



MSc in Sustainable Agriculture and Business

The Progress of Agricultural Entrepreneurship for Young Farmers: Evaluation of Investment Plans

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Abstract

The purpose of the present research was to examine the progress of agricultural entrepreneurship for young farmers in order to evaluate their investment plans. The sample consisted of 100 young farmers under 40 years old across Greece. Regarding the sustainability of the young farmers' investment plants, the results indicated high levels for the diversification of farming activities as well as their decision to continue farming investment and find new markets. The new job openings were also highly desired. The demand for support across different activities proved to be at high levels as young farmers asked for this service. They wanted to increase their production and expend to alternative agricultural activities. They were also concerned about the adoption of quality policies and the adaptation to climate change. The demand for advisory services was also high indicating that the young farmers in Greece have low levels of managerial and marketing skills on the preparation of a business plan.

A future study should include a more representative sample across Greece and more hypotheses to be generated including demographic characteristics and comparisons between different regions.

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Chapter 1 Introduction

1.1 Theoretical Background

The demand for sustainable food systems for food security and nutrition has become a significant international issue. The Food and Agricultural Organization of the United Nations stressed the important on security of food nutrition over the years 2010 2012, the 12% off world population suffered from lack of food nutrition in the form of chronic undernourishment or hunger. (Darmadji, 2016)

According to UNICEF (2013) in 2012 around the world there were found 101 million under the age of five years old suffered from lack of weight, 165 million suffered from obstacles suffered from obstacles growth and another 52 million suffered from shrinkage, and all these because of nutritional deficiency. (Darmadji, 2016)

October 16 has been declared as a World Food Day by the United Nations and in 2016 the theme was 'Sustainable Food Systems for Food Security and Nutrition'. by this way the United Nations stays on the important or food system sustainability in order to support food security and nutrition. (Darmadji, 2016)

The global market changes have made the European Union to reorganize and transform its agriculture several times in order to manage the consequential implications for food security. However, these reforms aimed on the one hand to contemplate food security issues and on the other to think about the viability of the rural areas. For these reasons, it became important to separate the connections among numerous dimensions of policy processes, farmers' choices and their consequences on the economy, society as well as the environment. (Balezentis et al, 2020)

An in-depth analysis of the EU agriculture reveals that the demographics and business numbers of entry and exit firm intertwist. The reason of this intertwist lies on the fact that the young farmers' entry is stimulated by means of the public support as well as farmers contributing to the viability of the rural areas as they enter the market. Therefore, it is crucial to examine the progress of young farmers in order to evaluate their investment plans. (Balezentis et al, 2020)

It has been acknowledged that the farmers who are engaged in the food production are in a difficult situation as they have to tackle the increasing demand for food while they have constant and limited resources (Fischer et al., 2012). Consequently, the intensification of agriculture arises which triggers negative environmental impacts. However, more developed countries or regions try to overcome these consequences by encouraging the search for advanced modernization of agriculture which may diminish the negative effects of intensive farming while keeping or boosting agricultural production and not lessening the neighboring ecological systems (Song et al., 2019; Lu, 2019).

The European Union introduced a Common Agricultural Policy (CAP) with a variety of financial schemes to offer financial survival for more productive and sustainable agriculture. The CAP was introduced as a typical price support measure to ensure financial stability of farmers in the form of direct payments. Other significant goals of CAP include economic capability, the protection of agriculture and the labor force employed in agriculture to be continuously replaced. Hence, in 2014 it was introduced the payment for young farmers (PYF) scheme under the CAP in order to address the above issue. Under this scheme eligible were European Union citizens 18 to 40 years old, willing to start an agricultural business. This CAP measure continued for six years, 2014-2020. Besides the PYF scheme, the CAP umbrella included non-direct support measures for young farmers such as rural development programs

(RDP) and consultancy for the purposes of generational change. (Balezentis et al, 2020)

1.2 Key Terms

This section acquaints the reader with the main terms of the study, which namely are agricultural entrepreneurship and young farmers.

Agricultural Entrepreneurship

In the academic literature there is no fixed definition about ‘entrepreneurship’ even though there is a wide diversity of definitions in the academic literature. The term “entrepreneur” in daily language is used interchangeably with sole-trader, business owner, starter or for someone who is self-employed. In the agricultural literature, there is a collection of operational definitions of the agricultural entrepreneur, but this is not helpful as they build mostly on the classical economist Schumpeter (1934) as they are fueled by disciplinary inheritance or deviate from the personal psychologist McClelland (1967). Thus, the focus on entrepreneurship definitions has shifted from individual traits (such as need for achievement) toward entrepreneurial behavior (for example entrepreneurial orientation), cognitions (such as decision making), and social capital (for example networks). (Lans et al, 2017)

For over a decade there is a growing compromise that the distinctive features of entrepreneurship are identification, evaluation, and search to replace business by entrepreneurial opportunities. Entrepreneurial opportunities involve new means-ends-relationships and are an attractive for agricultural entrepreneurship. (Shane and Venkataraman 2000)

However, the search for opportunities as a kernel of agricultural entrepreneurship highlights the innovative, alert, practical, and interacting aspects of entrepreneurial activity (DeTienne and Chandler 2004). This empowers the researcher to deviate from the question of “who is the entrepreneur?” to the question “what does the entrepreneur do?” (Gartner 1989).

The concept of entrepreneurship involves both universal elements such as risk taking and proactiveness (Rauch et al. 2009) and other elements that depend more on the type and context of entrepreneurship such as the entrepreneurial learning (Lans et al. 2008).

In agricultural entrepreneurship the following should be considered:

- ✚ The Agricultural Sector. The agricultural modernization in postwar western societies successfully met the original goals to provide food security. However, the system did not encourage diversification and innovative entrepreneurship. Hence farmers were trained to produce food and fibers. (Vesala et al.2007)
- ✚ The Direct Farm Environment Farms. A family farm has opportunities to build on much bigger new activities if it is located near to urbanized areas with good public services and a well-developed supporting network. (Wilson 2008)
- ✚ The Family Firm Agriculture consists of small family farms. The priorities of farming families include survival, rural lifestyle, protecting family heritage, and passing through a healthy farm on to the next generation (Jervell 2011).
- ✚ Gender Farm. The role of women in agricultural entrepreneurship is important as in the majority of situations farm women start and develop new on-farm business activities (Bock 2004).

Entrepreneurial Farmer

The entrepreneurial farmer has been defined as the person who has the entrepreneurial spirit and is characterized by the outlook of independence, energy, great desire, creativity, taking risks and challenge trier; moreover, the entrepreneurial farmer has the knowledge and skills necessary for running a farm. (Priyanto, 2008)

Young Farmers

Consistent with the requirements of CAP, a young farmer is defined as a person engaged in farming activities and is aged less than 40 years old. (Balezentis et al, 2020)

1.3 Aim and Objectives

The purpose of the dissertation is to examine the progress of agricultural entrepreneurship for young farmers in order to evaluate their investment plans. Since sustainability lies in the heart of the CAP umbrella, three research objectives were formulated to examine young farmers' investment plans in terms of sustainability (economic, social and environmental).

The objectives of the dissertation have as follow:

1. To investigate if the young farmers' investment plants were sustainable (economic and social)
2. To assess if their investment plan supported different activities (economic, social, and environmental sustainability)
3. To examine if their investment plan was supported form advisory services (economic, social and environmental sustainability)

Accordingly, the main variables of the study have as follow: sustainability of young farmer's investment plants, support of different activities and advisory services.

The research philosophy is based upon positivism and the research upon the deductive hypothesis. A survey will be used to gather quantitative data from a sample of 100 young farmers to meet the objectives of the study. (Saunders et al, 2009)

1.4 Rationale

1.4.1 Agriculture in EU & Greece

The total sum of the farms within the borders of the European Union reaches to 10.467.850 and the standard output €359.40 billion. However, the overall number of farmers decreased from 13.8 million to 10.5 million over the period of 2007–2016 as a result of the ageing of the farming society and the reorganization processes. The age group of young farmers under 44 years old in 2007 was 3.0 and by 2017 had decreased to 2 million. However, the age group under 35 years old experienced the greatest decline as their number declined by 37.7% over the decade 2007 – 2017. The age group of over 55 years old composes more than 50 percent of farm managers in the EU and this has been recognized as main problem in the agricultural society. (Eurostat, 2018)

In Greece, the total holdings of farms of natural persons reaches to 684.250. From them, 445.831 are male holders and the rest 204.319 female. However, the age structure reflects the aging problem in the respective society as the overwhelming majority 63% is over 55 years old. (Table 1) (ELSTAT)

The EU in an attempt to solve the ageing issue in the respective industry distributed to young farmers €3.2 billion over the period 2007- 2013 (Pillar I) and further €6.4 billion over the period 2014-2020 (Pillar II). The total amount distributed over the period 2007–2020 was €9.6 billion from the EU budget. However, the total public support amounted to €18.3 billion because the Member States were to co-finance the measure to support young farmers set up under Pillar II.

Table 1-1. Age Structure of Greek Farmers (Source ELSTAT)

Age Group	Number of Farmers (Farm owners)
15-24	2,511
25-34	21,469
35-44	80,655
45-54	151,186
55-64	179,946
65>	248,483
Total	684,250

1.4.2 Theoretical Rational

The purpose of the dissertation is to examine the progress of agricultural entrepreneurship for young farmers in order to evaluate their investment plans. Taking into consideration that sustainability lies in the center of EU Common Agricultural Policy (CAP) and the support mechanisms provided since 2014, this research examines young farmers' investment plans in terms of sustainability – economic, social, and environmental. The results of this research will shed light on the progress of young farmer's entrepreneurship.

The results of the research will clearly reveal the progress of young farmers' entrepreneurship along with the EU respective policies. Such analysis will provide insights about the support mechanisms provided to young entrepreneur farmers as well as if there are needs to be met. Moreover, the analysis will be useful for academics and professionals in the respective industry as they will evaluate the existing conditions and might need to propose more effective measures to reform the agricultural policy.

Furthermore, the present study might work as a case study about the progress of young farmers' entrepreneurship in Greece and to compare it with other age groups or by size of fields and crops among others.

Consequently, the research contributes towards the scientific discussion about the progress of young farmers' entrepreneurship along with sustainability as it is the cornerstone of the EU CAP mechanisms providing empirical insights.

1.5 Dissertation Structure

The dissertation is structured in five chapters.

Chapter 1 works as an introductory chapter as it leads the reader to the topic and the core concepts of the research by explaining the key terms. Moreover, it introduces the aim and objectives of the research along with the research design. The conversation was further improved with the rationale of the study, which was devoted to the current situation of agricultural sector in EU and Greece and the theoretical rationale devoted to academics and professionals of the respective sector. The dissertation structure brings Chapter 1 to a close.

Chapter 2 discusses the most recent academic literature related to the aims and objectives of the study. Hence the conversation starts with the CAP literature followed by the review of young farmers and sustainability. Previous research about young farmers in Greece and abroad brings the literature review chapter to a close.

Chapter 3 is devoted to the methodology employed in order to accomplish the research objectives of the study. Hence, the discussion was revolved around the following topics: research approach and strategy, data collection methods, sample size, reliability, and validity of the questionnaire. The methodology chapter concludes with the ethical issues considered in the study.

Chapter 4 analyses the data gathered. Hence, the analysis starts with reliability tests and then the demographic profile of respondents is presented. Then, the research hypotheses are examined.

Chapter 5 works as a conclusions and discussion chapter as it summarizes the main results of the study. First of all, the results are presented along with the research hypotheses and are linked with the literature review. Then, the managerial implications are discussed based on the previous analysis. Chapter 5 concludes with limitations of the present study followed by recommendations for future research.

Chapter 2 Literature Review

Chapter 2 discusses the most recent academic literature related to the aims and objectives of the study. Hence the conversation starts with the entrepreneurship in the agricultural sector and the conversation is enriched with the entrepreneurial farmers' characteristics and the factors influencing farmers' entrepreneurship. Then, the young farmers' sustainability is discussed under the following topics: the effects of CAP payments, young farmers' trend, young farmers, and rural sustainability. Moreover, direct payments and rural development measures are discussed along with the quality of services provided by the Minister.

2.1 Entrepreneurship in the Agricultural Sector

It has been acknowledged by academics that the mainstream entrepreneurship has neglected the agricultural sector because of the complex mechanisms of market regulations besides the fact that the agriculture by itself is a special case. However, in the academic agricultural entrepreneurship literature there are various interesting issues. One of them is innovation which by itself is a distinguishing characteristic of entrepreneurship. An analysis of the external environment of the agricultural sector reveals that it is governed by small family firms with many rivals as well as traditional products. However, it provides several entrepreneurial opportunities as for example the development of new products as well as innovations in the business process, supply, and marketing. (Pindado and Sánchez, 2017)

Agriculture has become more market-oriented since 1990s when the agricultural entrepreneurs started to develop new products characterized by higher food quality. This was attributable to both, the liberalization of agricultural trade and Common Agricultural Policy (CAP) reforms. (Giannakis and Bruggeman, 2015)

For example, the geographic indications provide growth opportunities for agricultural firms which employ suitable strategies as well as for those functioning in a niche market (Gellynck et al., 2012).

