

**WOMEN ENTREPRENEURSHIP AND
CREDIT SCORING MODEL**

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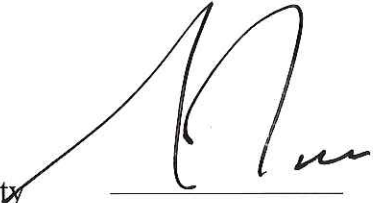
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CREDIT SCORING MODEL

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Abstract

This study is that entrepreneurship plays an important role in women's becoming stronger, and women entrepreneurs must be encouraged and supported. The place of women in society has changed within the process of industrialization and they learned to invest their labour in a way to increase the standard of life. However, women entrepreneurs are subject to several social, economic and bureaucratic challenges as they start a business and afterwards. These challenges vary across sexes and women entrepreneurs have to deal with more challenges than men just because they are women.

Many banks in our country give credits to support women entrepreneurs who have an important role in the country's economy. It provides support for women to realize their dreams and build their own business or to enlarge their current business. The biggest problem is the lack of capital for business establishment.

A simple credit scoring model has been created with specific variables in the credits process to ensure that women are supported in this study.

KADIN GİRİŞİMCİLİK VE KREDİ SKORLAMA MODELİ

Özet

Bu çalışmada, kadınların güçlenmesinde girişimciliğin önemli bir rol oynadığı ve bu nedenle girişimci kadınların teşvik edilmesi ve desteklenmesini önermektedir. Endüstriyel gelişmeyle birlikte kadının toplum içindeki yeri ve konumu değişmiş, kadın emeğini verimli kullanarak yaşam kalitesini yükseltmiştir. Kadınların girişimci olmasına karar vermesiyle birlikte hem işletmeyi kurarken hem de işletme faaliyetlerini sürdürürken sosyal, ekonomik, bürokratik birçok sorunla karşılaşmaktadır. Bu sorunların girişimcilere göre farklı olduğu ve kadın girişimcilerin sırf kadın oldukları için erkek girişimcilere göre daha farklı sorunlarla karşılaştığı görülmektedir.

Ülke ekonomisinde önemli bir rolü olan kadınlar için ülkemizde pek çok banka kadın girişimcilere yönelik destek kredileri vermektedir. Kadınların hayallerini gerçekleştirerek kendi işlerini kurabilmeleri ya da mevcut işlerini büyütebilmeleri için destek sağlıyor. İş kurma sürecinde en büyük sorun sermaye yetersizliğidir.

Bu çalışmada kadınların desteklenmesini sağlamak için kredi verme işlemlerinde belirli değişkenlerle basit bir kredi skorlama modeli oluşturulmuştur.

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To my family,

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1. INTRODUCTION

The economic system of the twenty-first century is based on innovation and initiatives with a holistic background. As the fundamental objective of the economic systems, economic growth is driven by production and the forces behind it. Among these forces which are *natural resources, capital, labour and entrepreneurship*, qualified labour and entrepreneurship are critical (Bayraktar and Bilgiç, 1995). This is because human mind and innovative applications are the natural resources of economic development (Sappin, 2016).

In particular, entrepreneurship lies at the very heart of competitive economy as a growth source. As written in the United Nation's article called *Entrepreneurship and Economic Development: The empretec Showcase* (2004), entrepreneurship are all activities in order to turn ideas into economic opportunities (2005). Moreover, these activities aim to take responsibility for the establishment, sustainability and extension of a profit-oriented business unit (Kent et al., 1982). Thus, it is a dynamic process for fulfilling unmet needs and demand in the market. This explains why an entrepreneur initiates the necessary action that economic goods and services by combining production factors. However, it also includes coordination, creativity, uncertainty, capital supply, allotment of resources, possession, and decision-making (Friijs et al., 2002). As a result of the generation of creative ideas and the implementation of innovative attempts in the dynamic process, enterprises lead an economic growth, the decrease in unemployment, and a substantial profit.

Enterprises are the core of economic power due to their impact on personal wealth and competitiveness. Furthermore, they are formed by a process including functions, activities and movements related to the realization of organizations for perceiving and evaluating opportunities (Bygrave, 1994). According to The Wennekers and Thurik Model (Carree and Thurik, 2002), its performance is affected by individual forces and macro forces. In detail, individual forces are individuals, the

entrepreneurs; on the other hand, macro forces induce market dynamics and competition. For instance; individuals try to establish their own business to be independent as behavioural characteristics of a person and have support in individual forces; skills and attitudes. Accordingly, Lumpkin and Dess (1966) claims that while competitive, self-reliant and active decision maker personality is the main requirement of an entrepreneur, its gender has no impact its success.

In Turkey, women take on active roles in business life, aspired to focus on specific tasks and struggle for reaching independence has taken a long time. The reasons for the low number of women entrepreneurs are that the women are late to take an active role in their working life and the share of working women in the female population is low (Atalay, 1993). According to the results of the Turkish Statistical Institute, the proportion of female employed as an employer in total employer realized as 8% in Turkey, 2014. Taking this information into account, there is a significant gap in Turkey's labour market which can be turned be turned into an economic opportunity.

Social, technological and industrial changes have been attracting more and more women into business life, and many women want to set up their own business. In recent years women have moved beyond these roles by solving the problems arising from their traditional roles in developed and developing countries. Women have stepped in higher roles like leaders, managers, entrepreneurs in society (Peterson and Weiermair 1988, Sirageldin et al. 1990, Liman 1993). These steps are helping and encouraging women to improve their entrepreneurial skills and attributes in order to cover the gap in the labour market.

In principle, what triggers women to establish their own business and involve in the labour market more root in a variety of reasons. In fact, entrepreneurship is an alternative way for women who want to get rid of economic and social dependence. Furthermore, the most important factors that motivate women as entrepreneurs are economic needs, ownership of the workplace and salary compensation (Goetting and Muggli 1988, Liman 1993). Not just reasons to become an entrepreneur, the way how they become an entrepreneur is also different compared to male entrepreneurs. According to the research of Hisrich ve Peters (1989) on differences women and men entrepreneurs, how women get benefit from financial sources, which sectors

women would like to participate and what kind of education women had are significantly different. For instance; women entrepreneurs are mostly located in the retail and service sectors (Goffee and Scase 1987). On the other hand, male entrepreneurs tend to work in finance, technical specialities or manufacturing more than women (Arıkan, 2002). Taking all requirements and ways of entrepreneurship for different gender into consideration, it obviously creates common and uncommon results for them.

Eventhough explaining women entrepreneurs is as difficult as an entrepreneur as a term, woman entrepreneurs can be defined as a woman or a group of women who initiate, organize and operate a business enterprise (Kumar, 2006). Further to that, these women bear the risk factor for creative and rational projects with the help of capital sources. This factor gives a critical responsibility to women and brings some fundamental characteristics into the forefront. Therefore, women entrepreneurs have nine main characteristics which are visionary, diligent, innovative, instinctual, flexible, knowledgeable, confident, risk-taker and rejecting “No” as an answer (Hisrich and Brush 1986, Fortenberry 1988, Lee-Gosselin and Grise 1990, Pickle and Abrahamson 1990, Özcan 1993). Yet, all these characteristics are still not enough women to achieve their goals and found strong enterprises easily due to the lack of access to opportunities. As a result of this, Güleç (2011) states that women entrepreneurs are a minor group in the entrepreneurship ecosystem.

Initially, women entrepreneurs have some problems which are capital, finding workplace, renting, the supply of goods, relations with official organizations, inexperience, lack of trust in customers, thoughts and beliefs about women in society (Hisrich and Brush 1988, Leo Gosselin and Grise 1990). Although these issues seem like common issues for all entrepreneurs, particularly capital sources differentiate for each. While male entrepreneurs are likely to receive credits from banks or investors and use their savings, women entrepreneurs' capital sources are mostly their savings (Gürol 2000). Basically, the main problem is not reaching the credit for women entrepreneurs in work. Women's access to economic resources is more limited than men. Due to their limited opportunities to borrow, they have to use their savings. This opportunity is influencing the starting phase and the ability to grow their business (Stevenson 1988). This is why capital and credit is a critical factor for

women entrepreneurs which are not employed by the public and private sector, trying to establish their own business (Yıldız Ecevit, 1993).

In spite of the rising number of women entrepreneurs and their active roles in the entrepreneurship ecosystem in recent years, there is still a significant gap. Thus, some government agencies have taken lead in creating and implementing projects supporting women entrepreneurship and its acceleration in the ecosystem in order to fill the gap. Furthermore, Small and Medium Industry Development Organization (KOSGEB), Directorate General on the Status of Women (KSGM) and Turkish Labor Agency (İŞKUR) are exemplified in Turkey. Owing to deliberate and biased approaches of financial institutes to women, these agencies came into prominence. In particular, KOSGEB is a key actor supporting small-scale credit in the manufacturing and technology sector. KOSGEB Entrepreneurship Development Institute's target group is also women entrepreneurs. Moreover, they are creating networks and special programmes for women to benefit from training, counselling and funding programs. Their women-only programme COSME aims to encourage women to take a more active role in the business life and turn their ideas into a business. Further to that, international WEF network, *a global network for women encouragement*, and their mentorship programme are a part of common training method which can be seen globally, since the most common training methods are seminars, counselling, awareness raising and career guidance (Yıldız Ecevit, 2007). In doing so, they not only boost women entrepreneurs in Turkey but also contribute to the entrepreneurship ecosystem by creating potential ideas and women entrepreneurs.

