硕士研究生学位论文

题目： **危地马拉企业家对孵化器有何期待？**

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摘要

危地马拉以 39.9%的人口开设自己的企业，被《普通创业观察》研究列为第一国家 (UFM, 2020)。政府和私营部门已经意识到这一兴趣，并通过他们的资金建立了企业孵化器。政府还举办了研讨会和竞赛，以支持企业家。随着企业孵化器数量的增加，要问的一个重要问题是危地马拉企业家是否对孵化器提供的服务感到满意。

通过 47 个问题的调查，对企业家的满意度、行为意向和感知价值进行了测量。该样本包括 66 名企业家，他们通过与他们合作的企业孵化器分发的电子邮件联系。数据分析采用 STATA 15.1 版本和 Excel。使用的统计方法为正态性检验、相关分析、单因素方差分析和有序平方回归。分析结果支持了创业家满意度对创业家行为意向的正向影响，孵化器服务质量对孵化器创业家感知价值的正向影响的假设。研究表明，孵化器对孵化器的服务是满意的。但必须不断增加对孵化器和企业家的支持，以帮助他们提高业绩。

这些建议都是为了更好地与企业家沟通和理解。就像之前提到的，沟通对于培养本地人才非常重要。目前就业机会不足，迫使他们移民。鼓励大学、孵化器和企业合作，这可能有助于中国留住人才，并有利于创业生态系统。之前描述的想法被用于发达国家的大学科学园区孵化器(USPI)。USPI 的目标是利用大学产生的知识，在企业孵化器和企业的支持下解决现实世界的问题。如果这个想法能够成功实施，三方都会受益。大学可以吸引新学生，他们的现有学生将有动力去解决现实世界的问题。孵化器和企业家可以获得更多的曝光、知识和商业理念，企业可以找到未来的员工，解决他们正在处理的问题。这个国家也从中受益，因为它可以避免本国最优秀的人才外流。

通过进行更多的研究和收集更多的数据，可以增加对创业者和孵化器的了解。随着更多的理论被证实，随着有利于孵化器和企业家的新政策的出台，人们将更有信心采取行动。金融部门和国家的基础设施也必须以同样的速度增长，这样国家才能看到和享受国家的利益。

另一个重要的发现是，教育可以影响创业者对孵化器服务的排名。拥有高中或技术学位的人认为共享办公室和社交活动应该排在前三名，而咨询或指导服务并不重要。另一方面，拥有学士、硕士或博士学位的人认为咨询或辅导服务应该是顶级服务，而社交活动和共享办公室并不那么重要。这一发现与孵化器应该专注于一个服务行业并进

行更多研究以了解其需求的观点是一致的。之后，结果应该与在该行业已经成功的人确认。

我也希望这个研究可以激励人们对创业进行更多的研究，去了解企业家，需要什么才能成功。他们在经济中扮演着重要的角色，因为他们有创造新工作的潜力和解决问题的创造力。了解和帮助他们的努力从长远来看将有利于危地马拉。

关键词：孵化器，企业家精神，危地马拉

What do Guatemala entrepreneurs expect from a local business incubator?

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ABSTRACT

Guatemala has been ranked by the General Entrepreneurship Monitor study as a top country in the percent of population opening their own business with a 39.9% (UFM, 2020). The government and the private sector have been aware of the interest and have founded business incubators through their funding. The government also has promoted workshops and competitions to support entrepreneurs. As business incubators grow in number an important question to ask is if Guatemala entrepreneurs are satisfied with the services offered by the incubators.

A survey with 47 questions was designed to measure the entrepreneurs' satisfaction, behavioral intention and perceived value. The sample consisted of 66 entrepreneurs that were contacted through emails distributed by the business incubators they work with. Data analysis was done using STATA version 15.1 and Excel. The statistical methods used were normality tests, correlation, one-way ANOVA and ordinal square regressions. The analysis supports the hypotheses that entrepreneur satisfaction can have a positive influence on the entrepreneur ś behavioral intention and the incubator service quality can have a positive influence on the entrepreneur ś perceived value of the incubator. The study shows evidence that incubators are satisfied with the service of the incubators. But the support must keep increasing to help incubators and entrepreneurs increase their performance.

The suggestions made are all related towards building a better communication and understanding of the entrepreneurs. As mentioned before, communication will be important to keep developing the local talent. Currently the job opportunities are not enough, forcing them to migrate (Ur ás, 2020). One of the ideas that could help the country to retain its talents and benefit the entrepreneurial ecosystem, is to encourage universities, incubators and businesses to work together. The idea described previously is used in developed countries with the name

of University Science Park Incubators (USPIs). The objective of the USPIs is to use the knowledge generated by universities to solve real world problems with the support of business incubators and businesses. The three parties would be benefited if the idea can be implemented successfully. Universities can attract new students, and their current students would be motivated to solve real world problems. Incubators and entrepreneurs could get more exposure, knowledge and business ideas and the businesses can find their future employees and solve the problems they are dealing with. The country is also benefited, as it can avoid the migration of its best talents.

Understanding of the entrepreneurs and incubators can be increased by conducting more research and gathering more data. As more theories are confirmed, people will be more confident to act as new policies are made to benefit incubators and entrepreneurs. The finance sector and the infrastructure of the country also has to grow at the same pace so the benefits for the country can be seen and enjoyed by the country.

Another important finding was that education can influence how entrepreneurs rank the incubator services. People who have a high school or technical degree think that shared offices and networking events should be on the top 3 services provided, while counseling or mentoring service is not important. On the other hand, people with a bachelors, masters or PhD degree think that counseling or mentoring services should be a top service, while networking events and shared office are not so important. The finding is consistent with the idea that incubators should focus on one service sector and make more studies to understand their needs. Later the results should be confirmed with people who have been successful on that industry.

I also hope this study can motivate people to conduct more research on entrepreneurship, to understand what entrepreneurs, need to be successful. They play an important role on the economy because they have the potential to create new jobs and the creativity to solve problems. An effort to understand and help them will benefit Guatemala on the long run.

KEY WORDS: Incubators, Entrepreneurship, Guatemala

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Chapter I.   Introduction

1.1   Proposition of the problem

Guatemala is bordered in the northwest by Mexico, in the northeast are Belize and the Caribbean Sea, Honduras in the east, El Salvador in the southeast and the Pacific Ocean in the south (Nordea, 2021).

The biggest contributor for the economy is the service sector. Tourism, health care, customer service, financial services, banking institutions, hospitality, communications and retail produce 62.1% of Guatemala's GDP. Another source of income comes from managing the production and logistics of textiles, furniture, petroleum, sugar, processed foods, and chemicals. Together they produce 24.6% of GDP. Last, but not least are coffee, sugar, bananas, cotton, rubber, cardamom and a variety of woods and fruits that are produced, consumed and exported in the country. The agriculture sector produces 10% of GDP (Nordea, 2021).

As a developing country Guatemala suffers an inequality in income that influences negatively the access to education, healthcare and job opportunities. Job hunting has become harder because there are not enough offers or the requirements are too high. The situation has increased the amount of people becoming an entrepreneur to support their family. A study from the top business school in the country, Universidad Francisco Marroquin (UFM), in collaboration with the Global Entrepreneurship Monitor (GEM) show the current situation of the entrepreneurs (UFM, 2020).

The study has been conducted for 9 consecutive years. In 2019 Guatemala became the top three country in percentage of people developing a new business (23.3%), they also ranked high between Latin American countries in percentage of population that are entrepreneurs with a 39.9% (the measure is the addition of people developing a new business with the entrepreneurs that already have a stable business). Ecuador and Chile are the only countries that surpass Guatemala. For 2019, a 25.1% of the population were creating new businesses but only 14.8% of the population owns a stablished business. A stablished business needs to be generating incomes for more than 3.5 years.

The entrepreneurship quality in Guatemala is still developing. Statistics show that 58% of new ventures start with a capital lower than Q10,000 (equivalent to US$1,300). Another interesting fact is that 70% of business are in the consumption sector. Interviewed entrepreneur experts agree with the statistics collected by the report. They also gave suggestions on how to improve. First, education should be available to all the population in the country. This will enable the knowledge transfer to be more efficient. This will lead to an increase in the number of technology start-ups. Second, the financing instruments do not provide enough support. Banks are not giving loans to entrepreneurs and the amount of angel investors and venture capitalists have not been fully developed yet. The report mentions that 56% of the population used their own capital to start their new business. From the 44% of the population that got funded, only 14.3% say they went to the bank or a finance institution. The rest comes from family, friends or coworkers (UFM, 2020).

Positive changes are happening as resources supporting the entrepreneurs are increasing. The United Nations Development Program (PNUD in Spanish), launched a competition to help raising funds for entrepreneurs. They will donate US$50,000 and the final goal is to reach US$100,000 to help 20 entrepreneurs selected by a team of successful entrepreneurs (PNUD, 2020). Additionally, 5 business incubators were built with the donation of US$250,000 from the region of Taiwan (China) (Palacios, 2019). The private sector is also contributing by developing entrepreneurship communities that enable networking and sharing of information related to entrepreneurship (Mazariegos, 2020).

Guatemala's entrepreneurship ecosystem is receiving support from the government, private sector and international institutes. The research question I am interested in answering is: Are Guatemalan entrepreneurs satisfied with the current services provided by national business incubators? The answer provided by the entrepreneurs will be important for the incubator managers. A positive answer would be the best outcome because it would justify the growing interest that the country has. It would also motivate Guatemalan society to keep informed and to continue supporting the entrepreneurs because it can benefit their economy on the long term.

1.2   Review of results

The entrepreneurs from Guatemala are satisfied with the incubator services. Data analysis supports the hypotheses that entrepreneur satisfaction can have a positive influence on the

entrepreneurś behavioral intention and the incubator service quality can have a positive influence on the entrepreneurś perceived value of the incubator. The study shows evidence that incubators are helping entrepreneurs develop their business, and their support should keep increasing to help Guatemala's entrepreneurial ecosystem to develop. Even though entrepreneurs are satisfied with the services of business incubators, their performance can still be improved. The study makes three suggestions to the business incubators to increase their performance: the first one, is to create workshops and networking events that can adapt to the entrepreneurs' needs. The second suggestion is to increase the amount of surveys about service quality. Constant feedback from the entrepreneurs can help business incubators to develop a better service for them. The last suggestion is for incubators to promote collaboration and team work instead of a competitive environment. By working together, new businesses can help each other grow and benefit from their individual strengths.

1.3   Dissertation Structure

The thesis will first introduce the literature review of incubators and customer satisfaction, then the hypotheses will be presented alongside with an explanation of the assumptions made by the researcher. The next section would be the presentation of the methodology, results, and conclusions. An appendix is included for the reader to get familiar with the survey questions used, the interface of the online survey and the code used in STATA to get the results.

Chapter II. Literature Review

2.1 Business Incubators

Academic research about entrepreneurship is very diverse. This study will focus on the studies that have contributed to developing the business incubators theory and how they interact with the entrepreneurs. One study compiled all the studies and identified all the topics that have been originated from incubators (Albort & Ribeiro, 2016).

One of the topics that has attracted more academics has been the measurement of performance and what factors have an influence on it. A study done in New York with a sample of 24 executives of an incubator program, designed a questionnaire to measure what factors lead start-up ventures to success. They found out initial success is correlated with entrepreneurial characteristics exhibited by the leaders. Another important finding is that the new venture team should have experience dealing in the industry they plan to open their business (Stuart & Abbetti, 1987).

Academicians think that incubator services also influence the performance of new firms. A total of 200 incubators were surveyed to determine what was their contribution to society. In 1990, incubators were more focused on providing a space for entrepreneurs to gather and work together. The author found out that failure was related to management issues or technical difficulties. Business incubators can address the problem by offering services of financial, management and technical assistance (Udell, 1990).

