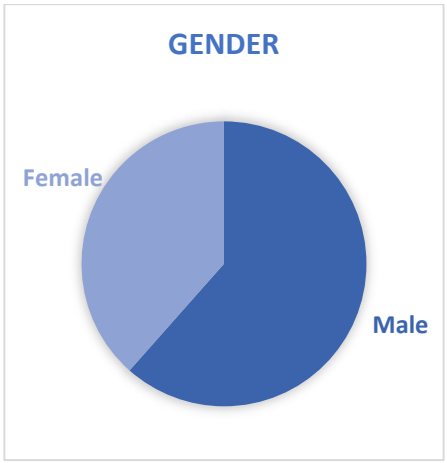


Figure 6 Gender Distribution

- As shown in Figure 7, only 3 interviewees had previous startup experience.
    - This aligns with the ecosystem being young (since 2014).

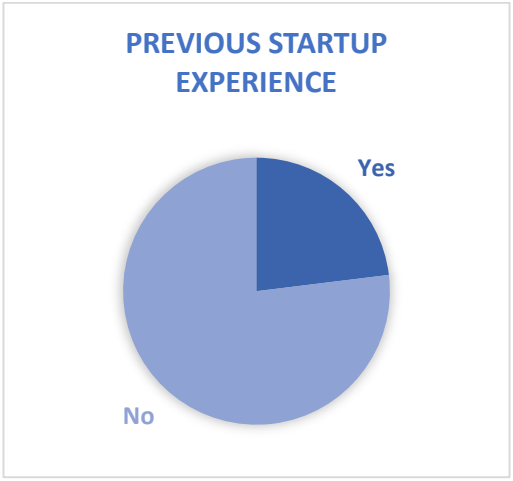


Figure 7 Previous Startup Experience Distribution

- As shown in Figure 8, only 2 interviewees participated in an incubator program.
    - Many interviewees did not know about local incubators and only found accelerators when searching for startup programs.

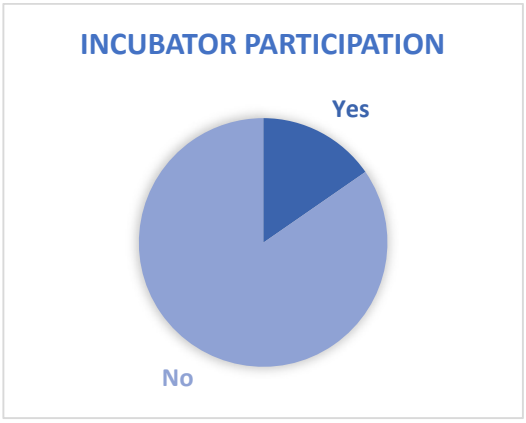


Figure 8 Incubation Participation Distribution

- As shown in Figure 9, the average number of programs attended was 1.85.
    - As many attended programs were 3-6 months long accelerators, it makes sense that many needed other accelerators to help them along their startup journey from one stage to another.

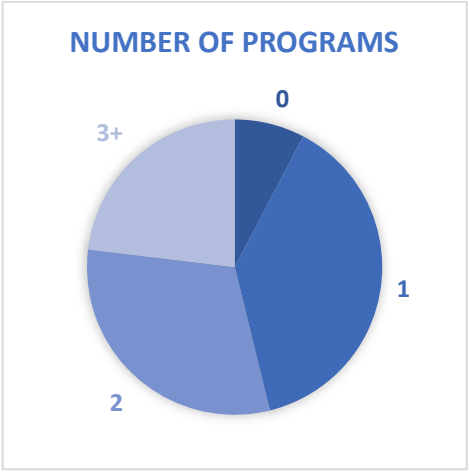


Figure 9 Number of Programs Attended Distribution

- As shown in Figure 10, 9 out of 13 startups joined a program in the Idea stage.
    - Inexperienced startup founders seek the support of startup programs, especially in the early stages. The go-to program is usually an accelerator.

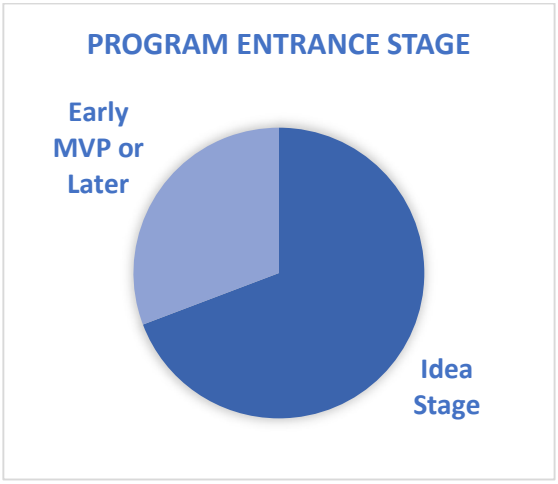


Figure 10 Program Entrance Stage Distribution

B. Analysis and Results

Interview recordings were transcribed and analyzed. Several codes were extracted and grouped together based on their related context. Multiple passes were made over the interviews, and themes began to appear. Some codes were not selected (can be found in Appendix B) since they were not relevant to this study of startup programs or related to an idea which was expressed by only one participant or repeated by the same participant.

Codes belonging to the same theme were then color-coded (Appendix B) and further grouped into five higher level themes:

1. State of Programs
2. Funding and Investment
3. Networking and Mentorship

4. Suggested Improvements
5. Advice for New Startups

Figure 11 illustrates all found themes and sub-themes in a fishbone diagram:

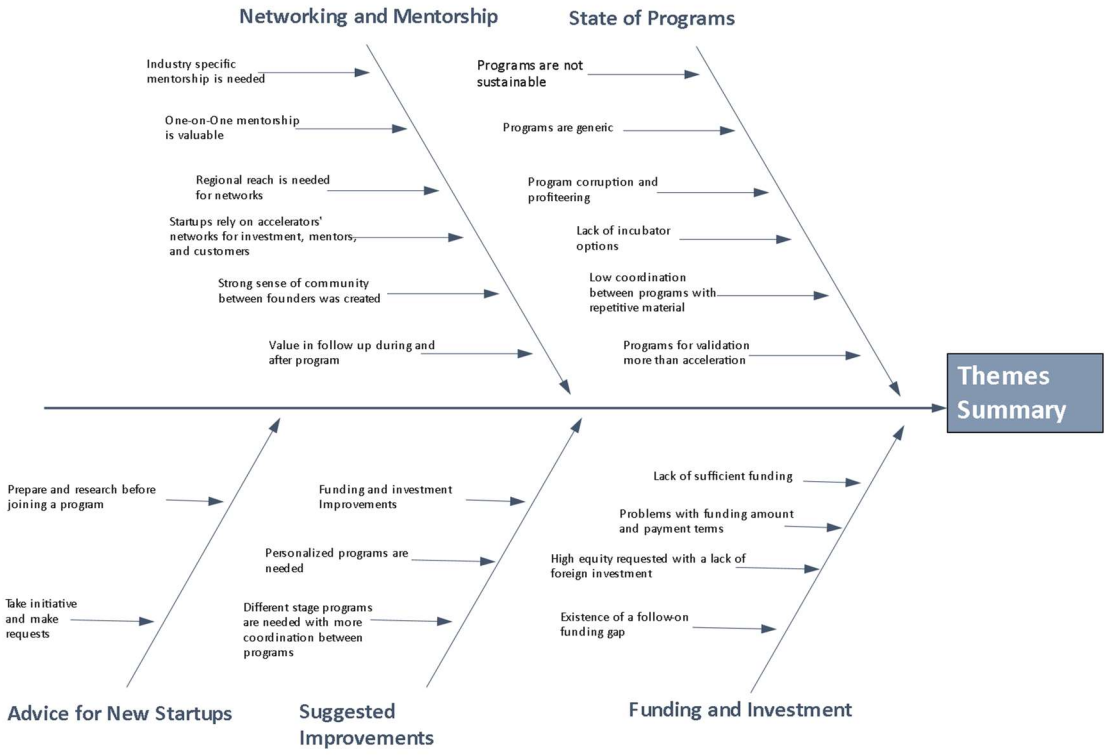


Figure 11 Fishbone Diagram of Themes

The following Table 4 shows the main themes, their color-coded sub-themes, codes, and from where each code was extracted in the initial extraction pass. The themes are then organized into a thematic map.

State of Programs			
Sub-Theme Name	**Section**	**Int#**	**Quote**
Programs are not sustainable	P	1	accelerators run out of funds or stop working due to the situation in Lebanon
	P	11	in Lebanon, the concept of accelerators is not implemented properly as it is abroad. There, accelerators are sustainable
Programs are generic	P	2	when you start such programs which are not sector-specific, it will be difficult to build good networks
	P	4	brought us quality instructors, but the program was one-size-fits-all, not sector-specific
	P	6	The workshops were average. The trainings were average and basic, but they taught me what I needed to search for to go further in depth
	B	6	how to think about user experience, how to think about marketing, and a general overview of everything at a basic level
	P	8	would have appreciated more personalized attention to the startup
	P	8	fixed schedules regardless of the startup growth and does not account to each startup's pace
	P	10	all the participant startups were very early stage, but the program was more advanced for our stage
	P	11	the fresh ones can learn new things. But someone who has attended the training once will not attend it a second time; they all focus on the 101 level of startups. We are stuck at the 101 level which is not good
	P	11	The issue is that there are no advanced stage trainers
	B	12	Their program is very workshop oriented which gave a general idea on how to build a startup, how to think, the legal side, recruiting your team, etc.
	P	12	There's something I've noticed in Lebanon, and it's that there is a lot of rubbish programs. They're useless. You have a lot of those, and it's being recycled year after year. I joined the startup scene in 2015, and I can still see 80% of the same faces.
	P	13	it was like they were following some dry steps: we give some sessions, maybe offer funding, do some reporting, and that's it
Program corruption and profiteering	P	2	especially (programs) with 331 which is restrictive and suffocating
	P	4	It seemed like these guys were more for-profit
	P	4	it was also a little politicized since some companies which participated clearly just entered for the money. Some were already set-up companies
	P	4	like to set-up their own private ecosystems that are exclusive

	P	6	they were backed by BDL's circular 331 money. So, you did not have any flexibility with the money nor clarity. They promised investment at the later stages, but what about BDL's involvement? It was not clear because of BDL
	P	11	(Concerning circular 331) There must have been lots of theft and bad spending. Kafalat spent a lot of money. It's painful that a project with such potential ended up like this due to the country's corruption. People who deserved funding did not receive it.
	P	13	[BDL] gave 400 million first then an additional 200 million, but that initial 400 million disappeared, and no one asked about them
	P	13	I sat with several people who are managing different funds whose source is mainly circular 331, and I found they were operating via cronyism and corruption.
Lack of incubator options	P	7	They were interested in our work and suggested that incubation was a good way to go. They unfortunately requested an expensive fee to join their incubator for a year
	P	11	There is a misunderstanding of what incubation is. Here, in Lebanon, incubation is free office space only. Incubation is not this. Incubation is full support by a team of mentors and people working with you. You can't accelerate properly from the idea stage.
Low coordination between programs with repetitive material	P	2	It was not great, mainly because the workshops they offered were very similar to the ones the (previous) program provided us
	P	2	It wasn't a bad program, but I think I did not benefit because I had already participated in a previous one and attended their workshops
	P	8	I did however also participate in other programs which I will not name. Those were super fast with a lot of money pumping with little benefit and the same trainers and talks we already knew
	P	9	all accelerator programs are the same. Mentors, training sessions, etc.
	P	8	I felt there was a lot of lost opportunity in the gap between the programs. Some programs were a week, some were a month or two, but there were gaps in between. There should be more follow up and events
	P	11	When they used to get new trainers, we felt we learned new things, but that was not the case when they used the same trainers. The issue in our ecosystem is that when they find a trainer they like; they stick to him

	P	11	They required a lot of weekly deliverables which I had to juggle with work and university. It was not easy
	P	11	There is a big gap. There is a lot of redundancy where people keep repeating the same material, programs being
	P	13	Accelerators are going by the book: there's a set curriculum with the same people and content being given
	P	13	They do not usually take in hardware startups in Lebanon
Programs for validation more than acceleration	P	7	He said that, in our situation, we needed to focus on validation instead while we were going through these phases in line with the program to reach an MVP target
	P	10	It felt more of a validation sprint rather than an accelerator program
Funding and Investment			
Sub-Theme Name	**Section**	**Int#**	**Quote**
Lack of sufficient funding	P	1	In Lebanon, they lack proper funding to fund talented startups
	P	2	to help startups, they need to offer funding
	P	4	they were not offering funding, but the later batches got offered funding
	P	5	did not invest and request shares, so motivation to put effort is low
	P	5	This funding option is not available. Sometimes, startups need some cash at the beginning
	P	5	There is a problem with Seed funding in Lebanon. There aren't any Seed funds here
	P	5	network of angel investors is not that strong because they are part of the ecosystem and know the big funds. We had to look for ourselves
	P	8	One program gave a lot in-kind services, sometimes even for free, but did not have much funding. Another program has a lot of funding and give you money, but they do not give you many other services or support. Another would give technical support but not much else.
	P	9	we still had marketing and advertising costs we needed to cover
	P	13	The only thing missing was the funding

Problems with funding amount and payment terms	P	2	they offer $ 40,000 cash and $ 55,000 in client services. 40k would have been good if the Lebanese investment cycle were a short one, but in Lebanon, it takes 6-8 months to receive funding from investors. So, technically, you'd be using the 40k to cover a whole year, but practically spending it over 6 months' work, then work on getting more funds in the remaining 6 months. 40k over 12 months is around 3k per month which is nothing. This is not accelerator specific but has to do with the entire Lebanese ecosystem
	P	3	when you needed to apply for the follow-on funding, you had to go through the process from the beginning
	P	4	They had a paid program, but the way they paid hinders the startups. they asked startups to make their own payments and get receipts for compensation (full or half)
	P	4	they promised around $ 50,000 but they pay in tiny doses
	P	12	Funding in Lebanon comes with a thousand restrictions. The amount of restrictions is crazy. Mostly it's the fault of BDL and their rules. They are complicated, unrealistic, and hinder a startup's ability to scale. Decisions are made by bankers irrelevant to the benefit of the businesses. As an accelerator, you need money that is not complicated to be invested more easily without all these restrictions.
High equity requested with a lack of foreign investment	P	1	many Lebanese startups with an idea with a funded early-stage prototype will not receive any support which leads to these startups closing or approaching private investors whom will request a lot of equity
	P	1	they request too much equity from the startups which was negative for us and a repelling factor
	P	5	seed funding in Lebanon is mainly from accelerators, The problem is that it's not always taken that seriously. When you're raising money for your next round, investors would see that an accelerator gave you money for equity, but the truth is that accelerator funding is not really an investment. When you go series A and B, to be very honest, raising those funds is easier in Lebanon
	P	6	outside investors are not willing to invest in startups in Lebanon
	P	6	our 50k investment was lost due to the environment, legal system, and the political and financial situations. Investors don't trust our financial system

	P	6	Startups might not be okay with giving equity. The accelerator's 10% is already a lot. It's less in other countries and this creates issues for us in future rounds
	P	6	We have not received this funding yet. But, as we can see, funds in Lebanon are almost all related to BDL (maybe around 80%), and BDL's situation is very unclear. The restriction here is by BDL whereby that branch company needs to be owned by the Lebanese company. This creates a credibility issue with foreign investors
Existence of a follow-on funding gap	P	2	the problem in Lebanon is not with the accelerators themselves, rather with the follow-on funding that is available in Lebanon. There is a gap in funding here. Accelerator money is available. Afterwards, for 200k to 500k funding, there are no available funds.
	P	2	as a startup that doesn't find that follow-on funding, you'd close before reaching that VC funding stage
	P	4	Everyone promises follow-on funding but nobody comes through
	P	8	cannot find good follow-on funding in Lebanon
	P	10	You find an idea, get validation, and everything. You have an MVP, but what's next? There is no investment, you need 20 million to register an SARL, so the whole situation is discouraging. Most people reach a stage where they're all stuck.
	P	12	[For Seed investment] global investors are reluctant to invest. Actually, they won't invest here. You always have to register your company outside Lebanon. But if you've taken money from Lebanon from circular 331, then you get into lots of problems. The circular does not allow you to register abroad unless your headquarter is in Lebanon. Foreign investors only accept for the headquarter to be abroad and a subsidiary in Lebanon and not the other way around since the intellectual property needs to be abroad.
	P	12	For Series A, not only the company needs to be outside Lebanon, but so do you. Investors need to make sure that founders are in a stable environment
	P	13	Impossible. Which foreign investor will come invest here?
Networking and Mentorship			
Sub-Theme Name	**Section**	**Int#**	**Quote**
Industry specific mentorship is needed	P	3	The mentorship was a bit general, so we did not benefit much
	P	4	The very different industries need specialized mentoring