Contribution to the economy and women entrepreneurs is possible with the help of knowledge and support. Transfer of information to women for their entrepreneurial attempts supports them in financial, organisational and educational areas (İlter, 2008). The way of encouragement for women is very significant for their success due to the fact that they feel a lack of support. On the other hand, transferring information and supporting women with all sources have cost for institutions and agencies. Furthermore, the success of them is based on how they measure the potential of entrepreneurial attempts and how they contribute their need. When capital which is the main need of women entrepreneurs is considered, the role of banks and capital

providers are important for their success as well. This is why they developed special systems called credit scoring models to adjust their credits according to potential and credibility of organisations.

In this study, a simple credit scoring model has been created with specific variables in the credits process to ensure that women are supported.

2. LITERATURE SURVEY ON WOMEN ENTREPRENEURSHIP

In this section of the study, situation and importance of women entrepreneurs has been clarified in order to explain properly why a model has been created. In particular, their needs and struggles have been manifested and searched, since women entrepreneurs face off more difficulties rather than other entrepreneurs due to gender perception in the workplace. Understanding them and matching their needs with financial opportunities can be provided by analyzing these gaps. These explanations and gaps will be shaping our study for creating a model which will change economic and social norms.

2.1 Women Entrepreneurs

Even though entrepreneurship is not easy to explain, it comes from the French word "entreprendre" which means "doing or creating something" (Westhead and Wright, 2000). On the other hand, entrepreneurship is perceived as an innovation creation at risk in the twenty-first century (Çetindamar, 2012). In general, entrepreneurship is a process which entrepreneurs chase the opportunities, take risks and then create innovation or production in order to contribute economy. Entrepreneurship is obviously a course of action and understanding. This is why its roles and characteristics have been shaping and affecting economy prominently.

In particular, the entrepreneur is who lives in the future and has the potential to turn every little detail into an important value. They not only take advantages of opportunities but also put them into practices with the help of business plans and feasibility studies. These motivations have a close relationship with their intuitions and perceptions. Furthermore, their intuitions and perceptions are shaped by knowledge and their capabilities. For these reasons, entrepreneurship is evaluated as a personality. Concordantly, it is also influenced by society and its values. Yetim claimed that entrepreneurship is the most ideal profession to create prestigious and

indicate a show of force in most Eastern societies (2002). Thus, gender is not of one of the characteristics of entrepreneurs despite the fact that gender roles in societies affect entrepreneurship.

As patterns of societies affect entrepreneurs and entrepreneurship, entrepreneurs have an impact on societies. When taking their impact on women into consideration, they give more autonomy, independence, self-realization, and reaching future goals for women in societies, since perception of individuals' opportunities and entrepreneurship capacity have increased with the help of corporate support and knowledge transfer to women. They enabled them to make short-term or long-term plans for their own business within the total employment. In doing so, women started to use resources more optimally, achieve success in human relations, and transfer their experiences to different channels. Moreover, it offers the opportunity to determine their own destiny and overcome dependencies for women.

Recently women show their power in many different fields such as the economy, art, science, politics, social life, media, local governments, law, various associations and foundations. In addition, the amount of women in professional business lines is increasing. Women have been at the top of the decision mechanisms and have created their own power and communication networks at the points they are in. They have proven themselves as successful entrepreneurs. Further to that, they have supported the potential women entrepreneurs and invested in them to boost their amount in the workplace.

Women's success depends on their confidence in themselves and their tendency to take risks with their confidence in entrepreneurship. Women will be able to compete and achieve success by taking personal responsibility. Because they have abilities that creative, discreet, open to innovation, produce solutions and mediator.

2.1.1 The Characteristics of Women Entrepreneurs

Entrepreneurship and women entrepreneurship are interbedded. However, the relationship of women entrepreneurship with "gender roles in societies" is inevitable. This causes overlapping between them in terms of their characteristics. When

considered from this point of view, the characteristics which women dominate in societies are important in entrepreneurship as well (Ufuk and Özgen, 2001). Good communication, problem-solving and a tendency to compromise might be exemplified.

Basically, entrepreneurs have many common character traits bursting into prominence. Beyond establishing their own business, these characteristics accelerate their success. Their desire for independence triggers them and increases their tendency to take risks. It does not only differentiate them from others but also makes them more optimistic.

One of the main characteristics of entrepreneurs which make it important for the status of women entrepreneurs is standing against the status quo. It is quite crucial for women to overcome the status quo with their ideas and success. Moreover, it creates a vicious circle for self-confidence. While they boost their self-confidence, their self-confidence increase their success. In detail, self-confidence means that people feel good about themselves as a result of their good emotional development. In other words, it means to be satisfied with oneself, and as a result, people must be in peace with themselves and their surroundings. Briefly, self-confidence is the feeling that "being lovable and capable". This is why self-confidence is a key player for success and taking their ideas to the next step. A woman who has a high self-confidence will come through the gender role and increase her chance while competing. Clearly, it is a way to change perceptions in societies.

Women-owned businesses have qualities in parallel to their personal characteristics. Women entrepreneurs have an approach that focuses on quality of work and emphasizes creativity, flexibility, humanitarian approaches in business management, manages businesses. Further to that, they highlight social and cultural purposes as much as financial goals. In doing so, they bring different perspectives and ideas to the workplace and draw investors' attention. As a result, getting support and raising self-confidence pushes their motivations.

Motivation is the power that provides the initiation and pushes them the first and more steps. Then, it leads to more directions and helps stay in the game. It might be

defined as an energy or motive that activates the resources that a person possesses in the direction of a specific goal. Motivation is also meaningful with the words that are enthusiasm, desire, impulse and passion. In order for an entrepreneur to be successful, it is necessary to define a business as an opportunity which his or her knowledge and experience or resources are likely to become a success story with motivation. Even though motivation is a common characteristic for all entrepreneurs, the ways they increase or reach to their motivation for different genders are different. Indeed, the initiation process can be longer for women due to self-actualisation needs and this puts other obstacles to women's entrepreneurship journey.

One of the most basic features of an entrepreneur is to create and to innovate. In short, it can be described as a valuable addition to business and society. The entrepreneurs have these characteristics that provide gain competitive advantage and adapt to changing business conditions. With the help of self-confidence and motivation, they trust their own idea and dedicate themselves for it. Moreover, they form their most of life and become their prioritisation in their lives. When women's gender role, as a mom and housewife, is considered, it creates the bias for women. Yet, women destroy all doubts with the power of their idea and passion. Then, a woman entrepreneur is very dedicated to work and become more ambitious to compete. Generally, women entrepreneurs do not hesitate to work long hours because they have a work-loving and success-oriented structure. They believe in their own success, not luck. They have the courage to overcome financial and managerial difficulties.

An entrepreneur has to be a risk taker. Risk appetite (economic, psychological, social relations, career development and health) is one of the key characteristics of successful entrepreneurs. Indeed, the basic condition to become an entrepreneur is that they can take risks and have the ability to carry that risks. It is also the determinant for entrepreneurs for their success. This is why they have to invest in their foresight and minimise their risks. Furthermore, the risk is the possibility of not reaching a targeted result and incurring the loss in a certain period of time. It points to potential problems, threats and hazards that may arise in the future. The risk usually varies depending on the time when it is unclear or unpredictable. There are negative effects on the result. As a negative result of risk, failure is seen as an

ending. This is a life changing point for entrepreneurs to overcome issues and expanding their knowledge and skills since risk is a manageable phenomenon. The basic components of risk are the likelihood of occurrence and how the outcome will affect the results if it occurs. But it would be a big failure to think that risk is only a concept with adverse effects. It should be viewed as an opportunity to gain income. In particular, when they have a strong support network, they can come up with a better business. Thus, women have to focus on their support network and foresee their possible risks factors from a broad angle. For instance, risk factors affecting women entrepreneurs can be listed as market conditions, difficulties due to the collection of receivables, operating expenses, payments to the government, debts to third parties and companies. In addition, a woman entrepreneur will be able to reduce the risk factors with the help of successful cash flow and well financial planning.

Foresight on entrepreneurs' business is very critical to estimate their future and shape it. Growth and expansion can be considered in these plans. In particular, woman entrepreneurs see growth as a business strategy and direct them to work in that direction and also avoid the risks which are not foreseen or calculated.

Self-control and controlling emotions are important for entrepreneurs when making decisions since it plays a key role in risky situations and problems. This is why entrepreneurs have to increase their emotional intelligence in order to improve their managerial skills and create trustworthiness for their support network. Additionally, a comprehensive definition of emotional intelligence can be defined as the ability to monitor and edit what he or she feels and to use his or her feelings to guide thought and action. "Emotional intelligence" is the ability to recognize, motivate, and manage the feelings of ourselves and others.