By employing new technology, the agricultural enterprise can become more productive even though its size may change as a result of the nature and type of technology (Micheels and Nolan, 2016).

Therefore, it could be concluded that innovation is component of the entrepreneurial behavior of farmers. In the following subsection the discussion is focused on the entrepreneurial farmer's characteristics followed by the factors that influence farmers' entrepreneurship.

2.1. Entrepreneurial Farmers' Characteristics

In order to overcome the obstacle for sustainable food systems for food security and nutrition, it is imperative to understand that farmers should be viewed as the main actors in production. Historically, the governments around the world have made efforts to increase food production by emphasizing on aspects of cultivation - on farm- by offering cultivation technology packages. Then, the government emphasis shifted from the aspects of cultivation towards implementation. The advantage of implementation is that those farmers are not only motivated, but they are also focused and directed in order to be able to implement the whole technology package which is offered by the government. Therefore, in the majority of the situations, the number of farmers selected as a mean of government policy is increased and the farmers have to comply. (Darmadji, 2016)

The entrepreneurial characteristics though are seen as significant factor in the concept of entrepreneurial farmers. In Priyanto's (2006) approach farmers are seen as subjects with the following characteristics the comply with the entrepreneurial spirit: internal potential independent attitude, dare to try, vivacious, excessive desire, have a need for accomplishment, imaginative,

brave risk and also have the knowledge and skills required to accomplish their tasks.

Wirasasmita (1994) claimed that entrepreneurial spirited persons are both creative and risk takers. In Machfoed's (2004) view, entrepreneurship is seen as an innovator capable of transforming opportunities into new ideas and also innovative and responsible in preparing, managing, and measuring risk; furthermore, it is seen as an innovator who is an independent thinker and someone able to reflect failure as study materials.

Further research has revealed that the entrepreneurial farmer is a significant factor in establishing the success of market-oriented businesses (Saragih, 1998). Hartono (2003) stressed the need for developing innovator and motivated entrepreneurial farmers. Both Soetriono (2006) and Widodo (2008) claimed that entrepreneurship was important for agribusiness development. Additionally, Wibowo and Subiyono (2005) commented on the need of the growth of entrepreneurship needs. Finally, Priyanto (2004, 2008) concluded that the number of entrepreneurial farmers should increase in order to face the pressure of the non-advantageous market environment.

2.1.3 Influencing Factors of Farmers' Entrepreneurship

Past studies related to the factors affecting peasant entrepreneurship have concentrated on education, human capital accumulation and other skills and capabilities among others. Therefore, it has been revealed that farmer entrepreneurs have higher education degrees as well as agricultural professional identification compared to ordinary farmers (peasants). However, in order to succeed in entrepreneurship, they need capital accumulation. Moreover, it has been acknowledged that the key ingredients that lead to success in farmers' entrepreneurship are as follow: formal education, training, work experience as well as management experience. Additionally, it has been

revealed that farmer entrepreneurs with higher education, talent, further business experience as well as management ability can get increased financial support for their business. (Ping Yuan, 2017)

Furthermore, there have been studies that investigated the psychological characteristics and entrepreneurial skills of entrepreneur farmers as a factor for success. By their investigation, it was concluded that the entrepreneurs' skills should be composed of two levels; the first level refers to functional skills, as for example interpersonal skills and management, while the second level includes advanced core skills such as growth orientation, innovation, adventure, rural business networks as well as information and communication technology among others. (Ping Yuan, 2017)

Another influential factor in farmers' entrepreneurship is the regional financial environment. The factors that shape farmer's growth and roots in entrepreneurship are influenced by cultural traditions and economic circumstances. Moreover, cultural factors play a critical role in the success of farmers' entrepreneurship. (Ping Yuan, 2017)

Other studies concentrated on the entrepreneurial role models. Past studies revealed that both entrepreneurship intent and entrepreneurial behavior are influenced by behavior entrepreneurial traditions in rural areas. Such enterprises can succeed by one external factor: the government's ability to promote entrepreneurship. (Ping Yuan, 2017)

Similarly, the external environment heavily influences the farmers' entrepreneurship. As it is known the rural environment comprises entrepreneurial constraints besides entrepreneurial opportunities. In the environment the following are included: natural environment, economic environment, policy environment and social environment; additionally, the

rural areas are very dissimilar in population density, infrastructure, and market access compared to urban areas. (Ping Yuan, 2017)

Past research concentrating in China revealed that there was a strong association between farmer entrepreneurs and following: working experience, entrepreneurial experience, training experience and entrepreneurial resources; the farmer entrepreneurs were influenced by psychological characteristics and both demographic and environmental factors; moreover, the entrepreneurial opportunities were affected by the social network size of entrepreneur farmers. (Ping Yuan, 2017)

Furthermore, it was revealed that the entrepreneurial behavior of farmers was affected by the financial environment of the rural area as well as the existed credit constraints. Additional research discovered that the development of the rural financial environment is encouraged by the excellent rural financial environment. Likewise, the new rural financial institutions affect positively the entrepreneurial choice of farmers. (Ping Yuan, 2017)

Lin Qian's (2001) study revealed that the following factors influence farmers' entrepreneurship in China: institutional factors, external environment, and their personal qualities.

Zhu Mingfeng (2010) concluded that entrepreneurial farmers are highly influenced by both personal psychological capital and social capital. Other influential factors include the family environment and its size, and the education level attained.

To conclude, by the above review of past studies it became clear that the factors that affect farmers' entrepreneurship are summarized into the following: farmers' demographic characteristics, farmers' psychological characteristics and entrepreneurial skills, rural environment, rural environment and infrastructure, policy factors as well as social and cultural factors among others.

The following section examines the academic literature about young farmers.

2.2 Young Farmers for Agricultural Sustainability

The Common Agricultural Policy (CAP) introduced by the European Union aimed to provide financial subsistence for more sustainable and productive agriculture. In order that aim to be achieved, under the CAP umbrella there were various financial mechanisms. Among others, it aimed to address the issue of assuring sustainability of rural regions across the 28 EU Member States' by maintaining economic viability, preserving the culture, and sustaining a continuous replacement level of labor force, employed in agriculture. As a result of this, a new scheme introduced in 2014 under the CAP umbrella, the payment for young farmers (PYF). Additionally, the rural development programs (RDP) were introduced, having the form of one of the non-direct support measures for young farmers. The CAP measures supported the setting up of young farmers under 40 years of age over the period 2014-2020. (Balezentis et al, 2021)

2.2.1 The Effects of CAP Payments

Empirical research has provided evidence that direct payments, including PYF scheme, affected negatively various rural sustainability dimensions and mostly the economic and environmental ones (Ciliberti and Frascarelli, 2015). However, some other studies have concluded on the positive effect of direct payments on rural sustainability (Cortignani et al., 2017).

The young farmers in order to associate their future income with farming activities, they would be more interested to save the quality of soil for future generations compared to older farmers with a working horizon 5-10 years. On a theoretical basis, young farmers are asked to accept innovation and take high risk and by this way to reshape the agricultural sector. The PYF scheme aimed

also to overcome the entry barriers to farming activities and enable the entrance of young people into agricultural activities and thus to retain a beneficial generational change into agriculture sector. (Balezentis et al, 2020)

2.2.2 Young Farmers' Trend

Since the introduction of CAP, the academic literature on young farmers is growing. In Emmerling and Pude's (2017) view young farmers are the most defenseless group within the agriculture sector and for this reason additional support measures aiming at increasing their capabilities, are required.

Anderson et al's (2017) research examined the need for various support programs for young farmers across the 28 EU Member aiming to facilitate banking investment decisions. Micu (2018) claimed that it is vital to support young farmers for two reasons: first of all, their educational level will be increased and then to stop the emigration from rural regions across the new EU Member States.

However, Rovný (2016) concluded that there was a lowering trend of young farmers across the EU and as a result of this he proposed that the support measures for young farmers under the CAP umbrella should be improved. Similarly, Burny and Terrones Gavira (2016) supported the increase in financial support in order to facilitate the startups in rural regions. Further evidence provided by Kontogeorgos et al's (2014) study who perceived the negative trend of young farmers as a threat to the whole EU agriculture sector.

Furthermore, scientific researched concentrated on the low percentages of young farmers across the EU. The main obstacles to enter agricultural business were summarized as follow: obstacles in obtaining land, machinery as well as other production related factors (Šimpachová Pechrová et al., 2018). Further obstacles include immaturity in strategic planning and marketing or even low as well as inexperience in sales (Szerletics, 2018). For this reason, the

CAP umbrella includes a variety of consultations aiming to assist young farmers during the whole procedure.

2.2.3 Young Farmers and Rural Sustainability

Research has provided empirical evidence that young farmers have high entrepreneurial spirit, and they are much more environmentally concerned compared to older colleagues (Hamilton et al., 2015). Likewise, Urdiales et al. (2016) study supported younger farmers' increased concern about environmental protection. Later, the study of Defrancesco et al. (2018) confirmed that young farmers were oriented towards rural sustainability especially with reference to the environmental component, but they needed encouragement to take control of farming business from older generations and join the respective sector.

Further research revealed that the EU financing mechanisms are improper and demotivate young farmers to continue with their agricultural activities (Papadopoulou et al., 2019).

Duric and Njegovan (2015) scrutinized the CAP measures with reference to support to young farmers. They concluded that while the CAP measures aiming to support young farmers by assuring the economic stability of newly established farms, more attention should be made by both EU and national governments to assist farmers in acquiring land. By this way more young people will be motivated to engage in agricultural activities and stay in rural areas. (Duric and Njegovan, 2015)

Similarly, Laforge et al (2018) scrutinized the CAP support measures for young farmers. They concluded on a major gap between the government actions and the problem faced by young farmers. At the same time Schreiner et al.'s (2018) research provided evidence that even though the government's aim was to finance mentoring, advising as well as practical training of new farmers, two major issues should be solved: land and financial capital.

Likewise, Djuric et al. (2019) examined the mechanisms supporting young farmers. Their research revealed that there is a number of financial support schemes, such as LEADER+ and Young Farmers, which encourage young person's motivation to join in agricultural activities. However, all those support schemes are offset by the CAP measures, which encourage land prices to increase and eventually act as a significant entry barrier to young farmers. Therefore, they concluded that CAP measures have rather unfavorable effects upon young farmers than beneficial. (Djuric et al., 2019)

Equally, Kan et al. (2018) assessed young farmers' support programs and concluded that the issue of gender equality should be prioritized in order to serve the sustainability of rural regions better.

Finally, Katchova and Ahearn (2016) supported that the social sustainability of the rural regions would be benefited by the state support to young farmers. By this way, the overall engagement of farming activities of young farmers would be facilitated as the rates of part – time occupation will be lowered. (Katchova and Ahearn, 2016)

2.2.4 Direct Payments and Rural Development Measures

Balezentis et al (2020) assessed the impact of CAP on the sustainability of rural regions. In their research they focused on the influence of direct payments for young farmers and rural development measures initiatives. Hence, they examined both the decisions and intentions of young farmers in Lithuania according to the rural sustainability concept. Additionally, they considered payments for farm establishment and expansion along with advisory services. By this way, they could untangle the feasible consequences of the CAP support on farming sustainability. A questionnaire survey was employed to meet the objectives of their study. It was structured within three main groups of questions. Hence, the first group of questions assessed the

benefits from the PYF scheme, the second the demand for support with reference for different activities and finally, the third the demand for advisory services. The questions that were chosen in each question group aimed to cover as many dimensions of sustainability as possible. However, some questions were related to multiple dimensions of sustainability. (Balezentis et al, 2020)

Their sample size consisted of 473 young farmers in Lithuania. Their study provided evidence that the young farmers' support system under the CAP umbrella had the strongest perceived effect on income support in Lithuania without significant differences through different groups of farmers. (Balezentis et al, 2020)

Further investigation revealed that the investments were significantly lower for corps compared to other farming types. However, Lithuanian young farmers had environmental awareness probably because the demand for such services was comparatively low. Finally, it was provided evidence that the young farmers in Lithuania had low levels of business administration and marketing skills, since the demand advisory services on the business plan preparation was relatively high. Based on this result they suggested the development of the social dimension. (Balezentis et al, 2020)

2.2.5 Measure 112 'Setting up of Young Farmers'

Kontogeorgos et al (2014) examined the perceptions and expectations of young farmers in Greece about the service quality provided by the Ministry of Rural Development and Food in central Macedonia – Greece (MRDF). A questionnaire survey was employed to meet the objectives of the study. Hence, the SERVQUAL approach was used to examine the service quality provided by the MRDF to young farmers. The SERVQUAL approach assumes that service quality can be measured by defining the disparity between the customers' expectations for a specific service and the assessments of the actual performance of the service provider. In order to determine service quality, they

used the SERVQUAL scale, which was created in 1985 by Parasuraman Berry and Zeithaml and originally composed of 10 dimensions, which were reduced to the following 5: Reliability, Responsiveness, Assurance, Empathy and Tangibility. (Kontogeorgos et al, 2014)

Their sample size consisted of 146 young farmers, who were participating in the measure 112 'setting up of young farmers' under the Common Agricultural Policy (CAP), Pillar II. (Kontogeorgos et al, 2014)

It was revealed that the level of quality of the services provided by Ministry of Rural Development and Food in central Macedonia – Greece (MRDF) was not satisfactory. Additional assessment disclosed that there were gaps in the quality characteristics with reference to the “social skills” of the employees’ of MRDF’s. (Kontogeorgos et al, 2014)

2.3 Conclusion

This section examined the academic literature in accordance with the objectives of the study.