	P	13	We had really good mentors especially that we are a hardware startup and got mentors who are hardware specialized working in this field. This was the unique value.
One-on-One mentorship is valuable	B	5	we mainly benefitted from the mentorship, the one-on-one coaching, and from a strategy and business perspective
	B	6	they introduced us to mentors
	B	6	The one-on-one sessions with mentors they used to give were very valuable though
	B	7	paired us with mentors to follow-up with us, mentors gave us specific advice to our situation, and each startup chose the mentors
	B	9	I benefitted from the mentors and their guidance
	B	10	I was able to learn about agriculture from mentors
Regional reach is needed for networks	P	2	were expected to connect us to a regional network; it turned out that each country branch has its own fund so there is no monetary gain for other branches to help ones in Lebanon
	P	3	under the impression that they had a bigger regional network - they only focused on Lebanon
	P	12	The issue in Lebanon is that their mentors are ones that have passed through the local programs a couple of years prior, so there aren't any big success stories to learn from, and a lot of the mentors are corporate mentors who work from big companies. They're helpful but cannot really relate to the obstacles I face as a startup since they come from a company with many employees, a lot of money and systems and processes.
Startups rely on accelerators' networks for investment, mentors, and customers - hit and miss experiences	P	6	lack of direct customer relationship, all accelerators should have very powerful business partners to help startups find customers from the early stages as part of their network
	P	12	there are things they can improve, especially when it comes to being a CEO. Unfortunately, they do not teach you how to be a CEO in Lebanon. You won't be able to do that as a first-time founder unless you have the correct guidance.
	B	5	allowed us to get the investment from them
	B	10	I was also able to find my first customer during the program via a Facebook ad
	B	13	The incubator helped us a lot and got us connections to build a stronger network, especially that it came in early stages
Strong sense of community between founders was created	B	5	community spirit was great whereby startups were helping each other
	B	6	the whole atmosphere they created was good
	B	7	we help each other as startup founders

	B	8	The benefit is to learn and to meet people
	B	9	The sense of community, cooperation, and competition
	B	11	This is advice no one gives you. If it weren't for our friendship and this sense of community between startup founders, no one would have helped me
Value in follow up during and after program	B	5	they still follow up with us until today on a monthly basis
	B	6	still available at their offices which feel like home
	B	12	we are still in contact to this day. We became good friends, and I can talk to him anytime
	P	6	they were backed by BDL's circular 331 money. So, you did not have any flexibility with the money nor clarity. They promised investment at the later stages, but what about BDL's involvement? It was not clear because of BDL
	P	7	Lack of post-accelerator phase. We needed mentorship and follow-up afterward.
	P	7	did not feel there was enough follow up by the mentors
	P	7	They only asked us to send monthly reports with activity updates. There was also no framework for this reporting. And when we stopped sending our updates, they did not follow up
Suggested Improvements			
Sub-Theme Name	**Section**	**Int#**	**Quote**
Funding and investment Improvements	I	4	If I were to fix or improve something, it would probably be the funding issue. It's not a matter of money, but the timing of the money and mechanism by which it happens
	I	4	We have seed funding in abundance in Lebanon, and they are small amounts. Then, you have the major funding in excess of a million or two dollars. There's a huge gap in between which nobody is addressing, and this causes many companies to die, your growth phase, that nobody here specializes in
	I	6	If the accelerators can use the ability to invite investors to their offices and events, even finance those trips, then that would add great value
	I	6	As an accelerator in Lebanon, they are backed by banks. Banks have very good connections with corporate people and business owners. They need to leverage this. The investor should be working for me and with me; not just giving us money and leaving. They should invest some of their time and connections

	I	6	VCs in Lebanon to be successful expats from abroad who would help us grow on the international level. Experienced people on an international level are much better than local managers and private bankers running VCs. Salaries in those VCs are super high at our expense. It should be more results-based, that way they would be incentivized and motivated into helping
	I	2	In Lebanon, how do they attract foreign startups/founders? Taxes, environment, etc. are all unattractive factors
	I	2	(Concerning circular 331) The startup's head office needs to be in Lebanon. You can have subsidiaries abroad, but the mother company needs to be in Lebanon.
	I	2	Your Intellectual Property IP cannot be transferred outside Lebanon
	I	10	the laws do not help especially when wanting to register a company in Lebanon. A person can register a company in Europe online for close to no money, but here, the process is too complicated. It's like wanting to construct a building without a proper base.
Personalized programs are needed	I	1	They can have specific programs for specific startup types
	I	8	I would improve them by making the mentors and networking more personalized
	I	8	focus on different sectors and industries is needed through cooperation, it (currently) feels like everyone is mixed together
	I	8	program durations also can be improved, more flexible durations based on good offerings which can be general intensive or focused extensive
	I	9	Finding contacts who are specialized in specific sectors and areas of business
Different stage programs are needed with more coordination between programs	I	6	I was in cycle one also so everyone was at a similar stage, and at the end they were all around the prototype stage. But I feel like we need programs to actually accelerate afterward
	I	7	work more on the mentorship framework for each startup to ensure that the accelerator has a part tailored to each startup along with the general part. I would consider the post-accelerator activity and follow up depending on their different scenarios
	I	8	programs to cooperate more and have each specialize in different stages and industries. After you actually launch the product and want to grow, you cannot find a program that helps you at that stage,when you need more advanced training

	I	4	big lack of attention to hardware and technology startups
	I	11	When you reach MVP2, you will find useful guidance if you're working on software, but for hardware, good luck in finding anyone to help with the MVP. We are not a hardware country which is bad since there is much potential
	I	11	There are fablabs, whether in Berytech or the ones being set up by UNICEF across the country, are all still new and being set up. There aren't enough people trained to use the machines to make proper use and innovate
Advice for New Startups			
Sub-Theme Name	**Section**	**Int#**	**Quote**
Prepare and research before joining a program	A	4	talk to these programs and see what they can offer instead of blindly joining
	A	11	they need to be solving a real problem
	A	6	I would advise founders without previous startup experience to join. At the accelerator program, you receive general knowledge. If you learned by yourself or have previous startup experience, don't join an accelerator program. Go find an angel investor
	A	11	there is a problem of expectations management too. Some think that joining an accelerator program means that they will have an established business, but no, a business takes years and years to set up
Take initiative and make requests	A	5	If a startup does not know how to ask for things, they might end up not benefitting much
	A	6	Founders should not wait for accelerators but rather demand from them help in introducing them to investors
	A	12	they give you a generic program that caters to startups from different industries. Your job as a startup is to benefit from it as much as possible. You need to put in the work and see what other resources you have access to. You need to ask questions, ask for introduction, ask for favors, etc

Table 4 Themes List

4. *Theme 1: State of Programs*

Figure 12 below summarizes all of Theme 1's sub-themes followed by their analysis:

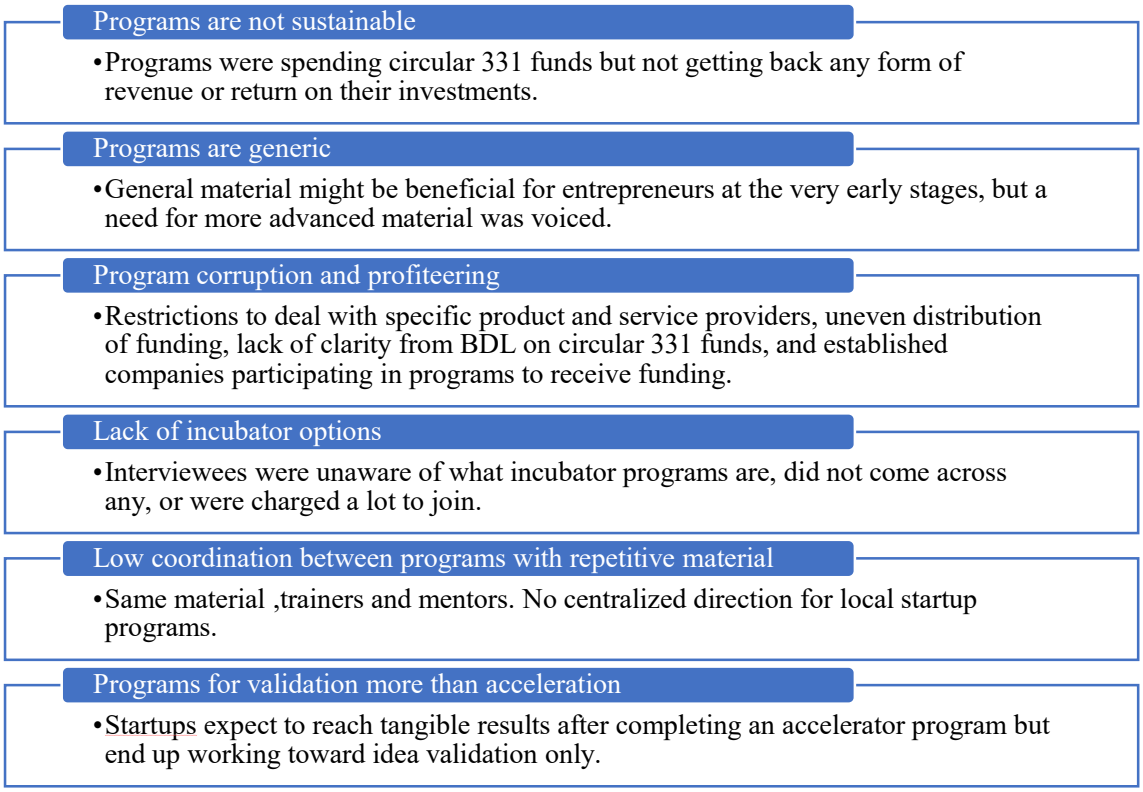


Figure 12 State of Programs Theme Summary

a. Sub-Theme 1: Programs are not sustainable

During the Lebanese financial crisis, local startup programs' reliance on Circular 331 money became more evident. Many programs halted their activities or even closed down completely when public funding stopped. This brings to light an issue of sustainability whereby programs were spending circular 331 funds but not getting back any form of revenue or return on their investments. Circular 331 was mentioned 7 times in interviews. Below are the interview codes/quotes relevant to this sub-theme.

- accelerators run out of funds or stop working due to the situation in Lebanon
- in Lebanon, the concept of accelerators is not implemented properly as it is abroad. There, accelerators are sustainable

b. Sub-Theme 2: Programs are generic

Several interviewees feel that the offered programs are very general. The Lebanese ecosystem is not a large one, and therefore, having specific programs might not be a viable option since there are not that many entrepreneurs. General material might be beneficial for entrepreneurs at the very early stages (usually provided by incubators), but a need for more advanced material was voiced. There have been sector-specific programs created, like Agrytech, which focus on a needed national sector, and there might be more of the same. For now, it would be useful to at least incorporate some sector-specific sections of the general programs to accommodate startup needs. 8 codes referenced the general nature of material, trainings, and mentorship. 4 codes referenced sector-specific efforts.

- Their program is very workshop oriented which gave a general idea on how to build a startup, how to think, the legal side, recruiting your team, etc.
- when you start such programs which are not sector-specific, it will be difficult to build good networks
- brought us quality instructors, but the program was one-size-fits-all, not sector-specific
- The workshops were average. The trainings were average and basic, but they taught me what I needed to search for to go further in depth
- how to think about user experience, how to think about marketing, and a general overview of everything at a basic level
- would have appreciated more personalized attention to the startup
- fixed schedules regardless of the startup growth and does not account to each startup's pace
- the fresh ones can learn new things. But someone who has attended the training once will not attend it a second time; they all focus on the 101 level of startups. We are stuck at the 101 level which is not good
- The issue is that there are no advanced stage trainers
- it was like they were following some dry steps: we give some sessions, maybe offer funding, do some reporting, and that's it

c. Sub-Theme 3: Program corruption and profiteering

Several interviewees have experienced or heard of occasions of profiteering and corrupt behavior by some programs' management. This was seen by the restrictions

placed on some entrepreneurs to deal with specific product and service providers, uneven distribution of funding, lack of clarity from BDL on circular 331 funds, and established companies participating in programs to receive funding. Such observations are plausible when considering Lebanon's high corruption index, as previously stated in this paper. 6 codes referenced corruption, politics, lack of clarity, and profiteering.

- especially (programs) with 331 which is restrictive and suffocating
- It seemed like these guys were more for-profit
- it was also a little politicized since some companies which participated clearly just entered for the money. Some were already set-up companies
- like to set-up their own private ecosystems that are exclusive
- they were backed by BDL's circular 331 money. So, you did not have any flexibility with the money nor clarity. They promised investment at the later stages, but what about BDL's involvement? It was not clear because of BDL
- (Concerning circular 331) There must have been lots of theft and bad spending. Kafalat spent a lot of money. It's painful that a project with such potential ended up like this due to the country's corruption. People who deserved funding did not receive it.
- [BDL] gave 400 million first then an additional 200 million, but that initial 400 million disappeared, and no one asked about them
- I sat with several people who are managing different funds whose source is mainly circular 331, and I found they were operating via cronyism and corruption.

d. Sub-Theme 4: Lack of incubator options

Some interviewees were unaware of what incubator programs are and others did not come across any. Incubators foster the startup at its very early stages and teaches its founders how to navigate this sensitive period (Isabelle, 2013). Only two out of the fourteen interviewed participated in an incubator program and one other was approached by one which required an expensive participation fee. Even at very early stages, interviewees were pushed to accelerate in programs spanning a few months. 5 codes referenced incubators while 36 referenced accelerators.

- They were interested in our work and suggested that incubation was a good way to go. They unfortunately requested an expensive fee to join their incubator for a year

- There is a misunderstanding of what incubation is. Here, in Lebanon, incubation is free office space only. Incubation is not this. Incubation is full support by a team of mentors and people working with you. You can't accelerate properly from the idea stage.

e. Sub-Theme 5: Low coordination between programs with repetitive material

Interviewees who participated in several programs and events noticed that the same trainers and mentors were being used by different programs. In addition to the previously described lack of incubation, most programs in Lebanon are accelerators which run for a few months only. Therefore, startups get accelerated from one stage to the next and would need to gain new knowledge and tools to accelerate to the following stage. When all programs use the same material, trainers, mentors, etc., startups lose needed support to continue their journey. There does not seem to be any coordination or centralized direction for local startup programs which organizes their activities and efforts. 10 codes referenced repetitiveness of programs.

- It was not great, mainly because the workshops they offered were very similar to the ones the (previous) program provided us
- It wasn't a bad program, but I think I did not benefit because I had already participated in a previous one and attended their workshops
- I did however also participate in other programs which I will not name. Those were super fast with a lot of money pumping with little benefit and the same trainers and talks we already knew
- all accelerator programs are the same. Mentors, training sessions, etc.
- When they used to get new trainers, we felt we learned new things, but that was not the case when they used the same trainers. The issue in our ecosystem is that when they find a trainer they like; they stick to him
- I felt there was a lot of lost opportunity in the gap between the programs. Some programs were a week, some were a month or two, but there were gaps in between. There should be more follow up and events
- They required a lot of weekly deliverables which I had to juggle with work and university. It was not easy
- There is a big gap. There is a lot of redundancy where people keep repeating the same material, programs being repeated, programs proven not to be as effective as they claim to be, etc.
- Accelerators are going by the book: there's a set curriculum with the same people and content being given
- They do not usually take in hardware startups in Lebanon

f. Sub-Theme 6: Programs for validation more than acceleration

Startups expect to reach tangible results after completing an accelerator program, especially when they lose equity to participate. Several interviewees completed programs but did not advance on their journey. This is particularly evident in the early-stage startups. This might not be the fault of accelerators which are by definition short in duration for later stages, rather it is more evidence of the lack of early-stage programs like incubators. Accelerator programs have stepped in to include very early-stage startups in their programs which stretches thin their abilities to provide progress and growth. 5 codes referenced validation.