A study exploring if incubators have been changing as the entrepreneurs needs keep developing, took a sample of incubators founded in different time periods and incubators with the stated mission of helping new ventures. Results show that incubators have adapted to the new demands of entrepreneurs. However, for older generation incubators, entrepreneurs do not fully use all the services provided by them. The authors suggest them to create new selection criteria and exit policies, so entrepreneurs can take full advantage of their services (Bruneel et al., 2012).

It is also important to note that new incubators have been created. One example is the

University Science Park Incubators (USI). One research took 18 high technology business firms (HTBF) participating on USIs and interviewed them through a period of 36 months. USIs are formed by a university, incubator firms and other external parties that transform innovative ideas from universities into useful tools for the real world. The study was carried out in the United Kingdom. Results indicate that resources and support are needed the most until the business firms seek for independence and autonomy (McAdam & McAdam, 2008).

The result shows the importance of forming alliances within universities, incubators and business firms. It also shows that incubator managers must know in what stage of the business the entrepreneurs are, before deciding a working schedule.

Another topic of interest is to learn how incubators operate, and how can they develop the entrepreneurs' skills. Research has been done by taking a sample of 127 incubators. A survey was used to collect data regarding structure, policy, age and size of incubators. The objective was to confirm if structure, policy, services and performance of the incubators are related. The researcher divided the incubator according to their structure and policy. There was no relation found between performance and the variables mentioned earlier, because the industry was still developing. The study encourages managers to pay special attention to the specific conditions of their tenants and services. The purpose is to offer a custom service that can guarantee the development of new ventures (Allen & McCluskey, 1991).

Interesting results have also been obtained when studying the territorial synergy, symbiosis and economies of scope of a networked incubator. A networked incubator only offers economies of scale, cooperation, and social interaction. During, 6 months the researchers were collecting data of people that came into this unique incubator. Results show that networking could be improved if the entrepreneurs see each other as complementary and started working as a team. Earning trust in relationships can generate better results. Working as a team will allow entrepreneurs to develop their ideas faster and grow their business quicker. A competitive environment would harm relationships and limit the entrepreneurs' growth (Bollingtoft & Ulhoi, 2005).

One of the trending topics is a focus towards the actions taken by the people who participate on the incubators (Theodorakopoulos et al., 2014). For example: incubator managers, entrepreneurs and external parties (like investors or business companies). The earliest research

found focused on satisfaction drivers for entrepreneurs. The study sample was a group of 287 entrepreneurs, from a 3-year longitudinal survey of new businesses conducted from 1985 to 1987. The original sample has 2,994 owner/managers from the National Federation of Independent Businesses (NFIB) which represents new businesses in the United Sates. Follow up surveys were sent to the entrepreneurs in 1986 and 1987. The main finding would be that entrepreneurs have different levels of satisfaction. For the entrepreneurs with an emphasis on noneconomic goals, they showed higher levels of satisfaction when their business was generating small profits. Having a positive attitude can help entrepreneurs overcome the challenges they face (Cooper & Artz, 1995).

The relationship between incubator managers and entrepreneurs as a co-production between parties has been explored. The data collected included the time dedicated and intensity of management from the incubator managers, and the readiness to engage in business of the entrepreneurs. The study took a sample of 8 incubator managers and created 32 pairs to interview and hand surveys to. The author concluded that a higher time of interaction from the managers can lead to better outputs. However, not all the responsibility must fall on them to make businesses successful. Entrepreneurs and the third parties must put their own effort to get what they want. This result supports the ideas mentioned of team work and collaboration, selection of entrepreneurs and exit policies (Rice, 2002).

Recent studies are focusing on analyzing the opinion entrepreneurs' have regarding to business incubators. These topics include: Satisfaction of entrepreneurs, how they rate the incubator services and what value do they provide. A survey for Australian entrepreneurs collected 111 responses from 24 incubators. determined how satisfied were the entrepreneurs with the services offered by Australian incubators. One of the results was that satisfaction with facility services was higher than counseling and business networking. The second result was gathering the importance of the incubator services and the expectations. Counseling and business networking were rated higher with low expectations, while facilities services had low importance but high expectations (Abduh et al., 2007). This means that incubators should focus more on their assistance services. A result that has been very consistent through this review.

To conclude the literature review of incubators, there is a research made last year about the value that accelerators gave to entrepreneurs in the United States (Lange and Johnston, 2020).

Accelerators differ from incubators, because they select small scale businesses with the objective of increasing it in a short period of time. They collected data from 205 accelerators and 66 incubators, finding that accelerator users consider the experience very valuable. There are notable differences in perceptions of accelerators versus incubator users. The next section of literature review will cover customer satisfaction, perceived value, sacrifice and behavioral intention.

2.2 Customer satisfaction, perceived value, sacrifice and behavioral intention

Customers are the most important asset to a company because they generate profits. To attract them a business must try solving their problems by providing them a unique experience. Discovering and measuring what factors can make a customer happy or satisfied are part of the topics marketers and psychologists are interested in. More than four decades ago a scale was developed to measure service quality (called SERVQUAL). A group of executives and customers were gathered from the areas of retail bank, credit card, securities brokerage and product repair and maintenance. It was concluded that service quality can be measured through 10 dimensions. Questions employed measured the difference between expectations and perceptions, this is known as the disconfirmation effect (Parasuraman, Zeithaml & Berry , 1985).

Another way to measure service quality is through its performance, a new scale (SERVPERF) was presented, while also measuring successfully the relation between service quality, consumer satisfaction and purchase intentions. The scale was found to be better because it reduced substantially the amount of questions and dimensions needed to measure the service quality construct (Cronin and Taylor, 1992). Related to the previous research, a study was made to confirm if expectation and perceived performance capture the effect of disconfirmation in satisfaction. The experiment consisted on measuring satisfaction with 2 products. First one was a plant (chrysanthemum), a product everyone knows, and a video disc player (VDP), which at that time was a new product. Conclusion shows that for popular or known products expectations, disconfirmation and satisfaction were all significant. When subjects perceived product performed better than expected, they were more satisfied and vice-versa. For products that are new, like the VDP, satisfaction was affected only by performance.

If the music player performed well, customer was satisfied, a poor performance would lead to dissatisfaction. Performance could explain an 88% of satisfaction's variation. In conclusion researchers can choose which scale to use based on the popularity of the product (Churchill & Suprenant, 1982).

Satisfaction, quality and disconfirmation were found to be correlated. For popular products quality is easily evaluated and satisfaction must be well managed. But for new products quality is ambiguous, causing expectations to influence customer satisfaction. The same study affirms quality has a greater effect on satisfaction and retention than expectations (Anderson and Sullivan, 1993).

Other studies have proposed to add monetary and nonmonetary prices to the consumer quality construct (Zeithaml, 1988). The mentioned variable is difficult to measure because it depends on what industry the research is conducted in. For example, scales change for the people-based industry (Lee, Lee and Yoo, 2000). Another study suggests adding physical or tangible quality of products, service environment and consumers expectations for fast food, health care and entertainment industry (Cronin, Brady & Hult, 2000). A special scale was developed to measure quality in the business to business commerce (Patterson & Spreng (1997), the idea is also supported by the mobile value-added services (Kuo, Wu & Deng, 2009) and the hotel industry (Alexandris, Dimitriadis & Markata, 2002). This study will try to develop a scale adapted to the incubator services.

Another variable that has been studied for a long time is customer perceived value. A study done in the tourist industry proposes that customer value can affect how a customer perceives outcome quality, process quality, satisfaction and loyalty. Giving customers more value can guarantee their return or loyalty (Keshavarz & Jamshidi, 2018).

The creation of concepts has been so wide that researchers might think consumers and the media can confuse terms such as, satisfaction and quality. However, consumers showed awareness of the difference between those terms. Satisfaction is related to consumer reaction with dimensions such as, timeliness and physical environment. While quality is based on aspects that managers can control (Iacobucci, Ostrom & Grayson, 1995). For example, price, expertise of workers and the service offered. Another study proved that quality and satisfaction are different. Both constructs can be used to predict behavioral intentions (Eggert & Ulaga,

2002).

Not only theory is important for marketers, they have also conducted empirical research showing the benefits of satisfied customers. The relation between customer satisfaction and company profitability has been studied with a sample of 77 companies from the National Quality Research Center (NQRC) from the University of Michigan Business School. All the companies have a cumulative market share of 70% from airlines, baking, clothing retail and PCs industries. It was advised to companies to keep investing on new technology and knowledge to satisfy consumers' needs in order to see benefits in the long term (Anderson, Fornell and Lehman, 1994).

Researchers also conduct studies on how consumer satisfaction, perceived value and service quality are related so businesses can keep improving the daily life of the society. An example is a proposed framework that analyzes the relationship between service quality, customer value and satisfaction. The correlation of the variables can explain how consumers make decisions and can also evaluate a company performance (Oh, 1999). Another example was conducted on the diners from a restaurant in England Analysis shows that satisfaction has a significant effect on the consumer behavioral intention, but on its own it cannot influence repeating purchase behavior (Tam, 1999). More evidence can be found on the hotel industry, the results show that service quality on its own, is able to explain 93% of variation in word of mouth (WOM) communication and an 85% of purchase intention variation (Alexandris, Dimitriadis & Markata, 2002). Similar results about the use of satisfaction, service quality, satisfaction and behavioral intentions have been conducted on the hotel industry (Beldona & Kher, 2014), bus industry (Wen, Lan & Cheng, 2005), hospitals (Dubey & Sahu, 2019).

Finally, academicians have also been focused on studying what factors lead to consumers satisfaction. There is a study from the United States in where population was more satisfied with goods than services. They also think that customization is more important than reliability when determining satisfaction. For people in the United Sates satisfaction is quality driven (Fornell et al., 1996). A research between United States and Ecuador fast food consumers show differences in culture can affect their perceived satisfaction. For people from Ecuador, consumer satisfaction drive consumer behavior, while for people in United States service value and satisfaction are the main factors (Brady, Robertson & Cronin, 2001).

The results show the importance of understanding the culture of a country before running any business. Success depends on how to adapt to new policies, behaviors and way of thinking.

Chapter III.   Hypotheses Development

The basic services that an incubator should offer are coworking spaces, mentorship, networking events, development of products, financial consultancy and entry to the market (Abduh et al., 2007). In Guatemala entrepreneurs face difficulty to enter into the market, need financial advisory and knowledge to develop new products. If the incubators in the country can offer all these services to them, entrepreneurs would be able to develop their new businesses and be satisfied.

Hypothesis 1. Service quality of the incubators will have a positive influence on the entrepreneurs' satisfaction.

This assumption is confirmed through the studies presented by clients from the mobile value-added services (Kuo, Wu & Deng, 2009), communications, transportation and recreation services (Taylor & Baker,1994), customers of major products and services from Sweden (Anderson & Sullivan, 1993) and North American and Latin American fast food consumers (Brady, Robertson & Cronin, 2001). It is also important to know that the service quality scale will be adapted to measure the unique services of a business incubator (Cronin & Taylor, 1992).

Before defining the second hypothesis, it is important to mention that perceived value will be defined as the impact that the incubator has on entrepreneurs. The idea comes from a study that uses the dimensions of outcome value, recommendation value and experience value (Lange & Johnston, 2020). For the service industry, academics have used service quality dimensions such as cleanliness of offices, attentive staff and responsiveness to assess how customers rate a business. If a business can excel at one dimension, it can give them a competitive advantage. Customers will be attracted to go to the business, to judge if the product or service can really bring them new value.

Hypothesis 2. Service quality of the incubator has a positive influence on the entrepreneurs' perceived value of the incubator.

Studies made for service industries (Kuo, Wu & Deng, 2009; Brady, Robertson & Cronin, 2001) and entrepreneurs in the United States (Lange & Johnston, 2020) support this hypothesis.