It could be concluded that economic sustainability dimension of young farmers support system takes the form of a financial injection to local rural economy (Adamowicz and Szepeluk, 2016).

Furthermore, it is difficult to evaluate the PYF since there are more financial instruments available to young farmers (Šimpachová Pechrová and Šimpach, 2018).

Chapter 3 Methodology

3.1 Introduction

This chapter presents the methodology of the study. First of all the research hypotheses are presented and then the questionnaire and the sample size of the study.

3.2 Research Hypotheses

The purpose of the dissertation is to examine the progress of agricultural entrepreneurship for young farmers in order to evaluate their investment plans. Three research questions were formulated and examined young farmers' investment plans in terms of economic, social and environmental sustainability.

The objectives were defined as follow:

1. To investigate if the young farmers' investment plants were economically and socially sustainable.
2. To assess if their investment plan supported different activities in terms of economic, social, and environmental sustainability.
3. To examine if their investment plan was supported from advisory services in terms of economic, social and environmental sustainability.

Based on the above objectives the following research hypotheses were formulated.

Research Hypothesis 1

The aim of Research Hypothesis 1 was to investigate the relationship and difference between the 'benefits of the PYF scheme', the 'demand for advisory services' and the 'demand for support across different activities'.

Therefore, the following hypothesis was formulated.

H_{O1} There is no relationship between the 'benefits of the PYF scheme' , the 'demand for advisory services' and the 'demand for support across different activities'.

H_{A1} There is (some) relationship between the 'benefits of the PYF scheme' , the 'demand for advisory services' and the 'demand for support across different activities'.

Research Hypothesis 2

The purpose of Research Hypothesis 2 was to investigate if the young farmers' investment plants were economically and socially sustainable.

Therefore, the hypothesis has as follow:

H_{O2} There is no relationship between the items of the PYF scheme ('benefits of the PYF scheme').

H_{A2} There is (some) relationship between the items of the PYF scheme ('benefits of the PYF scheme').

Research Hypothesis 3

The aim of Research Hypothesis 3 was to assess the demand for support across different activities in terms of economic, social, and environmental sustainability.

Hence, the research hypothesis was formulated as follow:

H_{O3} There is no relationship between the items for demand support across different activities ('demand for support across different activities').

H_{A3} There is (some) relationship between the items support across different activities ('demand for support across different activities').

Research Hypothesis 4

The aim of Research Hypothesis 4 was to examine young farmers' demand for advisory services in terms of economic, social and environmental sustainability.

H_{O4} There is no relationship between the items for support from advisory services ('demand for advisory services').

H_{A4} There is (some) relationship between the items for support from advisory services ('demand for advisory services').

The next section presents the questionnaire that will be used in the study.

3.3 Questionnaire

The questionnaire of the study is composed of two parts. The first part gathers information about the main variables of the study which namely are: 'benefits of the PYF scheme' and then about the 'demand for support across different activities' and the 'demand for advisory services'. The second part gathers information about the demographics of respondents such as gender, level of education, farming type and residence.

Thus, the 'benefits of the PYF scheme' were assessed with six items which are presented on table 3-1 below. The mean of these items produced the benefits of the PYF scheme variable. Items A1 to A3 measured young famers' investment plan in terms of economic sustainability, while items A4 to A6 in terms of social sustainability. Respondents rated their agreement on a 5 point Likert scale.

Table 3-1 ‘benefits of the PYF scheme’

	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
A1. I found new markets.					
A2. I decided to continue farming investing.					
A3. I diversified my farming activities.					
A4. My income was supported.					
A5. My activities created new work places.					
A6. I set up in a rural area.					

Likewise, the ‘demand for support across different activities’ was measured with six items. The mean of these six items produced the demand for support variable. Items B1 to B4 measured the support in terms of economic sustainability. The item B5 measured the demand in terms of social sustainability while item B6 in terms of environmental sustainability. Table 3-2 presents the items discussed above. Respondents rated their agreement on a 5 point Likert scale.

Table 3-2 ‘demand for support across different activities’

Statement	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
B1. I expanded the crop production.					
B2. I expanded livestock production.					
B3. I expanded alternative activities to agriculture.					
B4. I processed the production.					
B5. I adopted quality policies.					
B6.I adapted to climate change.					

Similarly, the ‘demand for advisory services’ was measured with six items. The mean of these six items produced the ‘demand for advisory services’ variable. Items C1 to C3 measured the demand for advice in terms of economic sustainability. The item B4 measured the demand in terms of social sustainability and the items C5 and C6 in terms of environmental sustainability. Table 3-3 presents the items discussed above. Respondents rated their agreement on a 5 point Likert scale.

Table 3-3 ‘demand for advisory services’

Statement	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
C1. My investment plan was supported by advisory services about the management of machinery.					
C2. My investment plan was supported by advisory services about sales improvement.					
C3. My investment plan was supported by advisory services about the business plan preparation.					
C4. My investment plan was supported by advisory services about the overall cooperation development.					
C5. My investment plan was supported by advisory services about the implementation of agri-environmental requirements.					
C6. My investment plan was supported by advisory services about adaptation to the climate change.					

3.4 Validity

The questionnaire was valid because it was set up by professionals and tested in empirical research. (Saunders et al, 2009)

Therefore, the measurement signifies the characteristics that occur in the phenomenon under investigation. In this study, questionnaires' face validity or measurement content was examined. This was performed with the pilot test. (Sullivan and Gilbert, 2004)

3.5 Reliability

Reliability refers to the proportion of systematic variation in a scale. The coefficient alpha or Cronbach's alpha was employed in this study in order to examine the reliability in both pilot and main study. if the scale is less than 0.6, then the internal consistency is unsatisfactory. (Sullivan and Gilbert, 2004)

3.6 Sample

The sample size was randomly selected from the databases of union farmers with the help of SPSS program. Thus, at the beginning 10 respondents were selected or the pilot study and then 100 for the main.

Chapter 4 Empirical Analysis

4.1 Introduction

The aim of the present chapter is to analyze the data gather and examine the research hypotheses of the study. The data analysis starts with the examination of questionnaire's reliability and then the demographic profile of

respondents is presented. In the next section, the main variables of the study are presented by examining their main characteristics in order to decide about the tests that will be used in the subsequent section to examine the research hypotheses.

4.2 Questionnaire’s Reliability

In order to determine questionnaire’s reliability Cronbach’s alpha was applied. According to the test, a measurement scale is reliable if Cronbach’s alpha is over 0.6. Table 4-1 below summarizes the results of the tests for pilot and main study respectively and the SPSS outputs are presented in Appendices II and III.

Consistent with the results, the Pilot survey, to start with, the variable referring to the ‘benefits of the PYF scheme’ (0.620) had moderate reliability and the variable referring to the ‘demand for advisory services’ (0.992) had high reliability. However, the variable referring to the ‘demand for support across different activities’ (0.517) was not found reliable. Overall, the whole questionnaire had high reliability (0.875). (Table 4-1, Appendix II)

Variables	Item (6 items per each variable)	Measurement reliability coefficients (Cronbach’s alpha)	
		Pilot Survey	Survey
Benefits for the PYF Scheme	6	0.620	0.607
Demand for Support Across Different Activities	6	0.517	0.270
Demand for Advisory Services	6	0.992	0.977

Whole Instrument	18	0.875	0.794
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Table 4-1 Measurement Reliability Coefficients for Pilot & main Study

As regards the main study, it was revealed that the results were similar to the pilot study. Hence, the ‘benefits of the PYF scheme’ (0.607) had moderate reliability and the variable referring to the ‘demand for advisory services’ (0.977) had high reliability. However, the variable referring to the ‘demand for support across different activities’ (0.270) was not found reliable. Overall, the whole questionnaire had good reliability (0.794). (Table 4-1, Appendix II)

In the next section the demographic profile of the subjects participating in the study is presented.

4.3 The Demographic Profile of the Subjects

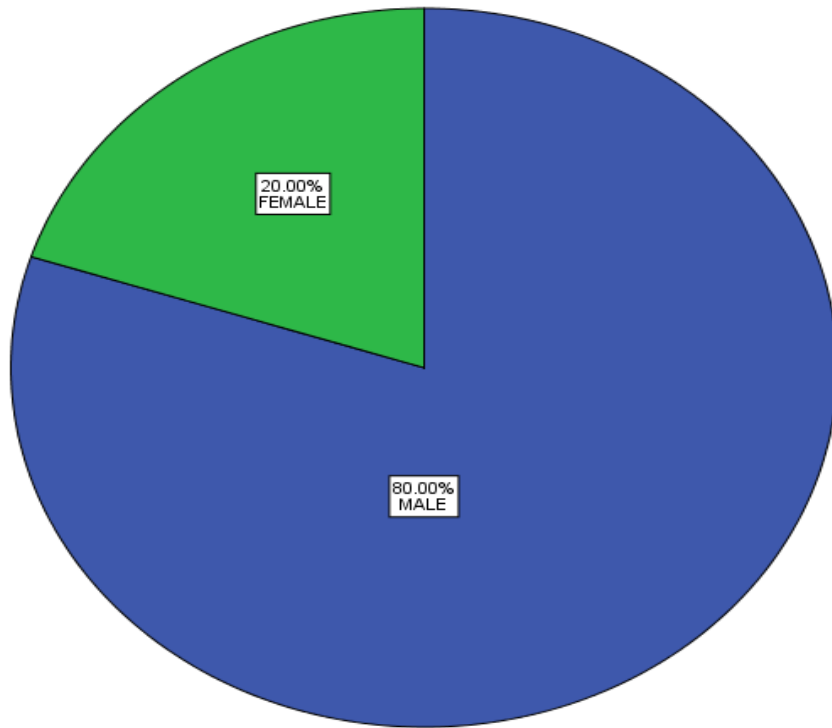


Figure 4-1 Subjects distribution by gender.

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
	MALE	80	80.0	80.0	80.0
Valid	FEMALE	20	20.0	20.0	100.0
	Total	100	100.0	100.0	

Table 4-2 Subjects frequency by gender.

80% of the respondents were male and 20% female. (Figure 4-1, Table 4-2)

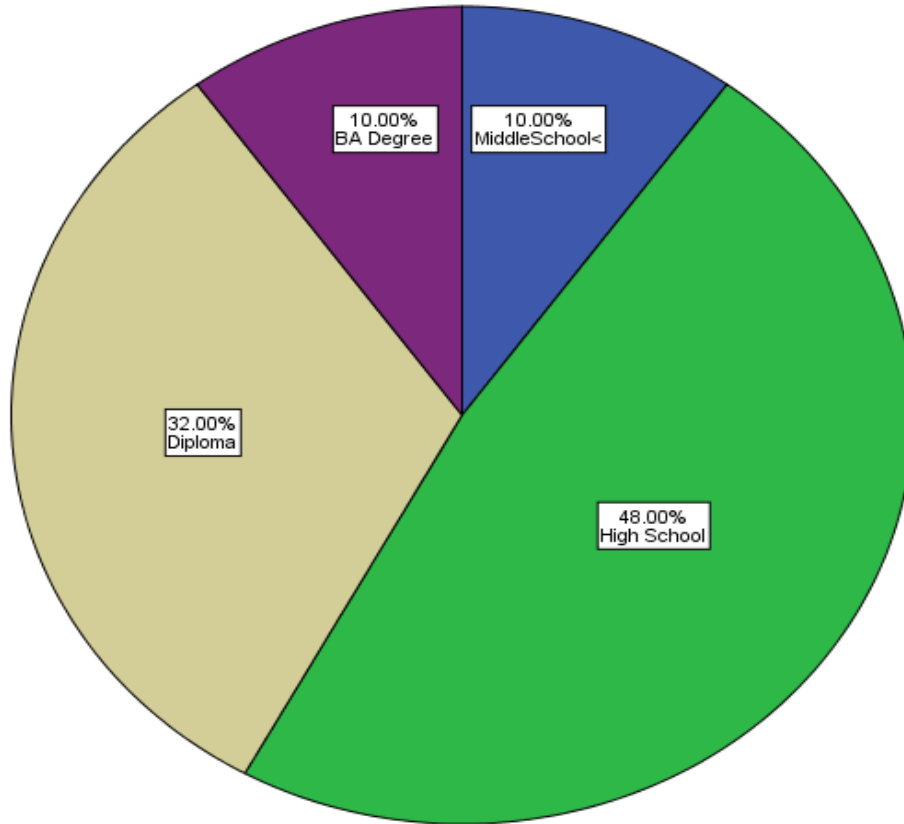


Figure 4-2 Subjects distribution by educational background.