- He said that, in our situation, we needed to focus on validation instead while we were going through these phases in line with the program to reach an MVP target
- It felt more of a validation sprint rather than an accelerator program

5. *Theme 2: Funding and Investment*

Figure 13 below summarizes all of Theme 2's sub-themes followed by their analysis:

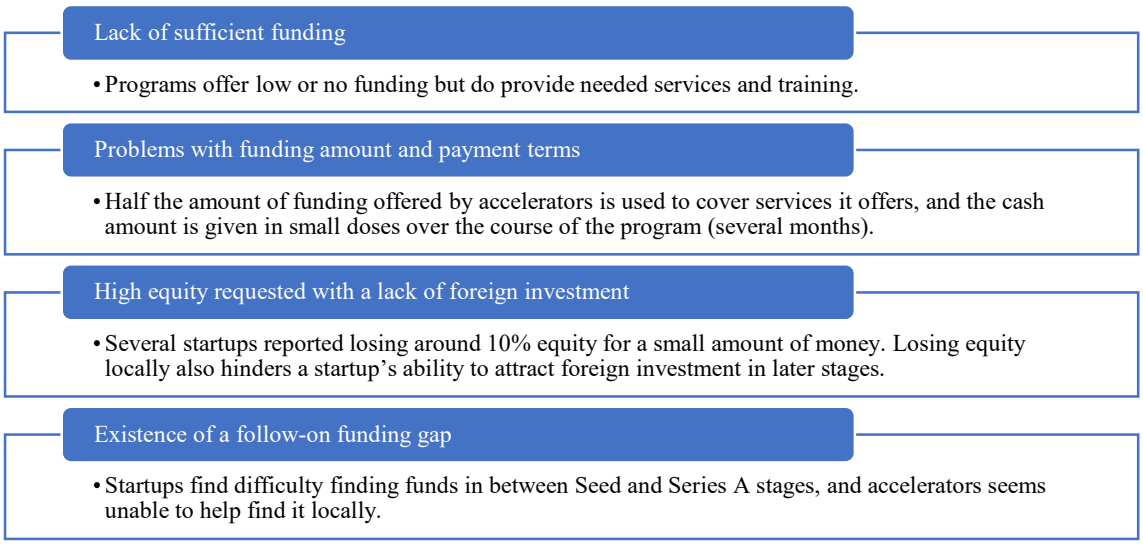


Figure 13 Funding and Investment Theme Summary

a. Sub-Theme 1: Lack of sufficient funding

Several programs do not offer any funding but do provide needed services and training. These programs do provide essential support but for a short period of time. Incubators which are more specialized for early stages continue for 1-3 years in comparison until a startup is ready for the next step. Other programs offer a small amount of funding for an acceleration program which forces early-stage startups to participate in several programs to gather needed funds but find themselves losing equity several times at the same time. 63 codes referenced funding and 10 referenced its insufficiency.

- In Lebanon, they lack proper funding to fund talented startups
- to help startups, they need to offer funding
- they were not offering funding, but the later batches got offered funding
- did not invest and request shares, so motivation to put effort is low
- This funding option is not available. Sometimes, startups need some cash at the beginning
- There is a problem with Seed funding in Lebanon. There aren't any Seed funds here
- network of angel investors is not that strong because they are part of the ecosystem and know the big funds. We had to look for ourselves
- One program gave a lot in-kind services, sometimes even for free, but did not have much funding. Another program has a lot of funding and give you money, but they do not give you many other services or support. Another would give technical support but not much else.
- we still had marketing and advertising costs we needed to cover
- The only thing missing was the funding

b. Sub-Theme 2: Problems with funding amount and payment terms

Half the amount of funding offered by accelerators is used to cover services it offers, and the cash amount is given in small doses over the course of the program (several months). Otherwise, startups would need to pay from their own money then apply for compensation. All these restrictions might be a way for the accelerator to keep control over startup spending, but in many cases, it hinders the startup's freedom. It

might be a better approach to coordinate with the founders and work on a mutual plan which would be followed up on regularly rather than impose such restrictions. 5 codes referenced the payment process.

- they offer $ 40,000 cash and $ 55,000 in client services. 40k would have been good if the Lebanese investment cycle were a short one, but in Lebanon, it takes 6-8 months to receive funding from investors. So, technically, you'd be using the 40k to cover a whole year, but practically spending it over 6 months' work, then work on getting more funds in the remaining 6 months. 40k over 12 months is around 3k per month which is nothing. This is not accelerator specific but has to do with the entire Lebanese ecosystem
- when you needed to apply for the follow-on funding, you had to go through the process from the beginning
- They had a paid program, but the way they paid hinders the startups. they asked startups to make their own payments and get receipts for compensation (full or half)
- they promised around $ 50,000 but they pay in tiny doses
- Funding in Lebanon comes with a thousand restrictions. The amount of restrictions is crazy. Mostly it's the fault of BDL and their rules. They are complicated, unrealistic, and hinder a startup's ability to scale. (…) As an accelerator, you need money that is not complicated to be invested more easily without all these restrictions.

c. Sub-Theme 3: High equity requested with a lack of foreign investment

Several startups reported losing around 10% equity for a small amount of money. 10% is a lot to lose especially at early stages and when considering that most Lebanese startups need to participate in several programs. This is in addition to the fact that many local startups struggle to find sufficient funding and guidance in early stages which might cause them to join several accelerator programs and hence lose more equity. Losing equity locally also hinders a startup's ability to attract foreign investment in later stages. 12 codes referenced equity, and 7 codes referenced concerns about requested equity amount.

- many Lebanese startups with an idea with a funded early-stage prototype will not receive any support which leads to these startups closing or approaching private investors whom will request a lot of equity
- they request too much equity from the startups which was negative for us and a repelling factor
- seed funding in Lebanon is mainly from accelerators, The problem is that it's not always taken that seriously. When you're raising money for your next round, investors would see that an accelerator gave you money for equity, but the truth is that accelerator funding is not really an investment. When you go series A and B, to be very honest, raising those funds is easier in Lebanon
- outside investors are not willing to invest in startups in Lebanon
- our 50k investment was lost due to the environment, legal system, and the political and financial situations. Investors don't trust our financial system
- Startups might not be okay with giving equity. The accelerator's 10% is already a lot. It's less in other countries and this creates issues for us in future rounds
- We have not received this funding yet. But, as we can see, funds in Lebanon are almost all related to BDL (maybe around 80%), and BDL's situation is very unclear. The restriction here is by BDL whereby that branch company needs to be owned by the Lebanese company. This creates a credibility issue with foreign investors

d. Sub-Theme 4: Existence of a follow-on funding gap

Several interviewees spoke of a follow-on funding gap. Early stage and seed funding is available despite the issues discussed above. Series A funding is also available via several big venture capital firms in Lebanon. Startups, however, find difficulty finding funds in between these two stages, and accelerators seems unable to help find it locally. If startups decide to check for foreign investment, they face different obstacles related to lost equity, instability of Lebanon, local company registration which is required by BDL, etc. The inability of startup programs to regularly find sources of follow-on funding is harmful to the founders who lose their business, the accelerators who lose on their investment, and potentially to the country which might be losing an important product or service idea. 6 codes referenced the follow-on funding gap.

- the problem in Lebanon is not with the accelerators themselves, rather with the follow-on funding that is available in Lebanon. There is a gap in funding here.

Accelerator money is available. Afterwards, for 200k to 500k funding, there are no available funds.

- as a startup that doesn't find that follow-on funding, you'd close before reaching that VC funding stage
- Everyone promises follow-on funding but nobody comes through
- cannot find good follow-on funding in Lebanon
- You find an idea, get validation, and everything. You have an MVP, but what's next? There is no investment, you need 20 million to register an SARL, so the whole situation is discouraging. Most people reach a stage where they're all stuck.
- [For Seed investment] global investors are reluctant to invest. Actually, they won't invest here. You always have to register your company outside Lebanon. But if you've taken money from Lebanon from circular 331, then you get into lots of problems. The circular does not allow you to register abroad unless your headquarter is in Lebanon. Foreign investors only accept for the headquarter to be abroad and a subsidiary in Lebanon and not the other way around since the intellectual property needs to be abroad.
- For Series A, not only the company needs to be outside Lebanon, but so do you. Investors need to make sure that founders are in a stable environment
- Impossible. Which foreign investor will come invest here?

6. *Theme 3: Networking and Mentorship*

Figure 14 below summarizes all of Theme 3's sub-themes followed by their analysis:

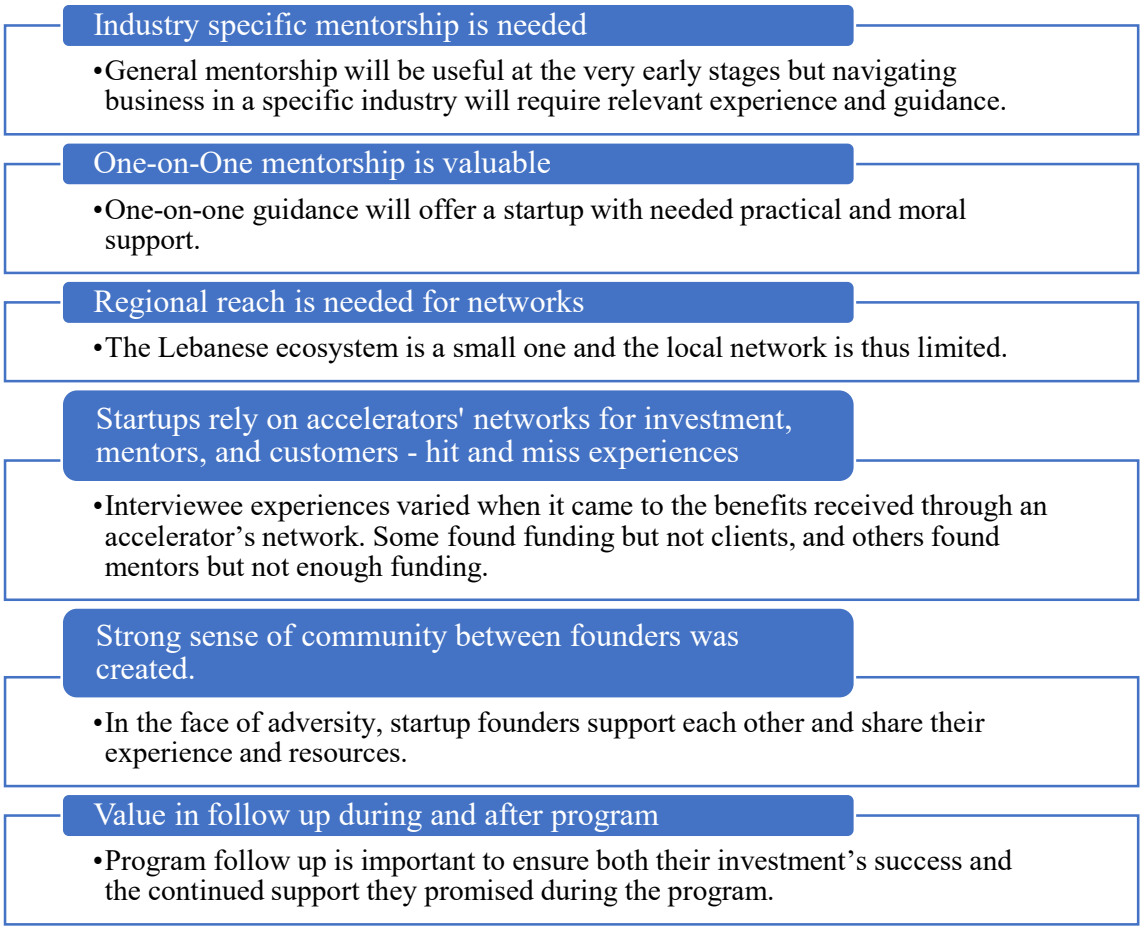


Figure 14 Networking and Mentorship Theme Summary

a. Sub-Theme 1: Industry specific mentorship is needed

There is great value in mentors, especially for inexperienced founders. Mentors can provide guidance, introduction to new important professional networks, and advice on soft skills. Interview profiling showed an average age of 28 and young founders will need to rely on their mentors' experience in specific fields. General mentorship will be useful at the very early stages but navigating business in a specific industry will require relevant experience and guidance. 27 codes referenced mentorship with 3 codes focusing on the lack of specialized mentorship.

- The mentorship was a bit general, so we did not benefit much
- The very different industries need specialized mentoring
- We had really good mentors especially that we are a hardware startup and got mentors who are hardware specialized working in this field. This was the unique value.

b. Sub-Theme 2: One-on-One mentorship is valuable

This sub-theme and its codes validate the importance and value of mentorship. One-on-one guidance will offer a startup with needed practical and moral support. Mentors will also open opportunities via their own networks and help the startup succeed. Again, for young startup founders who lack relevant experience, mentors provide essential guidance. 2 codes focused on one-on-one mentorship with another 6 codes highlighting the value of mentorship.

- we mainly benefitted from the mentorship, the one-on-one coaching, and from a strategy and business perspective
- they introduced us to mentors
- The one-on-one sessions with mentors they used to give were very valuable though
- paired us with mentors to follow-up with us, mentors gave us specific advice to our situation, and each startup chose the mentors
- I benefitted from the mentors and their guidance
- I was able to learn about agriculture from mentors

c. Sub-Theme 3: Regional reach is needed for networks

The Lebanese ecosystem is a small one and the local network is thus limited. At some point, startups will need to reach out to the global ecosystem and market, but not having a bridge to that global network is an obstacle. Be it client volume, funding, specialized mentors, etc., startups will eventually need access to regional if not global networks to grow. This subtheme is also tied to the funding themes in that local funding in the small Lebanese ecosystem is limited, and regional investors and mentors need to play a bigger role in supporting local startups. 22 codes referenced networking with 4 codes focusing on regional reach.

- were expected to connect us to a regional network; it turned out that each country branch has its own fund so there is no monetary gain for other branches to help ones in Lebanon
- under the impression that they had a bigger regional network
- they only focused on Lebanon
- The issue in Lebanon is that their mentors are ones that have passed through the local programs a couple of years prior, so there aren't any big success stories to learn from, and a lot of the mentors are corporate mentors who work from big companies. They're helpful but cannot really relate to the obstacles I face as a startup since they come from a company with many employees, a lot of money and systems and processes.

d. Sub-Theme 4: Startups rely on accelerators' networks for investment, mentors, and customers - hit and miss experiences

Interviewee experiences varied when it came to the benefits received through an accelerator's network. Some found funding but not clients, and others found mentors but not enough funding. Large networks provide founders with more opportunities to find investment, connect with the right mentors, and grow their product or service with new customers. As described by El Nemar (2016), Lebanon's small network is one of the main entrepreneurial barriers, and startup programs are expected to find solutions for local entrepreneurs. 4 codes referenced specific experiences related to accelerator networks.

- lack of direct customer relationship, all accelerators should have very powerful business partners to help startups find customers from the early stages as part of their network
- allowed us to get the investment from them
- I was also able to find my first customer during the program via a Facebook ad
- The incubator helped us a lot and got us connections to build a stronger network, especially that it came in early stages

e. Sub-Theme 5: Strong sense of community between founders was created

A positive consequence of startup programs is the strong sense of community which was created between startup founders. In the face of adversity, startup founders support each other and share their experience and resources. Founders will therefore try

to fill the gaps left by startup programs in terms of guidance and networking, but it is not enough, especially in a fairly young ecosystem. 9 codes referenced the sense of community.

- community spirit was great whereby startups were helping each other
- the whole atmosphere they created was good
- we help each other as startup founders
- The benefit is to learn and to meet people
- The sense of community, cooperation, and competition
- This is advice no one gives you. If it weren't for our friendship and this sense of community between startup founders, no one would have helped me

f. Sub-Theme 6: Value in follow up during and after program

In addition to the sense of community created by founders, several startup programs have remained in touch with their participants and have offered support beyond the program's duration. This is important to ensure both their investment's success and the continued support they promised during the program. Even programs that do not request equity maintain follow up with their participants. This adds to the sense of community which pushes founders forward. 6 codes referenced follow up.