Research shows that service quality has a direct and indirect positive effect on behavioral intention (Cronin and Taylor, 1992; Brady, Robinson and Cronin, 2001; Kuo, Wu and Deng, 2009), the relationship can help businesses understand their customers decisions. Behavioral intention refers to positive word of mouth of the customers and repurchase intentions. The hypothesis can be shown as a daily life example. Restaurants are putting more emphasis on their service quality by renovating their interior design to attract new customers. The staff is also trained to provide a good client service, and their uniforms are designed to match the restaurant design. The purpose is for clients to share with their friends the new restaurant (positive word of mouth) or return to the restaurant because the eating experience was unique (repurchase intentions).

Hypothesis 3. Service quality of the incubators will positively affect entrepreneurs' behavioral intention.

For the fourth hypothesis a new concept will be introduced, it is the customer perceived sacrifice. Customers must let go of resources (time, money) in order to acquire a product or service (Zeithaml, 1988; Brady, Robinson and Cronin, 2001). As resources sacrificed increase, the customers compare if what they are acquiring deserves such a sacrifice. Customers will only acquire a product if value received can cover the lost resources. The same type of analogy can be applied to the resources sacrificed by entrepreneurs to assist to an incubator.

Hypothesis 4. Entrepreneurs' perceived sacrifice will have a negative impact on the entrepreneurs' perceived value of the incubator.

The next hypothesis will be about customer satisfaction., in daily life a customer is satisfied when his/her problems or necessities are fulfilled. Companies usually show how can their product or service help to solve a customer pain point through marketing. The objective of the companies is to convince the customers to buy a product or a service because it can bring value to the user. This will lead to customer satisfaction.

Hypothesis 5. Entrepreneurs' perceived value of the incubator can increase the entrepreneurs' satisfaction.

These studies show that the relation is significant and positive (Patterson & Spreng, 1997; Brady, Robinson & Cronin, 2001).

Not only marketing strategy has to be well planned, but the staff also needs training to offer a great experience for the customers. The Disney theme parks rely on a clean park, friendly staff, secure rides and beautiful hotels so people want to be back again.

Hypothesis 6. Entrepreneurs' perceived value of the incubator will have a positive effect on entrepreneurs' behavioral intention.

Companies must prioritize consumer satisfaction, for them to expand the company name. Disney can offer values like fun and safe parks, spending quality time with family and having a great time. Studies from different services sectors affirm a positive relation between the constructs (Weng, Lan & Chang, 2005; Brady, Robinson & Cronin, 2001; Kuo, Wu & Deng, 2009).

Finally, satisfaction is one of the most important variables for a company. As mentioned earlier customers are the reason businesses earn profits. Companies that are able to adjust to their client necessities will have satisfied customers. Going the extra mile can show clients that the company do care about them (Patterson & Spreng, 1997).

Hypothesis 7. Entrepreneurs' satisfaction can have a positive effect on entrepreneurs' behavioral intention.

Here is a diagram of all the variables involved and their relations

Figure 3.1 Diagram with the relations between the variables of interest
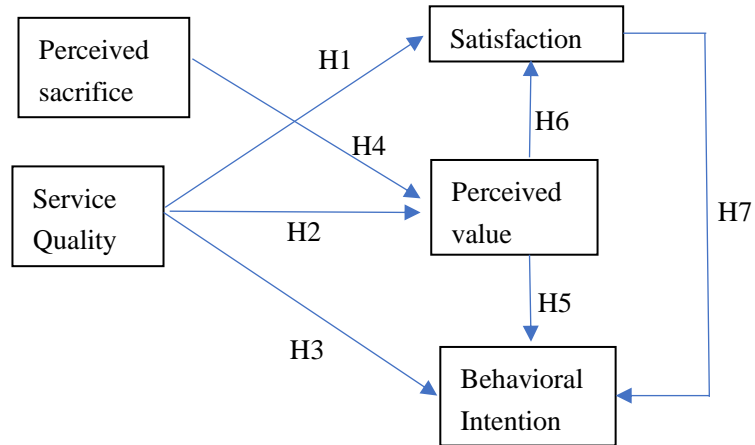
Chapter IV.   Methodology

4.1   Data collection

The first step was to contact with Guatemalan incubator managers to introduce the study and get to know the entrepreneurial ecosystem. It was also important to know if they agreed in distributing a survey to the entrepreneurs they support.

The second step was to design and create the survey online in surveyhero.com so it could be filled in Guatemala. First, the survey was sent to classmates, friends and the incubator managers. Their suggestions were helpful to reduce and rewrite questions. Approximately, one month and a half was used to send emails, LinkedIn messages and Zoom calls to contact incubator managers to increase the amount of surveys filled.

Even though so many different contact tools were used, the sample consists of Guatemalan entrepreneurs currently participating in an incubator program who have their business located in Guatemala City (See Table 4.1). 572 people were reached, 120 responses were received in total, but only 66 people completed the survey. As shown by Table 4.2 the present study has several business incubators that can represent the entrepreneurial ecosystem of the country.

4.2   Descriptive statistics

A summary of the descriptive statistics detailed on Table 4.3. Data is classified this way: for Gender (0=Masculine, 1=Feminine), Age was divided in groups (1 is less than 20, 2 is between 20 to 29, 3 is from 30 to 39, 4 is from 40 to 49 and 5 is 50 or more), Education is also divided like this: 1 is High school, 2 is Technician, 3 is Bachelor's Degree, 4 is Master's Degree and 5 is Doctor Degree, lastly entrepreneurship experience is divided as 1 means less than 1 year, 2 means between 1 and 2 years, 3 means between 3 and 4 years and 4 means 5 years or more.

Stata version 15.1 was used to calculate all the results, while Microsoft Excel was used to tabulate all the data and do the data visualization.

Table 4.1 Distribution of people around the departments of Guatemala

Department	Total number of people
Alta Verapaz	1
Chiquimula	1
Guatemala	57
Quetzaltenango	3
Sacatepéquez	3
Suchitepéquez	1
Total	66

Table 4.2 Business incubators participating on the study

Name of Business Incubator	Participants
Bpeace	1
CAMIPYME	1
Campus Tec	8
CEPI Sacatepéquez Gravileas	1
Cámara de Industria de Guatemala (CIG)	2
Centro Municipal de Emprendimiento (CME)	31
E10	1
USAC	2
Lucilabs	3
Multiverse	5
Municipalidad de Villa Nueva	1
NEGU	1
Pomona Impact	1
Technoserve	2
Xelaju Naranja	1
Online	1
Company where I work	1
Other	3
Total	66

Table 4.3 Summary of descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
Gender	0.4545	0.5017	0	1
Age	3.0152	0.9686	1	5
Education	2.9545	1.0293	1	5
Experience	2.5606	1.1914	1	4

The next step was checking the data distribution. Table 4.4 arranges all the participants into an age group and split them according to their genre. This sample shows equality in the number of males and females participating on the survey. Most the entrepreneurs are between 20 to 39 years old (68.18%).

Table 4.4 Guatemala entrepreneurs' age and gender of sample

Age (years old)	Male	Female	Total
< 20	2	0	2
20 to 29	10	9	19
30 to 39	14	12	26
40 to 49	7	7	14
>50	3	2	5
Grand Total	**36**	**30**	**66**

Figure IV.1 Guatemala entrepreneurs' age and gender distribution
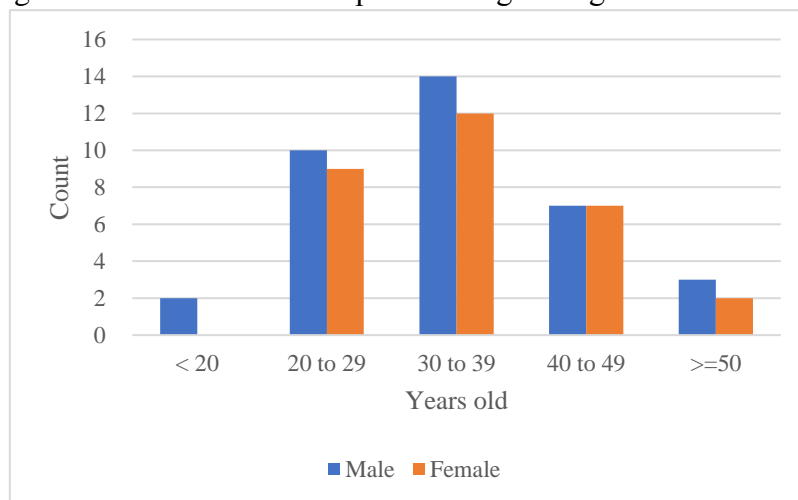

Table 4.5 groups the participants according to the department of Guatemala where they have their business and the highest level of education they possess. From this table is clear that entrepreneurs may have more possibilities to develop their business in the capital city, than in any other department of the country. Development opportunities are unequal for the population.

Table 4.5 Distribution of education classified by department

Department	High School	BA/BSc	MA/MSc	PhD	Technician	Total
Alta Verapaz		1				1
Guatemala	8	26	17	1	4	57
Quetzaltenango		1	2			3
Sacatepéquez	1	2				3
Suchitepéquez	1					1
Chiquimula			1			1
Grand Total	**10**	**30**	**20**	**1**	**4**	**66**

Table 4.6 groups entrepreneurs by ages and their experience as an entrepreneur. It is very well distributed for people between 20 to 49 years old. What is interesting to see is that all the people with 50 years or older have more extensive entrepreneur experience. It would be interesting to involve them more in the entrepreneurial ecosystem as mentors.

Table 4.6 Experience in entrepreneurship categorized by age

Age (years old)	Experience (years)				Total
	<1	1-2	3-4	>=5	
< 20	2				2
20 to 29	6	8	4	1	19
30 to 39	5	6	7	8	26
40 to 49	4	2	1	7	14
>50				5	5
Grand Total	**17**	**16**	**12**	**21**	**66**

Figure IV.2 Distribution of entrepreneurship experience (years) grouped by age
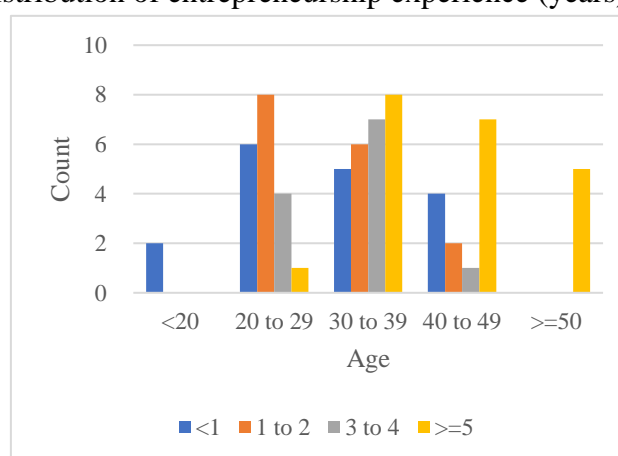
All the descriptive statistics of the control variables (gender, education, age and experience as an entrepreneur) were shown.

4.3   Survey design

A Likert scale of 5 points was used to measure all the variables. In total it has 47 questions to collect the control variables, and one question regarding how entrepreneurs rank incubator services is included to get a better understanding of the Guatemalan entrepreneurs.

Table 4.7 describes all the variables and scales used to develop the survey:

Table 4.7 Description of variables and number of questions used for the survey

Variable type	Variable	Items (Questions)	Sources
Endogenous	Service Quality	Tangibles (3) Responsiveness (2) Reliability (3) Assuredness (4) Empathy (4)	Parasuraman, Zeithaml, Berry (1985), Cronin and Taylor (1992)
	Perceived Sacrifice	Monetary (3) Emotional (3) Effort (3)	Beldona and Kher (2014)
Exogenous	Satisfaction	Interest (1) Service (2)	Wen, Lan and Cheng (2005)
	Perceived value	Outcome (3) Experience (2)	Wen, Lan and Cheng (2005), Lange and Johnston (2020)
	Behavioral intention	Recommend (2) Collaboration (1)	Zeithaml (1996)

The survey can be found in the Appendix A (English version) and Appendix B (Spanish version).