Education				
	Frequency	Percent	Valid Percent	Cumulative Percent
MiddleSchool<	10	10.0	10.0	10.0
High School	48	48.0	48.0	58.0
Valid Diploma	32	32.0	32.0	90.0
BA Degree	10	10.0	10.0	100.0
Total	100	100.0	100.0	

Table 4-3 Subjects frequency by educational background.

The majority of the sample 48% were high school graduates and the 32% had a diploma qualification. Furthermore, the respondents were equally distributed with 10% in two other groups, ‘middle school or bellow’ and bachelor’s degree. (Figure 4-2, Table 4-3)

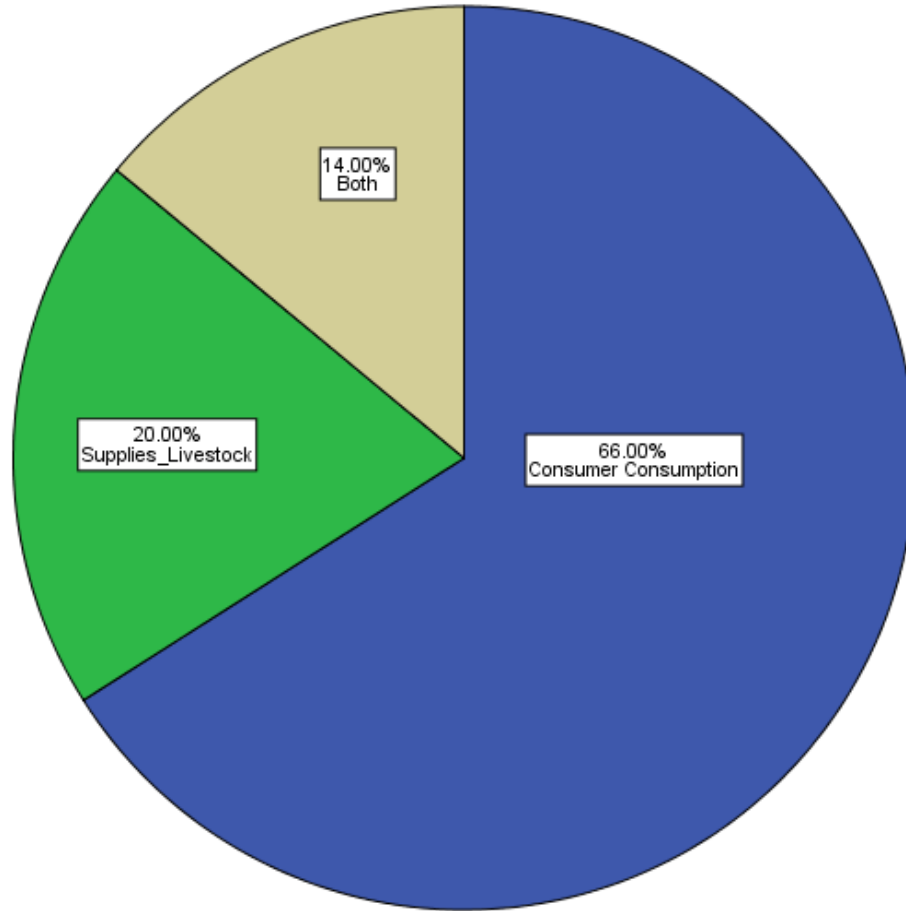


Figure 4-3 Subjects distribution by type of farming.

FarmingType				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Consumer Consumption	66	66.0	66.0
	Supplies_Livestock	20	20.0	86.0
	Both	14	14.0	100.0
	Total	100	100.0	100.0

Table 4-4 Subjects frequency by type of farming.

The majority of the sample 66% were producing goods for consumer consumption, 20% for supplies for livestock and 14% were involved in the production of both. (Figure 4-3, Table 4-4)

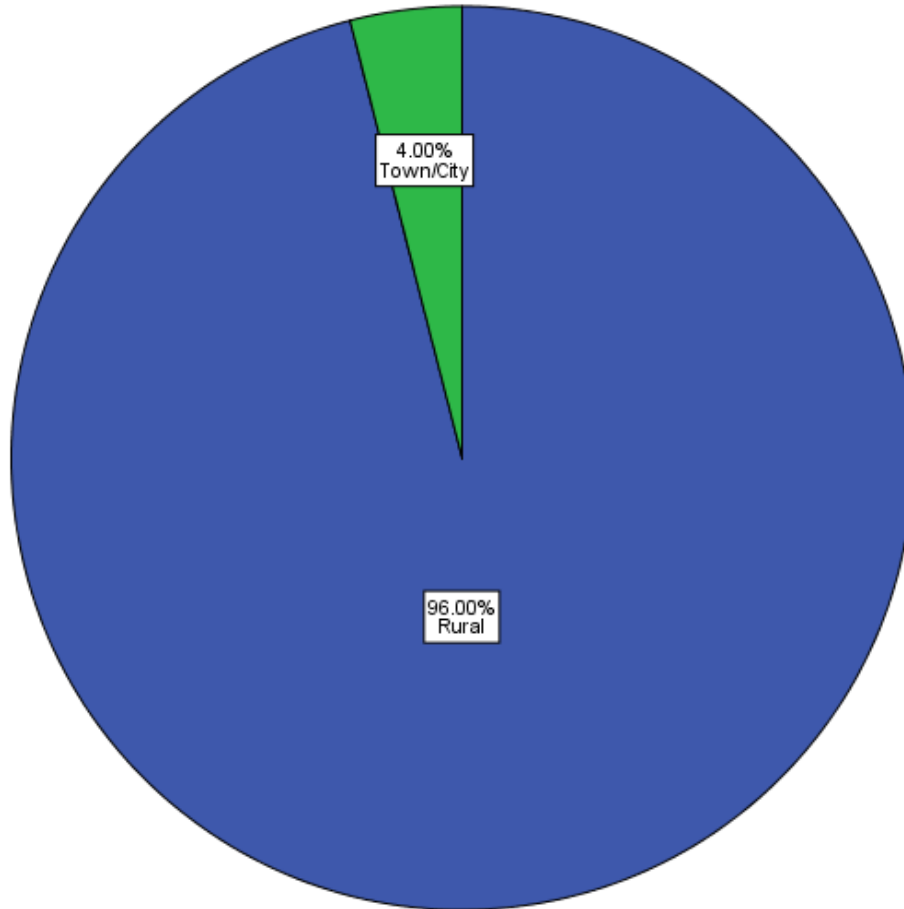


Figure 4-4 Subjects distribution by place of residence.

Residence				
	Frequency	Percent	Valid Percent	Cumulative Percent
Rural	96	96.0	96.0	96.0
Valid Town/City	4	4.0	4.0	100.0
Total	100	100.0	100.0	

Table 4-5 Subjects frequency by place of residence.

The majority of the sample 96% were residing in the rural area while only a small minority, 4%, were residing in the town next to their farm. (Figure 4-4, Table 4-5)

After concluding on the main features of the respondents, the next step is to employ crosstabulations in order to gain further understanding about the respondents.

Education * Gender Crosstabulation

			Gender		Total
			MALE	FEMALE	
Education	MiddleSchool<	Count	8	2	10
		% of Total	8.0%	2.0%	10.0%
	High School	Count	38	10	48
		% of Total	38.0%	10.0%	48.0%
	Diploma	Count	24	8	32
		% of Total	24.0%	8.0%	32.0%
	BA Degree	Count	10	0	10
		% of Total	10.0%	0.0%	10.0%
	Total	Count	80	20	100
		% of Total	80.0%	20.0%	100.0%

Table 4-6 Crosstabulations gender * education.

The majority of the male sample 38% out of 80% total male distribution, were high school graduates, while another important segment (24%) had a diploma qualification. 10% had a bachelor's degree and 8% had middle school and below education. (Table 4-6)

As regards the female population, the majority (10%) were high school graduates, 8% had a diploma qualification and 2% had middle school and lower qualification. (Table 4-6)

FarmingType * Gender Crosstabulation

		Gender		Total	
		MALE	FEMALE		
FarmingType	Consumer Consumption	Count	58	8	66
		% of Total	58.0%	8.0%	66.0%
	Supplies_Livestock	Count	14	6	20
		% of Total	14.0%	6.0%	20.0%
	Both	Count	8	6	14
		% of Total	8.0%	6.0%	14.0%
Total	Count	80	20	100	
	% of Total	80.0%	20.0%	100.0%	

Table 4-7 Crosstabulations gender * type of farming.

The majority of the male sample 58% out of 80% total male distribution, were involved in agricultural activities for consumer consumption, the 14% in supplies for livestock and 8% in both. (Table 4-7)

As regards the female population, the majority (8%) were involved in agricultural activities for consumer consumption, and they were equally distributed by 6% in the other two categories, supplies for livestock and both activities. (Table 4-7)

Education * FarmingType Crosstabulation

		FarmingType			Total
		Consumer Consumption	Supplies_Livestock	Both	
MiddleSchool<	Count	6	2	2	10
	% of Total	6.0%	2.0%	2.0%	10.0%
High School	Count	40	8	0	48
	% of Total	40.0%	8.0%	0.0%	48.0%
Diploma	Count	16	6	10	32
	% of Total	16.0%	6.0%	10.0%	32.0%
BA Degree	Count	4	4	2	10
	% of Total	4.0%	4.0%	2.0%	10.0%
Total	Count	66	20	14	100
	% of Total	66.0%	20.0%	14.0%	100.0%

Table 4-8 Crosstabulations education * type of farming.

The majority of the sample involved in the agricultural production for consumer consumption 40% out of 66% total distribution within the respective group were high school graduates, 16% had a diploma qualification, 6% had finished middle school and 4% had a bachelor’s degree. (Table 4-8)

The majority of the sample involved in the agricultural production for livestock supplies 8% out of 20% total distribution within the respective group were high school graduates, 6% had a diploma qualification, 4% had a bachelor’s degree and 2% had finished middle school. (Table 4-8)

The majority of the sample involved in the agricultural production of both, products for consumer production and livestock supplies 10% out of 14% total distribution within the respective group had a diploma qualification and the other two category groups ‘middle school and bellow graduates’ and bachelor degree holders were equally distributed by 2%. (Table 4-8)

Residence * Gender Crosstabulation					
			Gender		Total
			MALE	FEMALE	
Residence	Rural	Count	76	20	96
		% of Total	76.0%	20.0%	96.0%
	Town/City	Count	4	0	4
		% of Total	4.0%	0.0%	4.0%
Total	Count	80	20	100	
	% of Total	80.0%	20.0%	100.0%	

Table 4-9 Crosstabulations gender * residence.

The majority of the male sample 76% out of 80% total distribution within the respective group were residing in a rural area and the remaining 4% in a town near their farm. (Table 4-9)

However, all the female respondents were residing in the rural area (Table 4-9).

In the next section, the main variables of the study are presented.

4.4 Descriptive Statistics

The purpose of the present section is two - folded: first of all, it presents the main variables of the study after they have been computed and assesses their main characteristics and then the data distribution to conclude if either parametric or non-parametric tests will be used.

		Statistics		
		PYF	SUPPORT	ADVISORY
N	Valid	100	100	100
	Missing	0	0	0
Mean		4.22	4.11	4.04
Median		4.42	4.00	4.33
Mode		5	4	4
Std. Deviation		.396	.328	1.069
Variance		.157	.107	1.143
Skewness		-1.071	-.067	-1.710
Std. Error of Skewness		.241	.241	.241
Kurtosis		.059	-.150	1.989
Std. Error of Kurtosis		.478	.478	.478
Minimum		3	3	1
Maximum		5	5	5

Table 4-10 Descriptive Statistics of Main Variables.

The variable ‘benefits of the PYF scheme’ (PYF) has highest mean (4.22). Then, follows the ‘demand for support across different activities’ (SUPPORT) with mean 4.11 and then the variable ‘demand for advisory services’ (ADVISORY) with mean 4.04. (Table 4-10)

Similarly, ‘benefits of the PYF scheme’ (PYF) has highest median (4.42) and follows the ‘demand for advisory services’ (ADVISORY) with 4.33 while the ‘demand for support across different activities’ (SUPPORT) has the lowest median 4.00. (Table 4-10)

The most frequent (mode) and highest score of the data was 5 for the ‘benefits of the PYF scheme’ (PYF) variable. In the other two variables, the most frequent score was 4. (Table 4-10)

Furthermore, it was provided evidence that the standard deviation, the measure of dispersion, fluctuates broadly weighed against the mean in all variables. For example, the variable ‘benefits of the PYF scheme’ (PYF) has mean 4.22 and standard deviation 0,396. Hence, the variability is high in the data. (Table 4-10)

The measures of distribution, skewness and kurtosis provide further evidence about the distribution of the data. The skewness statistic is negative and not equal to zero (0) in all the variables while the kurtosis statistic is less than 3 and have negative value in all variables. Therefore, it could be concluded that the data is not normally distributed and that the distribution has a long right tail and the majority of the prices are on the left side of the mean. additionally, Moreover, the distribution is platykurtic relative to the mean. The histograms of normality depict these characteristics. (Table 4-10, Appendix IV)

The Smirnov – Kolmogorov test is another way to examine the data distribution. (Table 4-11)

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
PYF	.258	100	.000	.810	100	.000
SUPPORT	.192	100	.000	.928	100	.000
ADVISORY	.285	100	.000	.744	100	.000

a. Lilliefors Significance Correction

Table 4-11 Normality Test

The Smirnov – Kolmogorov statistic provided evidence that the data in all three variables is not normally distributed since the significance value is smaller than 0,005 ($p=0.05 < 0.05$). Accordingly, ‘benefits of the PYF scheme’ (PYF) $p=,000 < .05$; ‘demand for advisory services’ (ADVISORY) $p=,000 < .05$ and ‘demand for support across different activities’ (SUPPORT) $p=,000 < .05$. (Table 4-11)

After all the above tests, it is safe to conclude that the data is not normally distributed.