- they still follow up with us until today on a monthly basis
- still available at their offices which feel like home
- we are still in contact to this day. We became good friends, and I can talk to him anytime

When this follow up was weak or missing, it was greatly felt by the founders in terms of mentorship and follow-on funding.

- they were backed by BDL's circular 331 money. So, you did not have any flexibility with the money nor clarity. They promised investment at the later stages, but what about BDL's involvement? It was not clear because of BDL
- Lack of post-accelerator phase. We needed mentorship and follow-up afterward.
- They only asked us to send monthly reports with activity updates.

7. *Theme 4: Suggested Improvements*

Figure 15 below summarizes all of Theme 4's sub-themes followed by their analysis:

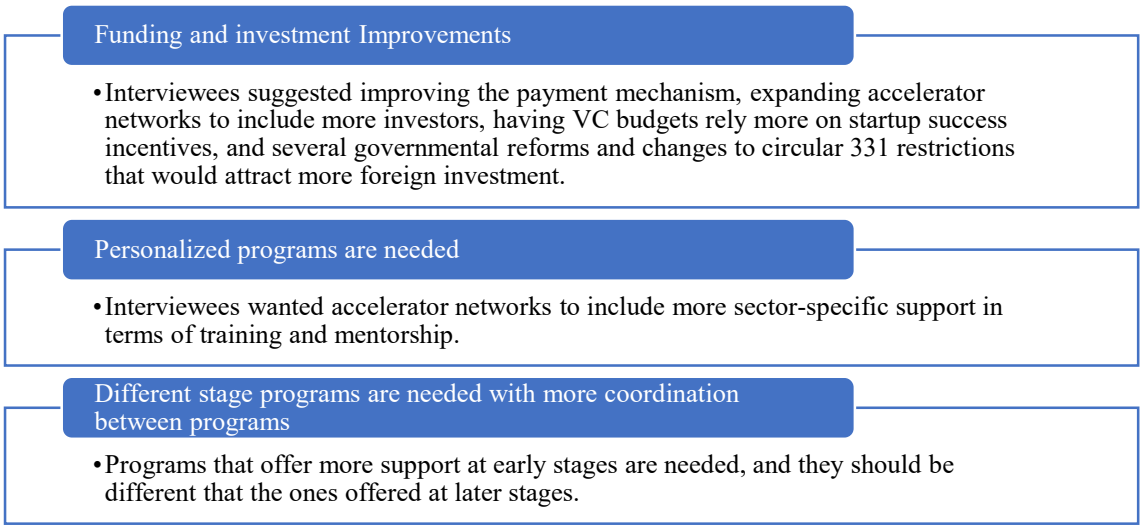


Figure 15 Suggested Improvements Theme Summary

a. Sub-Theme 1: Funding and investment Improvements

Interviewees wanted to see improvement in funding. Almost every interview mentioned some form of funding difficulty. They suggested improving the payment mechanism, expanding accelerator networks to include more investors, having VC budgets rely more on startup success incentives to justify their high operating expenses, and several governmental reforms and changes to circular 331 restrictions that would attract more foreign investment. 9 codes referenced funding and investment improvements.

- If I were to fix or improve something, it would probably be the funding issue. It's not a matter of money, but the timing of the money and mechanism by which it happens
- We have seed funding in abundance in Lebanon, and they are small amounts. Then, you have the major funding in excess of a million or two dollars. There's a huge gap in between which nobody is addressing, and this causes many companies to die, your growth phase, that nobody here specializes in

- If the accelerators can use the ability to invite investors to their offices and events, even finance those trips, then that would add great value
- As an accelerator in Lebanon, they are backed by banks. Banks have very good connections with corporate people and business owners. They need to leverage this. The investor should be working for me and with me; not just giving us money and leaving. They should invest some of their time and connections
- VCs in Lebanon to be successful expats from abroad who would help us grow on the international level. Experienced people on an international level are much better than local managers and private bankers running VCs. Salaries in those VCs are super high at our expense. It should be more results-based, that way they would be incentivized and motivated into helping
- In Lebanon, how do they attract foreign startups/founders? Taxes, environment, etc. are all unattractive factors
- (Concerning circular 331) The startup's head office needs to be in Lebanon. You can have subsidiaries abroad, but the mother company needs to be in Lebanon.
- Your Intellectual Property IP cannot be transferred outside Lebanon
- the laws do not help especially when wanting to register a company in Lebanon. A person can register a company in Europe online for close to no money, but here, the process is too complicated. It's like wanting to construct a building without a proper base.

b. Sub-Theme 2: Personalized programs are needed

Interviewees wanted accelerator networks to include more sector-specific support in terms of training and mentorship. The repetitive nature of current startup material deprives program participants from essential knowledge they need to achieve the growth they need. As highlighted in the Interview Profiles table (Table 3), some participants complete a program with little to no advancement in their stage. Some means of reaching such experts is therefore required to properly support startups after the very early stages. 5 codes referenced the need of personalized programs.

- They can have specific programs for specific startup types
- I would improve them by making the mentors and networking more personalized
- focus on different sectors and industries is needed through cooperation, it (currently) feels like everyone is mixed together
- program durations also can be improved, more flexible durations based on good offerings which can be general intensive or focused extensive
- Finding contacts who are specialized in specific sectors and areas of business

c. Sub-Theme 3: Different stage programs are needed with more coordination between programs

The most common startup program in Lebanon appears to be the accelerator. Accelerators are taking in startups from the idea to the growth stages. Programs that offer more support at early stages are needed, and they should be different that the ones offered at later stages. Coordination is also needed between these programs to avoid repetition and a subsequent waste of funds and time. 6 codes referenced the need for different stage programs and coordination between them.

- I was in cycle one also so everyone was at a similar stage, and at the end they were all around the prototype stage. But I feel like we need programs to actually accelerate afterward
- work more on the mentorship framework for each startup to ensure that the accelerator has a part tailored to each startup along with the general part. I would consider the post-accelerator activity and follow up depending on their different scenarios
- programs to cooperate more and have each specialize in different stages and industries. After you actually launch the product and want to grow, you cannot find a program that helps you at that stage,when you need more advanced training
- big lack of attention to hardware and technology startups
- When you reach MVP2, you will find useful guidance if you're working on software, but for hardware, good luck in finding anyone to help with the MVP. We are not a hardware country which is bad since there is much potential
- There are fablabs, whether in Berytech or the ones being set up by UNICEF across the country, are all still new and being set up. There aren't enough people trained to use the machines to make proper use and innovate

8. Theme 5: Advice for New Startups

Figure 16 below summarizes all of Theme 5's sub-themes followed by their analysis:

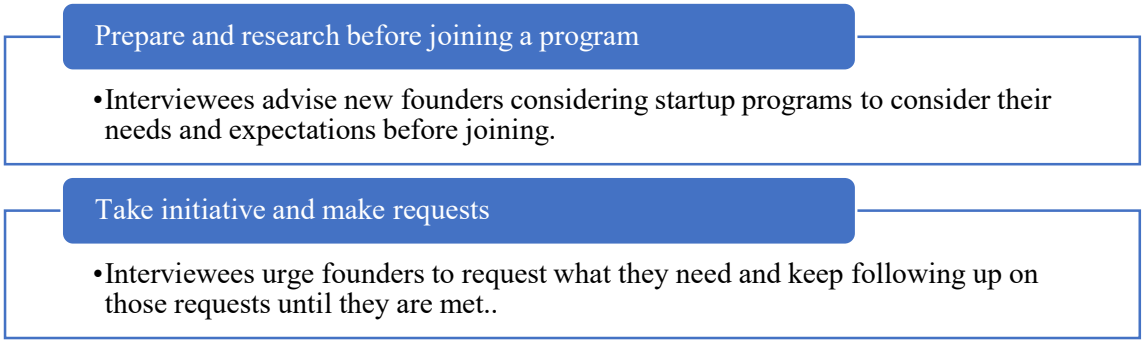


Figure 16 Advice for New Startups Theme Summary

a. Sub-Theme 1: Prepare and research before joining a program

Interviewees advise new founders considering startup programs to consider their needs and expectations before joining. They are advised to meet with several programs and research before making their decision so as not to waste valuable time and possibly equity. 4 codes referenced the need for research before joining a startup.

- talk to these programs and see what they can offer instead of blindly joining
- they need to be solving a real problem
- I would advise founders without previous startup experience to join. At the accelerator program, you receive general knowledge. If you learned by yourself or have previous startup experience, don't join an accelerator program. Go find an angel investor
- there is a problem of expectations management too. Some think that joining an accelerator program means that they will have an established business, but no, a business takes years and years to set up

b. Sub-Theme 2: Take initiative and make requests

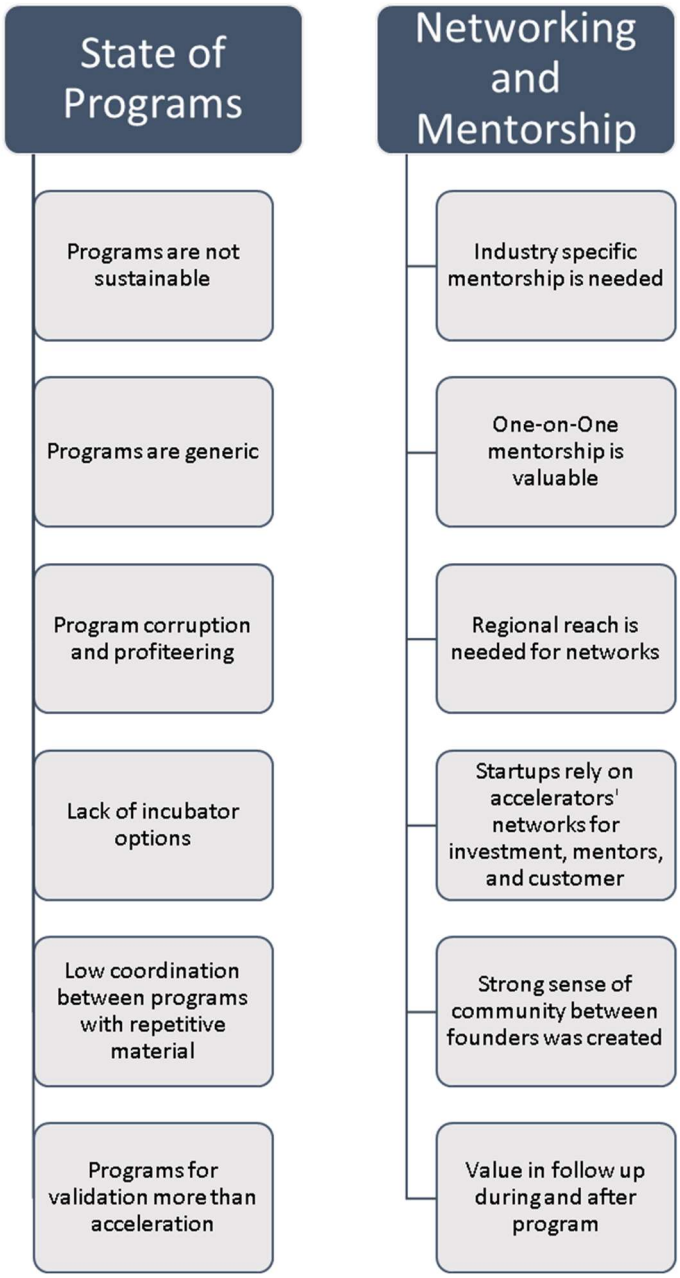
Interviewees urge new founders to take initiative with the program's management. They are urged to request what they need and keep following up on those

requests until they are met. Interviewees who took that approach described how they got the support they needed while others who did not ask for it missed out. 3 codes referenced the suggestion to make requests, and they were all made by the more successful startup founders.

- If a startup does not know how to ask for things, they might end up not benefitting much
- Founders should not wait for accelerators but rather demand from them help in introducing them to investors
- they give you a generic program that caters to startups from different industries. Your job as a startup is to benefit from it as much as possible. You need to put in the work and see what other resources you have access to. You need to ask questions, ask for introduction, ask for favors, etc.

C. Thematic Map

A Thematic Map involves a detailed account of the hierarchical relationship between codes, as well as a description of each, their criteria, exemplars, and counter (Braun and Clarke, 2006). Figure 17 illustrates the Thematic Map used in the analysis of conducted interviews.



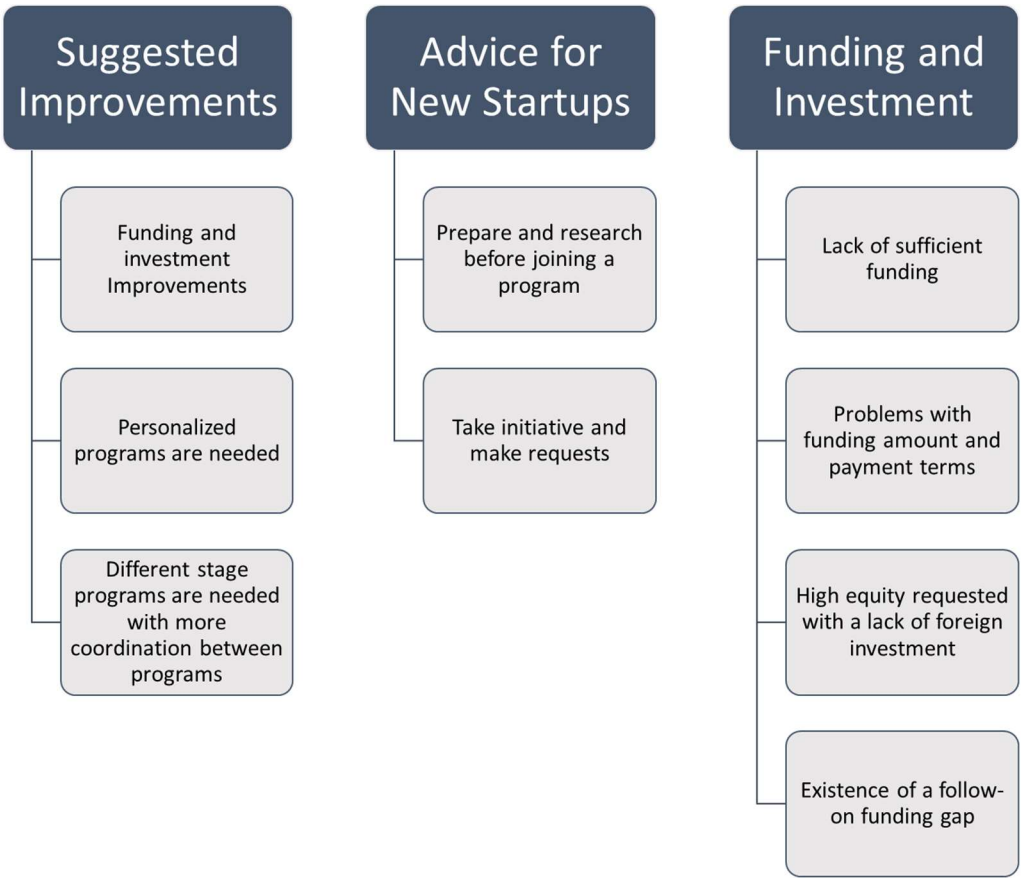


Figure 17 Thematic Map

D. Discussion

The first finding concerns the State of Programs which are perceived as unsustainable whereby funding is not always available or is limited. Another finding was that corruption and profiteering were experienced by participants. Program material and trainers are recycled regularly regardless of market needs, and there does not appear to be sufficient coordination between these programs to benefit the ecosystem as a whole. Accelerator programs are the most common and seem to focus on validation during their short duration whereas incubator programs are not available or accessible.

This finding confirms the statements made in the World Bank report which questioned the sustainability of Lebanese startup programs which rely on Circular 331 funding and the quality of their provided services (Mulas et al., 2017).

Cohen (2019) considered startup programs as key providers of services and guidance, and their management is therefore important for the success of any startup ecosystem. Therefore, these presented managerial subthemes must be addressed, investigated, and remedied by local startup programs, so they can provide the quality services that entrepreneurs expect.