4.4   Study design

The objective of the study is to find out if entrepreneurs of Guatemala are satisfied with the services offered by local business incubators. The next step is to introduce the analysis that will be carried out on the data to determine the answer to the question. First step is to check

the distribution of the data collected. This can be done by looking at the histograms of the variables measured. If the histograms are difficult to read, the Shapiro Wilk Test can be employed. The method calculates a W statistic to determine if a random sample comes from a normal distribution. Small values of W show that the hypothesis can be rejected (NIST, 2013). If the data has a normal distribution the parametric tests can be used to do the analysis, but if data does not have a normal distribution then non-parametric tests have to be used.

After checking distribution of data, the second step is to determine if the variables relate to each other. Correlation can be used as a parametric test and Spearman rank for the non-parametric test. Both tests will create a table and give values between 0 to 1 for each pair of variables. Check for values that are higher than 0.90, those variables can give collinearity or multicollinearity issues. Collinearity means that two variables are related and will vary at the same time, this will generate results that are difficult to interpret. Researchers should avoid this problem, so they created a method that can verify the presence of collinearity issues. More of the method will be explained on the next paragraphs.

The third step is to measure the strength and direction of the relation between the variables of interest. The Ordinary Least Squares Regression method will be used. The most important parameters to check are the level of significance of the independent variables on the dependent variable (p values), the coefficients of the variables to determine if the relation is positive or negative and the R^2 which tells how much variance of the dependent variable can be explained by the independent variable, values go in a range of 0 to 1, closer values to 1 indicate the model can better predict how the variable behaves. If the models obtained are significant, the hypothesis formulated at the beginning of the study can be confirmed.

Regressions can also be used to determine if a variable mediates the relation between a dependent (DV) and independent variable (IV). By using three regressions is possible to determine mediation effect of a variable (Baron & Kenny, 1986). First is to regress M on the IV, second regress the DV on the IV and lastly, regress the DV on the IV and the M. Three conditions must be checked on each regression to determine if the variable is a M. For the first regression check if the IV affects the M, for the second regression check if the IV affects the DV and for the last regression check that the effect of the IV on the DV decreases when comparing the results between the second and third regression. A partial mediation is confirmed if the three conditions are met. A complete mediation happens when the IV no

longer affects the DV if the M is present. The mediation effect of some variables will be discussed on the results section.

The results obtained from the regressions can be evaluated and confirmed by running additional tests to confirm that the variables used in the regression are not strongly related to each other. The VIF method can be very helpful, it stands for Variance Inflation Factor. It detects if multicollinearity is present, it means that an independent variable has a strong relation with more than one independent variable of the regression. Values above 4 indicate that multicollinearity problems might exist and values higher than 10 means that a multicollinearity problem is present, and it needs to be corrected. Low VIFs mean that the regression results do not have multicollinearity issues (CFI, 2021).

The last statistical analysis tool that will be used is the one-way ANOVA for normally distributed data or the Kruskal Wallis test for non-normally distributed data. It can detect differences between two or more groups of an independent variable on a continuous or ordinal dependent variable (Laerd Statistics, 2021). It will be interesting to detect if there is any demographic variable that makes entrepreneurs rank differently the importance of incubator services. The next section will show the results obtained.

Chapter V. Results

A summary of statistics of each question is provided by Table 5.2, Table 5.3 and Table 5.4. Before analyzing the data obtained, the Cronbach Alpha analysis is run to verify if the questions are measuring the variables of interest. A rule of thumb is that values of 0.70 and above are good, 0.80 and above are better, and 0.90 or more is the best (Ludwig-Mayerhofer, 2010). Values obtained for every variable are shown on Table 5.1. The lowest one is sacrifice, but for the other constructs the coefficient goes up to an interval between 0.86 to 0.90. Additionally, STATA also has the option of creating a new scale for every construct, by adding up scores and dividing the sum through the number of items entered into the computation (Ludwig-Mayehofer, 2010). The STATA function previously described simplifies the data analysis, the summary statistics of the new scales are presented on Table 5.5.

Table 5.1 Cronbach Alpha coefficients of the variables of interest

Variables	Cronbach Alpha	Number of items
Sacrifice	0.7368	9
Service Quality	0.9061	16
Satisfaction	0.8631	3
Perceived value	0.8677	5
Behavioral Intention	0.9044	3

Table 5.2 Descriptive statistics for the sacrifice variable

Variable	Description of question	Mean	Std. Dev.
Sac1	Money used on hobbies (reversed)	4.1515	1.0988
Sac2	Incubator fee is high	1.9242	1.3046
Sac3	Control all expenses	4.0303	1.1090
Sac4	Wish to spend more time with family	3.7424	1.1274
Sac5	I have missed important family reunions	3.0455	1.2942
Sac6	My business occupies most of my personal time	3.8939	1.0096
Sac7	Work shift is longer than 8 hours a day	3.8333	1.4313
Sac8	Constant rescheduling because of business meetings	3.3030	1.3470
Sac9	My holidays are shorter than usual (28 days/year)	3.8333	1.2960

Table 5.3 Descriptive statistics for the service quality variable

Variable	Description of question	Mean	Std. Dev.
SQ1	I constantly use shared offices	1.8636	1.2513
SQ2	Incubator offers enough workshops and networking events	3.3636	1.0761
SQ3	Workshops helped me develop business skills	3.8030	1.2431
SQ4	Incubator often makes customer satisfaction surveys	2.6970	1.4247
SQ5	Incubator staff are polite and respectful	4.5909	0.9604
SQ6	I have regular meetings with mentor to discuss about my business	3.1667	1.3653
SQ7	I have a mentor that follows the development of my business	3.0152	1.4517
SQ8	Mentors know latest trends in business of Guatemala	4.1667	1.0013
SQ9	Inquiries sent to incubator during working hours are answered immediately	3.8030	1.1925
SQ10	Incubator staff can solve my problems	4.0758	1.0715
SQ11	I share with my mentor all the problems of my business	2.9091	1.3556
SQ12	Guatemalans rate positively the incubator	4.1061	1.1385
SQ13	News about the incubator are usually positive	3.1970	1.3152
SQ14	If a problem can't be fixed, staff has external resources to solve it	3.7576	1.2411
SQ15	I usually follow my mentors' advice	3.5455	1.2671
SQ16	Incubator promotes cooperation between clients	3.9848	1.2709

Table 5.4 Descriptive statistics for the satisfaction, perceived value and behavioral intention variables

Variable	Description of question	Mean	Std. Dev.
Sat1	I was interested in working with the incubator	4.3939	1.0058
Sat2	I was delighted by the services of the incubator	4.0303	1.1228
Sat3	The service received was better than expected	4.0455	1.1560
PV1	After entering the incubator, my business network has expanded	3.3939	1.3460
PV2	After participating in the incubator, my	3.0909	1.3212

	business has more clients		
PV3	After participating in the incubator, my business earnings have increased	3.0455	1.3177
PV4	Price paid is acceptable for the services received	4.0455	1.3177
PV5	I think the decision of choosing the incubator was the right one	4.1515	1.2557
BI1	I would express preference for the incubator I'm working with	4.3788	1.0041
BI2	I will recommend the incubator to my contacts	4.2576	1.1544
BI3	In the future I would like to help or work with the incubator	4.5152	0.9486

Table 5.5 Descriptive statistics for the new scales of the variables of interest

Variable	Mean	Std. Dev.	Min	Max
Sac	2.6061	0.6987	1.1111	4.3333
SQ	3.5028	0.7955	1.5625	4.75
Sat	4.1566	0.9718	1	5
PV	3.5455	1.0609	1	5
BI	4.3838	0.9523	1	5

On the next paragraphs a resume of the answers collected for the survey answers will be given. When checking the survey answers related to entrepreneurs' satisfaction (Q37 to Q39) and entrepreneurs' behavioral intention (Q45 to Q47), when averaged they get high scores (average of 4.16 and 4.38, respectively). Entrepreneurs' satisfaction questions were related to interest to work with the incubator, and if the entrepreneurs think that the service received is better than expected. Entrepreneurs' behavioral intention shows positive behaviors toward the incubator, like preferring the services of the actual incubator, recommending it to friends and collaborating with it in the future. From these results it can be said that Guatemalan entrepreneurs are happy with the experience provided by incubators.

Entrepreneurs' perceived value of the incubator was also measured, its overall score is 3.64 which means incubators still need to develop their services to offer customers a good value proposition. The construct is divided in outcome value and experience value. The first division has questions related to an increase in the number of contacts, new clients and increasing incomes for the companies operated by the entrepreneurs (Q40 to Q42). The average for this construct has a value of 3, which is participants neither agree or disagree. A

reason for obtaining this result might be linked to the fact that entrepreneur's top ranked services (mentoring service, financial administration and a tie between market entry and product development) are not offered by incubators, according to the entrepreneurs. 38 people (57.6%) say that at least one of the top services is not offered by the incubator (Q7 and Q22). For the experience value entrepreneurs' (average score of 4.1) agree that the incubator fee is reasonable, and they affirm they took the right decision by joining the incubator they are working with. This supports the idea that incubators are doing a good job on satisfying entrepreneurs', but performance can be improved.

The service quality of incubators construct measured different services provided by the incubator, in average it received a score of 3.54, this means that entrepreneurs' still think that services can be improved. The questions can be divided as tangible services (Q20, 23 and 24), empathy (Q21, 25, 29, 30), responsiveness (Q26, 34), assurance (Q27, 31, 35, 36), and reliability (Q28, 32, 33). Tangibles measure use frequency of shared office space, number of workshops and events and if workshops helped developing business skills. Majority of people surveyed answered they don't use the offices too often (average score of 1.86). Regarding the number of workshops and events, entrepreneurs are still not satisfied with the quantity of events offered (avg score of 3.36). Finally, entrepreneurs think that the workshops help to develop skills, as the score approximates to a partially agree score (3.80).

For measuring empathy, questions used were: frequency of client satisfaction surveys, the personnel are polite and respectful, entrepreneurs have meetings with their mentor regularly and the mentor follows the development of the entrepreneur business. The average score for the first question was very low (avg score 2.70), incubators should try to evaluate constantly if the entrepreneurs are happy with the services provided. Personnel is polite and respectful, the average for this question is high (avg score 4.59). Meetings and follow up of the mentor with the businesses can improve as they have a neutral score (avg score of 3.17 and 3.02 respectively).

Responsiveness measures if mentors are up to date with business trends in the country and if messages sent during working hours are answered immediately. Scores are very high (avg score of 4.17 and 3.80 respectively). Showing that mentors keep updated with business trends and care about the customers by answering quickly to any inquiries they receive.

The assurance construct has 4 components which are: incubator staff can solve entrepreneurs' problems, entrepreneurs share with their mentor all their business problems, Guatemalans rate positively the incubator and the news and media mention the incubator constantly. Question 1 and 3 have a high score (avg score of 4.08 and 4.11), which means that incubator staff are well prepared to solve entrepreneurs' issues and have a good image in the country. However, there is a lack of trust of entrepreneurs toward incubator managers as they don t share all their problems (avg score of 2.91). It is also important to mention that incubators do not appear constantly in the news (avg score of 3.20), which limits the number of entrepreneurs in the country that they can reach out to.

Finally, the construct of reliability asks if: incubator personnel have external resources to solve problems, entrepreneurs usually follow their mentors' advices and the incubator promotes cooperation between all the parties involved. In average all the aspects still have room for improvement, scores are 3.76, 3.54 and 3.98 respectively.

The last variable measured was entrepreneurs' sacrifice. It is divided in three sections that are money, emotion and time sacrifice. Questions related to money sacrifice are: most of my income is used for my hobbies (inversed), I believe the price of the incubator is too high and I try to control my monthly spending as much as possible. Question 1 and 3 had averaged scores of 4.15 and 4.03 respectively. It can be said that entrepreneurs from Guatemala are conscious on their spending and are able to keep their finances healthy. For question 2 a low average score of 1.92 means entrepreneurs are comfortable paying the incubator fees.