Emotional intelligence is one of the important concepts in the entrepreneurial process. This concept is described as being aware of both the emotions of entrepreneurs and the feelings of their employees, understanding them, associating them with their sources and reasons, managing their feelings and benefiting from them in both personal and interpersonal relationships. It is because emotional intelligence will only be possible to bridge the feelings of others through their own feelings. According to some researchers, emotional intelligence is the main

determinant of success in family, business and social life. It is also a power in business life, since it may be possible to establish a relationship beyond the same type of thinking, appropriate opinions, and similar pleasures or close intelligence levels. In addition, it makes entrepreneurs more flexible which is a requirement for them due to their uncertain and risky situation. In that case, although intelligence is a very difficult changing structure, it is often possible to develop emotional structure. Women entrepreneurs can reflect their emotional intelligence in business life with the difference and sensitivity that women create and often get positive results in this situation. In that case, their capabilities coming from their gender role help them in communication and relationships.

Women entrepreneurs come into prominence with their characteristics due to their gender roles. Even though gender is not a determinant for describing an entrepreneur, these affect their success stories and reliability. How they turn their characteristics into a success and how they deal with challenges in risks and problems will be changing their position in the entrepreneurship ecosystem more.

Table 1: Characteristics of Women Entrepreneurs

Characteristics	Explanation
Standing against the status quo	Women entrepreneurs deal with their gender perception and stand against the status quo with their ideas.
Having self-confidence	Self-confidence makes women feel better what they are doing and triggers them to do more.
Broader approach and focus	Women entrepreneurs have an approach that focuses on quality of work and emphasizes creativity, flexibility, humanitarian approaches in business management, manages businesses.
Diversified Goals	Women entrepreneurs have social and cultural purposes as much as financial goals.
Self-actualisation motivation	Even though motivation is a common characteristic for all entrepreneurs, self-actualisation needs of women increases their motivation.
Having a work-loving and success-oriented structure	Women Entrepreneurs believe in their own success, not luck. They would like to destroy all doubts coming from their gender roles.
Supporting network and foreseeing their possible risks	Women Entrepreneurs are risk-taker. They invest in their foresight and minimise their risks with the help of their network.
Creating growth-focused business plans	Women Entrepreneurs see growth as a business strategy and direct them to work in that direction and avoid the risks.

Self-control	Women Entrepreneurs have high level self-control and they control their emotions by turning into their advantages because most of the time it gives them opportunity to improve their relationships.
Giving importance to emotional intelligence	Women entrepreneurs can reflect their emotional intelligence in business life with the difference and sensitivity and they use it for their advantage because it helps them in communication and relationships.

2.1.2 Reasons for the Support of Women Entrepreneurs

Potential of entrepreneurship should be evaluated according to its country (Fettahoğlu 2014). This statement is also valid for women due to the differentiation of social values and their economic contribution. In Turkey, women employment and their contribution to the economy are quite low. Additionally, the Turkish Statistics Institute states that it is less than half of men's (Karadeniz 2017). While half of the Turkish population is women, it shows that there is a problem in economic development due to the lack of women as a labour.

Taking importance of entrepreneurship in economic development into account, it is important to involve women more into entrepreneurship and encourage them. In particular, it is required to make investigations on women entrepreneurs and understand their needs, determine strategies and plan policies for supporting them (Türko and Kadiroğlu 2017).

The subject of women entrepreneurship has been continued to on issue intensely by the supporters of various approaches and in different contexts. These discussions not only aim to promote women's entrepreneurship but also adopt different viewpoints and approaches regarding why women should be entrepreneurs.

The main approaches are: the First approach is economic development and growth. According to this approach, women establishing small businesses are important for economic development and are also of vital importance in economic revival and employment generation after crises. The second approach is increasing women's participation in the labour market, leading to a decrease in unemployment. Women as entrepreneurs mean they are active participants in the labour market. Those who adopt this approach also associate encouraging women to engage in setting up SMEs

with reducing high unemployment in Turkey particularly by providing work opportunities for other women. The third approach is improving the welfare of the family and helping families escape from poverty. Women being able to receive an income from a small business can ensure that their family are protected from poverty.

Micro-finance which supports small businesses by enhancing the economic and social status of the poor turns them into a productive part of the labour market. The last approach is encouraging women to become stronger and ensuring gender equality. Women's becoming entrepreneurs is important in the process of gaining strength and standing against the injustices and inequities in patriarchal families and marriage above all. A woman who becomes stronger will increase the welfare of her family and children. People and institutions who support this approach neither aim to eliminate inequality in the labour market by directly increasing women's employment nor prevent unemployment and decrease poverty while encouraging women to entrepreneurship. In the first place, they encourage women to become powerful in society and be part of the movement to ensure gender equality (Ecevit, 2006).

Women have the opportunity to develop themselves, increase their self-confidence, the authority to make decisions and act more independent with the power of entrepreneurship. Thus, women take a more active role in the economy and increase their professional knowledge and skills and act within the framework of a plan in business life. It is beneficial for women to develop their ability to solve and analyze their problems in the framework of plans and programs. By empowering women, it is possible to contribute to the economic efficiency and sustainability of their work, increase the self-confidence and increase their position in society. Increasing employment in the labour market and providing the qualified labour force to the market should ensure that women participate more dynamically in the business environment. Women's adaptability to change and development can be ensured by supporting entrepreneurship to become more productive. Gaining a qualified workforce for the labour market will increase the quality of services and products (Burch, 2014).

The increase in women entrepreneurship provides to reduce gender inequality and enables women to increase their social cohesion. Especially in rural areas, the participation of women in the labour market brings more vitality and mobility to the economy. Women in rural areas are also increasing their self-esteem and women's status in society. In many regions of our country, active participation of women in the labour market is ensured in rural areas. Women with increased motivation for success can systematically work more consciously and find the opportunity to improve themselves (Cici, 2014).

2.1.3 Institutional Supports

In the last decade, institutional support to women entrepreneurs is prominent due to considerable effects of low women employment in the economy. According to the Turkish Statistics Institute published data (Workif, 2018), Turkish women entrepreneurs are 15% of entrepreneurs in Turkey. It is clear that their weight will have to increase in following years with the rising contribution of government and institutions.

Determinants of entrepreneurship demonstrate that government and institutions take a significant place in the entrepreneurship ecosystem. Additionally, these determinants are financial support, the convenience of government policies, proficiency of programmes, education, research and development, the infrastructure of commerce and professionalism, dynamics of the domestic market (Karadeniz, 2017). Therefore, the development of entrepreneurship is subject to these activities which are able to change under government and institutions. In fact, entrepreneurship is evaluated as an economic behaviour and entrepreneurs' behaviours and frame of mind are formed by regulations, norms and cognitive institutional systems.

Through their self-efficacy for a successful business, there are several models and ideas due to the variable code of conduct. These models are required to use limited resources wisely to increase venture performance by getting supports from institutions which have enough experiences and vision to support more women in employment.

Based on Kawai and Kazumi's *Proposed Conceptual Model* (2017), the institutional environment includes two different supports: Formal and Informal institutional support. While formal institutional support affects their confidence and vision, informal uses social norms and encourage them for learning from their failures owing to the availability of tangible and intangible resources. In order for women entrepreneurs, formal institutional support aims to develop women's reactions to uncertainty. Moreover, they provide funding, training and guidance. From an institutional support angle, financial grants, technical and legal advice, and counselling are benefits of formalised version for women. It does not only leverage the resources they can reach but also help their personal development. Further to that, it minimises the gender gap in entrepreneurship due to gender roles in societies with legal assistance, counselling and funding them. As a result, women's self-confidence and determination are boosted. On the other hand, informal institutional support influence entrepreneurs in individual level and provide a kind of approval of their attempts in the society or community, since the lack of a normative support to women entrepreneurs is likely to distract them and change their behaviours, such as giving up. Clearly, informal institutional support embraces "one-is-not-alone" perspective for women with emotional security and minimising their self-doubts.

Both institutional supports to women affect their outcomes, particularly venture performance. The aspects of formal and informal institutional supports are quite different. As women entrepreneurs are reinforced for their credibility with government support policy and reach funds easier by formal institutional support, they can build cooperative relationships with fundamental stakeholders and create a better access to strategic opportunities.

As a consequence, the fulfilment of the needs of women entrepreneurs with institutional supports is very critical due to resource constraints. When women entrepreneurs' needs are examined, lack of capital is in the lead in contradistinction to male entrepreneurs. Therefore, it is crucial to fund them with the help of formal institutional supports and encourage them in line with informal institutional guidance, encourage and cooperation. In order to enhance women's ambition and goals in the entrepreneurship ecosystem, institutional supports must provide experiential knowledge and financial support (Kickul et al., 2007). Taking this

statement into account, it is inevitable that government and institutions will clear an economic hurdle and contribute to women, as well as the society.