In terms of networking and mentorship, Pittaway et al. (2004) emphasized the direct link between startup success and networking's ability to provide access to product-related resources and markets. Local entrepreneurs are faced with a small network in Lebanon but still find great value in program follow up and one-on-one mentorship which provide lasting guidance. It was evident that startups rely on accelerators' networks to find investment, mentors, and customers. Therefore, these programs can create more value by providing more industry specific mentorship and access to regional networks. During the entrepreneurial journey, startup founders have created a strong sense of community which was encouraged by local programs.

This finding also confirms the statements made in the World Bank report on the Lebanese ecosystem which discussed the small size of the Lebanese network and the limitation that presents in terms of finding investment and mentorship (Mulas et al., 2017).

In the literature review section of this thesis, two of the three external startup success factors, which were identified by studying several meta-analysis papers, were related to funding: capital and financial changes. Cohen (2019) found that funding can

be reached via the provided access to investors through networking, sponsored competitions/events, pitching to investors on demo days, or direct funding by the programs. When it comes to the Lebanese ecosystem, there is a lack of proper funding experienced while the existing funding is insufficient and restricting with high equity requested. Foreign investors are discouraged by governmental and central bank restrictions, and no alternatives are presented to cover the follow-on funding gap. This finding confirms the funding difficulties stated in the World Bank report on the Lebanese ecosystem (Mulas et al., 2017).

Interviewees were also asked about suggested improvements and advice they could give. Their suggestions focused on the funding and investment issues startup face, the need for personalized focused programs, and the need for specialized programs for advanced stage startups through inter-program coordination. Their advice for fellow entrepreneurs focused on the need to prepare and research programs before joining any, and the importance of taking initiative and making requests when participating in startup programs.

For example, a new idea stage startup might consider joining a program with their innovative concept. The most common programs they find are general accelerators which might be beneficial as they start to learn the basics of running a startup, but the short duration program might not be enough. If all goes well, they might exit with an early MVP which requires clients for testing and further development. Here, the startup would consider joining yet another program but might need a more sector-specific program with specialized training and mentorship. This is where they will face the first obstacle as these types of programs are lacking in Lebanon. Additionally, they might face difficulties finding clients and a loss of equity early on might lead to problems

when seeking foreign investment in later stages. Lebanese accelerators funded by circulars like 331 will also require startups to register in Lebanon which again hinders their ability to find foreign investment. Therefore, for startups in Lebanon, many potential obstacles can lead to dead ends.

This study has therefore highlighted issues that were not available in the MOET or World Bank literature. These issues include potential corruption and profiteering, the lack of incubators, the need for industry-specific mentorship, the existence of a follow-on funding gap, and the loss of high equity in return for funding.

As highlighted in the Startup Success Factors section of the Literature Review, management experience and funding are key factors for a startup's success. Interviews have shown that there are issues with funding and advanced level mentorship and training. Startup programs need to address this and offer new startups the needed tools and opportunities to succeed. Governmental involvement will also be required to create a more startup-friendly environment through proper legislation, infrastructure, and anti-corruption measures.

E. Potential Solutions

Based on the found themes and considering the startup success factors and Lebanese obstacles, the following solutions are suggested:

1. Re-evaluate the current compensation structure.

   Due to issues with the scope of existing startup programs, particularly accelerators, many startups are joining several programs to find the needed support and might be losing equity several times. There needs to be a reevaluation of the amount of equity requested while focusing on the true value and quality of the provided services.

2. Re-evaluate effectiveness of startup program material/training and mentorship and create means of coordination between programs.

   The repetitiveness of startup program material and trainings needs to be addressed whereby material specific to the startup's stage is given to provide useful information and guidance. The mentorship network for later stage startups also needs to be expanded to provide sector-specific guidance.

3. Allocate more follow-on funding.

   a. Attract top-tier VC/PE firms and angel investors.

      As funding seems to be restricted to BDL's Circular 331 and few private initiatives, startups face a follow-on funding gap between the early and late stages. Public and private sector initiatives are needed to collect and organize the distribution of sufficient funding. An example would be the Equifund in Greece (Startups in Greece Report 2019).

   b. Broaden BDL Circular 331 and ensure auditing.

In addition to the expansion of funding explained above, auditing is needed to ensure proper allocation of funds among members of the ecosystem and across different startup stages.

4. Encourage more cycle programs at different times of the year for different startup stages and study possibility of creating more industry-specific programs.

   Early-stage general programs are beneficial for new entrepreneurs, but the lack of later stage and industry-specific programs hinders proper growth. With specific resources and guidance that address startup needs at advanced stages, startups will be better positioned to achieve success and growth.

5. Address the need for regional exposure and foreign investment in coordination with local authorities for needed legislative support.

   Due to the small size of the Lebanese ecosystem and apparent reliance on one main source of funding (Circular 331), an expansion of networks to cooperate and attract foreign players becomes essential for the sustainability and prosperity of the ecosystem. For this to be achieved, the support of local authorities is needed in terms of initiatives and reforms in infrastructure and legislation.

When comparing these potential solutions with the solutions suggested by the Ministry of Economy and Trade (MOET) and the World Bank (WB) report on the Lebanese ecosystem which were presented in the literature review chapter (section G.3), we can see many common points.

Potential Solution #2 concerning the reevaluation of program material and mentorship and the creation of inter-program coordination aligns with the suggested solutions of developing mentorship networks and setting up an observatory by the MOET (Ministry of Economy and Trade, 2014). It also aligns with the WB's suggested solutions of

strengthening coordination mechanisms of startup programs and increasing the capability of mentors in accelerators while attracting international talent (Mulas et al., 2017).

Potential Solution #3, related to the allocation of follow-on funding via attracting top tier investors and the expansion and auditing of Circular 331, also aligned with the literature. When discussing the Capital Mismatch issues in Lebanon, MOET's National SME Strategy book mentioned the existence of a "Missing Middle" where funding outside the collateral requiring commercial banks is unavailable to cover enterprises valued approximately between 500K and 8M USD (Ministry of Economy and Trade, 2014). The World Bank included suggestions for increasing adoption of international talent and addressing process constraints (Mulas et al., 2017).

Potential Solution #5, related to the need for regional exposure, foreign investment, and legislative reform, again aligned with the literature. The MOET suggested developing a conductive business environment through legal/judicial and international initiatives (Ministry of Economy and Trade, 2014), and the World Bank report suggested addressing process constraints (Mulas et al., 2017).

CHAPTER VI

CONCLUSION

A. Limitations and Future Works

Due to the fast-moving nature of startup ecosystems, accurate measurement of its components is bound to contain flaws as data might become obsolete after collection (Mulas et al., 2017). Accordingly, the findings of this study should be considered with this limitation in mind and focus should be given to the found insights about startup programs which describe program trends and entrepreneur experiences.

This paper has relied on the experiences of Lebanese entrepreneurs during their startup journey. The first limitation is sample size which can be increased for more accurate data which would cover more programs and experiences. Due to lack of sufficient data on the Lebanese ecosystem (Yan, 2018), it is unclear how representative this sample is. Despite this, average age of the same (28) is close to the average age of the World Bank Lebanese Ecosystem report's sample (29.8) (Mulas et al., 2017). Also, lack of previous experience was noted in both this study and the same World Bank report (Mulas et al., 2017). Due to the limited sample size, not all startup programs were encompassed in this study. Concerning the large number of idea stage startups interviewed, this might be explained by the fact that most startups in Lebanon leave the country to grow or exit early when stuck, especially considering that interviews were conducted in 2020 during the financial crisis and pandemic; this concept is called survival bias where successful or unsuccessful startups tend to leave the ecosystem and cannot be captured by the study. Finally, the interviewed founders might carry some biases, positive or negative, toward the programs they participated in based on their

experience, and this is why patterns and themes are selected based on coding and recurrence of codes.

Another limitation is the general nature of the interview questions. Due to the lack of data, these questions were aimed at building a primary set of experiences from which the insights derived in the analysis section. More focused studies of specific program types or program aspects can create more specific insights.

Finally, this study is based on interviews where some participants were recalling experiences over a year old and others might have changed some of their views since the interview date.

Further qualitative and quantitative data collection and analysis are needed to achieve an in-depth view of the entrepreneurial landscape. In addition, and to achieve a holistic view, future work should include the experience of startup programs and venture firms and consider their perspective when it comes to offerings, success stories, shortcomings, and obstacles. The literature review section of this thesis found 5 internal startup success factors by studying meta-analysis papers: industry specific knowledge, management experience, target market knowledge, founding team and firm size. These factors can be good starting point for future research into the detailed profiles of Lebanese entrepreneurs and will compliment studies of external factors such as this thesis.

The startups interviewed for this paper show the great potential of Lebanese entrepreneurs, and further studies of past experiences will deliver more insights and suggestions for improvement when new initiatives for the ecosystem begin.

B. Implications of Research

This research provides insight into startup programs in Lebanon where data about the startup ecosystem is scarce. There is no searchable or even non-searchable database or repository for collected data related to Lebanese entrepreneurship (Yan, 2018). While researching for this paper, I contacted several accelerators and the relevant personnel at the ministry of labor only to find out that they also do not have data related to startups. The closest material I found was a book published in 2014 by the Ministry of Economy and Trade which is cited in the literature review section of this paper, but even this book focuses on small and medium businesses and not startups. The central bank might have some data collected, but as per my conversation with one of the deputies, it is not accessible due to banking secrecy laws.

Therefore, insights into the startup ecosystem are rare in Lebanon and might shed light on how startup programs have been performing and how their work can be improved in order to provide Lebanese entrepreneurs with the needed support and guidance.

The results of this study provide a starting point for future work related to the Lebanese startup ecosystem and particularly startup programs. The first four themes of State of Programs, Networking and Mentorship, Funding and Investment, and Suggested Improvements paint an image of how Lebanese entrepreneurs perceive local startup programs, how they are benefitting, and what obstacles or problems they have faced. The remaining theme of Advice for New Startups presents some guidance by experienced Lebanese entrepreneurs for new ones regarding local startup programs. With this insight into local founders' experiences, more focus and effort can be allocated to address and improve existing programs. It can also provide guidance to future new programs.

Additionally, this study can be relevant to other developing countries which face similar obstacles as the ones found in these themes and presented in the literature review section (Section G.3). Despite this study's focus on the Lebanese ecosystem and its startup programs, it provides insights into issues related to program management, funding, and networking which can be generalized to any country's ecosystem, particularly that of developing countries where the entrepreneurial landscape and obstacles might draw more parallels.

C. Conclusion

This thesis aims to better understand the entrepreneurial process in Lebanon and the emerging programs that aim to support the local startup ecosystem. The interviews conducted to collect data about the Lebanese ecosystem show that there are several avenues for the improvement of startup programs to better support local entrepreneurs. For over 5 years, startup programs have been helping Lebanese entrepreneurs in their journey by providing workspace, training and mentorship, networking, and sometimes funding. The results of this study show that there is room for improvement.

The found themes and sub-themes show that, although local startup programs in Lebanon have made great progress and offered support to many startups, much can still be improved and added to make the continuation of Lebanon's entrepreneurship journey a more successful one. There needs to be a detailed study of the circular 331 restrictions and a revision based on which impeded startup success and growth. In addition, local laws, infrastructure, and corruption need to be addressed to further support entrepreneurial efforts. When it comes to startup programs, Lebanese programs have been operating for the past six years, and their experience needs to be studied in depth.

Funding, training, coordination, and networking/mentoring are sometimes lacking and rather generalized or even incompatible with startup needs.

Most players in Lebanon want the technology sector to flourish and succeed, but pertinent data and research is unavailable to properly gauge the sector's status nor its startup programs' effectiveness. Therefore, this paper aims to shed light on startup experiences in these programs and provide insights into what can be done to improve the current situation. Further studies are needed to create a holistic view, but the findings of this paper are a first window into the reality of Lebanese entrepreneurship and startup programs through the experience of local entrepreneurs.

In 2020, Lebanon dealt with an economic crisis, loss of trust in financial and public institutions, a pandemic, and mass immigration. The startup ecosystem is therefore suffering under these circumstances, but future initiatives to restart entrepreneurial activities are inevitable. There are many success stories around the world, like the Georgia case this paper talked about, and Lebanon will need to write its own story. We must learn from the experiences of the past few years and build a stronger more sustainable startup ecosystem to help new entrepreneurs along with national interest in general.

APPENDIX A

INTERVIEW QUESTIONS

The following interview questions were compiled based on the above literation review section and the dissertation by Joao Ramadas whereby the main aspects of startup programs and their activities was addressed. The interview questions were by the Institutional Review Board at the American University of Beirut (Appendix C).

1- Please provide the following information about your startup:
    a. Name
    b. Industry
    c. Number of founders
        i. Gender
        ii. Age
        iii. Education
        iv. Previous startup experience
2- Did you participate in any startup bootcamp?
3- If yes, please describe your experience: Motivation – Benefits – Feedback
4- Did you join an accelerator or incubator?
    a. If yes, please describe your experience: Stages – Participation level – Benefits – Feedback
        i. Did you compensate them in any way?
        ii. During what stage of your startup did you join?
        iii. What were the most helpful offerings? How and why?
        iv. What was the main benefit at the end?
        v. What was the least helpful offering? How and why?
        vi. During what stage of your startup did you leave the accelerator?
        vii. Did the program live up to your expectations?
        viii. How would you improve the program?
        ix. Would you advise other startups of joining this program? To what type of startups would you recommend this program?
    b. If not, please describe why you chose not to participate
        i. Do you feel not participating affected your chances of achieving the following and how did you manage them:
            1. Being approached by a VC
            2. Expanding your network
            3. Raising money/funds
            4. Ability to attract talent
            5. Marketing capability
            6. Legal counsel

7. Defining objectives and plans

5- Can you recommend another startup founder with whom to make contact?

APPENDIX B

CODING

Table 5 below shows the coding tables used during the thematic analysis process.

Section P – Problems

Coding Group	Int #	Quote
Management	1	they will only take startups that have been active for 2-3 years with a working prototype
	1	accelerators run out of funds or stop working due to the situation in Lebanon
	1	the accelerators do not help them by delivering more than one program per year
	2	I didn't like the online experience. You open their webinar at a specific time, but I did not find it to be very engaging; I used to open the webinar sometimes and do something else if I felt it was a topic I knew about. Even when they used to ask questions, no one would answer just because it's online and people would wait for others to answer instead
	2	when you start such programs which are not sector-specific, it will be difficult to build good networks
	4	very bureaucratic
	4	not everyone had a desk on which to work
	4	they invited us to the UK but couldn't help with the Visas or anything
	4	It seemed like these guys were more for-profit
	4	it was also a little politicized since some companies which participated clearly just entered for the money. Some were already set-up companies
	4	like to set-up their own private ecosystems that are exclusive
	5	At a very early stage, you're always expected to have traction and revenue, but that shouldn't be the case for early stage
	6	cannot leave the country since you signed papers limiting you from starting a competing business outside
	7	we were completely left alone afterward. Because of no direct follow-up we got easily side-tracked by our jobs
	7	I felt there was a lot of expectation for us to apply to other accelerators or VCs but cannot afford to leave our job
	7	They were interested in our work and suggested that incubation was a good way to go. They unfortunately requested an expensive fee to join their incubator for a year
	7	there was a lack of clarity and a lack of guidance
	7	He said that, in our situation, we needed to focus on validation instead while we were going through these phases in line with the program to reach an MVP target