The second section measures entrepreneurs' emotion sacrifice, the questions asked were: I wish I could spend more time with my family, I have missed important family meetings because of my business and I think my business occupies a lot of my personal time. The average scores were 3.74, 3.04 and 3.89, respectively. From the results it can be deduced that entrepreneurs can share enough time with their families.

Last section is the time sacrifice. Questions were related to working hours and holidays: My work schedule overcomes 8 hour/day, I have to constantly rearrange my schedule to fit my business reunions, my holiday period is shorter than the one of an average worker. Similar to the second section, the scores are neutral (3.83, 3.30 and 3.83, respectively) meaning

entreprneurs are very efficient on time management. Their workload is comparable to the one of an average-worker.

5.1   Main Results

The first step was to check the distribution of the variables of interest. Results show that the data collected do not have a normal distribution behavior. Table 5.7 shows the histograms and Table 5.6 the results of the Shapiro Wilk tests. Many of the variables do not have a normal distribution, so the non-parametric statistical tests will be used.

Table 5.6 Shapiro Wilk test results for variables of interest

Variable	W	Z	Prob>z
Sacrifice	0.9879	-0.734	0.7684
Satisfaction	0.8285	5.005	0.0000
Perceived Value	0.9689	1.305	0.0959
Behavioral Intention	0.7039	6.188	0.0000
Service Quality	0.9708	1.168	0.1214

Table 5.7 Histograms of all the variables of interest
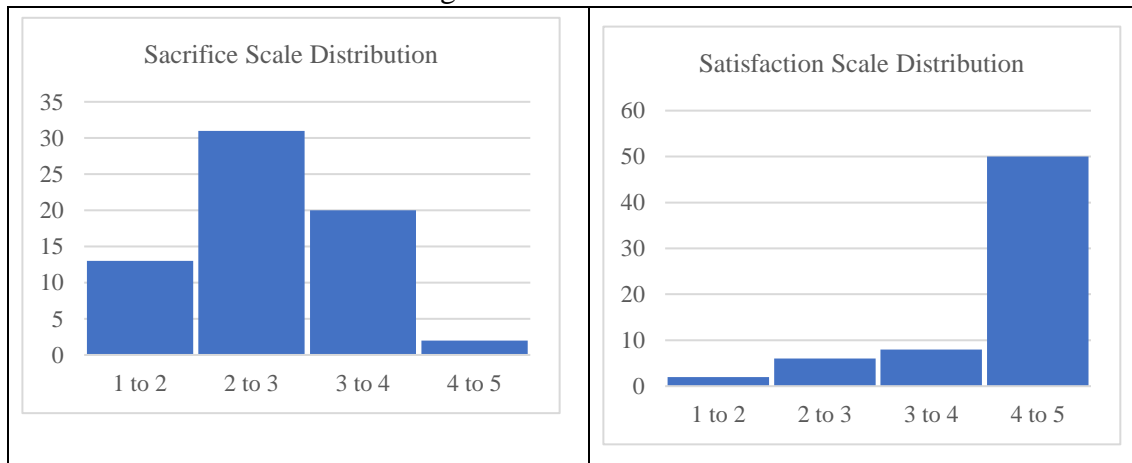
Correlation between all the variables collected was conducted, Table 5.8 shows the correlation between the variables that do not behave normally, and Table 5.9 correlates all the variables collected with the survey. From both tables it is evident that Satisfaction (Sat), Perceived Value (PV), Behavioral Intention (BI) and Service Quality (SQ) are related. Only Sacrifice (Sac) shows no relation. The VIF test will have to be conducted after the regressions are run to prove there are no multicollinearity issues.

Table 5.8 Spearman Rank correlation for the variables of interest

	Sacrifice	Satisfaction	Perceived Value	Behavioral Intention	Service Quality
Sacrifice	1.0000				
Satisfaction	-0.0725 (0.5627)	1.0000			
Perceived Value	0.0757 (0.5456)	0.6502 (0.0000)	1.0000		
Behavioral Intention	-0.1590 (0.2024)	0.7343 (0.0000)	0.6552 (0.0000)	1.0000	

Service Quality	0.0926 (0.4595)	0.7484 (0.0000)	0.8184 (0.0000)	0.6635 (0.0000)	1.0000

Table 5.9 Correlation of all the variables collected with the survey

	Age	Gender	Education	Experience	Sacrifice
Age	1.0000				
Gender	0.0489	1.0000			
Education	0.3556	0.2789	1.0000		
Experience	0.4591	-0.1497	0.3598	1.0000	
Sacrifice	0.0670	-0.0372	0.0793	0.1441	1.0000
Service Quality	0.1684	0.2183	0.0671	0.0105	0.0603
Satisfaction	0.2208	0.0937	-0.0287	-0.0105	-0.1343
Perceived Value	0.2374	0.0993	0.1160	0.2096	0.0305
Behavioral Intention	0.2549	0.1122	0.1018	0.1057	-0.2103

Continuation table 5.9

	Service Quality	Satisfaction	Perceived Value	Behavioral Intention
Age				
Gender				
Education				
Experience				
Sacrifice				
Service Quality	1.0000			
Satisfaction	0.7702	1.0000		
Perceived Value	0.8239	0.6879	1.0000	
Behavioral Intention	0.6907	0.8872	0.6992	1.0000

The next set of tables present the results obtained by running regressions between the variables of interest, together with the VIF tests.

Table 5.10 Regressions ran to test hypotheses 1, 2, 3 and 4

	Model 1 Satisfaction	Model 2 Perceived Value	Model 3 Behavioral Intention	Model 4 Perceived Value
Age	0.1590*	0.0137	0.1212	0.1938
Education	-0.1113	-0.0163	-0.0023	0.0082
Experience	-0.0398	0.1789**	0.0344	0.1118
Service Quality	0.9185**	1.0945**	0.8016**	
Perceived Value				

Sacrifice				-0.0001
Constant	0.8907**	-0.7399*	1.1292**	2.6510**
F(4,61)	24.67	39.10	15.14	1.13
R^2	0.6180	0.7194	0.4983	0.0692
Root MSE	0.6200	0.5801	0.6963	1.0566

**(p-value<0.05), *(p-value<0.10)

Table 5.11 VIF results for models 1, 2, 3 and 4

Variable	VIF Model 1	VIF Model 2	VIF Model 3	VIF Model 4
Experience	1.35	1.35	1.35	1.36
Age	1.38	1.38	1.38	1.34
Education	1.21	1.21	1.21	1.21
Service Quality	1.04	1.04	1.04	
Perceived Value				
Sacrifice				1.02
Mean VIF	1.24	1.24	1.24	1.23

Table 5.12 Regressions ran to test hypothesis 5, 6 and 7

	Model 5 Satisfaction	Model 6 Behavioral Intention	Model 7 Behavioral Intention
Age	0.1861*	0.1335	-0.0191
Education	-0.0961	0.0106	0.0953
Experience	-0.1677*	-0.0838	0.0695
Service Quality			
Perceived Value	0.6400**	0.6172**	
Satisfaction			0.8774**
Constant	2.0394**	1.9765**	0.3346
F(4,61)	16.97	15.59	64.66
R^2	0.5267	0.5054	0.8092
Root MSE	0.6901	0.6913	0.4294

**(p-value<0.05), *(p-value<0.10)

Table 5.13 VIF results for models 5, 6 and 7

Variable	VIF Model 5	VIF Model 6	VIF Model 7
Experience	1.36	1.36	1.36
Age	1.37	1.37	1.44
Education	1.21	1.21	1.22
Service Quality			
Perceived Value	1.07	1.07	
Satisfaction			1.08
Mean VIF	1.25	1.25	1.27

Besides the individual regressions, the measuring of the mediation effect of Perceived Value and Satisfaction was measured. Results are shown on the next tables. First the mediation effect of Perceived Value in the relation of Service Quality->Perceived Value->Satisfaction. The first regression and second regression are done and presented on the previous tables. Regression two and three are compared on the same table as they have the same dependent variable.

Table 5.14 Comparison of models to compare effect of Perceived Value as a mediator on the relation Service Quality->Perceived Value->Satisfaction (Model 8)

	Model 1 Satisfaction	Model 2 Perceived Value	Model 8 Satisfaction
Age	0.1590*	0.0137	0.1566*
Education	-0.1113	-0.0163	-0.1084
Experience	-0.0398	0.1789**	-0.0717
Service Quality	0.9185**	1.0945**	0.7230**
Perceived Value			0.1785
Constant	0.8907**	-0.7399*	1.0228**
F(4,61)	24.67	39.10	20.31
R^2	0.6180	0.7194	0.6286
Root MSE	0.6200	0.5801	0.6164

**(p-value<0.05), *(p-value<0.10)

Table 5.15 VIF results model 8

Variable	VIF Model 1	VIF Model 2	VIF Model 8
Experience	1.35	1.35	1.49
Age	1.38	1.38	1.38
Education	1.21	1.21	1.21
Service Quality	1.04	1.04	3.44
Perceived Value			3.56
Mean VIF	1.24	1.24	2.22

Because the effect of Perceived Value is not significant on Regression 8, Perceived Value is not a mediator on the relation between Service Quality and Satisfaction.

Next, the mediation effect of Perceived Value in the relation of Service Quality->Perceived Value->Behavioral Intention is measured. Results are presented as before.

Table 5.16 Comparison of models to compare effect of Perceived Value as a mediator on the relation Service Quality->Perceived Value->Behavioral Intention (Model 9)

	Model 2 Perceived Value	Model 3 Behavioral Intention	Model 9 Behavioral Intention
Age	0.0137	0.1212	0.1164
Education	-0.0163	-0.0023	0.0034
Experience	0.1789**	0.0344	-0.0283
Service Quality	1.0945**	0.8016**	0.4183**
Perceived Value			0.3502**
Constant	-0.7399*	1.1292**	1.3884**
F(4,61)	39.10	15.14	14.14
R^2	0.7194	0.4983	0.5410
Root MSE	0.5801	0.6963	0.6715

**(p-value<0.05), *(p-value<0.10)

Table 5.17 VIF Results for regression 9

Variable	VIF Model 2	VIF Model 3	VIF Model 9
Experience	1.35	1.35	1.49
Age	1.38	1.38	1.38
Education	1.21	1.21	1.21
Service Quality	1.04	1.04	3.44
Perceived Value			3.56
Mean VIF	1.24	1.24	2.22

When comparing the R^2 values of the regressions, the second regression can explain a 69.63% of Behavioral Intention, but the model including the moderator can explain less variance. It can be concluded that Perceived Value could be a moderator and further studies should be made before affirming that it can influence the relation between Service Quality and Behavioral Intention.

The last mediation effect measured was Satisfaction in the relation of Service Quality->Satisfaction->Behavioral Intention.

Table 5.18 Comparison of models to compare effect of Satisfaction as a mediator on the relation Service Quality->Satisfaction->Behavioral Intention (Model 10)

	Model 1 Satisfaction	Model 3 Behavioral	Model 10 Behavioral

		Intention	Intention
Age	0.1590*	0.1212	-0.0194
Education	-0.1113	-0.0023	0.0962
Experience	-0.0398	0.0344	0.0696
Service Quality	0.9185**	0.8016**	-0.0103
Satisfaction			0.8840**
Constant	0.8907**	1.1292**	0.3419
F(4,61)	24.67	15.14	50.89
R^2	0.6180	0.4983	0.8092
Root MSE	0.6200	0.6963	0.4330

**(p-value<0.05), *(p-value<0.10)

Table 5.19 VIF results for regression 10

Variable	VIF Model 1	VIF Model 3	VIF Model 10
Experience	1.35	1.35	1.45
Age	1.38	1.38	1.36
Education	1.21	1.21	1.25
Service Quality	1.04	1.04	2.52
Perceived Value			2.62
Mean VIF	1.24	1.24	1.84

Even though the model including Satisfaction as a mediator can explain more of the variation of Behavioral Intention, the effect of Satisfaction is not significant. This study can not affirm whether Sat can influence the relation between SQ and BI.