In table 2, the main institutions and their support for women entrepreneurs have been explained according to Kawai and Kazumi's Proposed Conceptual Model.

Table 2: Support Reasons and Institutions

Formal / Informal	Institutional Support	Institutions
Formal / Vision and confidence and Informal / Regulations and learning from failures	Providing trainings for entrepreneurs	Women entrepreneurs Association of Turkey (KAGIDER) - Institutions of Providing Jobs and Employee
Formal / Vision and confidence and Informal / Regulations and learning from failures	Mentorship Programmes	Women entrepreneurs Association of Turkey(KAGIDER) -
Formal / Vision and confidence	Consultancy and Marketing	The Foundation for the Support of Women's Work (FSWW) - Women entrepreneurs Association of Turkey(KAGIDER)
Formal / Vision and confidence	Financial Support	Turkey Grameen Micro-finance Programme – Banks - Institutions of Providing Jobs and Employee – Maya Microcredit Support Institution - The Foundation for the Support of Women's Work (FSWW)
Formal / Vision and confidence	Trainings for Financial Empowerment	Saving Groups

2.2 Financial Problems of Women Entrepreneurship

An increasing number of women participates business life with the expansion of opportunities and development of economic sources. Although this number is increasing all over the world in general, its growth rate and potential vary country by country. For instance, women employment rate in Turkey is 46% while it is in European Union countries 60% (Karadeniz, 2016). Moreover, these numbers reflect themselves on entrepreneurship and c-level management of companies. Indeed, 25,4 % of private companies are owned by women in Turkey and 3% of them is dominated by women executives (Uyar, 2018). Taking the role of identity economics into consideration, it is obvious that contribution of women to economics is not understood enough yet.

Understanding contribution of women and its positive impact on economy is quite determinant for the future of countries. Therefore, it is required to examine their activities and expectations well. Expectations of women entrepreneurs are shaped regarding their needs and struggles. When competitive business environment is considered, women can enter this ecosystem by enhancing their education and becoming financially strong (Bedük, 2005). Therefore, financial needs are forming a significant level of their needs. On the other hand; unfortunately, their needs are not fulfilled fully by one source; therefore, they request different supports from banks, government and other institutions. Initially, they would like to feel strong financially and have the advantage of financial independence in their business.

On the other hand; unfortunately, their needs are not fulfilled fully by one source; therefore, they request different supports from banks, government and other institutions. Initially, they would like to feel strong financially and have the advantage of financial independence in their business.

Most women entrepreneurs try to benefit from more than one source for reaching their needs, finding investment and capital for their business. Financial sources are required in planning, managing and leading parts of the establishment. The most difficult challenges are lack of capital, the stability of market and taxes for women entrepreneurs by running their business (Erdun, 2011). Taking into the statement into account, financial challenges are determinant for their future. Notedly, capital is the only challenge they face owing to their gender (Çakıcı, 2004). As Barış and Aşkın (2016) stated, gender issue for women is not only pushing them to become an entrepreneur, but also pulling them from becoming one. Although capital is the main issue of all entrepreneurs, it is more critical for women entrepreneurs. This, in particular, grew out of the conflict between their role in the society and characteristics of entrepreneurship.

When all these struggles combined with the lack of information, women entrepreneurs go on facing off financial problems after establishing their business as well. Clearly, lack of information and experiences they had before creates fears and

discourage them. Özkaya (2009) states that almost 85% of women entrepreneurs face financial problems at the beginning of their entrepreneurship journey. Among their financial problems, lack of information about microloan system, rejection or low scoring in microcredit scoring system might be listed. Moreover, the credibility of business and belief of financial support to business also affect women entrepreneurs' financial status.

Clearly, there are many reasons underlying why women entrepreneurs are struggling financially more than men do. As the main reason, women are not able to prove their financial reliability due to the lack of financial documents (Özyılmaz, 2016). For instance, properties are generally registered to men. While % 65 of men in Turkey have a property, the ratio of women's is 35% (Dünya 2014). This reason reduces the possibility of getting loans or supports from financial authorities or banks. In fact, this high risk has a high monetary cost for banks. As a result, they have to use their own savings in order to create their own business.

According to Garanti Bank's research called *Kadın Girişimciler Araştırması* (2015), 24% of women entrepreneurs apply for the loan to banks. Thus, bank loans come in first for supporting women. However, 23% of them get help from their husbands and 19% of them are supported by their families. This kind of support from their husbands and families obviously are contrary to their independence goal. Further to that, women worked at jobs related to their entrepreneurship plans in their previous professional life as a step for experience and money saving (Yetim, 2002). However, owing to their education level and wage gap in their previous professional life, women have not enough opportunities to save money as much as men have (Buğra, 2018). This factor also causes women to get financial help form their husbands and share its possible risks. For this reason, the microloans of banks play a very important role in the financial problems of women entrepreneurs, since 71.4% of women entrepreneurs asserted that they had financial issues, while founding their business (KSSGM, 2000).

Due to the fact that most women apply banks for microloans, almost half of women entrepreneurs who apply banks have complaints about difficulties of banks loans (*Kadın Girişimciler Araştırması*, 2015). In particular, warranty, bank interests and a

high cost of a loan are among these complaints. Moreover, it is more difficult for private companies to get loans.

To sum up, financing is the main need of women entrepreneurs due to their gender role and its perception in the society. Further to that, difficulties to reach the sources which can fulfil financial needs including networking and trainings are amplifying the importance of this need. Thus, financial institutions, banks and their programs for women are quite critical to change their destiny and future of countries when economic conditions and their contribution are considered. Particularly banks should embrace all women entrepreneurs in order to provide a balance to this ecosystem as an investment. Moreover, they should improve themselves on how they can support micro businesses or small scaled businesses better for enhancing their performance (Yalçın, 2017).

2.3 Micro Loans for Women Entrepreneurship

In the entrepreneurship ecosystem investment or financial support turned into an aim for entrepreneurs, rather than an instrument. The main reason under this topic is deprioritisation of entrepreneurship by being discounted its contribution. Indeed, 7,6% of start-ups have got investment in Turkey in 2018 (Kutsal, 2018). When young population of Turkey is considered, Turkey obviously could not catch its potential yet. Further to that, reflections of gender issues are seen in the ecosystem, particularly in financial support for their start-ups.

In some countries where the involvement of women to economic activities are quite high, women entrepreneurship and micro-finance are emphasised more than other countries. According to Muhammed Yunus who highlights importance of microloans in Bangladesh, *“if the goals of economic development are targeted at reducing poverty, improving economic status and creation of honorable jobs, than it only seems natural to begin these reforms with the emphasis on women.”* (Soyak, 2010). Thus, the notion of “microloans” and improvement of microfinance have very critical roles on women.

The inequality that women faced in wages and financial support shows itself in microloans as well. In parallel, Ryan (2015) highlights that women entrepreneurs have slightly fewer credit scores than men. The factors which weaken women's financial status have been going on weakening them. Thus, their need of capital

forces them to fund their business attempt with their personal loans as putting them into more risks and struggles.

In general, microloans are a financing tool which is given to people as a beginning capital. People who utilise are generally liable to pay it back, yet it is guaranteed by "social and group pressure" or "responsibility". Due to its low cost of supporting a group, it creates a financial deepening. In fact, microloans are not based on what an individual has already as a property, yet it is based on an individual's potential and future plans. For providers, the credibility of these plans and the determination of these individuals are important.

In entrepreneurship, microloans are generally given to women in order to implicate them into the market economy and develop the socio-economic structure. In that case, gender is excluded as an obstacle and becomes a benefit for women, because it is not only a monetary support but also a training for financial literacy. Further to that, they are also supported by microinsurance which is a system given to individuals and businesses for risk division. While ensuring that they focus on their own and business development, microloan providers help them reduce risks of their properties, health and capabilities.

Microloans for women can be explained as small capital which provides an opportunity to low-income women so as to establish their revenue-generating business or projects. Then, these loans do not require warranty or security deposit (Turkey Grameen Microfinance Programme n.d.). Mainly, it is a mechanism for creating an empowering experience. The mechanism delivers a financial service in two ways: a relationship based individual banking model or a group-based model bringing several entrepreneurs to apply for loans.

In Turkey, microloan providers evaluate candidates and require several conditions. For instance, at least five women from the same neighborhood should come together and they should not have any lines of descent. However, they do not have any age limitations. While evaluating these women's applications, they examine their economic background and criminal records as well. All reasons behind these examinations are pieces of training and monetary support without any warranty.

The vision of micro providers plays a very strategic role for economies. Therefore, they try to increase the wealth of societies, as well as reducing social inequalities. Nevertheless, in financial support, their financial return expectations and capacity of risk-taking are differentiated in spite of dynamics of the microfinance sector.