In the following section the research hypotheses are examined as they were formulated in the previous chapter.

4.5 Research Hypotheses Examination

This section examines the research hypotheses as they presented in the previous chapter.

4.5.1 Research Hypothesis 1

The first objective was to examine investigate the relationship and difference between the variables of the study. The following hypothesis was formulated:

Hypothesis 1

H₀₁ There is no relationship between the 'benefits of the PYF scheme' , the 'demand for advisory services' and the 'demand for support across different activities'.

H_{A1} There is (some) relationship between the 'benefits of the PYF scheme' , the 'demand for advisory services' and the 'demand for support across different activities'.

			Correlations		
			PYF	SUPPORT	ADVISORY
Spearman's rho	PYF	Correlation Coefficient	1.000	.065	.067
		Sig. (2-tailed)	.	.522	.509
		N	100	100	100
	SUPPORT	Correlation Coefficient	.065	1.000	.115
		Sig. (2-tailed)	.522	.	.254
		N	100	100	100
	ADVISORY	Correlation Coefficient	.067	.115	1.000
		Sig. (2-tailed)	.509	.254	.
		N	100	100	100

Table 4-12 Spearman's rho PYF scheme/Demand for Support/Demand for Advisory services.

The statistics presented on Table 4-12 above reveal that the relationship between the variables of PYF scheme, demand for support across different

activities and demand for advisory services was statistically significant. Thus, pyf scheme /demand for support across different activities ($\rho=,065$, $df=98$, $p=,522>.05$); pyf scheme /demand for advisory services ($\rho=,067$, $df=98$, $p=,509>.05$); and demand for support across different activities / demand for advisory services ($\rho=,111$, $df=98$, $p=,254>.05$). (Table 4-12) (Saunders et al, 2009)

The next step is to examine if there is difference between the main variables of the study. Thus, the following hypothesis is formulated:

H_{O4} There is no difference between the benefits of the PYF scheme, the demand for support across different activities and the demand for advisory services.

H_{A4} There is (some) difference between the benefits of the PYF scheme, the demand for support across different activities and the demand for advisory services.

	SUPPORT - PYF	ADVISORY - PYF	ADVISORY - SUPPORT
Z	-2.677 ^b	-.160 ^c	-1.543 ^c
Asymp. Sig. (2-tailed)	.007	.873	.123

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

c. Based on negative ranks.

Table 4-13 Wilcoxon test.

The output presented on Table 4-13 presents the results for the three variables. For the case of the benefits of PYF scheme and the demand for support across different activities the z value is -2677, which has a two tailed probability of 0.000. Therefore, the difference between the benefits of PYF scheme and the demand for support across different activities is statistically significant at the 5% level. (Table 4-13) (Saunders et al, 2009)

Then, the results could be reported as follow: there was found some difference between the benefits of PYF scheme and the demand for support across different activities (N=100, $z=-2.667$, two tailed $p=.007 <.000$). (Table 4-13) (Saunders et al, 2009)

However, the difference between the benefits of PYF scheme and demand for advisory services as well as the difference between demand for support across different and demand for advisory services were found to be statistically insignificant at the 5% level. (Table 4-13) (Saunders et al, 2009)

Then, the results could be reported as follow: there was found no difference between the benefits of PYF scheme and the demand for advisory services (N=100, $z= -.160$, two tailed $p=.873 > .000$); there was found no difference between the demand for support across different activities and the demand for advisory services (N=100, $z= -1.543$, two tailed $p=.123 > .000$). (Table 4-13) (Saunders et al, 2009)

4.5.2 Research Hypothesis 2

The second research hypothesis is linked with the second objective of the study that aims to investigate if the young farmers' investment plants were sustainable, both economically and socially. For this reason, the investigation will start by examining the mean of all six items of the PYF variable and then their frequencies. Finally, the correlations among the items will be examined.

		Statistics					
		a1	a2	a3	a4	a5	a6
N	Valid	100	100	100	100	100	100
	Missing	0	0	0	0	0	0
Mean		3.42	4.16	4.40	4.26	4.44	4.66
Median		4.00	4.00	4.50	4.00	4.00	5.00
Mode		4	4	5	4	4	5
Minimum		2	2	3	4	4	4
Maximum		5	5	5	5	5	5

Table 4-14 Descriptive Statistics for PYF Scheme items.

The output presented on Table 4-14 presents the results for all six items of the benefits of PYF scheme variable. From the economic dimensions item 3 (diversification of farming activities) was perceived as the most important from the respondents as it has the highest mean (4.40). Then comes the decision to continue farming investment (mean = 4.16) and the last their agreement that they found new markets (mean = 3.42) (Table 4-14)

As regards the social dimension of the benefits of PYF scheme, it was provided evidence that their decision was set up in a rural area (item a6) was the most important as it had the highest mean (4.66). then comes their evaluation if their activities created new places (item a5, mean = 4.44) and finally if their income was supported (item a4, mean = 4.26) (Table 4-14)

The next step is to examine the frequencies in each item in order to understand better if their plans were sustainable.

Table 4-15 presents the frequencies of each item of the PYF scheme variable and the SPSS output is presented in Appendix V.

Statement	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
A1. I found new markets.	-	24%	20%	46%	10%
A2. I decided to continue farming investing.	-	10%	-	54%	36%
A3. I diversified my farming activities.	-	-	10%	40%	50%
A4. My income was supported.	-	-	-	74%	26%
A5. My activities created new work places.	-	-	-	56%	44%
A6. I set up in a rural area.	-	-	-	34%	66%

Table 4-15 Frequencies for PYF Scheme items.

The results summarized in Table 4-15 reveal some further information about the sustainability of young farmers' investment plans. The 56% (46% + 10%) found new markets for their products. However, the 20% of the respondents did not find new markets while the remaining 20% stayed neutral.

The 90% of the respondents decided to continue farming while only a small minority (10%) decided not to continue farming. Moreover, the 90% (40% + 50%) diversified their farming activities while the 10% stayed neutral. (Table 4-15)

The 100% (74% + 26%) of the respondents agreed that their income was supported. Likewise, the 100% (56% + 44%) of the respondents agreed that their activities created new workplaces. Similarly, the 100% (34% + 66%) set up in a rural area. (Table 4-15)

The next step is to examine the correlations among the items. Therefore, the following hypothesis is formulated:

Hypothesis 2

H₀₂ There is no relationship between the items of the PYF scheme ('benefits of the PYF scheme').

H_{A2} There is (some) relationship between the items of the PYF scheme ('benefits of the PYF scheme').

		Correlations					
		a1	a2	a3	a4	a5	a6
Spearman's rho	Correlation Coefficient	1.000	.327**	.221*	.219*	.164	.047
	a1 Sig. (2-tailed)	.	.001	.027	.029	.104	.644
	N	100	100	100	100	100	100
	Correlation Coefficient	.327**	1.000	.821**	.019	.327**	.034
	a2 Sig. (2-tailed)	.001	.	.000	.847	.001	.734
	N	100	100	100	100	100	100
	Correlation Coefficient	.221*	.821**	1.000	.018	.504**	-.122
	a3 Sig. (2-tailed)	.027	.000	.	.862	.000	.227
	N	100	100	100	100	100	100
	Correlation Coefficient	.219*	.019	.018	1.000	-.250*	.425**
	a4 Sig. (2-tailed)	.029	.847	.862	.	.012	.000
	N	100	100	100	100	100	100
	Correlation Coefficient	.164	.327**	.504**	-.250*	1.000	-.384**
	a5 Sig. (2-tailed)	.104	.001	.000	.012	.	.000
	N	100	100	100	100	100	100
	Correlation Coefficient	.047	.034	-.122	.425**	-.384**	1.000
	a6 Sig. (2-tailed)	.644	.734	.227	.000	.000	.
	N	100	100	100	100	100	100

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 4-16 Spearman's rho for the items of PYF scheme variable.

The statistics presented on Table 4-16 reveal that the relationship between all the items was not significant. The decision to continue their farming investment (a2) and to diversify their farming activities (a3) was found to be positive and statistically significant ($\rho=,821$, $df=98$, $p=,000 < .05$). such a relationship can be characterised as very strong.

Furthermore, there was found a statistically significant positive and moderate relationship between respondents decision to diversify their farming activities (a3) and the new work places created by their activities (a5) ($\rho=,504$, $df=98$, $p=,000 < .05$); similarly, statistically significant and moderate was found the relationship between respondents' perception that their income was supported (a4) and to set up in a rural area (a6) ($\rho=,425$, $df=98$, $p=,000 < .05$). (Table 4-16) (Saunders et al, 2009)

Moreover, there was found a statistically significant, positive and moderate relationship between respondents' opinion that they found new markets (a1) and the following items: their decision to continue farming investment (a2) ($\rho=,327$, $df=98$, $p=,000 < .05$), that they diversified their farming activities (a3) ($\rho=,221$, $df=98$, $p=,000 < .05$) their income support (a3) ($\rho=,219$, $df=98$, $p=,000 < .05$) and also that their activities created new places (a5) ($\rho=,327$, $df=98$, $p=,000 < .05$). (Table 4-16) (Saunders et al, 2009)

The next section examines the third research hypothesis.

4.5.3 Research Hypothesis 3

The third research hypothesis is linked with the third objective of the study that aims to investigate if the young farmers' investment plants supported activities. For this reason, the investigation will start by examining the mean of all six items of the demand for support across different activities variable and then their frequencies. Finally, the correlations among the items will be examined.

		Statistics					
		b1	b2	b3	b4	b5	b6
N	Valid	100	100	100	100	100	100
	Missing	0	0	0	0	0	0
Mean		3.98	3.54	4.22	4.42	4.24	4.24
Median		4.00	4.00	4.00	4.00	4.00	4.00
Mode		4	4	4	4	4	4
Minimum		1	1	4	4	4	4
Maximum		5	5	5	5	5	5

Table 4-17 Descriptive Statistics for demand for support across different activities.

The output on Table 4-17 presents the results for all six items of the demand for support across different activities.

Form the economic dimensions item 4 (processed the production) was perceived as the most important from the respondents as it has the highest mean (4.44). Furthermore, it was provided evidence that the item b3 (expansion of alternative activities to agriculture) was also important with mean 4.22. then, comes the corp expansion (item b1, mean = 3.98) and the livestock expansion (item b2, mean = 3.54). (Table 4-17)

Moreover, by the statistics it was provided evidence that both the social (adoption of quality policies) and economic (adaptation to climate change) dimensions of the demand for support across different activities where equally distributed with mean 4.24. (Table 4-17)

The next step is to examine the frequencies in each item in order to understand better if their plans were sustainable.

Table 4-18 presents the frequencies of each item of the demand for support across different activities variable and the SPSS output is presented in Appendix VI.

Statement	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
B1. I expanded the crop production.	2%	14%	-	52%	32%
B2. I expanded livestock production.	10%	6%	12%	64%	8%
B3. I expanded alternative activities to agriculture.				78%	22%
B4. I processed the production.				58%	42%
B5. I adopted quality policies.				76%	24%
B6. I adapted to climate change.				76%	24%

Table 4-18 Frequencies for demand for support across different activities.

The results summarized in Table 4-18 reveal some further information about the sustainability of young farmers' demand for support across different activities. Thus, the 84% (52% + 32%) expanded the crop production, while the remaining 16% (2% + 14%) disagreed. Similarly, the 72% (64% + 8%) of the respondents expanded the livestock but the remaining 16% (10% + 6%) disagreed. (Table 4-18)

Furthermore, it was provided evidence that all the respondents expanded alternative activities to agriculture (78% + 22%) and processed the production (58% + 42%). (Table 4-18)

As regards the social and environmental the results were similar. Hence, it was provided evidence that the 100% (76% + 24%) agreed that they adopted quality policies (social) and adapted to climate change (environmental). (Table 4-18)

The next step is to examine the correlations among the items. Therefore, the following hypothesis is formulated:

H_{O3} There is no relationship between the items for demand support across different activities ('demand for support across different activities').

H_{A3} There is (some) relationship between the items support across different activities ('demand for support across different activities').

