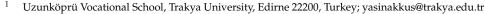


# Article The Role of Sustainable Entrepreneurship in UN Sustainable Development Goals: The Case of TED Talks

Yasin Akkuş<sup>1</sup> and Kıymet Çalıyurt<sup>2,\*</sup>



<sup>2</sup> Department of Business Administration, Trakya University, Edirne 22200, Turkey

\* Correspondence: kiymetcaliyurt@trakya.edu.tr

Abstract: It can be seen that entrepreneurship has undergone many changes since the time it was defined and many types have been introduced over time as well. A relatively new type is sustainable entrepreneurship, which seeks to function in a way that can be passed down through the generations without endangering nature's responsiveness. Sustainable entrepreneurs sometimes perform their activities in a way that emphasizes the social aspect, and sometimes in a way that highlights the economic aspect. The Sustainable Development Goals (SDGs) announced by the United Nations in 2015 are expected to correspond to the activities of sustainable entrepreneurs. In order to identify this correspondence, we performed qualitative content analysis of presentations on entrepreneurship in TED Talks. As a result of the analysis, the social and economic aspects of sustainable entrepreneurs were evaluated separately with the SDGs, and strong correlations were determined in some instances. These correlations are expected to provide insight in terms of identifying the topics that sustainable entrepreneurs focus on.

**Keywords:** sustainable entrepreneurship; sustainable development goals; development; innovation; TED Talks



Entrepreneurs are among the most important actors contributing to economic growth. It can also be seen that they have an important role in increasing employment. Yet, today, the roles of entrepreneurs have diversified, and they have many additional purposes besides making a profit [1–3]. Entrepreneurs, especially in their innovative aspects, have an important effect on the world apart from economy and employment. These effects sometimes stay at the local level, and sometimes they rise to the global level [4]. Especially after the 1970s, entrepreneurs made great contributions to the development of technology with their innovations [5]. In turn, technology is a key factor in many areas, mainly in economic growth and development [6].

It is rather difficult to define entrepreneurship as a uniform and homogeneous concept. Today, it is possible to divide entrepreneurship into many subtypes. It can be observed that the structure established by entrepreneurs can fit into more than one subtype of entrepreneurship [7]. While there are entrepreneurs whose aim is to generate profit, there are also entrepreneurs who do not aim to gain a profit. The purpose of some entrepreneurs is both generating profit and providing social benefits [8]. Since Muhammed Yunus proved to the world when he founded Grameen Bank that there can be a social entrepreneurship model that supports entrepreneurship, many entrepreneurship and social entrepreneurship structures have been created at different rates and in different combinations [9]. Whether they seek profit or social benefit or both, all entrepreneurs are important actors in growth and development at the global level, and this is seen as a fact that is difficult to oppose.

Entrepreneurship playing an active role in the realization of growth and development in a sustainable way is also seen as quite natural [10]. The United Nations (UN) has set goals



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**Copyright:** © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). regarding economic growth, and particularly sustainable development, and has put forward targets in conjunction with these goals, with the approval of its 193 member countries. These goals, which were finalized and approved in 2015, are called the Sustainable Development Goals (SDGs). It is expected that these goals, which were put forward with full consensus for the first time in history, will bring humanity to a sustainable future [11].

This study was aimed at investigating the relationship of entrepreneurs with the SDGs from an entrepreneurship perspective that also involves social entrepreneurs. In clarifying this relationship, the focus was on TED Conferences, which organizes talks by prominent entrepreneurs around the world, based on the following research questions:

What are the possible relationships of entrepreneurs giving TED Talks to the SDGs, and how are these relationships shaped?

What SDGs do entrepreneurs giving TED Talks focus on?

What are the differences between classic (commercial) and social entrepreneurs giving TED Talks in terms of SDGs?

Thanks to these research questions, it is possible to reveal the relationships of entrepreneurs invited to speak with the SDGs. By determining the relationship of these entrepreneurs, who stand out from other entrepreneurs, with SDGs, inferences can be made about the current situation and future of sustainable entrepreneurship. Thus, the SDGs perspective of sustainable entrepreneurship can be put forward.