	8	I felt there was a lot of lost opportunity in the gap between the programs. Some programs were a week, some were a month or two, but there were gaps in between. There should be more follow up and events
	8	had the same repeated trainers, and we paid a huge sum of money for them
	8	would have appreciated more personalized attention to the startup
	8	fixed schedules regardless of the startup growth and does not account to each startup's pace
	10	It felt more of a validation sprint rather than an accelerator program
	10	It was marketed as an accelerator, but looking back, none of us ready for acceleration
	10	the program was an accelerator but the content was more for validation
	10	Also, concerning the deliverables, it needs to be more intensive in terms of sessions and deliverables
	11	In Lebanon, the concept of accelerators is not implemented properly as it is abroad. There, accelerators are sustainable
	11	You also have a difference in maturity levels between the different innovation labs that were opened
	11	They required a lot of weekly deliverables which I had to juggle with work and university. It was not easy
	11	There is a big gap. There is a lot of redundancy where people keep repeating the same material, programs being repeated, programs proven not to be as effective as they claim to be, etc.
	11	There is a misunderstanding of what incubation is. Here, in Lebanon, incubation is free office space only. Incubation is not this. Incubation is full support by a team of mentors and people working with you. You can't accelerate properly from the idea stage.
	11	(Concerning circular 331) There must have been lots of theft and bad spending. Kafalat spent a lot of money. It's painful that a project with such potential ended up like this due to the country's corruption. People who deserved funding did not receive it.
	12	Lebanon does not have the infrastructure that allows a startup to succeed. You do not have the correct talent or laws and registration. In Lebanon, registering a startup properly and receiving the circular 331 money is a complete nightmare. It really makes it difficult for you to scale abroad. As a startup, Lebanon is not your market. If you want a business that makes money in Lebanon only, then that business is not really a tech company which needs a huge number of clients to turn into a big business. The advantage of a startup is that you can scale worldwide, but the infrastructure and imposed rules do not allow you to do that
	12	There's something I've noticed in Lebanon, and it's that there is a lot of rubbish programs. They're useless. You have a lot of those, and it's being recycled year after year. I joined the startup scene in 2015, and I can still see 80% of the same faces.
	13	For the accelerator (…) it turned from something that was supposed to be helpful to startups to becoming something like work
	13	I felt like the people running accelerators in Lebanon seem like they're just running a business

	13	it was like they were following some dry steps: we give some sessions, maybe offer funding, do some reporting, and that's it
	13	They do not usually take in hardware startups in Lebanon
	13	Accelerators are going by the book: there's a set curriculum with the same people and content being given
	13	They are nothing like the accelerators in Lebanon. I think they are creating accelerators with minimal effort.
	13	I sat with several people who are managing different funds whose source is mainly circular 331, and I found they were operating via cronyism and corruption.
Followup	7	They only asked us to send monthly reports with activity updates. There was also no framework for this reporting. And when we stopped sending our updates, they did not follow up
	7	Lack of post-accelerator phase. We needed mentorship and follow-up afterward.
Follow on funding	1	many Lebanese startups with an idea with a funded early-stage prototype will not receive any support which leads to these startups closing or approaching private investors whom will request a lot of equity
	2	the problem in Lebanon is not with the accelerators themselves, rather with the follow-on funding that is available in Lebanon. There is a gap in funding here. Accelerator money is available. Afterwards, for 200k to 500k funding, there are no available funds.
	2	as a startup that doesn't find that follow-on funding, you'd close before reaching that VC funding stage
	3	when you needed to apply for the follow-on funding, you had to go through the process from the beginning
	4	Everyone promises follow-on funding but nobody comes through
	5	seed funding in Lebanon is mainly from accelerators, The problem is that it's not always taken that seriously. When you're raising money for your next round, investors would see that an accelerator gave you money for equity, but the truth is that accelerator funding is not really an investment. When you go series A and B, to be very honest, raising those funds is easier in Lebanon
	6	We have not received this funding yet. But, as we can see, funds in Lebanon are almost all related to BDL (maybe around 80%), and BDL's situation is very unclear. The restriction here is by BDL whereby that branch company needs to be owned by the Lebanese company. This creates a credibility issue with foreign investors
	6	4 years ago, the follow-on funding gap was less. But since then, and maybe due to corruption at BDL and some big startup (Bookwitty) going bankrupt, many funds closed down. As I saw it, VC funds in Lebanon couldn't handle things. They did not invest right or in the right amounts. How can they invest 30 million in a book startup? 30 million went to waste out of the 300 million BDL were investing. After that incident, BDL became more aware and investors incompetence at the VC level. Everything slowed down then
	8	cannot find good follow-on funding in Lebanon
	10	You find an idea, get validation, and everything. You have an MVP, but what's next? There is no investment, you need 20 million to

		register an SARL, so the whole situation is discouraging. Most people reach a stage where they're all stuck.
	12	**[For Seed investment] global investors are reluctant to invest. Actually, they won't invest here. You always have to register your company outside Lebanon. But if you've taken money from Lebanon from circular 331, then you get into lots of problems. The circular does not allow you to register abroad unless your headquarter is in Lebanon. Foreign investors only accept for the headquarter to be abroad and a subsidiary in Lebanon and not the other way around since the intellectual property needs to be abroad.**
	12	**For Series A, not only the company needs to be outside Lebanon, but so do you. Investors need to make sure that founders are in a stable environment**
	13	**Impossible. Which foreign investor will come invest here?**
Trainings	2	It was not great, mainly because the workshops they offered were very similar to the ones the (previous) program provided us
	2	It wasn't a bad program, but I think I did not benefit because I had already participated in a previous one and attended their workshops
	4	brought us quality instructors, but the program was one-size-fits-all, not sector-specific
	4	Berytech did not provide anything for free, even the training programs were charged
	4	least helpful stuff would probably be the programs for which we had to pay, everything costs money there
	6	The workshops were average. The trainings were average and basic, but they taught me what I needed to search for to go further in depth
	7	the accelerator we joined made us think of several aspects at the same time which was great as an overview, but we felt we needed more guidance to proceed in the right direction
	8	gave us financial, legal, and marketing training. But these were all dry lectures and not very beneficial. It was more for the startups to meet the trainers and book them later on for paid services
	8	I did however also participate in other programs which I will not name. Those were super fast with a lot of money pumping with little benefit and the same trainers and talks we already knew
	9	all accelerator programs are the same. Mentors, training sessions, etc.
	10	all the participant startups were very early stage, but the program was more advanced for our stage
	11	the fresh ones can learn new things. But someone who has attended the training once will not attend it a second time; they all focus on the 101 level of startups. We are stuck at the 101 level which is not good
	11	When they used to get new trainers, we felt we learned new things, but that was not the case when they used the same trainers. The issue in our ecosystem is that when they find a trainer they like; they stick to him.
	11	The issue is that there are no advanced stage trainers

	11	No one supports early stage startups. They give lectures about when to get VC funding and how to perform due diligence and talk to investors, but did any of these trainings help a startup actually perform due diligence? As far as I know, none.
	11	No one supports early stage startups. They give lectures about when to get VC funding and how to perform due diligence and talk to investors, but did any of these trainings help a startup actually perform due diligence? As far as I know, none.
Mentorship	3	The mentorship was a bit general, so we did not benefit much
	4	The very different industries need specialized mentoring
	7	did not feel there was enough follow up by the mentors
	10	I remember the mentoring was a bit messy. It could have been more organized
	11	The stereotype is having mentors tell you that your idea is not good enough and needs more work. They kill their enthusiasm instead of being constructive and helping them. Teach, guide, and support them instead. I've seen this first hand. This might cause people to be stuck in the idea stage.
	12	there are things they can improve, especially when it comes to being a CEO. Unfortunately, they do not teach you how to be a CEO in Lebanon. You won't be able to do that as a first-time founder unless you have the correct guidance.
	12	The issue with Lebanon is that you have very few success stories.
	12	The issue in Lebanon is that their mentors are ones that have passed through the local programs a couple of years prior, so there aren't any big success stories to learn from, and a lot of the mentors are corporate mentors who work from big companies. They're helpful but cannot really relate to the obstacles I face as a startup since they come from a company with many employees, a lot of money and systems and processes.
	13	That is very bad. Mentors should not be restricted to mentorship. They need to be company owners that have practical jobs in the industry and not ones whose job is to mentor different startups
Networking	2	were expected to connect us to a regional network; it turned out that each country branch has its own fund so there is no monetary gain for other branches to help ones in Lebanon
	3	under the impression that they had a bigger regional network - they only focused on Lebanon
	6	lack of direct customer relationship, all accelerators should have very powerful business partners to help startups find customers from the early stages as part of their network
	7	networking was when they brought in experts for the sessions. When it comes to introducing us to people, it was always dependent on the founders requesting it
	7	Networking was through the sessions and based on startup requests. Issues arise when startups are unsure of what they need. One thing that was missing was the preparation of approaching and talking to investors. We were only trained on the pitch
	13	They tried to show that their connections were strong, but I cannot recall a decent connection they offered us.
Funding	1	In Lebanon, they lack proper funding to fund talented startups

	1	they request too much equity from the startups which was negative for us and a repelling factor
	2	to help startups, they need to offer funding
	2	they offer $ 40,000 cash and $ 55,000 in client services. 40k would have been good if the Lebanese investment cycle were a short one, but in Lebanon, it takes 6-8 months to receive funding from investors. So, technically, you'd be using the 40k to cover a whole year, but practically spending it over 6 months' work, then work on getting more funds in the remaining 6 months. 40k over 12 months is around 3k per month which is nothing. This is not accelerator specific but has to do with the entire Lebanese ecosystem
	2	especially (programs) with 331 which is restrictive and suffocating
	4	they were not offering funding, but the later batches got offered funding
	4	They had a paid program, but the way they paid hinders the startups. they asked startups to make their own payments and get receipts for compensation (full or half)
	4	they promised around $ 50,000 but they pay in tiny doses
	4	they promised around $ 50,000 but they pay in tiny doses
	4	They point you toward the people you have to spend the money with
	4	it was a risk to pick your own service providers to work with fearing they might not cover it
	5	did not invest and request shares, so motivation to put effort is low
	5	This funding option is not available. Sometimes, startups need some cash at the beginning
	5	There is a problem with Seed funding in Lebanon. There aren't any Seed funds here
	5	network of angel investors is not that strong because they are part of the ecosystem and know the big funds. We had to look for ourselves
	6	they were backed by BDL's circular 331 money. So, you did not have any flexibility with the money nor clarity. They promised investment at the later stages, but what about BDL's involvement? It was not clear because of BDL
	6	would have preferred to be backed by a private fund rather than the government since you know how our government is not transparent and unstable
	6	outside investors are not willing to invest in startups in Lebanon
	6	our 50k investment was lost due to the environment, legal system, and the political and financial situations. Investors don't trust our financial system
	6	accelerators will pay in LBP which hurts in terms of the currency devaluation
	6	Startups might not be okay with giving equity. The accelerator's 10% is already a lot. It's less in other countries and this creates issues for us in future rounds
	8	One program gave a lot in-kind services, sometimes even for free, but did not have much funding. Another program has a lot of funding and give you money, but they do not give you many other services or support. Another would give technical support but not much else.
	9	we still had marketing and advertising costs we needed to cover

	10	No one would finish this program and get an investment because none of the startups were investment ready
	12	Funding in Lebanon comes with a thousand restrictions. The amount of restrictions is crazy. Mostly it's the fault of BDL and their rules. They are complicated, unrealistic, and hinder a startup's ability to scale. Decisions are made by bankers irrelevant to the benefit of the businesses. As an accelerator, you need money that is not complicated to be invested more easily without all these restrictions.
	13	The only thing missing was the funding
	13	it does not make sense to have an accelerator program without offering funding
	13	one winner at the end (…) received a one-million-dollar prize. No one else wins anything
	13	[BDL] gave 400 million first then an additional 200 million, but that initial 400 million disappeared, and no one asked about them

Section B – Benefits

Coding Group	Int#	Quote
Administrative	6	They helped us create a SAL
	7	All founders had full-time jobs, so having an online program did not intervene with our full-time jobs
	7	The deadlines they set were also pushing us
	7	(Online format) gives people abroad and expats to participate in something related to Lebanon
Management	2	their program was online so that people from anywhere in Lebanon would be able to participate
	5	their head has previous startups and is currently working on one as well. So, he is involved in the startup scene, learned from his experiences
	12	Their program is very workshop oriented which gave a general idea on how to build a startup, how to think, the legal side, recruiting your team, etc.
	12	They are very hands-on but not in an annoying way
	13	For us, the incubator helped us the most. They were supporting us without expectations and not as if they were doing business.
Workspace	3	We had a fixed place to work
	5	benefitted from office space
Mentorship	1	The advantage is that they put you in contact with good mentors that help you build on your prototype and help you build your startup
	5	we mainly benefitted from the mentorship, the one-on-one coaching, and from a strategy and business perspective
	6	they introduced us to mentors
	6	The one-on-one sessions with mentors they used to give were very valuable though
	7	paired us with mentors to follow-up with us, mentors gave us specific advice to our situation, and each startup chose the mentors

	9	I benefitted from the mentors and their guidance
	10	I was able to learn about agriculture from mentors
	12	they used to fly in interesting mentors from around the world who helped us
	13	We had mentors which I am still in contact with after 3 years. They were great.
	13	We had really good mentors especially that we are a hardware startup and got mentors who are hardware specialized working in this field. This was the unique value.
Trainings	2	they got very good people from France for the workshops
	2	I learned how to build a startup company and it changed my perspective and expectations of the process
	5	program's talks were relevant and the network was helpful, connections locally and abroad
	6	how to think about user experience, how to think about marketing, and a general overview of everything at a basic level
	6	learned from them how to talk to and contact people for help
	8	when you start out in your community with a small business, your vision is limited to the local. When you get out there and attend events and lectures, you start thinking more globally
	10	I also learned from marketing and UX/UI trainers
	12	They had interesting workshops
	13	They gave workshops and sessions.
Community	5	community spirit was great whereby startups were helping each other
	6	the whole atmosphere they created was good
	7	we help each other as startup founders
	8	The benefit is to learn and to meet people
	8	I felt the community was a bit broken in Beirut whereas networking in Tripoli was much more helpful, a tight-knit community
	9	The sense of community, cooperation, and competition
	9	Being part of a big team which gave us needed guidance
	9	We benefitted from the time we spent as a team and the growth of our team
	10	(oraganizers were) encouraging high interaction between the teams to create a sense of community
	10	I finished the whole thing and met a lot of mentors and fellow founders with whom a community was created
	11	This is advice no one gives you. If it weren't for our friendship and this sense of community between startup founders, no one would have helped me
Followup	3	We benefitted from the deadlines they placed for us
	4	a professional team with good advice and catering to your needs, work with you and don't lecture you
	5	they still follow up with us until today on a monthly basis
	6	still available at their offices which feel like home

	7	We had weekly sessions that were general, we asked questions and got assignments that got reviewed with feedback and had other meetings for quick follow-up on startup activities and challenges
	10	the accelerator organizers played a big role in following up with the startups
	12	we are still in contact to this day. We became good friends, and I can talk to him anytime
Services	10	They had something called Ganperks which were perks covering marketing, hosting, domain, etc. needed by new startups without revenue.
Funding	2	The only benefit was that we won a small prize, $ 2000
	2	the funding is what mattered: 10% equity for $ 40,000 in 2019
	4	they offered us an equity investment
	6	would give you some funding and take equity in return, funding is split into money that you use and the other is compensation for services like workspace, legal, technology, etc
	7	There were investors (on demo day)
	7	By entering the accelerator, we had a $ 500 prototype grant for the 3-month cycle
	10	The $500 grant was also useful
	11	The latter was a paid program, and we used that funding to develop our product and hire people. It was equity free funding.
	12	the benefits kicked in once the program ended since we were selected to go to the US to Draper University where we started raising big money with Draper and LebNet's investment
	13	[On how they found grants] Initially, through the connections of CREM. The first grant we got was from Kafalat which was a big boost
Networking	4	introduce you to people and find the people you need
	5	network was very important, and I would say the board meetings also were
	5	provided connections to potential investors, partners, etc
	5	allowed us to get the investment from them
	6	They have a good network and will get some relevant people from the industry, used their network to send us abroad and meet investors
	9	Also, the ecosystem, networking, and mentors were beneficial
	10	I was also able to find my first customer during the program via a Facebook ad
	10	Mentors were added to our network, and the jury members were joining the events and we were able to meet and discuss with them to add them to your network
	13	Connections. They introduced us to Injaz, and I won the Injaz company award and product of the year, in addition to Injaz Arab where I won other awards. They also introduced us to Kafalat and LCEC, so connections were the most helpful thing
	13	The incubator helped us a lot and got us connections to build a stronger network, especially that it came in early stages
Validation	4	We attended workshops and they validated the work we had done