		Correlations					
		b1	b2	b3	b4	b5	b6
Spearman's rho	Correlation Coefficient	1.000	.147	.258**	-.436**	.461**	.579**
	b1 Sig. (2-tailed)	.	.145	.010	.000	.000	.000
	N	100	100	100	100	100	100
	Correlation Coefficient	.147	1.000	-.004	-.468**	.191	.327**
	b2 Sig. (2-tailed)	.145	.	.969	.000	.057	.001
	N	100	100	100	100	100	100
	Correlation Coefficient	.258**	-.004	1.000	-.256*	.267**	.380**
	b3 Sig. (2-tailed)	.010	.969	.	.010	.007	.000
	N	100	100	100	100	100	100
	Correlation Coefficient	-.436**	-.468**	-.256*	1.000	-.099	-.288**
	b4 Sig. (2-tailed)	.000	.000	.010	.	.329	.004
	N	100	100	100	100	100	100
	Correlation Coefficient	.461**	.191	.267**	-.099	1.000	.781**
	b5 Sig. (2-tailed)	.000	.057	.007	.329	.	.000
	N	100	100	100	100	100	100
	Correlation Coefficient	.579**	.327**	.380**	-.288**	.781**	1.000
	b6 Sig. (2-tailed)	.000	.001	.000	.004	.000	.
	N	100	100	100	100	100	100

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 4-19 Spearman's rho for the items of demand for support across different activities variable.

The statistics presented on Table 4-19 reveal that the relationship between all the items was not significant. First of all, it was provided evidence that there is a statistically significant and positive relationship between the adoption of quality policies (b5) and the adaptation to climate change (b6) ($\rho = .781$, $df = 98$, $p = .000 < .05$). Such a relationship can be characterised as a strong one.

Furthermore, it was provided evidence of a positive and statistically significant relationship among the following item: expansion of corp production (b1) and adaption of quality policies (b5) ($\rho = .461$, $df = 98$, $p = .000 < .05$); expansion of

corps (b1) and adaption of quality policies (b5) ($\rho=,579$, $df=98$, $p=,000 < .05$); expansion of livestock production (b2) and adoption to climate change (b6) ($\rho=,327$, $df=98$, $p=,000 < .05$); expansion of alternative activities to agriculture (b3) and adoption to climate change (b6) ($\rho=,380$, $df=98$, $p=,000 < .05$); and adoption of quality policies (b5) and production management (b4) ($\rho=,329$, $df=98$, $p=,000 < .05$). By the statistics, it could be concluded that all these relationships are moderate. (Table 4-19) (Saunders et al, 2009)

Finally, it was provided evidence that for a statistically significant and negative relationship between the following variables: expansion of crop production (b1) and production management (b4) ($\rho=-,436$, $df=98$, $p=,000 < .05$); between the expansion of livestock (b2) and the production management (b4) ($\rho=-,468$, $df=98$, $p=,000 < .05$). These relationships could be characterised as moderate. (Table 4-19) (Saunders et al, 2009)

The next section examines the fourth research hypothesis.

4.5.4 Research Hypothesis 4

The fourth research hypothesis was linked with the fourth objective of the study that aims to investigate if the young farmers' demand for advisory services. The investigation starts by examining the mean of all six items of the demand for advisory services variable and then their frequencies. Finally, the correlations among the items will be examined.

		Statistics					
		c1	c2	c3	c4	c5	c6
N	Valid	100	100	100	100	100	100
	Missing	0	0	0	0	0	0
Mean		4.00	4.04	4.02	4.12	3.92	4.14
Median		4.00	4.00	4.00	4.50	4.00	4.50
Mode		4	5	4 ^a	5	4	5
Minimum		1	1	1	1	1	1
Maximum		5	5	5	5	5	5

a. Multiple modes exist. The smallest value is shown

Table 4-20 Descriptive Statistics for demand for advisory services.

The output on Table 4-20 presents the results for all six items of the demand for advisory services.

The mean was equally distributed across the items of the economic dimension of the variable. Thus, the respondents perceived equally that their investment plan was supported by advisory services about the management of machinery (c1, mean = 4.00), the improvement of the sales (c2, mean = 4.0) and the business plan preparation (c3, mean = 4.02).

As regards the social dimension, that the respondents' investment was supported by advisory services about the overall cooperation development (c4) had mean 4.12, which was higher than the mean across the three items of the economic dimension.

Finally, from the environmental dimension, respondent's agreement that their advisory plan was supported by advisory services about the adaptation to the climate change had the highest mean score (4.14) across the three items of the economic dimension as well as the social dimension. However, the item rating respondents' agreement about the support of the advisory services with reference to the implementation of agri-environmental requirements has the

lowest mean score, 3.92 compared with the rest items of the demand for advisory services. (Table 4-20)

The next step is to examine the frequencies in each item in order to understand better if their investment plan was supported form the advisory services.

Table 4-21 presents the frequencies of each item of the demand for support across activities variable and the SPSS output is presented in Appendix VII.

Statement	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
C1. My investment plan was supported by advisory services about the management of machinery.	4%	8%	8%	44%	36%
C2. My investment plan was supported by advisory services about sales improvement.	8%	4%	8%	36%	44%
C3. My investment plan was supported by advisory services about the business plan preparation.	6%	6%	8%	40%	40%
C4. My investment plan was supported by advisory services about the overall cooperation development.	6%	6%	8%	30%	50%
C5. My investment plan was supported by advisory services about the implementation of agri-environmental requirements.	6%	6%	6%	54%	28%
C6. My investment plan was supported by advisory services about adaptation to the climate change.	6%	6%	6%	32%	50%

Table 4-21 Frequencies for demand for advisory services.

The results summarized in Table 4-21 reveal some further information about the sustainability of young farmers' demand for advisory services. Thus, the 80% (44% + 36%) agreed that their investment plan was supported by advisory services about the management of machinery, while 20% (4% + 8%) disagreed.

The 8% stayed neutral. Similarly, the 80% (36% + 44%) of the respondents agreed about the advisory services with reference to the improvement of the sales while the 12% (8% + 4%) disagreed. The 8% remained neutral. Likewise, the 80% (40% + 40%) of the respondents agreed about the support of their investment plan with reference to the business plan preparation. However, the 12% (6% + 6%) disagreed and the remaining 8% stayed neutral. (Table 4-21)

As regards the social dimension of this variable, it was provided evidence that the 80% (30% + 50%) of the respondents agreed that their investment plan was supported by advisory services with reference to the overall cooperation development. However, the 12% (6% + 6%) disagreed and the remaining 8% stayed neutral. (Table 4-21)

Consistent with the environmental dimension, it was provided evidence that the 82% (76% + 24%) of the respondents agreed about the support of their investment plan by advisory services with reference to agri-environmental requirements. However, the 12% (6% + 6%) disagreed and the remained 6% stayed neutral. (Table 4-21)

Likewise, the 82% (32% + 50%) of the respondents agreed about the support of their invest plan with reference to the adaptation to climate change. Though, the 12% (6% + 6%) disagreed and the remained 6% stayed neutral. (Table 4-21)

The next step is to examine the corelations among the items. Therefore, the following hypothesis is formulated:

H₀₄ There is no relationship between the items for support from advisory services ('demand for advisory services').

H_{A4} There is (some) relationship between the items for support from advisory services ('demand for advisory services').

		Correlations					
		c1	c2	c3	c4	c5	c6
Spearman's rho	Correlation Coefficient	1.000	.698**	.737**	.646**	.764**	.770**
	c1 Sig. (2-tailed)	.	.000	.000	.000	.000	.000
	N	100	100	100	100	100	100
	Correlation Coefficient	.698**	1.000	.737**	.579**	.792**	.563**
	c2 Sig. (2-tailed)	.000	.	.000	.000	.000	.000
	N	100	100	100	100	100	100
	Correlation Coefficient	.737**	.737**	1.000	.589**	.730**	.665**
	c3 Sig. (2-tailed)	.000	.000	.	.000	.000	.000
	N	100	100	100	100	100	100
	Correlation Coefficient	.646**	.579**	.589**	1.000	.469**	.809**
	c4 Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	100	100	100	100	100	100
	Correlation Coefficient	.764**	.792**	.730**	.469**	1.000	.610**
	c5 Sig. (2-tailed)	.000	.000	.000	.000	.	.000
	N	100	100	100	100	100	100
	Correlation Coefficient	.770**	.563**	.665**	.809**	.610**	1.000
	c6 Sig. (2-tailed)	.000	.000	.000	.000	.000	.
	N	100	100	100	100	100	100

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4-22 Spearman's rho for the items of demand for advisory services.

The statistics presented on Table 4-22 reveal that the relationship between all the items were statistically significant and positive. First of all, it was provide evidence for a strong relationship between respondents' agreement that their investment plan was supported by advisory services about the machinery management (c1) and the following demand for advisory services: sales improvement (c2) (rho=,698, df=98, p=,000 < .05); business plan preparation (c3) (rho=,737, df=98, p=,000 < .05); overall cooperation development (c4) (rho=,646, df=98, p=,000 < .05); implementation of agri-environmental requirements (c5) (rho=,764, df=98, p=,000 < .05); and adaptation to climate

change (c6) ($\rho=,770$, $df=98$, $p=,000 < .05$). These relationships can be characterized as strong ones.

Furthermore, it was provided evidence of a positive and statistically significant relationship between respondents' agreement that their investment plan was supported by advisory services about sales improvement (c2) and the following business plan preparation (c3) ($\rho=,737$, $df=98$, $p=,000 < .05$); implementation of agri-environmental requirements (c5) ($\rho=,792$, $df=98$, $p=,000 < .05$). These relationships can be characterized as strong ones.

Moreover, there was found evidence of a positive and statistically significant relationship between respondents' agreement that their investment plan was supported by advisory services about sales improvement (c2) and the following: overall cooperation development (c4) ($\rho=,579$, $df=98$, $p=,000 < .05$); and adaptation to climate change (c6) ($\rho=,563$, $df=98$, $p=,000 < .05$). These relationships can be characterized as moderate ones.

Additionally, it was provide evidence for a statistically significant, positive and strong relationship between respondents' agreement that their investment plan was supported by advisory services about the business plan preparation (c3) and the following: implementation of agri-environmental requirements (c5) ($\rho=,730$, $df=98$, $p=,000 < .05$); and adaptation to climate change (c6) ($\rho=,665$, $df=98$, $p=,000 < .05$). However, the relationship between the business plan preparation (c3) and the overall cooperation development (c4) ($\rho=,589$, $df=98$, $p=,000 < .05$) was moderate.

Further examination revealed that that there was a statistically significant, positive, and strong relationship between respondents' agreement that their investment plan was supported by advisory services about overall cooperation development (c4) and the adaptation to climate change (c6) ($\rho=,809$, $df=98$, $p=,000 < .05$). However, the relationship between respondents' agreement that their investment plan was supported by advisory services about overall

cooperation development (c4) and implementation of agri-environmental requirements (c5) ($\rho=,469$, $df=98$, $p=,000 < .05$) was moderate.

Finally, it was provided evidence about a statistically significant, positive, and very strong relationship between respondents' agreement that their investment plan was supported by advisory services about the implementation of agri-environmental requirements (c5) and adaptation to climate change (c6) ($\rho=,770$, $df=98$, $p=,000 < .05$).

4.6 Conclusion

This chapter presented the statistical analysis of the data collected. the next chapter presents discusses the results along managerial implications and presents the main limitations of the study.

Chapter 5 Conclusions and Recommendations

5.1 Introduction

The aim of the present chapter is to present and discuss the main findings of the study according to the research hypotheses. Then, it provides recommendations for policy makers and managers. It concludes with the limitations of the present study.

5.2 Research Overview

The purpose of the present research was to examine the progress of agricultural entrepreneurship for young farmers in order to evaluate their investment plans. Consistent with this, the following three research objectives were set up to examine young farmers' investment plans in terms of sustainability, namely, economic, social, and environmental:

1. To investigate if the young farmers' investment plants were economically and socially sustainable.
2. To assess if their investment plan supported different activities in terms of economic, social, and environmental sustainability.
3. To examine if their investment plan was supported form advisory services, in terms of economic, social, and environmental sustainability.

Positivism was chosen as the study's research philosophy and deduction as the research approach. The reason behind this is that a highly structured methodology was followed employed, and the research hypotheses were examined through statistical analysis. Another reason is that the researcher assumed hypotheses from the theory.

Therefore, the study of Balentzis et al (20200 was followed in order to examine the progress of agricultural entrepreneurship for young farmers in order to evaluate their investment plans.

A sample of 100 young farmers over the ages 18 – 40 years old were drawn from farmer union lists all over Greece.

In the next section the conclusions of the study are summarized according to the objectives.

5.3 Main Findings

As an overall, both, the pilot and the main study had good reliability scale.

The 80% of the respondents were male and the 96% of the respondents was living in rural area. The majority of the sample 48% were high school graduates and the 32% had a diploma qualification. The 66% were producing goods for consumer consumption and 20% for supplies for livestock.

5.3.1 Research Hypothesis 1

The first research hypothesis investigated the relationship and difference between the variables of the study namely, 'benefits of the PYF scheme', the 'demand for advisory services' and the 'demand for support across different activities'. It was provided evidence of a statistically significant and positive relationship between the PYF scheme and the following: demand for support across different activities as well as the demand for advisory services. These relationships were moderate, which means that as the benefits of the PYF scheme tend to increase, then the demand for support across different activities as well as the demand for advisory services increase too.