### 2. Literature Review

# 2.1. From Classical to Sustainable Entrepreneurship

Since Cantillon, Say, and Schumpeter first defined it, entrepreneurship has been associated with profit, risk, and innovation [12]. Until recently, it was believed that entrepreneurs are "homo economicus" individuals who only think about profit, evaluate opportunities, and put various types of capital at risk [13]. However, in recent years, it has been revealed that entrepreneurs cannot be limited to only the economic field and may also have purposes other than economic ones. It is reported that entrepreneurs have started to demonstrate that they have goals to protect the ecosystem, take actions against climate change, prevent environmental pollution, not pollute drinking water, and protect biological diversity [14]. In addition, many new entrepreneurs develop business models that aim to cope with the social challenges of the SDGs [15]. The view that sustainable goals can be achieved while businesses continue to make profits is presented in the various studies listed in Table 1.

**Table 1.** Entrepreneurship types focusing on sustainability in selected studies.

Entrepreneurship Types	Studies	
Environmental entrepreneurship	[16,17]	
Eco entrepreneurship	[18,19]	
Climate entrepreneurship	[14,20]	
Biosphere entrepreneurship	[21]	
Policy entrepreneurship	[22,23]	
Institutional entrepreneurship	[24,25]	
Sustainable entrepreneurship	[26-29]	

In Table 1, it can be seen that the types of entrepreneurship focusing on sustainability are defined under different headings. However, the entrepreneurship types focusing only on the environment and ecosystem do not involve the sustainability of societies or cities. The concept of sustainable entrepreneurship (SE) is suggested for the type of entrepreneurship that includes all entrepreneurs who adopt sustainability goals [30]. In sustainable entrepreneurship, there are both classical (commercial) entrepreneurs who prioritize making a profit and social entrepreneurs who prioritize social benefit [29]. It has been stated that sustainable entrepreneurship is based on the triple bottom line (TBL), which consists of environmental aspects aimed at long-term protection and mitigation, social aspects that consider all stakeholders, and economic aspects that consider economic

performance. Since all of the sustainable development goals are discussed in our research, these three aspects of sustainable entrepreneurship are examined together [31].

### 2.2. UN Sustainable Development Goals (SDGs)

International development has been on the agenda of the United Nations nearly since its founding. Various agencies or funds within or under the control of the United Nations dealt with international development in areas they were responsible for until the 1990s [32]. The UN General Secretary put together the headings of international development and released the Millennium Development Goals (MDGs) in 2000. In these goals, which were aimed to be achieved by 2015, the headings included the following: to exterminate poverty and hunger (1), to carry into effect primary education at the international level (2), to promote gender equality and empower women (3), to decrease child mortality (4), to strengthen maternal health (5), to fight HIV/AIDS, malaria, and other diseases (6), to ensure environmental sustainability (7), and to develop global cooperation for development (8) [33].

Building on the experience gained from the MDGs, the UN put new goals on the agenda in 2015. The Sustainable Development Goals (SDGs) are classified under 17 goals (Table 2) and 169 targets. While the goals are universal, the member states are free to choose their own priorities and determine the pace for achieving them. The targets are divided into medium and long term, but the expected date for many targets is determined as 2030 [34].

Goal Number	Goal Name
1	No poverty
2	Zero hunger
3	Good health and well-being
4	Quality education
5	Gender equality
6	Clean water and sanitation
7	Affordable and clean energy
8	Decent work and economic growth
9	Industry, innovation, and infrastructure
10	Reduced inequality
11	Sustainable cities and communities
12	Responsible consumption and production
13	Climate action
14	Life underwater
15	Life on land
16	Peace, justice, and strong institutions
17	Partnership for the goals

 Table 2. Sustainable Development Goals (SDGs).

Source: [35]. United Nations Department of Economic and Social Affairs, Sustainable Development. Retrieved from https://sdgs.un.org/goals (accessed on 23 November 2021).

### 2.3. Sustainable Entrepreneurship and SDGs

Previous sections noted that the business world, and particularly entrepreneurship, has an important role in sustainable development. In this section, the relationship between sustainable entrepreneurship and SDGs will be discussed. It is reported that with the experience of the Millennium Development Goals (MDGs), the expectation of the business world in terms of the SDGs has increased. In some assessments, it is noted that the goals within the SDGs will exert an influence on developing a policy framework that is in line with the business world in the long run. Therefore, it is suggested that the business world should take initiative to contribute to the process of meeting the SDGs [36]. The SDGs are a roadmap for sustainable entrepreneurship in the business world, with both profit-oriented and social benefit-oriented entrepreneurship types, and offer many opportunities [37]. Some studies provide empirical evidence that constructive developments in the SDGs also contribute positively to sustainable entrepreneurship [27]. In return, creative and

innovative solutions by entrepreneurs are needed in order to achieve the goals and targets put forward by the SGDs [38].