The results support what other researchers have found. For hypothesis 2 and 7, the first regression can explain 71.94% of the variation on entrepreneurs' perceived value of the incubator using service quality of the incubator as the independent variable. The second regression can explain 80.92% of the variation on entrepreneurs' behavioral intention using entrepreneurs' satisfaction as the dependent variable. The VIF was employed to show that both regressions do not have collinearity issues.

For hypothesis 4, there is not enough evidence to confirm that entrepreneurs' sacrifice have a negative effect on the entrepreneurs' perceived value of the incubator. Hypothesis 1, 3, 5 and 6 are partially supported because the value of R^2 is not as strong. For the first hypothesis, the regression can explain 61.80% of the variance of entrepreneurs' satisfaction using service quality of the incubator as the predictor. The second regression can explain 49.83% of the

variation of entrepreneurs' behavioral intention using service quality of the incubator as the predictor. Third regression can explain 52.67% of entrepreneurs' satisfaction using perceived value of the incubator. The last regression can explain 50.54% of the entrepreneurs' behavioral intention using entrepreneurs' perceived value of the incubator as the independent variable.

In Table 5.20 is a summary of what hypothesis were found to be supported by the results described recently.

Table 5.20 Hypotheses results

Hypothesis	Result
H1: Service quality of the incubator has a positive effect on the entrepreneurs' satisfaction	Partially Supported
H2: Service quality of the incubator has a positive influence on the entrepreneurs' perceived value of the incubator	Supported
H3: Service quality of the incubator will positively affect entrepreneurs' behavioral intention	Partially Supported
H4: Entrepreneurs' perceived sacrifice will have a negative impact on the entrepreneurs' perceived value of the incubator.	Not supported
H5: Entrepreneurs' perceived value of the incubator can increase the entrepreneurs' satisfaction	Partially Supported
H6: Entrepreneurs' perceived value of the incubator will have a positive effect on entrepreneurs' behavioral intention	Partially Supported
H7: Entrepreneurs' satisfaction can have a positive effect on entrepreneurs' behavioral intention	Supported

As described in the study design section the ANOVA or Kruskal Wallis test will be employed. The test will detect if the ranking of incubator services are different according to age, experience or education of the entrepreneurs. To determine which tests to use, the distribution of the data for services ranking has to be checked. From Table 5. it is clear that data is not normally distributed, so the Kruskal Wallis test will be employed.

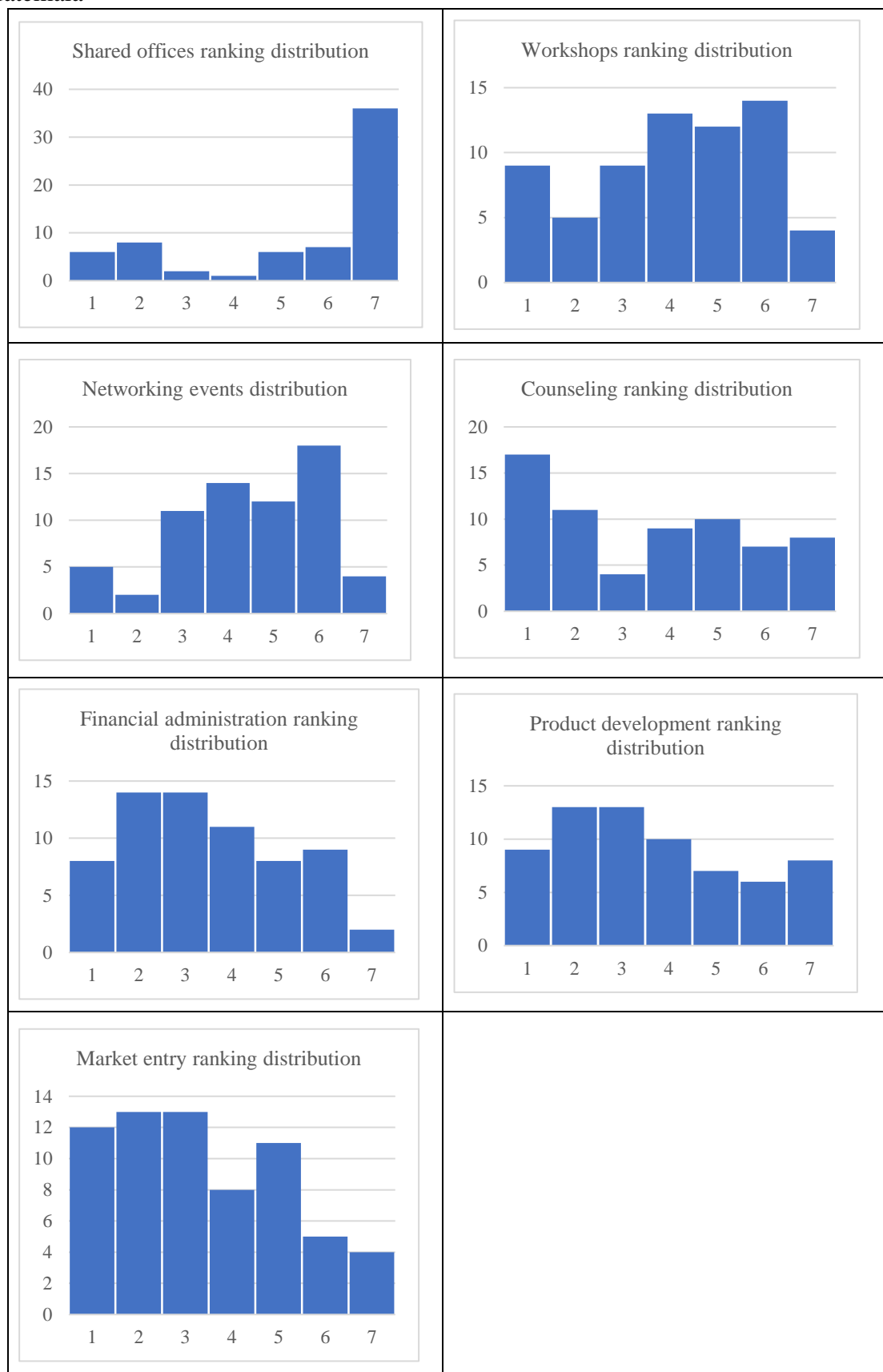Table 5.21 Data distribution of entrepreneurs ranking of services offered by incubators in Guatemala

Table 5.22 Kruskal-Wallis test with entrepreneur experience as independent variable

Service	Result
Shared Offices	Chi square=0.199 with 3 df Probability=0.9778 (not significant)
Workshops	Chi square=1.642 with 3 df Probability=0.6500 (not significant)
Networking events	Chi square=4.001 with 3 df Probability=0.2614 (not significant)
Mentor or coaching service	Chi square=4.124 with 3 df Probability=0.2484 (not significant)
Finance administration	Chi square=3.756 with 3 df Probability=0.2890 (not significant)
Product development	Chi square=1.339 with 3 df Probability=0.7198 (not significant)
Entry to the market	Chi square=2.746 with 3 df Probability=0.4325 (not significant)

Table 5.23 Kruskal Wallis test with entrepreneur age as independent variable

Service	Result
Shared Offices	Chi square=5.349 with 4 df Probability=0.2534 (not significant)
Workshops	Chi square=4.151 with 4 df Probability=0.3860 (not significant)
Networking events	Chi square=5.830 with 4 df Probability=0.2122 (not significant)
Mentor or coaching service	Chi square=5.795 with 4 df Probability=0.2150 (not significant)
Finance administration	Chi square=5.516 with 4 df Probability=0.2383 (not significant)
Product development	Chi square=1.650 with 4 df Probability=0.7997 (not significant)
Entry to the market	Chi square=4.864 with 4 df Probability=0.3015 (not significant)

Table 5.24 Kruskal Wallis test with entrepreneur education as independent variable

Service	Result
Shared Offices	**Chi square=10.583 with 4 df** **Probability=0.0317 (significant)**
Workshops	Chi square=3.984 with 4 df Probability=0.4082 (not significant)
Networking events	**Chi square=15.680 with 4 df** **Probability=0.0035 (significant)**
Mentor or coaching service	**Chi square=14.161 with 4 df** **Probability=0.0068 (significant)**
Finance administration	Chi square=2.402 with 4 df Probability=0.6624 (not significant)
Product development	Chi square=4.854 with 4 df Probability=0.3026 (not significant)
Entry to the market	Chi square=1.520 with 4 df Probability=0.8231 (not significant)

From Table 5.22, Table 5.23 and Table 5.24 is evident that education of respondents can lead to different answers while ranking the importance of services offered by incubators. This finding partially supports the idea that entrepreneurs need different services while their business keeps developing. In the case of Guatemala, education can influence the ranking people give to different incubator services. In Appendix the results of the ranking made by incubators is more detailed. Education have a marked difference, whereas experience and age do not show the same difference. People with a high school and technical degree ranked in the top 3, sharing office and networking events, while mentoring and coaching services are in the lowest 3. However, people with a bachelor, master or PhD degree think that sharing offices and networking events are in the lowest 3. While mentoring and coaching services rank in the top 3.

Further tests can be used to detect which groups are different, to be able to generalize the findings explained on this study.

Chapter VI. Conclusions and further discussions

6.1　Conclusions

The results obtained support the previous work done by researchers, especially the relation between entrepreneurs' satisfaction and entrepreneurs' behavioral intention and service quality of the incubator with entrepreneurs' perceived value of the incubator. Their R^2 of 0.8092 and 0.7194 respectively, show the relation between those variables is strong. Entrepreneurs' satisfaction can influence positively the entrepreneurs' behavioral intention and service quality of the incubator can influence positively entrepreneurs' perceived value of the incubator. Confirmation of both hypotheses show that entrepreneurs and incubators can be considered as normal customers and a service company.

Entrepreneurs have the dream of developing a business while incubators must assist them on the development stage. If the incubators are offering a good service, the variables of satisfaction and service quality will increase. After entrepreneurs experienced the service, then behavioral intention and perceived value can be measured as a collaboration in the future and positive word of mouth. Usually those outcomes can be achieved when entrepreneurs are satisfied.

The other variables of interest also show relation between each other. Results show that service quality of the incubator and entrepreneurs' satisfaction, entrepreneurs' perceived value of the incubator and entrepreneurs' satisfaction and, entrepreneurs' perceived value of the incubator and entrepreneurs' behavioral intention all influence each other positively. The R^2 values are 0.6180, 0.5267 and 0.5054 respectively. Even though relation is not as strong as the first four variables mentioned before, similar results have been obtained by researchers. Being able to confirm the relation between all the variables show that keeping customers satisfied is essential for any business to be successful. Additionally, the mediation effect of perceived value and satisfaction was tested. However, the models explained less variation than the simpler models, so further studies will be needed to confirm the indirect effects of those variables.

After analyzing the answers given by entrepreneurs and the hypotheses results, the research question can be answered. Guatemala entrepreneurs are satisfied with the services offered by the business incubators. These results apply only to Guatemala City incubators, as most entrepreneurs that participated on the survey work with business incubators of the capital city.

Satisfaction and positive behavioral intention relate to how entrepreneurs feel however performance is measured through the entrepreneurs' perceived value of the incubator construct. Some of the questions measure if entrepreneurs can detect an improvement on their incomes, network or number of clients. From the studied sample, results indicate that entrepreneurs have been part of incubators for an average period of less than one year. That is the reason why results are still unseen. The entrepreneurship ecosystem in Guatemala will need resources and time, before it can see the rewards of watching a national company become a well-known brand globally.

It is also important to mention that education influences entrepreneurs on how they rank the importance of services provided by incubators. For people who have a high school degree or technical degree, their top three services are shared offices and networking. While for people with a bachelors, masters or PhD degree prefer the coaching or mentor services to be on the top 3. Incubators can focus their services on a specific group of entrepreneurs to get better results and perform better, more studies are recommended to confirm the finding.