Further analysis provided evidence that there was some difference between the benefits of PYF scheme and the demand for support across different activities.

5.3.2 Research Hypothesis 2: Sustainability of Investment Plans

The second research hypothesis was linked with the sustainability of the young farmers' investment plants.

It was revealed that among the economic dimensions, the diversification of farming activities was perceived as the most important followed by their decision to continue farming investment and that they found new markets.

As regards the social dimension, it was provided evidence that their decision to set up in a rural area was the most important followed by their agreement for opening new working places and that their income was supported.

More analytically, all the respondents agreed that their income was supported. The majority of the young farmers (56%) found new markets for their products while the 20% could not. Additionally, the 90% decided to continue farming.

The statistics presented on Table 4-16 reveal that the relationship between all the items was not significant. The decision to continue their farming investment (a2) and to diversify their farming activities (a3) was found to be positive and statistically significant ($\rho=,821$, $df=98$, $p=,000 < .05$). such a relationship can be characterised as very strong.

Further analysis provided evidence that as the farmers' decision to diversify their farming activities tends to increase, then the creation of new work places from their activities tends to increase. Additionally, as the young farmers' income increases, their willingness to stay in rural area will increase, too.

Moreover, as young farmers efforts to find new markets increase, the following tend to increase too: their decision to continue farming investment, to diversify their farming activities, income support and creation of new working places.

5.3.3 Research Hypothesis 3: Demand for Support Across Different Activities

The third research hypothesis was linked the objective to investigate young farmers' demand for support across different activities. The discussion starts with the economic dimension.

For young farmers the most important was to increase their production followed by their willingness to expand to alternative agricultural activities and finally to expand their corp.

Furthermore, they were concerned about the adoption of quality policies (social) and the adaptation to climate change (environmental).

More analytically, the overwhelming majority of young farmers 84% expanded the crop production and the 72% expanded the livestock. All the young farmers expanded alternative activities to agriculture and processed the production.

Moreover, all the farmers (100%) proved to be socially concerned as they adopted quality policies (social) and environmentally concerned as they adapted to climate change.

Further analysis revealed that as the adoption of quality policies tend to increase, the adaptation to climate change will also increase.

Moreover, as young farmers tend to increase their corp production, then the following will also increase: adaption of quality policies, expansion of livestock production, adoption to climate change, expansion of alternative activities to agriculture, adoption to climate change, adoption of quality policies (b5) and production management.

Finally, it was revealed that as the young farmers tend to increase the expansion of crop production, the production management increase too. Moreover, as young farmers tend to increase the livestock, the production management also increase.

5.3.4 Research Hypothesis 4: Demand for Advisory Services

The fourth research hypothesis was linked to the objective to investigate young farmers' demand for advisory services.

The young farmers perceived as equally important all the items of the economic dimension of demand for advisory services, namely management of machinery, the improvement of the sales and the business plan preparation.

Also important for them was the overall cooperation development (social dimension)

Finally, they were concerned about the adaptation to the climate change followed by the implementation of agri-environmental requirements.

More analytically, the 80% agreed that their investment plan was supported by advisory services about the management of machinery, the improvement of the sales and the business plan preparation.

Moreover, they agreed (80%) that their investment plan was supported by advisory services with reference to the overall cooperation development

Additionally, they agreed (82%) that their investment plan was supported with reference to agri-environmental requirements and to the adaptation to climate change.

Further analysis provided evidence that as the support of young farmer's investment plan about the machinery management increase, then the following will increase: sales improvement, business plan preparation, overall cooperation development, implementation of agri-environmental requirements, and adaptation to climate change.

Moreover, it was provided evidence that as the support of young farmers investment plan about sales improvement increase, then the following increase too: business plan preparation and implementation of agri-environmental requirements.

Additionally, it was provided evidence that as the support of young farmers investment plan about sales improvement increases, the following will increase too: overall cooperation development and adaptation to climate change.

Likewise, as the support of young farmers investment plan about the business plan preparation tends to increase, the following will also increase:

implementation of agri-environmental requirements, adaptation to climate change and the overall cooperation development.

Similarly, as the support of young farmers investment plan about overall cooperation development tends to increase the following will also tend to increase: the adaptation to climate change, the overall cooperation development, and the implementation of agri-environmental requirements.

Finally, as the support of young farmers investment plan about the implementation of agri-environmental requirements tends to increase the adaptation to climate change will also increase.

5.4. Managerial Implications

By the previous analysis, it became clear that young farmers in Greece show high levels for economic, social and environmental sustainability regarding their investment plans. For this reason, policy makers and professionals in the agricultural sector should encourage young farmers to keep investing plans that include all three dimensions of sustainability.

The results of economic awareness are found to be high among young farmers in Greece because of the difficult economic environment in which they are operating. The support of income lies at the centre of their attention.

Another important issue is related with the high levels of environmental awareness among the young farmers. Probably they don't want to repeat the same mistakes the previous generation did and at the same time they are thinking that they have to preserve the soil in good quality in order their investment to continue to be profitable in the future.

Moreover, the levels of social awareness depict the need of the Greek society for job openings. These young farmers were also unemployed.

Finally, the high levels of demand for advisory services depicts that the young farmers in Greece have low levels on the preparation of a business plan as well as marketing skill.

5.5 Limitations

Future research on the respective area would benefit first of all with a greater sample that would be more representative of the Greek agricultural sector. It is recommended from probability sampling, stratified and simple random to be used. However, this will be difficult as there is a vast number of agricultural unions in Greece, with the majority of their number to be concentrated in Thessaly.

Then, more appropriate questionnaire should be prepared by a professional with knowledge of the agriculture sector, the CAP and its umbrella mechanisms as well as the young generation of farmers.

By such an instrument more hypotheses could be generated, as for example to examine some demographic characteristics of respondents with specific items or dimensions.

Furthermore they could compared the results across different regions.

A study like the one described above would conclude in more meaningful results.

Appendices

Appendix I

Instrument

**The progress of agricultural entrepreneurship
for young farmers: Evaluation of investment
plans.**

Supervisor: Dr. Agelopoulos

Salonica, October 2021

The purpose of the present instrument is to gather primary data to investigate **the progress of agricultural entrepreneurship for young Greek farmers in order to evaluate their investment plans.**

The results will be used for the completion of my MBA dissertation. Any information will be treated according to the research ethics as anonymous and confidential. All the completed instruments will be destroyed after.

Thank you in advance for your time.

Kourkouni, Aikaterini

MSc Candidate

SECTION 1

A. Rate the following statements according to your opinion on a scale from 1 ('strongly disagree') to 5 = ('strongly agree'). Please, tick only ONE answer.

<i>Statement</i>	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<i>A1. I found new markets.</i>					
<i>A2. I decided to continue farming investing.</i>					
<i>A3. I diversified my farming activities.</i>					
<i>A4. My income was supported.</i>					
<i>A5. My activities created new work places.</i>					
<i>A6. I set up in a rural area.</i>					

B. Rate the following statements as honest as you can on a 5 point scale from 1 ('strongly disagree') to 5 = ('strongly agree'). Please, tick only ONE answer.

<i>Statement</i>	1	2	3	4	5
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<i>B1. I expanded the crop production.</i>					
<i>B2. I expanded livestock production.</i>					
<i>B3. I expanded alternative activities to agriculture.</i>					
<i>B4. I processed the production.</i>					
<i>B5. I adopted quality policies.</i>					
<i>B6.I adapted to climate change.</i>					

C. Rate the following statements as honest as you can on a 5 point scale from 1 ('strongly disagree') to 5 = ('strongly agree'). Please, tick only ONE answer.

<i>Statement</i>	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<i>C1. My investment plan was supported by advisory services about the management of machinery.</i>					
<i>C2. My investment plan was supported by advisory services about sales improvement.</i>					
<i>C3. My investment plan was supported by advisory services about the business plan preparation.</i>					
<i>C4. My investment plan was supported by advisory services about the overall cooperation development.</i>					
<i>C5. My investment plan was supported by advisory services about the implementation of</i>					

agri-environmental requirements.

C6. My investment plan was supported by advisory services about adaptation to the climate change.

SECTION 2

Please answer the following questions by choosing 1 ONLY answer.

1. GENDER

Male _____

Female _____

2. EDUCATIONAL LEVEL

Middle School or bellow _____

High School _____

Diploma- _____

Bachelor's Degree _____

Postgraduate _____

3. FARM SIZE

4. TYPE of FARMING

Consumer Consumption _____

Supplies For Livestock _____

Both _____

5. Place of Residence

Rural _____

Town / City Near the Farm _____

Thank you for your time

Appendix II Pilot Study

Benefits of the PYF Scheme

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded ^a	0	.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.620	6

Item Statistics

	Mean	Std. Deviation	N
a1	3.30	1.059	10
a2	4.10	.876	10
a3	4.40	.699	10
a4	4.30	.483	10
a5	4.50	.527	10
a6	4.70	.483	10

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
25.30	6.456	2.541	6

Demand for Support Across Different Activities

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded ^a	0	.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.517	6

Item Statistics

	Mean	Std. Deviation	N
b1	4.30	.949	10
b2	3.40	1.075	10
b3	4.00	.000	10
b4	4.40	.516	10
b5	4.30	.483	10
b6	4.30	.483	10

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
24.70	4.900	2.214	6

Demand for Advisory Services

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded ^a	0	.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.992	6

Item Statistics

	Mean	Std. Deviation	N
c1	3.80	1.398	10
c2	3.90	1.449	10
c3	3.80	1.398	10
c4	3.90	1.449	10
c5	3.70	1.337	10
c6	3.80	1.398	10

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
22.90	68.544	8.279	6

Whole Instrument

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded ^a	0	.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.875	18

Item Statistics

	Mean	Std. Deviation	N
a1	3.30	1.059	10
a2	4.10	.876	10
a3	4.40	.699	10
a4	4.30	.483	10
a5	4.50	.527	10
a6	4.70	.483	10
b1	4.30	.949	10
b2	3.40	1.075	10
b3	4.00	.000	10
b4	4.40	.516	10
b5	4.30	.483	10
b6	4.30	.483	10
c1	3.80	1.398	10
c2	3.90	1.449	10
c3	3.80	1.398	10
c4	3.90	1.449	10
c5	3.70	1.337	10
c6	3.80	1.398	10

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
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72.90	102.544	10.126	18
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Appendix III Main Study

Benefits of the PYF Scheme

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded ^a	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.607	6

Item Statistics

	Mean	Std. Deviation	N
a1	3.42	.966	100
a2	4.16	.861	100
a3	4.40	.667	100
a4	4.26	.441	100
a5	4.44	.499	100
a6	4.66	.476	100

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
25.34	5.641	2.375	6

Demand for Support Across Different Activities

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded ^a	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.270	6

Item Statistics

	Mean	Std. Deviation	N
b1	3.98	1.035	100
b2	3.54	1.068	100
b3	4.22	.416	100
b4	4.42	.496	100
b5	4.24	.429	100
b6	4.24	.429	100

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
24.64	3.869	1.967	6

Demand for Advisory Services

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded ^a	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.977	6

Item Statistics

	Mean	Std. Deviation	N
c1	4.00	1.064	100
c2	4.04	1.188	100
c3	4.02	1.128	100
c4	4.12	1.166	100
c5	3.92	1.061	100
c6	4.14	1.155	100