### 3. Methodology

Content analysis was the method chosen for this study. Content analysis is described as a method that proceeds from data to context that can be repeated and used to reach inferences that can yield valid results. This method is included in the scope of constructive (interpretive) content analysis, which is assumed to be a qualitative content analysis type. The reason for choosing this method and subtype for this study is that it allows analysis of the categories that make up the research questions, explanations of their relations, and interpretation by answering the questions "why", "for whom", and "with what effect" [39]. By using constructive content analysis, the aim was to discover the relationships between sustainable entrepreneurship and the SDGs at the level of categories.

In the process of applying content analysis, the stages of planning, data collection, data analysis, and reporting the results were followed. During the planning stage of the research, decisions were made regarding the purpose, the sample unit, and the data collection and analysis methods [40]. Because the research sample and data were open source, a practical inference phase was not planned. After the planning, the data collection step was started. In determining the research universe, platforms where sustainable entrepreneurs can express themselves were searched. It is known that TED is a leading organization, with a platform that has wide appeal where entrepreneurs from all over the world can participate. Another reason for choosing the TED organization is that it has become a focus for innovative talks that stand out in the world. It is an important resource for entrepreneurs and those who want to be entrepreneurs, and TED Talk playlists are frequently included in online resources about entrepreneurship [41,42]. In addition, there are no other platforms where prominent entrepreneurs can make speeches. Consequently, the research universe was determined as presentations related to entrepreneurship given within the scope of TED Talks at the website www.ted.com (accessed on 22 July 2021). Presentations involving the concept of entrepreneurship were searched on the TED Talks system, and 68 presentations were found. Two of these presentations only included a narrow scope of entrepreneurship and could not be evaluated within the scope of SDGs [42,43]. It was determined that the word "entrepreneurship" was mentioned in 25 presentations, but the presenters were not entrepreneurs and/or the presentations were not directly related to entrepreneurship. In this context, 41 presentation videos were obtained for evaluation. These videos were transcribed and the documents were uploaded to the MAXQDA program.

In the process of coding documents, a basic coding strategy called the Weber protocol was adopted. The steps in the Weber protocol were implemented for the entire coding process [44]. A single coder (lead author) was responsible for coding the documents on the MAXQDA program. However, the entire process was subject to peer review to ensure the reliability of the study. The standard method, which is one of the reliability types suggested by Krippendorff, was chosen [39]. The peer coder, who was in the same research area as the author who performed the coding but not involved in the research, was asked to code six randomly selected TED Talks presentations according to the created coding book created. The coding of presentations by the author and the peer coder was compared, and divergences and deviations from the standard were revealed.

After evaluating the divergences and standard deviations, a coding consensus of over 80% was reached. In the coding, the SDGs were applied as a predefined coding scheme. One reason why this method was chosen is that the SDGs within the scope of the research questions are structured in a way that can be determined as a natural code. Another reason is that predefined codes increase coding reliability [45]. In addition to the predefined codes, the simultaneous coding method was also applied [46]. In the study, sustainable entrepreneurship (SE) was specified as the main theme, and classical and social entrepreneurship were determined as subcategories. For the SDG theme, 17 target categories (Table 3) were determined, and coding was performed for these categories.