When the Microfinance sector has been evaluated, it has been formed by classical banks and micro-credit institutions. According to Grameen, classical banks focus on male candidates, micro-credits institutions focus on women candidates. Indeed, an increase in women's status is one of their goals. Encouraging people to produce and become more innovative is in the nature of these institutions. It is obvious that the risks they get are quite serious and complicated. This is why they support individuals based on macro and micro drivers after several risk analyses.

3. CREDIT SCORING MODEL

Market conditions put a price on the risk which institutions or banks take. This is why assessment of these risks is crucial. Therefore, they implement several models in order to reduce their risk and they give credits to entrepreneurs after these assessments. By doing so, subject to minimum requirement and optimum conditions, banks evaluate and estimate risk components for the capital request (Central Bank of Malaysia, 2013). Furthermore, they get help from statistical methods called *Credit Risk Models*. The main reason behind these models is the need of developing quantitative estimations and foreseeing the support for risk taking activities.

The first model was developed fifty years ago for utilizing in administering and underwriting credit debt, residential mortgages, credit cards and indirect and direct consumer installment loans. However, according to Fay, these models were based on a great degree of subjectivity rather than statistical analysis. Even though many proper methods have been developed in the 20th century, modern statistics created opportunities to examine the likelihood of individuals' payment defaults, given the approximation of the characteristics to those had already faced the similar default in the past (Chatterjee, 2015). As one of them, a credit scoring model is just one of the tools implemented in examining a credit application or credit risk evaluation.

In particular, banks lead their decision-making process of approving or rejecting a credit request according to credit scoring models which gives information about who and how trustworthy the individual or entrepreneur is (Skantzos and Castelein, 2016). Basically, this model classifies applications by distinguishing explanatory variables such as salary, age, education, etc. Additionally, this model helps estimate default probability and gives bank more accurate and predictive details about their risks.

Credit scoring model is a statistical analysis tool to understand a person's or an entrepreneur's creditworthiness (Lopes, 2005). It is demonstrated in form of a credit score. In detail, this scoring system assigns a number from a range which is calculated with multiplied variables. In general, this scoring gives a number in between 300 to 850, in which 300 is the lowest and 850 is the highest score (Kenton, 2018). When the score gets higher, the probability of default decreases.

Despite a number of common credit elements in credit scoring models, there are diversified types specific to the credit characteristics. For instance, while the credit elements for a credit card are likely to check payment background, age, account number and use of the credit card, the credit elements for a mortgage are likely to check occupation and its history, amount of credit and down payment. Thus, variables and the structure of the model are determined regarding to type of credits.

In this study, a credit model which is created for Turkish women entrepreneurs has been demonstrated. The variables of the model have been selected specific to this model by considering Turkish women entrepreneurs.

3.1 Scoring Model Applied in the Study and Its Variables

Microcredit programs contribute empowerment to women and their status in the society. Thus, this study is prepared to make this contribution executing in a better and fair way for Turkish women entrepreneurs. By doing so, the decision-making process for banks is aimed to be improved. To assess whether the business of Turkish women entrepreneurs requires an investment under low risks, a model has been created for evaluating in this study.

When the risks of banks are taken into consideration, 17 main variables were set in order to reduce it. Moreover, these variables had been determined according to status of women's business idea and their professional background. These variables have been demonstrated as below:

- Operating period
- Number of employees
- Workplace ownership

- Duration of operation in the current address
- Major shares of ownership
- Is there anybody who will take over the management, except the partnership?
- Experience of the company in the sector
- Business partnership age
- Business partnership education background
- Home ownership
- Residence period in the current address
- Marital status
- Total work experience
- Has she used any financial goods before?
- Sector / Subject of activities
- Security deposit
- Business address / Regional

In the model, each variable has its own reference range so as to score women's business and their background. These ranges have been determined according to the profiles, requirements and segments in Turkey.

Operating Period - The operating period of the business gives information about how structured and trustworthy the business is. The more years the more structured team and finance. This part was divided into four parts as; 0-2-year, 2-5-year, 5-10-year, and 10+ year.

Number of Employee - Number of employees gives information how big company is and how the roles are divided. Moreover, it draws the scheme of activities. The size of this number might be an indicator of the capital requirement as well, since the business can be a tech start-up with a small operation team, as well as production-based business with a big facility. It is divided into 4 parts as; 1-5-employee; 5-15-employee; 15-30-employee and 30+employee.

Workplace Ownership - Workplace is a huge cost for business owners. Women, particularly without any capital earned by themselves are likely to struggle with finding a workplace. In the model, five different types of ownership evaluated. In the

model, workplace might be company's property, business partnership's property, family's property, leasing or rent.

Duration of Operation in the Current Address - Duration of the operation in the current address is important for trustworthiness and sustainability of the business. This part was divided into four parts as; 0-2-year, 2-5-year, 5-10-year, and 10+ year.

Major Shares of Ownership - Understanding who is leading the company and which partnership has which role is very important for banks. This is because business partnerships' domination and their background give information how much risk they will take by supporting them. The model has two options for this variable which are There is a main partner with more than 51% share or There is no main partnership with more than 51% share.

Is There Anybody Who Will Take Over the Management, Except the Partnership? Availability of someone who will take over the management gives information about the dynamics of the business. For banks, it is important to understand what and who they are investing in.

Experience of the Company in the Sector - Experience of the company in the sector gives information to banks about how much the business proceeds and how mature it is. It is important to understand its sustainability and effect in the sector. This part was divided into four parts as; 0-5-year, 5-15-year, 15-20 year, and 20+ year. These years are put according to the firm life cycles changing based on sectors.

Partnership Age - Business Partnership age was taken into the account in this model to understand the entrepreneur's background.

Partnership Education Background - Educational background might be convincing to banks to show how suitable and capable the entrepreneur is for this business. It increases the trustworthiness.

Home Ownership - Home ownership gives information about the financial situation of the entrepreneur. This variable is considered in the model for understanding financial background, as well as educational. In the model, home might be entrepreneur's herself, rent, in a lodgement, or family property.

Residence period in the Current Address - Residence period in the current address is important for reliability. This part was divided into four parts as; 0-2-year, 2-5-year, 5-10-year, and 10+ year.

Marital Status - Marital status is seen an important indicator of women entrepreneurs. In the model, married women entrepreneurs are likely to have more support due to their husband support regarding to a risk reducing effect for banks.

Total Work Experience - Total work experience is involved to the model in order to understand background and financial situation of the entrepreneur. The more experience the more chance to get support.

Previous Financial Good Use - The previous financial good use might be tracked, and this situation highlights the how trustworthy business or entrepreneur is. In the model, using any financial use is advantageous.

Sector and Subject of Activities - The potential of each sector and their activities is quite different. Whilst taking risks, banks must evaluate which sector the business is and what kind of activities they do. The activities explain how involved they are. In the model, infrastructure, wholesale/retailer, motor vehicle servis, real estate, Hotel- Restaurant / Food and other are involved. Yet, Hotel- Restaurant / Food and other were perceived better in the model.

Security Deposit - Financial risk of the banks is the main reason of this scoring model. Banks are trying to minimize their risk. Security deposit directly positive effect in that case, since availability of the deposits is an indicator of a low risk.

Business Address/Region - Business location is very important due to changing potential of each region in Turkey. While East and Southeast have low potential for success, other regions have more.

In the table 3, all variables have been shown with its score according to its reference range.

Table 3: Reference Ranges of Variables

Variable	Reference Range
Operating period	
0-2 year	0
2-5 year	25
5-10 year	70
10+ year	100

Number of Employee	
1-5	0
5-15	50
15-30	75
30+	100
Workplace ownership	
company's property	100
Partnership's property	60
Family Property	30
Rent	0
Leasing	30
Duration of operation in the current address	
0-2 year	0
2-5 year	25
5-10 year	70
10+ year	100
Major shares of ownership	
There is a main partnership with more than 51% share	100
There is no main partnership with more than 51% share	0
Is there anybody who will take over the management, except the partnership?	
Available	100
Unavailable	0
Experience of the company in the sector	
0-5 year	0
5-15 year	30
15-20 year	70
20+ year	100
Partnership age	
18-25	0
25-40	30
40-55	100
55-65	60
65+	0
Partnership Education Background	
Elementary School	10
High / Technical School	30
Undergraduate or Graduate	100
None	0
Home Ownership	
Owner	100
Rent	0
Lodgement	0
Family property	50
Residence period in the current address	
0-2 year	0
2-5 year	25
5-10 year	70
10+ year	100

Marital Status	
Married	100
Single	0
Total Work Experience	
0-5 year	0
5-15 year	20
15-25 year	60
25+ year	100
Has she used any financial good before?	
Yes	100
No	0

Sector / Subject of activities	
Infrastructure	0
Wholesale/Retail	0
Motor Vehicle Servis	0
Real Estate/Commission	0
Hotel- Restaurant / Food	70
Other	100
Security Deposit	
Available	100
Unavailable	0
Business Address / Regional	
East / Southeast	0
Other	100

As seen in the table, scores are determined regarding their importance level to understand trustworthiness for credit support. In following section, the use of these scores and their effect on decision-making will be applied. Furthermore, the results and scale of the results will determine the model of the study.