Section I – Improvements

Coding Group	Int#	Quote
Funding	4	If I were to fix or improve something, it would probably be the funding issue. It's not a matter of money, but the timing of the money and mechanism by which it happens
	4	We have seed funding in abundance in Lebanon, and they are small amounts. Then, you have the major funding in excess of a million or two dollars. There's a huge gap in between which nobody is addressing, and this causes many companies to die, your growth phase, that nobody here specializes in
	6	If the accelerators can use the ability to invite investors to their offices and events, even finance those trips, then that would add great value
	6	As an accelerator in Lebanon, they are backed by banks. Banks have very good connections with corporate people and business owners. They need to leverage this. The investor should be working for me and with me; not just giving us money and leaving. They should invest some of their time and connections
	6	VCs in Lebanon to be successful expats from abroad who would help us grow on the international level. Experienced people on an international level are much better than local managers and private bankers running VCs. Salaries in those VCs are super high at our expense. It should be more results-based, that way they would be incentivized and motivated into helping
Services	9	it would be better to have some services offered
Networking	2	networking needs to be regional
	8	I would improve them by making the mentors and networking more personalized
	9	Finding contacts who are specialized in specific sectors and areas of business
Management	1	They can have specific programs for specific startup types
	3	the cycle lacked preparation and clarity
	8	have more events and support from the program
	8	focus on different sectors and industries is needed through cooperation, it (currently) feels like everyone is mixed together
	8	program durations also can be improved, more flexible durations based on good offerings which can be general intensive or focused extensive
	10	Maybe too much money was used before the ecosystem started becoming ready to grow.
	11	there isn't any guiding work (documentation/processes) for startups nor for the ecosystem. No one advises accelerators on how to run their operations except for general information, but the situation in Lebanon is very specific
	11	I would decrease the number of participating startups in the program. I would be more hands-on and sit with them and their product directly to see how we could help

	12	A lot of them wait until the end of the program then send the top startup abroad. That's already wrong since the acceleration needs to be directed abroad. Teach from the beginning how things work outside, not the local mistakes.
	13	By linking this program with the ministry of industry to bridge the gap between the incubator, startups, entrepreneurs, and real-life experiences
	13	The way I see it, and due to the change in economies of scale and exchange rate, there should be around 3 good international accelerators operating in Lebanon. I'm not convinced with the work of local accelerators.They are dealing with it literally as a business.
	13	Startups, entrepreneurs, and all efforts would be Lebanese, but the management of these accelerators should not be Lebanese. [Or] auditing by the international accelerator.
Legal	2	In Lebanon, how do they attract foreign startups/founders? Taxes, environment, etc. are all unattractive factors
	2	(Concerning circular 331) The startup's head office needs to be in Lebanon. You can have subsidiaries abroad, but the mother company needs to be in Lebanon.
	2	Your Intellectual Property IP cannot be transferred outside Lebanon
	10	the laws do not help especially when wanting to register a company in Lebanon. A person can register a company in Europe online for close to no money, but here, the process is too complicated. It's like wanting to construct a building without a proper base.
	13	We are manufacturing the steel parts, shields, boards are in-house, etc. But when you need to order a motor, it gets stalled here and you pay 40-50% in customs charges when you should only pay 15%.
Trainings	3	work on the prototype here was very theoretical
	11	what I find more beneficial is listening to other entrepreneurs talking about their personal stories, their experience, etc. I'd rather have someone with experience in writing pitches, working in startups, talking to investors, etc.
Train Engineers	6	They created BDD and threw all that money into it. They didn't consider the number of engineers in the country which would help this ecosystem. It took time until they started SE Factory, which is great that it's finally there
Later Stage Programs	6	I was in cycle one also so everyone was at a similar stage, and at the end they were all around the prototype stage. But I feel like we need programs to actually accelerate afterward
	7	work more on the mentorship framework for each startup to ensure that the accelerator has a part tailored to each startup along with the general part. I would consider the post-accelerator activity and follow up depending on their different scenarios
	8	programs to cooperate more and have each specialize in different stages and industries. After you actually launch the product and

		want to grow, you cannot find a program that helps you at that stage,when you need more advanced training
Support Hardware Startups	4	big lack of attention to hardware and technology startups
	4	They can have a million users within a few months since they deal in software with freemium models. So, they can offer a freemium app and claim to have a million users. We cannot do that, and they invest based on the number and the traction, so there has to be a differentiation between software application-based startups and startups which develop actual physical technology
	11	When you reach MVP2, you will find useful guidance if you're working on software, but for hardware, good luck in finding anyone to help with the MVP. We are not a hardware country which is bad since there is much potential
	11	There are fablabs, whether in Berytech or the ones being set up by UNICEF across the country, are all still new and being set up. There aren't enough people trained to use the machines to make proper use and innovate

Section A – Advice

Coding Group	Int#	Quote
Research	4	talk to these programs and see what they can offer instead of blindly joining
	11	they need to be solving a real problem
Make requests	5	If a startup does not know how to ask for things, they might end up not benefitting much
	6	Founders should not wait for accelerators but rather demand from them help in introducing them to investors
	12	they give you a generic program that caters to startups from different industries. Your job as a startup is to benefit from it as much as possible. You need to put in the work and see what other resources you have access to. You need to ask questions, ask for introduction, ask for favors, etc
Competitions	5	very important for us as a startup in Lebanon was startup competitions, We raised around $ 112,000 through competitions
Trainings	6	I would advise founders without previous startup experience to join. At the accelerator program, you receive general knowledge. If you learned by yourself or have previous startup experience, don't join an accelerator program. Go find an angel investor
Expectations Management	11	there is a problem of expectations management too. Some think that joining an accelerator program means that they will have an established business, but no, a business takes years and years to set up
Legal	2	In the current situation, I would not advise any startup to incorporate in Lebanon
Funding	2	A good alternative would be if they could get Angel money

Table 5 Coding Tables

APPENDIX C

IRB

The following forms were submitted to and approved by the Institutional Review Board at the American University of Beirut:

- Approval of Research Letter
- Approved Interview Questions
- Approved Invitation Script
- Approved Application for Exemption/Limited Review
- Approved Consent Form

APPROVAL OF RESEARCH

June 25, 2020

Dr. Ali Yassine
American University of Beirut
01-350000 Ext. 3494
ay11@aub.edu.lb

Dear Dr. Yassine,

On June 25, 2020, the IRB reviewed the following protocol:

Type of Review:	Initial, Exempt
Project Title:	The impact of startup programs on the success of Lebanese entrepreneur
Investigator:	Ali Yassine
IRB ID:	SBS-2020-0275
Funding Agency:	None
Documents reviewed:	Received June 15, 2020: IRB Application, Interview Guide, Consent Form, Invitation Script.

The IRB approved the protocol from **June 25, 2020** to **June 24, 2021** inclusive.

Please find attached the stamped approved documents:

- IRB Application (received June 15, 2020),
- Interview Guide (received June 15, 2020),
- Consent Form (received June 15, 2020),
- Invitation Script (received June 15, 2020).

Only these IRB approved consent forms and documents can be used for this research study.

Thank you.

The American University of Beirut and its Institutional Review Board, under the Institution's Federal Wide Assurance with OHRP, comply with the Department of Health and Human Services (DHHS) Code of Federal Regulations for the Protection of Human Subjects ("The Common

Beirut PO Box 11-0236 (F15), Riad El Solh 1107 2020, Beirut, Lebanon | Tel: +961 1 350000 Ext: 5445 | Fax: +961 1 738025 | Email: irb@aub.edu.lb
New York 3 Dag Hammarskjold Plaza, 8th floor | New York, NY 10017-2303, USA | Tel: +1-212-583-7600 | Fax: +1-212-583-7651

Rule") 45CFR46, subparts A, B, C, and D, with 21CFR56; and operate in a manner consistent with the Belmont report, FDA guidance, Good Clinical Practices under the ICH guidelines, and applicable national/local regulations.

Sincerely,

Michael Clinton, PhD
Co-Chairperson IRB Social & Behavioral Sciences

Cc:

Fuad Ziyadeh, MD, FACP, FRCP
Professor of Medicine and Biochemistry
Chairperson of the IRB

Ali K. Abu-Alfa, MD, FASN, FAHA
Professor of Medicine
Director, Human Research Protection Program
Director for Research Affairs (AUBMC)

Beirut PO Box 11-0236 (F15), Riad El Solh 1107 2020, Beirut, Lebanon | Tel: +961 1 350000 Ext: 5445 | Fax: +961 1 738025 | Email: irb@aub.edu.lb
New York 3 Dag Hammarskjold Plaza, 8th floor | New York, NY 10017-2303, USA | Tel: +1-212-583-7600 | Fax: +1-212-583-7651

Interview Questions

1- Please provide the following information about your startup:
   a. Name
   b. Industry
   c. Number of founders
      i. Gender
      ii. Age
      iii. Education
      iv. Previous startup experience
2- Did you participate in any startup program?
3- If yes, please describe your experience: Motivation – Benefits – Feedback
4- Did you join an accelerator or incubator?
   a. If yes, please describe your experience: Stages – Participation level – Benefits – Feedback
      i. Did you compensate them in any way?
      ii. During what stage of your startup did you join?
      iii. What were the most helpful offerings? How and why?
      iv. What was the main benefit at the end?
      v. What was the least helpful offering? How and why?
      vi. During what stage of your startup did you leave the accelerator?
      vii. Did the program live up to your expectations?
      viii. How would you improve the program?
      ix. Would you advise other startups of joining this program? To what type of startups would you recommend this program?
   b. If not, please describe why you chose not to participate
      i. Do you feel not participating affected your chances of achieving the following and how did you manage them?
         1. Being approached by a VC
         2. Expanding your network
         3. Raising money/funds
         4. Ability to attract talent
         5. Marketing capability
         6. Legal counsel
         7. Defining objectives and plans
5- Can you recommend another startup founder with whom to make contact?

AUB Social & Behavioral Sciences
INVITATION SCRIPT

Invitation to Participate in a Research Study

This notice is for an AUB-IRB Approved Research Study

for Dr. Ali Yassine at AUB.

(ay11@aub.edu.lb)

It is not an Official Message from AUB

I am inviting you to participate in a research study about Startup Programs in Lebanon.

You will be asked to participate in an interview to give your opinion about your experience with Startup Programs in Lebanon.

You are invited because we are targeting startup founders whom have participated in startup programs in Lebanon within the past three years.

The estimated time to complete this survey is approximately 30 minutes.

The interview is conducted via phone call or online via Zoom.

Please read the consent form and consider whether you want to be involved in the study.

If you have any questions about this study, you may contact the investigators, Dr. Ali Yassine – 01/374374 ext. 3494 and Ahmad Farhat – 03/900745, for further information regarding the study.

Institutional Review Board
American University of Beirut

25 JUN 2020

APPROVED

AMERICAN UNIVERSITY OF BEIRUT
INSTITUTIONAL REVIEW BOARD (IRB)

Application for Exemption/Limited Review

Limited Review is a new category of review under Exemption

(FOR more INFORMATION on any topic CLICK ON THE BLUE TEXT BELOW)

Definition of " Human Subject Research" as defined by DHHS (45 CFR 46) ALL should be "YES" to submit an Application for Exemption:	
◉ Yes ○ No	Is the activity a systematic investigation?
◉ Yes ○ No	Is the activity *designed* to develop or contribute to generalizable knowledge?
◉ Yes ○ No	Does the activity involve living individuals about whom an investigator (whether professional or student) conducting research either: i. Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens ; **OR** ii. Obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens

Notes:

- Studies that involve pregnant women, fetuses & neonates are eligible for exemption under all categories.
- Exemption DOES NOT APPLY to **Research Involving Prisoners.**
- **Children** are allowed in categories 1, 4, 5, 6, 7 & 8; Limitations and **Exclusion of Children in Categories 2 &3.**
- **Limited review:** It is a process that is required only for certain exemptions, categories 2 (iii), 3 (C), 7 and 8. In limited IRB review, the IRB must determine that certain conditions that are specified in the regulations are met. Limited IRB review is done by the Chair/Co-Chair or an experienced IRB member designated by the Chair (although it can also be conducted by the full IRB).
- Standard annual is not required for Exemption/Limited review studies.
- AUB IRB does not plan to implement exemption categories 7 & 8 at this time. Limited exceptions may be considered.
- Research on sensitive topics which may cause undue stress or embarrassment to participants are not eligible for exempt/limited review.
- Please press CTRL + link to access links throughout the document.

An application is considered complete if it includes at minimum: *(To all documents except Appendix I, Arabic version or any other language depending on the targeted population is required for non-English speakers)*

- Completed and signed IRB application along with Appendix I
- Informed consent documentation or script
- Recruitment material, (if any flyer, email invitation, etc)
- Data Collection form i.e. questionnaire, interview questions etc.. or for category 4 fill the Form "Request to create a de-identified dataset from research data, clinical data or other identified data source"
- CITI Certification for the PI and each co-investigator
  AUB requires all researchers involving human participants in research to complete the appropriate CITI training program. All CITI modules can be accessed at https://www.citiprogram.org/Default.asp (log on using your AUB user name and password)

TITLE OF PROPOSAL: The impact of startup programs on the success of Lebanese entrepreneurs]

PRINCIPAL INVESTIGATOR:		
Name: Ali Yassine	**Signature:**	**Department:** Industrial Engineering and Management
Phone number: 00961-1-374374 ext 3494	**Email:** ay11@aub.edu.lb	**Faculty:** FEA
CITI certification: ○ YES ◉ NO ○ PENDING	**Course module:** Enter Course Module	**Expiry Date:** Enter Expiry Date
CO-INVESTIGATORS, if any (Attach extra sheet if necessary)		
Name: Enter Name	**Signature:**	**Department:** Enter Department
Phone number: Enter Phone No.	**Email:** Enter Email	**Faculty:** Enter Faculty
CITI certification: ○ YES ○ NO ○ PENDING	**Course module:** Enter Course Module	**Expiry Date:** Enter Expiry Date
STUDENT-INVESTIGATOR, if any (Attach extra sheet if necessary)		
STUDENT PROJECT/THESIS: ◉ Yes ○ No		
Name: Ahmad Farhat	**Signature:** 	**Department:** Industrial Engineering and Management
Phone number: 00961-3-900745	**Email:** ajf04@aub.edu.lb	**Faculty:** FEA
CITI certification: ◉ YES ○ NO ○ PENDING	**Course module:** ☑ Student minimal risk	**Expiry Date:** 6/15/2023
STAFF, if any (Attach extra sheet if necessary)		
Name: Enter Name	**Signature:**	**Department:** Enter Department
Phone number: Enter Phone No.	**Email:** Enter Email	**Faculty:** Enter Faculty
CITI certification: ○ YES ○ NO ○ PENDING	**Course module:** Enter Course Module	**Expiry Date:** Enter Expiry Date

COLLABORATORS, if any (Attach extra sheet if necessary)		
Name: Enter Name	**Signature:**	**Department:** Enter Department
Phone number: Enter Phone No.	**Email:** Enter Email	**Faculty:** Enter Faculty
CITI certification/Equivalent ○ **YES** ○ **NO** ○ **PENDING**	**Course module:** Enter Course Module	**Expiry Date:** Enter Expiry Date

If you have Collaborators, provide information on the following:

1. Briefly describe what each collaborator will contribute to the project.
   Click here to enter info

2. Will you send participants /subjects data information about participants or research data to any collaborator? **If yes, submit a fully executed Non-Disclosure Agreement (NDA) with each collaborating Institution with which data will be shared. (Please contact Office of Grants and Contracts (OGC) for executing such an agreement).**
   Click here to enter info

3. Submit copies of IRB approvals from collaborating institutions, if available. If not, specify the timeline for obtaining and submitting this information.
   Click here to enter info