Three suggestions will be proposed to the business incubators that might help them provide better services. First suggestion is to adapt workshops and networking events to the entrepreneurs' needs. Even though they did not receive a high ranking, entrepreneurs think that the number of events still does not satisfy them. The content of the events can also be checked. If the workshops offer useful knowledge to the entrepreneurs or the opportunity to network with high profile business individuals the events could be ranked higher and be more helpful to the entrepreneurs.

Second suggestion is for incubators to conduct more satisfaction surveys. Constant feedback from the entrepreneurs will help incubators to improve their services. Knowing the needs of their customers, can give an advantage to the incubators to improve their incomes and performance.

The final suggestion would be to build a stronger relation between incubator managers and entrepreneurs. Trust and cooperation between all the members of an incubator can help businesses develop faster as they help each other out. If all the members of the incubator are willing to engage and help, activities would increase, and it could potentially lead to positive outcomes for all the people who are involved in the incubator.

6.2   Contributions

The findings of this research contribute to the literature by extending the study of customer satisfaction, perceived value, behavioral intention and service quality to the field of entrepreneurship, specifically business incubators. The study also shows the present situation of the entrepreneurship ecosystem in Guatemala City.

Even though the business incubators have been able to satisfy the entrepreneurs, a bigger support and communication from the public and private sectors of the country are needed to further develop Guatemala's entrepreneurial ecosystem. One of the ideas that could be implemented is for universities, incubators and businesses to work together with the objective of creating solutions for the society (McAdam and McAdam, 2008). The three parties would be benefited if the idea can be implemented. Universities can attract new students, and their current students would be motivated to solve real world problems. Incubators and entrepreneurs could get more exposure, knowledge and business ideas and the businesses can find their future employees and solve the problems they are dealing with.

Cooperation and team work will be the key as the entrepreneurial ecosystem of Guatemala keeps growing. The private sector is already working towards building a network of entrepreneurs and business incubators, while also promoting entrepreneurship events. While the public sector also has started to gather funds to build incubators and help its' population. The country is on the right path to build a strong entrepreneurial ecosystem.

6.3   Limitations

The study had some limitations that need to be considered. The first one was the sample size. Data collection was hard, because the only way of contacting entrepreneurs in Guatemala was through emails, videocalls or instant messaging. Because of this limitation the results

obtained can not be generalized to the whole country. Replications of the study are necessary to confirm the results.

Using electronic surveys was convenient since the researcher was not in Guatemala when the data collection was made. But one problem, was that the questions had to be well written and the type of answers collected could not be open ended questions. To develop studies that can understand better the entrepreneurial ecosystem of the country, studies involving open-ended questions are needed.

Finally, non-parametric methods were used to analyze the data because the data had a non-normal distribution. As said earlier, further studies will be needed before the results of the study can be generalized to the population of Guatemala.

6.4   Future studies

It would be interesting to see studies being directed towards how business incubators operate on a day to day basis to unveil which activities benefit entrepreneurs and which ones still need to be improved based on the perspective of entrepreneurs and incubators managers.

The sacrifice construct had a low Cronbach Alpha coefficient, a deeper study to know what entrepreneurs in Guatemala must sacrifice to start their own business would be interesting. A better understanding of the psychology of the entrepreneurs is helpful for the incubator managers and decision makers to take more informed decisions that can benefit them in the future.

It can also be interesting to determine what specific group of education causes the difference on the ranking of services offered by an incubator. The use of open-ended questions can lead to get better answers. One solution to detect what level of education ranks differently the incubator services, is to ask the entrepreneurs why they ranked in a certain way the services of an incubator. This could only be done with a face to face interview.

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Appendix A Survey in English

General data

1. What is your gender? (M/F)
2. What is your age?
   Less than 20
   20-29
   30-39
   40-49
   More than 50

3. What is the highest degree or level of education you have completed?
   High School degree
   Bachelor's degree
   Master's degree
   Doctor degree
   Other (specify)

Information related to the entrepreneur and the incubator

4. How much experience you have as an entrepreneur?
   Less than 1 year
   1 to 2 years
   3 to 4 years
   5 or more years

5. In what department of Guatemala is your business located?

Alta Verapaz	Baja Verapaz	Chimaltenango	Chiquimula
El Progreso	Escuintla	Guatemala	Huehuetenango
Izabal	Jalapa	Jutiapa	Petén
Quetzaltenango	Quiché	Retalhuleu	Sacatepéquez
San Marcos	Santa Rosa	Sololá	Suchitepéquez
Totonicapán	Zacapa		

6. To what industry does your business belong to?

Computer	Agriculture
Food	Finance
Manufacturing	Chemical/pharmaceutical
Hospitality	Telecommunications
Education	Health care

	Yes	No
Other		

7. Which of the following services are offered by the incubator you work with?   (Yes/No)

	Yes	No
Shared office space		
Workshops		
Networking events		
Counseling/mentoring services		
Financial management		
Product development		
Market entry		

8. In what business incubator are/were you participating?
   Campus Tec
   Alterna
   Pomona Impact
   Multiverse
   Incuba
   Centro Municipal de Emprendimiento (CME)
   Heuristica
   E10
   Other (specify)

9. How much time have you been a part of the incubator program?
   Less than 1 year
   1 to 2 years
   3 to 4 years
   5 or more years

10. How long ago have you graduated from the incubator?
    I'm still working with the incubator
    Less than 1 year
    1 to 2 years
    3 or more years

Questions related to the money, effort and time spent in my business

For the next set of statements indicate how much you agree with them (1 Totally disagree, 5 Totally agree)

Sacrifice

Monetary sacrifice

11. The majority of my income is spent on my hobbies (reversed).
12. I believe the incubator fee is too high
13. I try to control my monthly spending as much as I can

Emotional sacrifice

14. I wish I could spend more time with my family
15. I have missed important family meetings while working on my business
16. I believe my business takes a lot of my personal time

Effort sacrifice

17. My working schedule is longer than 8 hours a day
18. I have to constantly rearrange my schedule to fit business meetings
19. My holiday period is shorter than the average worker (28 days a year)

Questions related to the use of installations and customer service

Reliability

20. I constantly use the space offered by the incubator
21. The incubator often makes customer satisfaction surveys
22. Rate the services from 1 "less important" to 7 "most important"
    Shared Office space
    Workshops
    Networking events
    Conseling/mentoring services
    Financial management
    Product development
    Market entry

Questions related to workshops and events of the incubator

23. The incubator offers enough workshops and networking events
24. Incubator workshops helped me develop business skills

Questions about incubator mentors

25. The incubator staff are polite and respectful
26. Mentors know the latest business trends in Guatemala
27. The incubator staff (mentors and contact personnel) can solve our problems

28. If a problem can't be solved, the staff has external sources to handle it.
29. We have meetings with our mentor regularly to discuss our progress

Questions related to mentors of the incubator

30. I have a mentor that follows the progress of my business
31. I share with my mentor all my business' problems
32. I tend to follow the advice given by my mentor

Questions related to the working atmosphere of the incubator

33. The incubator promotes an environment of cooperation between entrepreneurs

Questions related to communication with the incubator
34. Response to any inquiry during business hours is immediate
Questions related to the incubator image
35. The incubator is rated positively in Guatemala
36. The incubator appears constantly in the news and media

Questions related to entrepreneur satisfaction

For the next set of statements indicate how much you agree with them (1 Totally disagree, 5 Totally agree)
37. I was interested in being a part of this incubator
38. I was delighted by the services of the incubator
39. The service received was better than expected

Questions related to entrepreneur perceived value

Outcome value
40. After entering the incubator, I have expanded my business network
41. After participating in the incubator, my business has an increased amount of clients
42. After participating in the incubator, the business earnings have increased

Experience value
43. At the price I paid, the service was acceptable
44. It was worth choosing this incubator rather than the others

Questions related to entrepreneur behavioral intention

45. I would express preference for the incubator over others
46. I will recommend the incubator
47. In the future I would like to help or work together with the incubator

Appendix B Survey in Spanish

Datos Generales

1. ¿Cuál es su género? (M/F) (DGen 1)
2. ¿Cuál es su edad? (DGen 2)
   Menor a 20
   20-29
   30-39
   40-49
   Mas de 50

3. ¿Cuál es el título o nivel de educación más alto que posee? (DGen 3)
   Secundaria
   Licenciatura
   Maestría
   Doctorado
   Otro (Especifique)

Información relacionada al emprendedor y la incubadora

4. ¿Cuánta experiencia tiene como emprendedor?   (DGen 4)
   Menos de 1 año
   1 a 2 años
   3 a 4 años
   5 o mas años

5. ¿En qué departamento de Guatemala se localiza su empresa? (DGen 5)

Alta Verapaz	Escuintla	Quetzaltenango	Santa Rosa
Baja Verapaz	Guatemala	Quiché	Sololá
Chimaltenango	Huehuetenango	Retalhuleu	Suchitepéquez
Chiquimula	Izabal	Sacatepéquez	
El Progreso	Petén	San Marcos	

6. ¿A qué industria pertenece su empresa? (DGen 6)

Computadoras	Agricultura
Comida	Finanzas
Manufactura	Química/Farmacéutica
Hospitalidad	Telecomunicaciones
Educación	Salud
Otro	

7. ¿Cuál de los siguientes servicios son ofrecidos por la incubadora con la que está trabajando? (DGen 9)

	Sí	No
Oficinas compartidas		
Talleres		
Eventos de networking		
Servicos de consejería o mentoría		
Administración financiera		
Desarrollo de producto		
Entrada al Mercado		

8. ¿En cuál incubadora de empresas está/estuvo? (DGen 7)
   Campus Tec
   Alterna
   Pomona Impact
   Multiverse
   Incuba
   Centro Municipal de Emprendimiento (CME)
   Heuristica
   E10
   Otro

9. ¿Por cuánto tiempo ha estado trabajando con la incubadora de negocios? (DGen 8)
   Menos de un año
   1 a 2 años
   3 a 4 años
   5 o más años

10. ¿Hace cuánto tiempo se graduó de la incubadora de negocios
    Aún no me he graduado
    Menos de 1 año
    1 a 2 años
    3 o más años

Preguntas relacionadas al dinero, esfuerzo y tiempo invertido en mi negocio

Para los siguientes enunciados indique qué tanto se identifica con ellos (siendo 1= "Totalmente en desacuerdo", 2="Parcialmente en desacuerdo", 3="Neutro", 4="Parcialmente de acuerdo" y 5="Totalmente de acuerdo")

Sacrificio monetario

11. La mayoría de mis ingresos los uso para mis pasatiempos
12. Creo que el precio de la incubadora es muy alto
13. Trato de controlar mis gastos mensuales al máximo

Sacrificio emocional

14. Desearía pasar más tiempo con mi familia
15. Me he perdido de importantes reuniones familiares por trabajar en mi negocio
16. Creo que mi negocio ocupa bastante tiempo personal

Sacrificio de tiempo

17. Mi horario de trabajo sobrepasa las 8 horas al día
18. Tengo que reprogramar mi horario constantemente para acomodar mis reuniones de negocio
19. Mi periodo de vacaciones es más corto que el de un trabajador promedio (28 días al año)

Preguntas relacionadas al uso de instalaciones y atención al cliente

Fiabilidad

20. Uso constantemente las oficinas compartidas
21. La incubadora a menudo realiza encuestas de satisfacción del cliente
22. Como emprendedor cuál es la importancia que le da a los siguientes servicios de incubadoras (siendo 1 el más importante y 7 el menos importante)
    Oficinas compartidas
    Talleres
    Eventos de networking
    Servicios de consejería/mentoría
    Administración financiera
    Desarrollo de productos
    Entrada al Mercado

Preguntas sobre talleres y eventos

23. La incubadora ofrece suficientes talleres y eventos de networking
24. Los talleres de la incubadora me ayudaron a desarrollar mis habilidades de negocio