3.2 Application of Credit Scoring Model for Measuring Credit Scores of Woman Entrepreneurs

Scoring models are beneficial for economic decisions in examining the creditworthiness of individuals and legal identities. In order to provide fair, effective and efficient decisions, financial industries apply credit scoring methods. Particularly, these models are shaped for eliminating bias and human errors with the help of objective metrics. In this study, objectivity, fairness and effectiveness are quite important to deal with women's social status and its economic circumstances.

Therefore, when the methodology of the model and its variables were chosen, these factors were taken into consideration.

The most common demonstration of mathematical scoring model is as follows:

General Model of Scoring

$$\text{Score } Z = Di_1t_1 + Di_2t_2 + Di_3t_3 + Di_4t_4 + \dots + Dint_n$$

where Z – the generalized estimated value of the object; t_1, t_2, \dots, t_n - normalized value of the variables that influence the object; D_1, D_2, \dots, D_n - weights that indicate the importance of the relevant variables. Even though there are many mathematical models used in credit scoring, the most common is the linear regression.

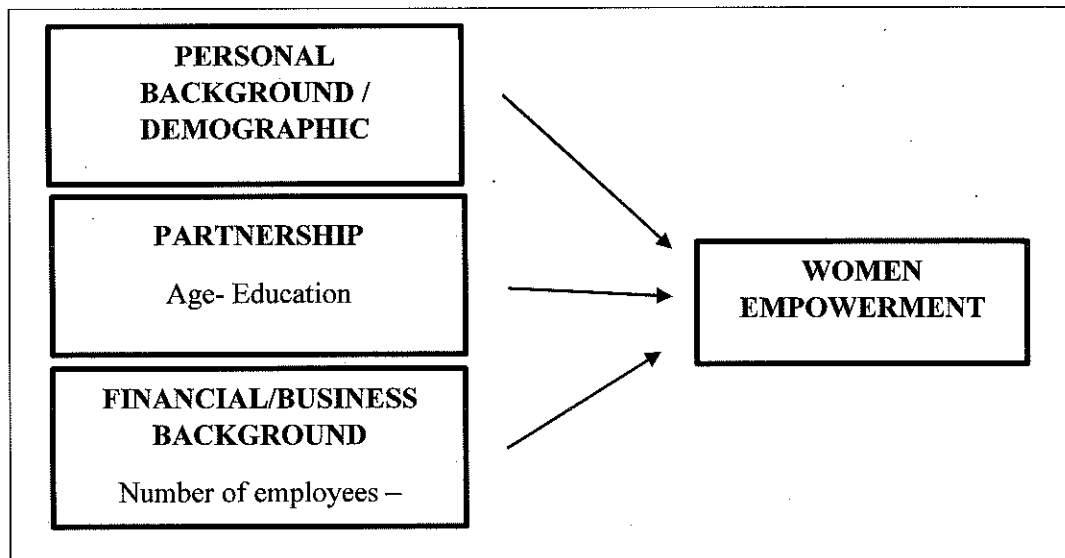
In the model, the relative importance of variables has been determined and the power of scorecard has been discriminated. Then, a lean and mean score card was created according to the questions for Turkish women entrepreneurs. All questions were prepared as women entrepreneurs can answer clearly to avoid confusion. For instance, a woman can consider herself widow and single at the same time. This kind of confusion can affect and mislead our study. Additionally, as a lack in models in Turkey, evaluation of these kind of models are quite slow. Therefore, the questions have been prepared as so they can get evaluated quickly.

While designing the study, a common process has been used. First, the scorecard was created. Then, it was implemented, and data was collected regarding to the questions in the scorecard. Before the last step which is the decision-making, data was analyzed. This model was also tested for its validity and reliability and gave us positive feedback for our main goal. To create a framework for the model, dependent and independent variables have been selected. Turkish women entrepreneurs have been used as the unit of analysis, which is the customer.

In detail, to score the customers, the scorecard has been created to interrogate three different areas to support women empowerment. It consists of “Background/ Demographic” part which asks questions about women’s marital status, age, and wealth, “Partnership” part which asks questions about the partnership of the entrepreneur, and “Financial/ Business Background” part which asks questions about

the entrepreneur's past financial background and business' situation. One of the main differences in application of this model among others is weight of these parts. Weighting of these parts has determined this model's statistical methodology.

Figure 1: Concept of the Model



The model of this study has been derived for Turkish women entrepreneurs based on a statistical model with discrete choices. Furthermore, this model is parametric. In the model, linear regression analysis has been used to understand relationship between a response variable which is creditworthiness and seventeen independent variables. This is because linear functions use characteristics in a best way for discriminating the groups. Moreover, this model measures the goodness of fit by considering sum of absolute errors and the maximum error. Application of the model has been indicated below:

Scoring Model of the Study

$$\text{Score} = Di_{1t} + Di_{2t} + Di_{3t} + Di_{4t} + Di_{5t} + Di_{6t} + Di_{7t} + Di_{8t} + Di_{9t} + Di_{10t} + Di_{11t} + Di_{12t} + Di_{13t} + Di_{14t} + Di_{15t} + Di_{16t} + Di_{17t}$$

where Score – estimation of trustworthiness of the women entrepreneur; t_1, t_2, \dots, t_n - values which women entrepreneur has got for the specific variable; D_1, D_2, \dots, D_n - weights that indicate the importance of variables mentioned in the previous section.

Values a woman entrepreneur is likely to get are separated into certain groups for each variable.

General credit scoring models use three-digit number score grades (Irby, 2018). In this model, score is ranging from 0 to 1700, with 1700 being the highest possible score and 0 being the lowest score an applicant can have. The higher score is on the scale, more credit chance an entrepreneur can have.

As in general model, higher score represents lower risk in this study's model as well. Lower risk Thus, the applicant should have more than a certain amount score to pass. However, the risk grades have been used in the model in order to classify the applicants according to their scores. In detail, credit scores of this model fall on the below range:

Table 4: Classification of Risk Scores

Scoring	Range	Creditworthiness Level
A	1700-1450	Excellent
B	1450-1200	Very Good
C	1200-950	Good
D	950-700	Fair
E	700-450	Bad
F	450-0	Very Bad

In the study, scores have been grouped for assigning each score from excellent to very bad. Indeed, forty different Turkish women entrepreneurs' applications have been shown and evaluated as an example.

For application of the model, a sample had been created. Random sampling techniques was applied for selection of the entrepreneurs. Thus, forty Turkish women entrepreneurs have been selected to represent to all women entrepreneurs in Turkey.

This is why sample has been selected taking all possible candidates' background, partnership situation and financial background into account.

The model has been implemented to each application and each has been scored according to their answers to the questionnaire. In detail, all applications' scores have been demonstrated in the following table, with each variable's score based on the scorecard.

Table 5: Results of the Credit Scoring Model Applied

VARIABLES	E1/ Scores	E2/ Scores	E3/ Scores	E4/ Scores	E5/ Scores	E6/ Scores	E7/ Scores	E8/ Scores	E9/ Scores	E10/ Scores
Operation Period	25	100	70	70	100	70	70	70	25	25
Number of Employee	0	0	0	0	0	50	0	0	0	0
Workplace Ownership	0	0	100	0	100	0	0	0	0	100
Duration of Operation in the Current Address	0	100	70	70	100	25	70	70	25	25
Major Shares of Ownership	100	100	100	100	100	100	100	100	100	100
Is There Anybody Who Will Takeover the Management, Except the Partner?	0	100	0	0	100	100	0	0	0	0
Experience of the company in the sector	0	100	30	100	30	30	30	30	0	0
Partner Age	30	60	100	100	100	100	30	30	30	30
Partner Education Background	30	30	100	30	10	100	100	30	30	30
Home Ownership	100	100	100	0	100	100	0	0	0	0
Residency Period in th Current Address	70	100	70	25	100	70	25	70	25	70
Marital Status	100	100	100	100	100	100	100	0	100	100
Total Work Experience	0	100	20	60	70	20	20	20	0	0
Has She Used Any Financial Goods Before?	100	100	100	100	100	100	100	100	100	100
Sector/ Subject of the Activity	70	100	100	100	100	0	100	100	100	100
Security Deposit	0	0	100	0	100	0	0	0	0	0
Workplace Address/Region	100	100	100	100	100	100	100	100	100	100
TOTAL SCORE	725	1280	1260	955	1360	1065	845	720	635	780