FUNDED: ○ Yes ◉ No

If Yes, indicate the source: Enter the Source

DATE OF SUBMISSION TO INSTITUTIONAL REVIEW BOARD: Enter Submission Date

EXPECTED START DATE OF STUDY: Enter Expected Starting Date

EXPECTED END DATE OF STUDY: Enter Expected End Date

Check the box corresponding to the eligibility for Exemption category §46.104 which best describes the proposed research:	
☐ **Exemption 1 §46.104(d)(1)**	Research, conducted in established or commonly accepted Educational Setting , that specifically involves Normal Educational Practices that are not likely to Adversely impact students' opportunity to learn required educational content or the of assessment of educators who provide instruction. **This research includes but is not limited to:** a. Research on regular and special education instructional strategies b. Research on the effectiveness of, or the comparison of, instructional techniques, curricula, or classroom management methods
☑ **Exemption 2 §46.104(d)(2)**	Research that **ONLY includes interactions** involving: Educational tests (cognitive, diagnostic, aptitude, achievement) OR Survey procedures OR Interview procedures; OR observation of public behavior **(including visual or auditory recording)** OR Focus Groups if **at least one of the following criteria is met**: i. The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects; **OR** ii. Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; **OR** iii. The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a **limited review** to make the determination required by §46.111(a)(7) which relates to there being adequate provisions for protecting privacy and maintaining confidentiality
☑ **Exemption 3 §46.104(d)(3)**	Research involving Benign Behavioral Interventions (BBI) through verbal or written responses (including data entry) or audiovisual recording if the adult subject prospectively agrees to the intervention and information collection and **at least one of the following below criteria is met** i. The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects; **OR** ii. Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; **OR** iii. The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a **limited review** to make the determination required by §46.111(a)(7), which relates to there being adequate provisions for protecting privacy and maintaining confidentiality

☐ **Exemption 4 §46.104(d)(4)**	Secondary research for which consent is not required: Secondary research uses of identifiable private information or identifiable biospecimens, if at least **one of the following criteria is met:** i. The identifiable private information or identifiable biospecimens are publicly available; **OR** ii. Information, which may include information about biospecimens, is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained directly or through identifiers linked to the subjects, the investigator does not contact the subjects, and the investigator will not re-identify subjects (Fill form "**Request to create a de-identified dataset from research data, clinical data or other identified data source**" **OR** iii. Research use of identifiable health information when that use is regulated by HIPAA as health care operations, research, or public health activities and purposes as those terms are defined in HIPAA. **(DOES NOT APPLY OUTSIDE UNITED STATES BUT SIMILAR PROTECTIONS MIGHT APPLY IN SOME CIRCUMSTANCES) OR** iv. The research is conducted by, or on behalf of, a Federal department or agency using government-generated or government-collected information obtained for nonresearch activities, if the research generates identifiable private information it is subject to specified privacy laws
☐ **Exemption 5 §46.104(d)(5)**	Research and demonstration projects that are conducted or supported by a Federal department or agency, or otherwise subject to the approval of department or agency heads (or the approval of the heads of bureaus or other subordinate agencies that have been delegated authority to conduct the research and demonstration projects), and that are designed to study, evaluate, improve, or otherwise examine public benefit or service programs, including procedures for obtaining benefits or services under those programs, possible changes in or alternatives to those programs or procedures, or possible changes in methods or levels of payment for benefits or services under those programs. *Such projects include, but are not limited to,* • *Internal studies by Federal employees,* • *Studies under contracts or consulting arrangements,* • *Cooperative agreements or grants.* • ***Important Note:*** *Each Federal department or agency conducting or supporting the research and demonstration projects must establish, on a publicly accessible Federal Web site or in such other manner as the department or agency head may determine, a list of the research and demonstration projects that the Federal department or agency conducts or supports under this provision. The research or demonstration project must be published on this list prior to commencing the research involving human subjects.*
☐ **Exemption 6 §46.104(d)(6)**	Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.
☐ **Exemption 7 §46.104(d)(7) Limited review**	Storage or maintenance of identifiable private information or identifiable biospecimens for potential secondary research use for which broad consent is required. **AUB IRB does not plan to implement this Exemption category at this time. Limited exceptions may be considered.**

☐ **Exemption8 §46.104(d)(8) Limited review**	Secondary research involving the use of identifiable private information or identifiable biospecimens for potential secondary research use for which broad consent is required. **AUB IRB does not plan to implement this Exemption category at this time. Limited exceptions may be considered.**

NB. Please note the following important information:

- The determination that a research study meets the requirements for Exempt status is based solely on the written information provided in the application. Any amendment to a research project that the IRB has determined to be Exempt (recruitment of participants, changes in the consent process, amendments to or addition to research instruments etc...) may cause the research to become non-exempt and subject to different IRB review level. Any proposed modification to an Exempt study must be re-submitted to the IRB office for review. Depending on the extent of the change an Expedited or Full Committee review, may be required. The responsible Principal Investigator should be aware of these requirements.
- An Exempt review research study does not require yearly continuing review or a final study report.

APPROVALS **Name** **Signature** **Date**

I hereby certify that the information provided in this application is complete and accurate.

Department Chairperson:

Chairperson (or Designee) of the IRB: Enter the Chairperson

APPENDIX-I

Please submit a research proposal of not more than three pages using the following headings as a guide.

1. Purpose of the study: Proposal/Abstract: Provide a brief description (limit to 500 words) including:

   - Aim/Hypothesis
   - Background & Significance
   - Research design & methods
   - Possible risks and benefits

   As more universities include entrepreneurship and innovation into their curriculum, and as the central bank and other governmental institutions begin to recognize entrepreneurship as a potentially strengthening and driving force to the Lebanese economy, data collection and analysis is needed to assess and improve startup programs that support and guide entrepreneurs. Unfortunately, the country is short of this data and many startup companies will close down due to lack of effective support. When researching the status of the startup ecosystem in Lebanon, this lack of data was very evident and the shortage of structure and guidance was a motivator to further explore how startup programs work in Lebanon, what their impact is, and what their shortcomings might be. Data will be collected from several local startup founders in interviews and later transcribed then analyzed via thematic analysis. Preliminary results show that the work of accelerator programs is limited and needs improvement in funding, frequency, and awareness in order to properly support local entrepreneurs.

   If your study ONLY involves the secondary use of data/information, PLEASE STOP. Please fill the form "Request to create a de-identified dataset from research data, clinical data or other identified data source" for the secondary use of information/data. If research involves use of publically available biospecimens, please contact the IRB office. Otherwise, please continue.

2. Indicate the targeted population and justify your inclusion/exclusion criteria.

   Startup companies of different stages and backgrounds that had experiences with startup programs will be chosen to participate in the interviews. This thesis, and hence the sample, are restricted to Lebanon and Lebanese tech startup founder whom have contacted startup programs or completed one or more of these programs. The chosen startups were also recent ones (active within 3 years) and shared experiences in the earlier stages of their startup lifecycle.

3. Indicate the sample size, how many participants needed for the research and provide justification.

   10-15 participants are required for proper Thematic Analysis.

4. Indicate the time required from participants in each activity.

   Around 30 minutes

5. Recruitment: indicate how the research participants will be identified/invited to the research and by whom.

Along with personal contacts, the first participants will be invited via the AUB I-Park, then further contacts will be gathered from these first participants.

6. Consenting research participants: provide a thorough description of your informed consent process (oral or written, where and by whom) and attach the consent document to the application).

   Please note voluntary participation must explain ability to discontinue participation, skipping of inappropriate or sensitive questions. In addition, a consent script is required even if it is oral consent. Please use AUB IRB templates

   When contacting a new participant, I give a brief of the research and of the interview is given along with a request for consent to use the data they provide. After consent for the recording of the interview and of data collection/analysis is given, the interview begins.

7. Describe all potential research risks or discomforts to participants and indicate how they are minimized.

   There are no potential risks or discomforts. Any question can be skipped in case of discomfort.

8. Describe any potential direct benefits of the research to participants whether direct or indirect.

   One of the aims of this research is to identify ways to improve the work of accelerator programs. This might be beneficial for the early stage startups that might participate in future programs.

9. Describe how privacy will be protected and explain how participants will be informed about protection of their privacy.

   Participants are informed that the data they provide will only be used for the stated purpose of this research. Their identities will not be included.

10. Indicate the private setting to conduct the research.

    Research will be done via one-to-one voice or video calls via phone or Zoom.

11. Are you going to record any direct identifiers, names, addresses, telephone number, etc…?

    Personal information and direct identifiers are not required for this research and will not be included. They will only be available temporarily for any needed follow up.

    If yes, please:

    a) Explain why it is necessary: Contact information will only be kept by me for potential follow up/
    b) Indicate for how long it will be kept: 3 months.
    c) Specify what coding system will be used to protect the privacy of the participants:. Standard Encyption

12. How, where, and how long will the data be stored? Will any passwords, codes or locks be used?

3 months on one device with password protection.

13. Check if any of the following is used in data collection:

a) ☑ Audiotapes/Digital Voice ☐ Videotapes ☐ Still photos ☐ Others, indicate ☐ None, skip section 13.b

b) If any of the above in section 13.a is selected, please consider,
   - Indicate who will transcribe the recordings I will conduct the interview and transcribe the data as well.
   - Clarify who will have access to the recordings Only I will have access to the recording.
   - When and by whom will the recordings be destroyed I will destroy the recordings within 3 months.
   - Clarify whether the audio/visual recordings will be shared, The recordings will not be shared.

14. How will the data be analyzed (including any audio or video recordings) at the end of the study?
    Recordings are transcribed to text which is then analyzed using Thematic Analysis.

15. Indicate when and how the data will be destroyed, if to be kept provide justification of physical custody, and security means to safeguard it All recordings are digital and will be deleted fully within 3 months.

16. Form(s) of compensation, if any e.g. transportation, reward, etc...

○ YES ◉ NO, if no skip section 16 a.

a) If YES, provide brief description and indicate how and when compensation is provided to participants

Please note, compensation should not be contingent upon study completion.

Click here to provide a brief description

17. Preparation of report and intentions regarding dissemination of findings

I will prepare the report/thesis and the findings will be shared with the thesis committee members for their evaluation.

Principal Investigator Signature:

Date:

Notes:

Exemption Category 1

- **Educational setting**: The consistent interpretation of this term is that commonly accepted educational settings can be almost anywhere, as long as the setting is one where specific educational offerings normally take place or a setting where one would go in order to have an educational experience. Examples include: K-12 schools and college classrooms, after-school programs, preschools, vocational schools, an alternative education programs; professional development seminar for school district personnel; soccer practice field; Boy/Girl Scouts meeting; Medical school; Religious education settings; Training simulators (e.g., medical simulators, flight simulators, etc.).

- **Normal educational practices:** Normal educational practices are those activities that are routinely used in similar educational settings and/or are considered proven educational practices with the population under study.

- **Adversely impact students' opportunity to learn**: Consider whether the proposed activity requires students to deviate from a curriculum that is aligned with any national or state-level indicators of student achievement (e.g., state end of grade testing) or if the activity will take instructional time away from students.

- **Adversely impact assessment of educators:** Will participation, or the refusal to participate, in the research be a factor in the assessment of educators? Will the outcomes of the research be a factor in the assessment of participating instructors?

Exemption Category 2

- **Educational Advancement**: Examples of damaging the educational advancement would be information learned in the study that would disqualify an individual from advancement. For example, in a survey that collects data about academic integrity where respondents indicate whether they have engaged in misconduct (e.g., cheating on exams, plagiarism, etc.), the disclosure of the subjects' responses outside the research could be damaging to the subjects' educational advancement.
- **Observation of Public Behavior:** Observation of public behavior without intervention or interaction can be human subjects research when it satisfies the definitions of human subject and research. Within the framework of this exemption, it is possible that an investigator may be observing individuals in a setting where, while public, there is an expectation of privacy (e.g., public restroom, online group). It is also possible under the exemption that an investigator engaged in public observation would capture information that would allow for the identification of observed individuals, provided that an IRB conducts a limited IRB review to make the determination required.

Exemption Category 3

- The term *benign behavioral intervention* is used in the language of the regulations to define research procedures that are employed in the study of psychological states and processes, cognition, ideas and attitudes, or behavior, and do not include physical (bodily) tasks or physical manipulations (e.g., range of motion activities, physical exercise) unless these are minor activities that are incident to the behavioral intervention and do not increase risk. For example, manipulating a keyboard, doing a puzzle, or walking while listening to music would be physical activities that could be considered minor activities that are taking place incident to the benign behavioral intervention. Physical interventions that are physically invasive; or, those that could be harmful or painful would not meet the exemption. Alterations in the subject's physical or sensory environment may be considered behavioral interventions to this exemption. Such interventions may not be harmful, painful or distressing, such as exposure to extremes of heat, cold, noise or light. In addition, the benign intervention is not expected to cause physical or emotional harm, persistent discomfort, be experienced by the subject as embarrassing, or be offensive. Ordinary, mild, transient forms of discomfort, such as the stress associated with completing a timed cognitive task, anxiety about performance, and boredom, are consistent with the intent of the exemption. Similarly, while research cannot meaningfully eliminate all risk of embarrassment or offense, the research should include only interventions that the researcher has no reason to think subjects will find offensive or embarrassing considering the characteristics of the subject population, the research context, and how they might impact the subject's experience of the research intervention.

- This category defines a narrow set of the allowable means by which data can be collected. Even very low risk physical procedures such as the application of sensors to the body (e.g. blood pressure monitoring, electroencephalogram, wearable activity

trackers), minimally invasive procedures (e.g. blood drawing), and the collection of bodily fluids via introduction of a tool or sensor into the body (e.g. buccal swab) would not be consistent with the language of this exemption. Data entry by a device (e.g., a Fitbit) would not meet this exemption.

References

Exempt Categories for Research Involving Human Subjects are defined in the US Code of Federal Regulations for the Protection of Human Subjects (45CFR46)

- https://www.hhs.gov/ohrp/regulations-and-policy
- https://www.ecfr.gov/cgi-bin/text-idx?SID=300df04ebff09c7b23735d902a3f645a&mc=true&tpl=/ecfrbrowse/Title45/45cfr46_main_02.tpl
- https://www.hhs.gov/ohrp/sachrp-committee/index.html

Consent to participate in an Online Research Study

This notice is for an AUB-IRB Approved Research Study

for Dr Ali Yassine at AUB.

It is not an Official Message from AUB

You are invited to participate in a research study entitled "The impact of startup programs on the success of Lebanese entrepreneurs" conducted by Dr Ali Yassine, Faculty of Engineering and Architecture at the American University of Beirut. The conduct of this study will adhere to the IRB approved protocol.

***The IRB approved method for approaching subjects is interviews. The purpose* of the study is to study how startup programs operate in Lebanon, how effective they are, and how they can be improved.**

PROCEDURES

This message invites you to:

1. **Read the consent document and consider whether you want to be involved in the study.**

And to note:

- ***Participation is completely voluntary.***
- ***Completing the interview will take around 30 minutes.***
- ***Only the data you provide in the interview will be collected and analyzed. The research team will not have access to your name or contact details.***
- ***The results of the survey will be published in a thesis available in printed from and electronically from AUB Libraries.***
- ***The inclusion and exclusion criteria:***
  - Participants are Lebanese tech startup founders whom have contacted startup programs or completed one or more of these programs. The required startups are also recent ones (active within 3 years).
- ***The targeted sample size:***
  - 10-15 interviews.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY:

You will not receive payment for participation in this study.

The results of the study will provide insights into the startup ecosystem are rare in Lebanon and might shed light on how startup programs have been performing and how their work can be improved in order to provide Lebanese entrepreneurs with the needed support and guidance

POTENTIAL RISKS TO SUBJECTS AND/OR SOCIETY

The risks of the study are minimal.

CONFIDENTIALITY

The collected data will remain confidential *and anonymous.*

Records will be monitored and may be audited by the IRB while assuring confidentiality.

PARTICIPATION AND WITHDRAWAL

If you voluntarily consent to take part in this study, you can change your mind and withdraw at any time without consequences of any kind.

Refusal to participate or withdrawal from the study will involve no penalty or loss of benefits to which the subject is otherwise entitled, and neither will it affect their relationship with their organization and AUB/AUBMC.

QUESTIONS ABOUT THE STUDY

If you have any questions about the study, can contact the research team:

1. Name: Dr. Ali Yassine
   - Number: 01-374374 ext 3494
   - Email: ay11@aub.edu.lb

2. Name: Ahmad Farhat
   - Number: 03-900745
   - Email: ajf04@aub.edu.lb

SETTING THE INTEVIEW

If after reading the consent document and having you questions answered, you voluntarily agree to take part in the study; you will be contacted to set a date for the interview.

CONCERNS OR QUESTIONS ABOUT YOUR RIGHTS

If you have concerns about the study or questions about your rights as a participant, you can contact the **AUB IRB Office**:

- IRB Office
- Email: irb@aub.edu.lb
- Telephone: 00961 -1-350000 or 1 374374, ext: 5445
- Fax: +961 1 738025

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