Preguntas sobre el personal y los mentores

25. El personal de la incubadora es educado y respetuoso
26. Los mentores conocen las últimas tendencias en negocios de Guatemala
27. El personal de la incubadora (mentores y personal) puede resolver mis problemas
28. Si un problema no puede ser solucionado, el personal tiene recursos externos para

resolverlo

29. Tengo reuniones regulares con mi mentor para discutir sobre el progreso de mi empresa
30. Tengo un mentor que sigue el desarrollo de mi negocio
31. Comparto con mi mentor todos los problemas de mi negocio
32. Usualmente sigo los consejos que me da mi mentor

Preguntas sobre el ambiente de trabajo

33. La incubadora promueve un ambiente de cooperación entre sus clientes y socios

Preguntas sobre comunicación

34. Los mensajes enviados a la incubadora en horas laborales son respondidos inmediatamente

Preguntas sobre imagen de la incubadora

35. Trabajadores de la incubadora y guatemaltecos califican positivamente a la incubadora
36. Las noticias sobre la incubadora usualmente son positivas

Preguntas relacionadas a satisfacción del cliente

Satisfacción
37. Estaba interesado/a en formar parte de la incubadora
38. Estoy encantado/a con los servicios de la incubadora
39. El servicio recibido es mejor de lo que esperaba

Preguntas relacionadas al valor percibido por los emprendedores
40. Luego de entrar a la incubadora, mi red de contactos de negocios ha crecido
41. Luego de entrar a la incubadora, mi negocio tiene nuevos clientes
42. Luego de entrar a la incubadora, los ingresos de mi negocio han incrementado
43. Me parece aceptable el precio que pagué por los servicios de la incubadora
44. Considero que la elección de esta incubadora fue acertada

Preguntas relacionadas a la intención conductual
45. Yo expresaría preferencia por la incubadora donde estoy sobre otras
46. Recomendaré la incubadora a mis contactos
47. En el futuro me gustaría ayudar o trabajar junto con la incubadora

Appendix C Additional Results

The next table show how the entrepreneurs from Guatemala ranked the incubator services, it shows the percentage of people selecting the service in the top 3 or low 3. First table groups entrepreneurs based on their education.

Table C.1 Entrepreneurs ranking shared offices grouped by education

Degree	Participants	Top 3 (%)	Low 3 (%)
High School	10	50	40
Technical	5	60	40
Bachelor's	30	13.33	86.67
Master's	20	20	80
PhD	1	0	100

Table C.2 Entrepreneurs ranking networking events grouped by education

Degree	Participants	Top 3 (%)	Low 3 (%)
High School	10	70	20
Technical	5	60	20
Bachelor's	30	16.67	60
Master's	20	10	65
PhD	1	100	0

Table C.3 Entrepreneurs ranking counseling/mentoring services grouped by education

Degree	Participants	Top 3 (%)	Low 3 (%)
High School	10	30	50
Technical	5	0	100
Bachelor's	30	60	26.67
Master's	20	50	35
PhD	1	100	0

The variability between each education group is big, however for entrepreneur experience and age is not the same case. The next tables show the results for experience and age groups.

Table C.4 Entrepreneurs ranking shared offices grouped by experience

Experience (years)	Participants	Top 3 (%)	Low 3 (%)
Less than 1 year	17	23.53	76.47
1 to 2 years	16	25	68.75
3 to 4 years	12	33.33	66.67
5 or more years	21	19.05	80.95

Table C.5 Entrepreneurs ranking networking events grouped by experience

Experience (years)	Participants	Top 3 (%)	Low 3 (%)
Less than 1 year	17	29.41	58.82
1 to 2 years	16	50	31.25
3 to 4 years	12	16.67	58.33
5 or more years	21	14.29	57.14

Table C.6 Entrepreneurs ranking counseling/mentoring services grouped by experience

Experience (years)	Participants	Top 3 (%)	Low 3 (%)
Less than 1 year	17	47.06	41.18
1 to 2 years	16	50	43.75
3 to 4 years	12	25	50
5 or more years	21	61.90	23.81

Table C.7 Entrepreneurs ranking shared office grouped by age

Age (years old)	Participants	Top 3 (%)	Low 3 (%)
Less than 20	2	50	50
20 to 29	19	26.32	73.68
30 to 39	26	19.23	76.92
40 to 49	14	35.71	64.29
50 or more	5	0	100

Table C.8 Entrepreneurs ranking networking events grouped by age

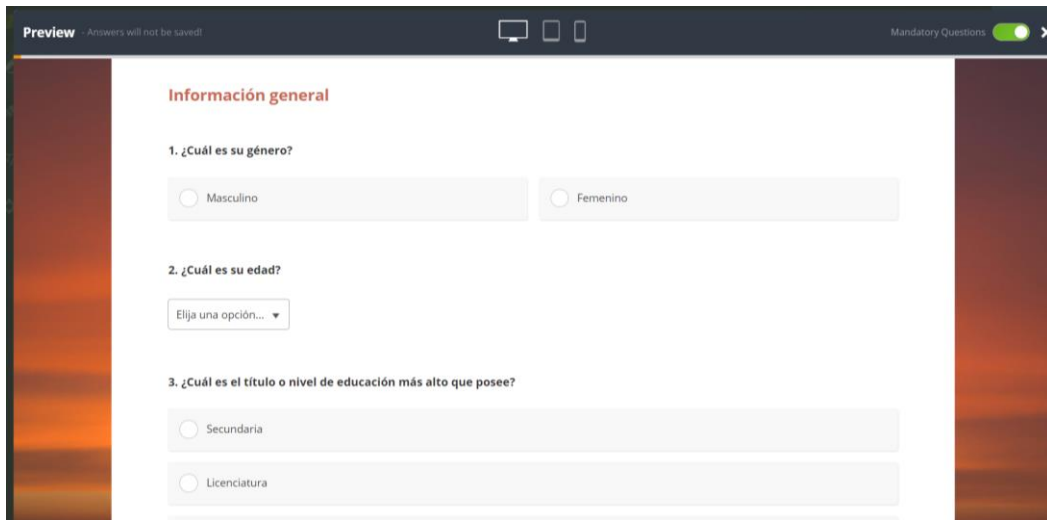| Age (years old)	Participants	Top 3 (%)	Low 3 (%)
Less than 20	2	50	0
20 to 29	19	15.79	73.68
30 to 39	26	34.62	46.15
40 to 49	14	28.57	35.71
50 or more	5	60	0

Table C.9 Entrepreneurs ranking counseling/mentoring grouped by age

Age (years old)	Participants	Top 3 (%)	Low 3 (%)
Less than 20	2	0	100
20 to 29	19	52.63	36.84
30 to 39	26	38.46	46.15
40 to 49	14	57.14	21.43
50 or more	5	80	20

Appendix D Survey interface

Additionally, the user interface of Surveyhero is presented

Picture D.1 Survey interface

The link survey is https://surveyhero.com/c/9bcee59a

Appendix E STATA Coding

Picture E.1 STATA code for data analysis of measured variables (part 1)

```
1   //import file
2   import excel "C:\Users\Jose Shin\OneDrive\Documents\Module 7\Cleaned data for STATA.xlsx", sheet("Sheet1") firstrow clear
3
4   /***Inversing sacrifice question 1 results and rename and label variables ***/
5   recode Sac1 (1=5) (2=4) (3=3) (4=2) (5=1)
6   {
7       // Sacrifice
8       {
9           forval i=1/9 {
10              rename Sac`i' Sac`i'
11              label var Sac`i' "Sacrifice_`i'"
12          }
13      }
14      // Service Quality
15      {
16          forval i=1/16 {
17              rename ServQual`i' SQ`i'
18              label var SQ`i' "Service Quality_`i'"
19          }
20      }
21  // Satisfaction
22      {
23          forval i=1/3 {
24              rename Sat`i' Sat`i'
25              label var Sat`i' "Satisfaction_`i'"
26          }
27      }
28  // Perceived Value
29      {
30          forval i=1/5 {
31              rename PerVal`i' PV`i'
32              label var PV`i' "Perceived Value_`i'"
33          }
34      }
35  // Behavioral Intention
36      {
37          forval i=1/3 {
38              rename BehInt`i' BI`i'
39              label var BI`i' "Behavioral Intention_`i'"
40          }
41      }
42
```

Picture E.2 STATA code for data analysis of measured variables (part 2)

```
42
43
44   //summary statistics of variables gender, age, education and experience
45   summarize Gender Age Education Experience
46
47   //factor loading of the factors
48   factor Sac* SQ* Sat* PV* BI*
49   factor Sac* SQ* Sat* PV* BI*, factor(5)
50   rotate, promax oblique blank(.30)
51
52   //alpha value of every variable of interest, and also creating a scale for each variable
53   alpha Sac*, c gen(Sac) item
54   alpha SQ*, c gen(SQ) item
55   alpha Sat*, c gen(Sat) item
56   alpha PV*, c gen(PV) item
57   alpha BI*, c gen(BI) item
58
59   summarize Sac SQ Sat PV BI
60   corr Age Gender Education Experience Timespent Sac SQ Sat PV BI
61
62   //Regressions
63   reg PV Sac Age Education Experience
64   estat vif
65   reg PV SQ Age Education Experience
66   estat vif
67   reg Sat SQ Age Education Experience
68   estat vif
69   reg Sat PV Age Education Experience
70   estat vif
71   reg BI SQ Age Education Experience
72   estat vif
73   reg BI PV Age Education Experience
74   estat vif
75   reg BI Sat Age Education Experience
76   estat vif
77
78   //Mediation effect of PV in relation of SQ->PV->Sat
79   reg Sat SQ PV Age Education Experience
80   estat vif
```

Picture E.3 STATA code for data analysis of measured variables (part 3)

```
75   reg BI Sat Age Education Experience
76   estat vif
77
78   //Mediation effect of PV in relation of SQ->PV->Sat
79   reg Sat SQ PV Age Education Experience
80   estat vif
81
82   //Mediation effect of PV in relation of SQ->PV->BI
83   reg BI SQ PV Age Education Experience
84   estat vif
85
86   //Mediation effect of Sat in relation of SQ->Sat->BI
87   reg BI SQ Sat Age Education Experience
88   estat vif
89
90   //Normality test
91   swilk Sac Sat PV BI SQ
92
93   //Correlation
94   spearman Sac Sat PV BI SQ, stats(rho p)
95
```

Picture E.4 STATA code for data analysis of incubator services ranking

```
95
96    //Use of another file with the data of the services ranking and the other variables
97    import excel "C:\Users\Jose Shin\OneDrive\Documents\Module 7\Q22 data.xlsx", sheet("Sheet1") firstrow
98
99
100   //Kruskal Wallis using experience as the independent variable, and the ranking of services as dependent variable
101   kwallis Oficinas, by(Experience)
102   kwallis Talleres, by(Experience)
103   kwallis Networking, by(Experience)
104   kwallis Consejeria, by(Experience)
105   kwallis Finanzas, by(Experience)
106   kwallis Productos, by(Experience)
107   kwallis Mercado, by(Experience)
108
109   //Kruskal Wallis using entrepreneur age as the independent variable, and the ranking of services as dependent variable
110   kwallis Oficinas, by(Age)
111   kwallis Talleres, by(Age)
112   kwallis Networking, by(Age)
113   kwallis Consejeria, by(Age)
114   kwallis Finanzas, by(Age)
115   kwallis Productos, by(Age)
116   kwallis Mercado, by(Age)
117
118   //Kruskal Wallis using entrepreneur education as the independent variable, and the ranking of services as dependent variable
119   kwallis Oficinas, by(Education)
120   kwallis Talleres, by(Education)
121   kwallis Networking, by(Education)
122   kwallis Consejeria, by(Education)
123   kwallis Finanzas, by(Education)
124   kwallis Productos, by(Education)
125   kwallis Mercado, by(Education)
126
```

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