VARIABLES	E11/ Scores	E12/ Scores	E13/ Scores	E14/ Scores	E15/ Scores	E16/ Scores	E17/ Scores	E18/ Scores	E19/ Scores	E20/ Scores
Operation Period	70	25	100	100	70	25	100	70	70	25
Number of Employee	0	0	0	0	0	0	0	0	0	0
Workplace Ownership	0	0	100	100	0	30	100	0	0	0
Duration of Operation in the Current Address	25	25	100	100	70	25	70	70	70	25
Major Shares of Ownership	100	100	100	100	100	100	0	100	100	100
Is There Anybody Who Will Takeover the Management, Except the Partner?	100	0	100	0	0	0	0	100	100	100
Experience of the company in the sector	30	0	30	30	30	0	30	30	0	30
Partner Age	30	30	100	100	30	100	60	30	100	30
Partner Education Background	30	30	30	30	100	30	30	30	30	30
Home Ownership	100	0	100	100	0	0	0	0	100	0
Residency Period in th Current Address	70	25	100	70	70	25	100	70	25	25
Marital Status	0	0	100	100	0	0	0	100	100	100
Total Work Experience	20	0	20	20	60	0	100	60	60	20
Has She Used Any Financial Goods Before?	100	0	100	100	100	100	100	100	100	0
Sector/ Subject of the Activity	100	70	100	100	100	70	100	100	100	100
Security Deposit	100	0	0	0	100	100	0	0	0	0
Workplace Address/Region	0	100	100	100	0	100	100	100	100	100
TOTAL SCORE	875	405	1280	1130	830	725	960	960	1055	685

VARIABLES	E21/ Scores	E22/ Scores	E23/ Scores	E24/ Scores	E25/ Scores	E26/ Scores	E27/ Scores	E28/ Scores	E29/ Scores	E30/ Scores
Operation Period	100	70	70	70	70	70	100	25	25	70
Number of Employee	0	0	0	0	0	0	0	0	0	0
Workplace Ownership	100	0	0	0	0	0	100	0	0	100
Duration of Operation in the Current Address	100	70	25	70	70	70	100	25	25	70
Major Shares of Ownership	100	100	100	100	100	100	100	100	100	100
Is There Anybody Who Will Takeover the Management, Except the Partner?	0	0	0	100	0	0	0	100	0	0
Experience of the company in the sector	30	30	30	30	30	30	30	0	0	30
Partner Age	100	100	30	100	100	100	30	100	100	100
Partner Education Background	100	30	30	30	30	30	100	30	30	100
Home Ownership	100	0	0	0	100	0	100	0	0	100
Residency Period in th Current Address	100	70	70	70	70	70	100	25	70	70
Marital Status	100	100	100	100	100	0	100	100	100	0
Total Work Experience	60	20	20	20	60	20	0	0	0	20
Has She Used Any Financial Goods Before?	100	100	100	100	100	100	100	100	0	100
Sector/ Subject of the Activity	100	70	100	0	100	0	100	100	0	100
Security Deposit	0	0	0	0	100	0	0	0	0	100
Workplace Address/Region	100	100	100	100	100	100	100	100	100	100
TOTAL SCORE	1280	860	775	880	1130	690	1230	805	650	1160

VARIABLES	E31/ Scores	E32/ Scores	E33/ Scores	E34/ Scores	E35/ Scores	E36/ Scores	E37/ Scores	E38/ Scores	E39/ Scores	E40/ Scores
Operation Period	100	100	100	0	25	100	100	100	70	100
Number of Employee	0	0	0	50	0	0	0	0	0	0
Workplace Ownership	100	100	0	0	0	0	100	0	0	100
Duration of Operation in the Current Address	70	100	100	0	25	100	100	70	70	100
Major Shares of Ownership	100	100	100	0	100	100	100	100	100	100
Is There Anybody Who Will Takeover the Management, Except the Partner?	100	0	0	0	0	100	100	0	0	100
Experience of the company in the sector	30	70	30	0	0	70	100	70	30	30
Partner Age	100	100	100	100	100	60	0	30	100	60
Partner Education Background	30	30	100	30	30	30	100	10	30	30
Home Ownership	100	100	0	0	0	0	100	100	0	0
Residency Period in th Current Address	100	100	100	25	25	100	100	100	70	70
Marital Status	100	100	100	0	100	100	100	0	0	100
Total Work Experience	20	60	20	0	0	100	100	60	20	20
Has She Used Any Financial Goods Before?	100	100	100	100	100	100	100	100	100	100
Sector/ Subject of the Activity	100	0	100	100	100	0	100	0	100	100
Security Deposit	0	0	0	100	0	0	100	0	0	0
Workplace Address/Region	0	100	100	100	100	100	100	100	100	100
TOTAL SCORE	1150	1160	1050	625	705	1060	1500	840	790	1110

Even though these scores create ranges themselves, they were appointed to a creditworthiness level according to these women's status for financial institutions and bank, since their evaluation is generally based on these levels. The model formed a chart indicating these women's trustworthiness distribution.

Whilst implementing the scoring system, each answer was scored according to the reference ranges and applied to the model. For each woman entrepreneur, a final score has been given to put them into a trustworthiness level. Later on, this level was determinant for financial institutions and banks to make decisions about their micro credits need.

4. EMPIRICAL RESULTS

The model is created by calculations of statistical variables of Turkish women entrepreneurs in the manner of showing their trustworthiness for capital support. Additionally, it is a 3- or 4- digit number indicating the likelihood that Turkish women entrepreneurs will succeed with the credit support.

The model insists of seventeen characteristics used according to the applicant's situation before arriving at its final score. The final score is determined with the statistical methodology because there is no judgmental factor such as previous payment status, relationship banks and references as involved in the model. Thus, the variables have been considered according to multiple factors which weights can be assigned and correlation coefficient can be determined.

In the model, forty applicants have been evaluated and appointed to the grades. The range of forty applicant is between 720 and 1360. Moreover, distribution of the applicants is differentiated for each scoring grade. While three applicants fell on B grade, very good, an applicant fell on C grade, good, and four applicants fell on D grade, Fair.

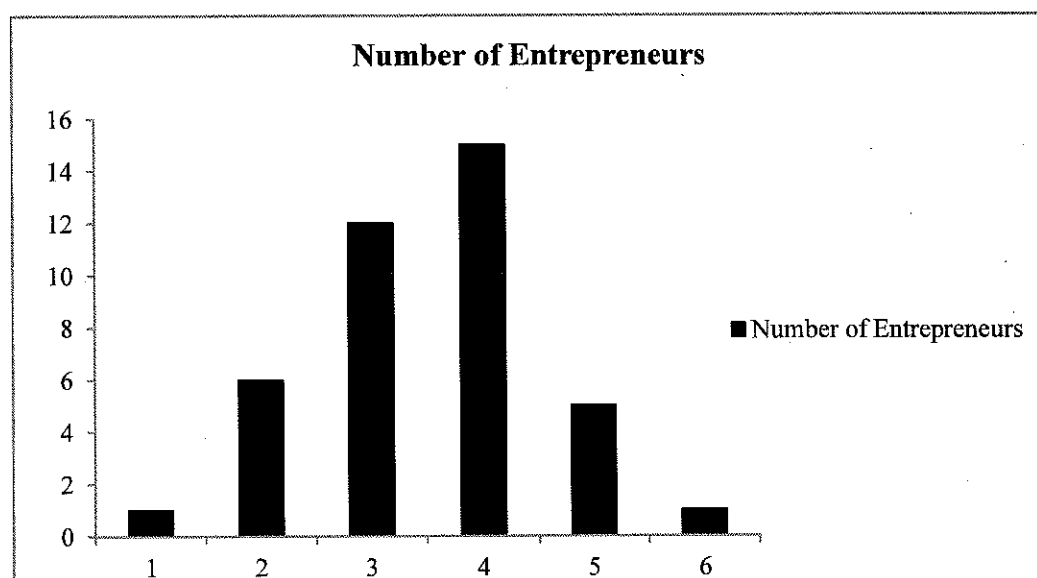
Table 6: Results of Scoring

Result	Reference Range	Number of Entrepreneurs
A	1700-1450	1
B	1450-1200	6
C	1200-950	12
D	950-700	15
E	700-450	5
F	450-0	1

The number of women entrepreneurs scoring in the very lowest score ranges is trending downward. On the other hand, the number of women entrepreneurs scoring in the very highest score ranges is trending downward as well. When the sample is expanded, the grade distribution of Turkish women entrepreneurs seeking capital is non-linear. As shown in the following chart, the creditworthiness of women entrepreneurs in Turkey has a normal distribution.

Results varied from 605 to 1500 in the study. The mean is 948 which means this study's average is in the "Fair" level in trustworthiness. Furthermore, its median is 882,5 which explains intense entrepreneurs' numbers in the "F".