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
24.24	41.154	6.415	6

Whole Instrument

Reliability Statistics

Cronbach's Alpha	N of Items
.794	18

Item Statistics

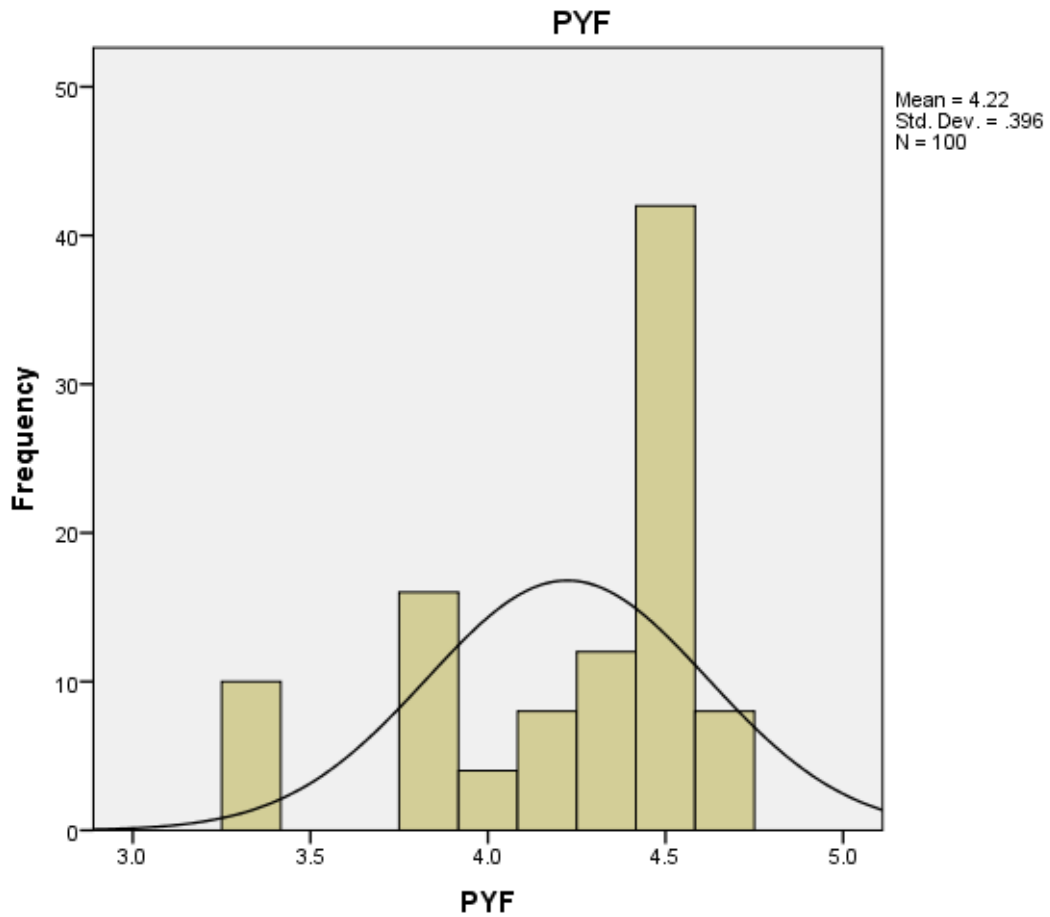
	Mean	Std. Deviation	N
a1	3.42	.966	100
a2	4.16	.861	100
a3	4.40	.667	100
a4	4.26	.441	100
a5	4.44	.499	100
a6	4.66	.476	100
b1	3.98	1.035	100
b2	3.54	1.068	100
b3	4.22	.416	100
b4	4.42	.496	100
b5	4.24	.429	100
b6	4.24	.429	100
c1	4.00	1.064	100
c2	4.04	1.188	100
c3	4.02	1.128	100
c4	4.12	1.166	100
c5	3.92	1.061	100
c6	4.14	1.155	100

Scale Statistics

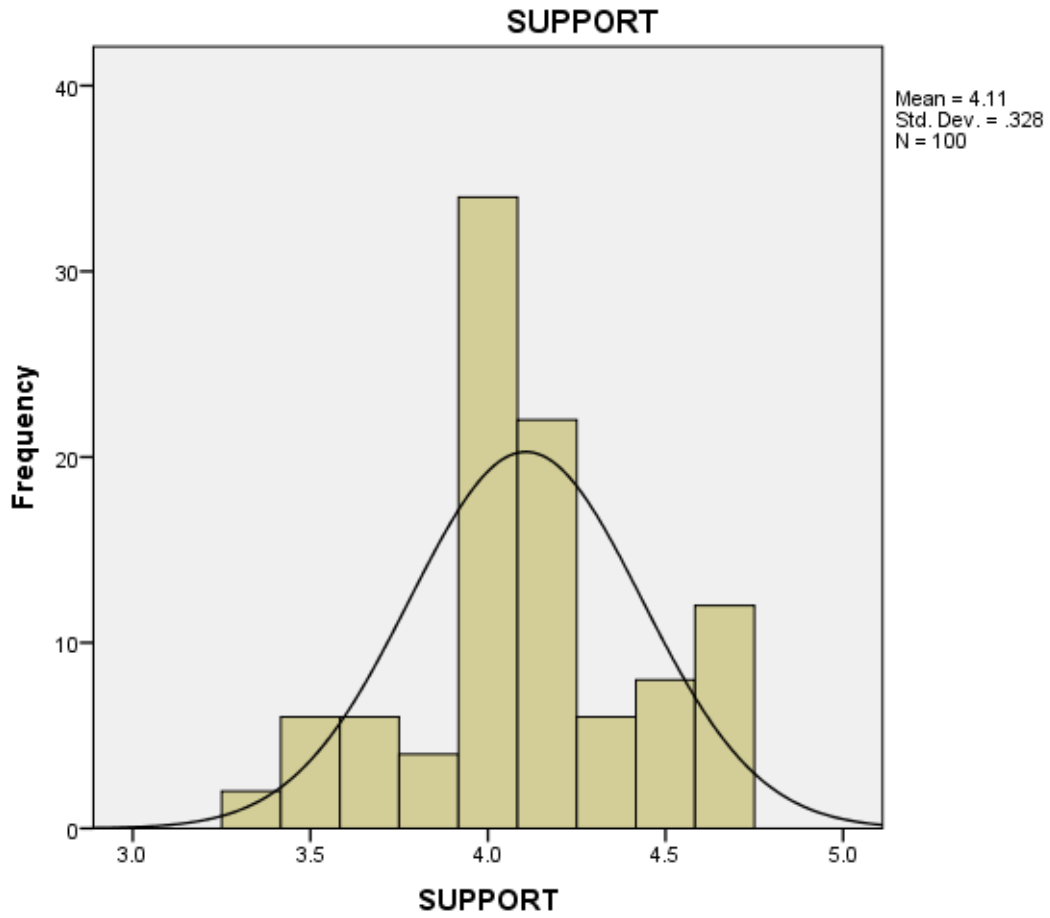
Mean	Variance	Std. Deviation	N of Items
74.22	53.749	7.331	18

Appendix IV Main Study

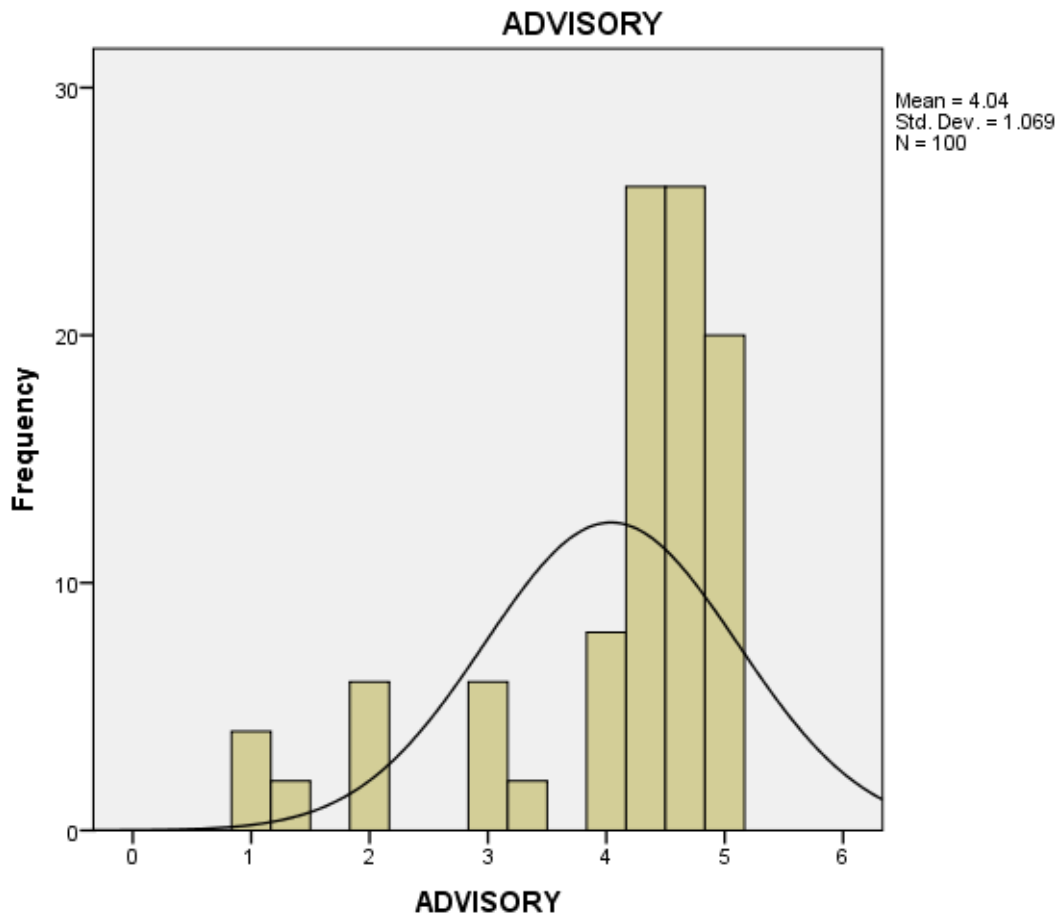
Benefits of the PYF Scheme



Demand for Support Across Different Activities



Demand for Advisory Services



Appendix V Research Hypothesis 2

Frequency Table

a1

	Frequency	Percent	Valid Percent	Cumulative Percent
2	24	24.0	24.0	24.0
3	20	20.0	20.0	44.0
Valid 4	46	46.0	46.0	90.0
5	10	10.0	10.0	100.0
Total	100	100.0	100.0	

a2

	Frequency	Percent	Valid Percent	Cumulative Percent
2	10	10.0	10.0	10.0
Valid 4	54	54.0	54.0	64.0
5	36	36.0	36.0	100.0
Total	100	100.0	100.0	

a3

	Frequency	Percent	Valid Percent	Cumulative Percent
3	10	10.0	10.0	10.0
Valid 4	40	40.0	40.0	50.0
5	50	50.0	50.0	100.0
Total	100	100.0	100.0	

a4

	Frequency	Percent	Valid Percent	Cumulative Percent

	4	74	74.0	74.0	74.0
Valid	5	26	26.0	26.0	100.0
	Total	100	100.0	100.0	

a5

		Frequency	Percent	Valid Percent	Cumulative Percent
	4	56	56.0	56.0	56.0
Valid	5	44	44.0	44.0	100.0
	Total	100	100.0	100.0	

a6

		Frequency	Percent	Valid Percent	Cumulative Percent
	4	34	34.0	34.0	34.0
Valid	5	66	66.0	66.0	100.0
	Total	100	100.0	100.0	

Appendix VI Research Hypothesis 3

Frequency Table

b1

	Frequency	Percent	Valid Percent	Cumulative Percent
1	2	2.0	2.0	2.0
2	14	14.0	14.0	16.0
Valid 4	52	52.0	52.0	68.0
5	32	32.0	32.0	100.0
Total	100	100.0	100.0	

b2

	Frequency	Percent	Valid Percent	Cumulative Percent
1	10	10.0	10.0	10.0
2	6	6.0	6.0	16.0
Valid 3	12	12.0	12.0	28.0
4	64	64.0	64.0	92.0
5	8	8.0	8.0	100.0
Total	100	100.0	100.0	

b3

	Frequency	Percent	Valid Percent	Cumulative Percent
4	78	78.0	78.0	78.0
Valid 5	22	22.0	22.0	100.0
Total	100	100.0	100.0	

b4

	Frequency	Percent	Valid Percent	Cumulative Percent
4	58	58.0	58.0	58.0
Valid 5	42	42.0	42.0	100.0
Total	100	100.0	100.0	

b5

	Frequency	Percent	Valid Percent	Cumulative Percent
4	76	76.0	76.0	76.0
Valid 5	24	24.0	24.0	100.0
Total	100	100.0	100.0	

b6

	Frequency	Percent	Valid Percent	Cumulative Percent
4	76	76.0	76.0	76.0
Valid 5	24	24.0	24.0	100.0
Total	100	100.0	100.0	

Appendix VII Research Hypothesis 4

Frequency Table

c1

	Frequency	Percent	Valid Percent	Cumulative Percent
1	4	4.0	4.0	4.0
2	8	8.0	8.0	12.0
3	8	8.0	8.0	20.0
4	44	44.0	44.0	64.0
5	36	36.0	36.0	100.0
Total	100	100.0	100.0	

c2

	Frequency	Percent	Valid Percent	Cumulative Percent
1	8	8.0	8.0	8.0
2	4	4.0	4.0	12.0
3	8	8.0	8.0	20.0
4	36	36.0	36.0	56.0
5	44	44.0	44.0	100.0
Total	100	100.0	100.0	

c3

	Frequency	Percent	Valid Percent	Cumulative Percent
1	6	6.0	6.0	6.0
2	6	6.0	6.0	12.0
3	8	8.0	8.0	20.0
4	40	40.0	40.0	60.0
5	40	40.0	40.0	100.0
Total	100	100.0	100.0	

c4

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	6	6.0	6.0	6.0
2	6	6.0	6.0	12.0
3	8	8.0	8.0	20.0
4	30	30.0	30.0	50.0
5	50	50.0	50.0	100.0
Total	100	100.0	100.0	

c5

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	6	6.0	6.0	6.0
2	6	6.0	6.0	12.0
3	6	6.0	6.0	18.0
4	54	54.0	54.0	72.0
5	28	28.0	28.0	100.0
Total	100	100.0	100.0	

c6

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	6	6.0	6.0	6.0
2	6	6.0	6.0	12.0
3	6	6.0	6.0	18.0
4	32	32.0	32.0	50.0
5	50	50.0	50.0	100.0
Total	100	100.0	100.0	

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