Figure 2 Distribution of Number of Entrepreneurs

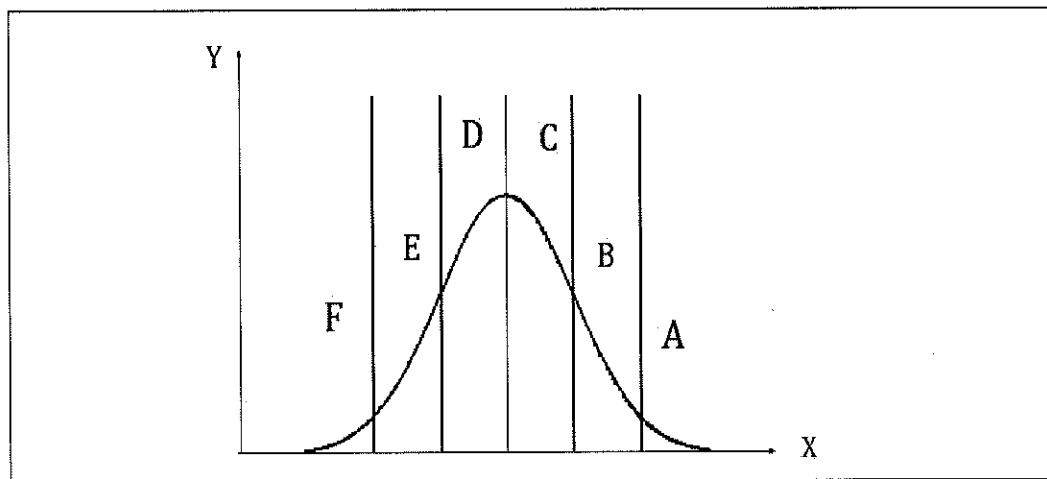


In the application of this model, the women entrepreneurs demonstrated a normal distribution regarding their trustworthiness level. In the Figure 4, this distribution has been shown with the numbers. Then, X-axis shows trustworthiness score and Y-axis shows the number of entrepreneurs assigning the level. In the model, the sample which represent Turkish women entrepreneurs dominate C and D area. More than half or these women have good and fair trustworthiness which shows the potential of these women. Further to that, number of women who got bad and excellent score are compared, it is obvious that these women have tendency to have high scores which means a better trustworthiness level. This also shows that these women should be

supported with trainings and mentorship programs. In that point, responsibility of financial institutions, foundations and banks gains importance. This encouraging situation gives a signal of a good potential of these women in the economy as well.

In the chart below, X indicates the score ranges forming of the credit grades and Y indicates the number of women entrepreneurs. Moreover, Figure 5 is the general demonstration of a normal distribution for creditworthiness. When the results are being explained and interpreted, the following chart has been used.

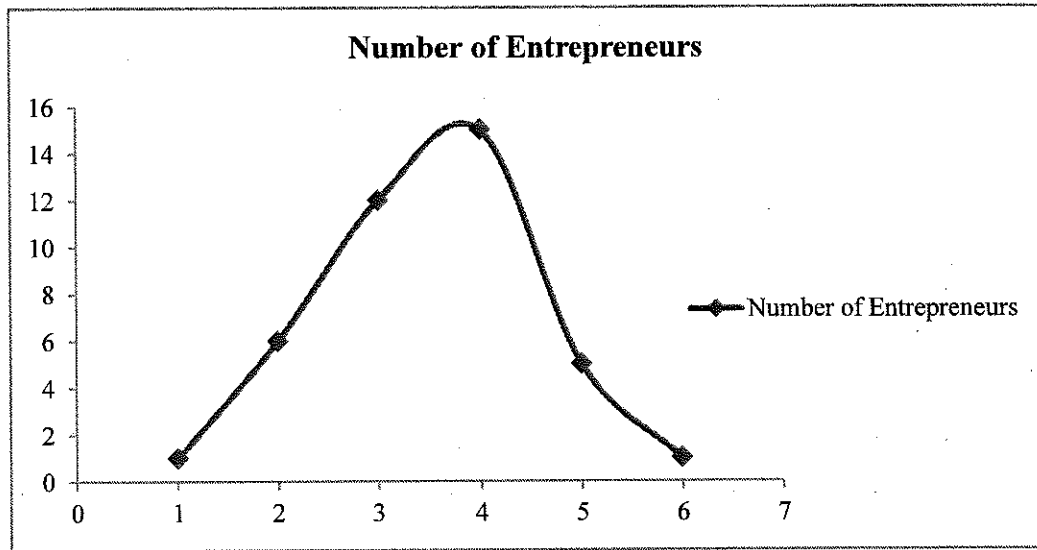
Figure 3: Normal Distribution of Creditworthiness



As a little difference compared to the chart, the study's results have shown that the models graph skewed to the left even though the majority of women entrepreneurs had fair and good results. This skewness explains the main aim of the study due to showing these women's potential and encouraging institutions and banks to produce better solutions.

According to the chart, it can be stated that women applied for capital have average creditworthiness in the case. When scores are considered, their partnership's age, operating period, experience and workplace ownership are their weak parts. This result also explains why they need capital and training to use it properly. Right use and right amount of capital will expand their operating period and workplace ownership will decrease their cost, which create a huge burden for particularly women having less-paid job background or new in the business life.

Figure 4: Number of Entrepreneurs Distribution of the Model



The model demonstrates us directly the weakness and creditworthiness of these women according to the selected variables which affect the corresponding bank in this case. Taking decisions according to the model and reading the result will be help understand these women by reducing the bank's risk. When there is an obvious result for these women and a great opportunity for the economy, making a decision supporting this win-win situation will contribute more for both participants, which are banks and Turkish women entrepreneurs. This is why all decisions about micro credits for Turkish women entrepreneurs should be taken this great potential into account.

5. CONCLUSION

In the study a simplified credit scoring model has been formed for evaluating the credits of Turkish women entrepreneurs with the help of specific variables. These variables have been selected by minding the risks of financial institutions and banks, as well as these women's struggles in their business journey. Therefore, these variables include women's background, personal information to understand their possible impact and estimate their success and their business' maturity and success. This study concludes that it is possible to support Turkish women entrepreneurs if their needs are understood properly and their success is based on the correct factors.

Even though all entrepreneurs have fundamental problems when they are establishing their business, women entrepreneurs struggle more for the capital due to their economic backgrounds. When their low contribution to economy is taken into consideration, taking an action and boosting their contribution can be provided by supporting them. This support should match their fundamental needs as well as their need gaining from their gender and its perception in the society.

Supporting women entrepreneurs is becoming more important for economy and society due to the role of women in the society and their lack of contribution to economy. When the numbers of women involvement in economy are reviewed, it is clear that there is much progress to be made. Indeed, women employment rate is %30 while average is %47 and men's is 65% in 2018. The main reason under this low employment rate of women is joining late to the business life and not taking an active or strategic role in the workplace. This is why women in the workplace should be prioritized and women should be supported to show themselves up in the workplace. Investing them or helping them get rid of their obstacles in the business life will accelerate their involvement process. In order to achieve it, pushing women entrepreneurs is a good way to make it faster. It is only possible to create a system which understands their needs and evaluate them according to their potential. As

mentioned in the study before, capital is the main need of these women. Creating or providing capital as much as they need to establish their businesses is the main way to help them. Then, training and mentoring them follow.

In addition, microloans and improvement of microfinance for women are fundamental requirements for financial inclusion of women. These requirements are a way to empower women and boost their business' success and lift them out of their status. Thus, microloans as investment aids are the biggest support provided by financial institutions and banks to women entrepreneurs.

In this investment, financial institutions and particularly banks come into prominence. Thus, banks started special programs and scoring systems in order to boost their employment and increase the number of women entrepreneurs. Particularly development of scoring models had an impact on women and their success. These models are created by these women's subjective answers under an objective system. This system includes methodological steps which should have a supportive framework and descriptive characteristics. Then, these characteristics are weighted according to their importance level in trustworthiness and included into the model. Even though there are several models such as logarithmic, a linear model has been used in this study due to the characteristics. Further to that, the characteristics shape the result of scoring which varies as excellent, very good, good, fair, bad and very bad. As seen in the study, applicants dominate generally the good and fair regarding their proficiency. This is because these characteristics are crucial for women entrepreneurs to understand their needs and support them. Indeed, the characteristics which are not enough should be seen a potential improvement area.

How the characteristics are chosen determines the main aim of the models. As shown in the study, their scoring system should be prepared based on their background and the potential of their businesses. Moreover, their personal information is critical as well. As an example, their marital status is also a determinant of their tendency to take risk for success. Moreover, education level and property ownership play an important role for trustworthiness of the financial institutions or banks.

All scoring models contain a certain amount of time and do not focus on involve more women in the economy. The faster models, the more women economy. This is why selection of methodology and characteristics differentiate this study from others.

Success of these women will contribute directly to the economy. When high unemployment rate of women in Turkey where the half of population is women is taken into consideration, it is clear that the involvement of women and success of their businesses will accelerate the growth of the country with an increase in production level. Obviously, these women have need acceleration and support for their economic attempts. These attempts will turn into a higher production.

Economic growth and economic future of nations are based on their production. Thus, the forces support to enhance this production level are quite critical. Among these forces, entrepreneurship is playing an important due to the fact that it is a bridge between human mind and innovation. Moreover, entrepreneurship gives a crucial mechanism for turning ideas and potential into a production and better economy. It has an ability to use all forces for turning them into a production or a business since natural and technological sources, capital and labor are the main parts of it. Furthermore, this situation explains why improvement in these parts help economic growth.

As a final word, a good economy is not possible without participation of women. Their participation is obviously not only their responsibility. The government and financial institutions should take responsibility by improving the opportunities and see this journey a long-term success.

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