Main Code	Subcode	Example TED Talk Excerpts Expressing Code
SE	Classic entrepreneurship	"I'm a robotics entrepreneur who spends most of my time in Africa."
SE	Social entrepreneurship	"We also go to the houses. We have been charging car batteries. Instead of taking the money I earn home, I give it back to the refugee community as business expense."
SDG	1. No poverty	"I was six years old when I first heard about poverty."
SDG	2. Zero hunger	"I have just learned that 70 percent of children don't get enough prenatal nutrition."
SDG	3. Good health and well-being	"A variety of diseases develop in these environments, the most dangerou of which is trachoma."
SDG	4. Quality education	"None of the women I grew up with in Maryland were college graduates never business graduates."
SDG	5. Gender equality	"In order to overcome the gender barriers of the period, I founded my own software house, one of the first of such initiatives in Britain."
SDG	6. Clean water and sanitation	"Today, more than 2.5 billion people in the world do not have full access to water and hygiene services."
SDG	7. Affordable and clean energy	"We can get all the energy we need from where we are in a clean, safe and inexpensive way."
SDG	8. Decent work and economic growth	"The employment crisis, in addition young people tell me they're worried about employment, they're afraid of not being able to find a job."
SDG	9. Industry, Innovation, and infrastructure	"What is demanded, I am repeating, the private sector can make a big difference, they can foster advocacy with big, creative thinking."
SDG	10. Reduced inequality	"Imagine yourself as a food investor in a place where your purchasing power helps create a more equal society for all."
SDG	11. Sustainable cities and communities	"If we do not take also the young people into account in the growth of ou cities, if we do not provide opportunities for them, this waiting story wil be the story of a new generation of cities as a gateway to terrorism, violence and gangs."
SDG	12. Responsible consumption and production	"To establish my own business for the design and manufacture of biodegradable packaging from waste such as paper, agricultural product and even textiles, instead of the disposable toxic plastic packaging that w are addicted to."
SDG	13. Climate action	"The pith of the matter is, even if CO <sub>2</sub> production is good for the environment, our hydrocarbons will run out; we have to find sustainable working opportunities."
SDG	14. Life underwater	"An initiative to help reduce the billions of kilograms of single-use plasti packaging that is left every year to future generations, such as my grandchildren and your grandchildren, which pollute our environment, rivers, and oceans."
SDG	15. Life on land	"If plants were not pollinated by pollinators, all living beings dependent on these plants, including ourselves, would starve to death."
SDG	16. Peace, justice, and strong institutions	"My anger at corruption led me to make a major career change last year and become a full-time lawyer."
SDG	17. Partnership for the goals	"This equation includes you and of course your users as well as regulator politicians and communities."

## Table 3. Table of codes.

# 4. Findings

# 4.1. Demographic Findings

The TED Talks presentations included in the research are listed with the title, presenter, year of presentation, and gender of the presenter (Appendix A Table A1). Presentations

were mainly reviewed based on year and gender. It can be seen that the reviewed presentations were distributed between 2007 and 2019. The most presentations took place in 2017, at 17.1%, while 2.4% of presentations took place in 2007 and 2015. When we use the year 2015 as the base, the year the SDGs were adopted, it can be seen that 51.62% of the presentations took place before and 48.78% after that year.

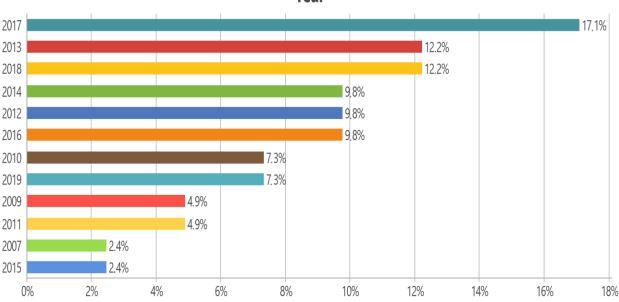
With regard to the gender of the presenters, there was an almost equal distribution (Table 4).

Table 4. Distribution by gender.

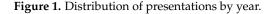
	Frequency	Percentage (%)	Percentage (%)
Male	22	53.66	53.66
Female	19	46.34	46.34
Total	41	100	100

### 4.2. Sustainable Entrepreneurship and SDGs

The objective of our study was to reveal which of the SDGs stand out within the scope of sustainable entrepreneurship and evaluate their relations. A map showing the relationship between social and classical entrepreneurship, which are sub-dimensions of sustainable entrepreneurship and all SDGs together, is seen in Figure 1. As can be seen on the map, there is intense contact between classical and social entrepreneurship.







Even though they are considered as two sub-dimensions within the scope of the study, it is difficult to separate the two types of entrepreneurship within certain lines. Particularly when evaluated within the scope of the SDGs, it is seen that classical and social entrepreneurship are often considered as intertwined concepts. Here is an excerpt from a presentation by a social entrepreneur who helps classical entrepreneurs as an example:

"I had my first client, and I helped this first guy who was smoking fish from a garage, was a Māori guy, and I helped him to sell to the restaurant in Perth, to get organized, and then the fishermen came to me to say, 'You the guy who helped Māori? Can you help us?' And I helped these five fishermen to work together and get this beautiful tuna not to the cannery in Albany for 60 cents a kilo, but we found a way to take the fish for sushi to Japan for 15 dollars a kilo, and the

farmers came to talk to me, said, 'Hey, you helped them. Can you help us?'" (Want to help someone? Shut up and listen!)

The relationship of SDGs with social and classical entrepreneurship can be reviewed from the map in Figure 2. While evaluating the relationships of goals, the proportional dimension within the related entrepreneurship type was taken into consideration. For example, while 25 intersections are considered intensive in social entrepreneurship, it is accepted that 50 intersections and above are intensive in classical entrepreneurship.

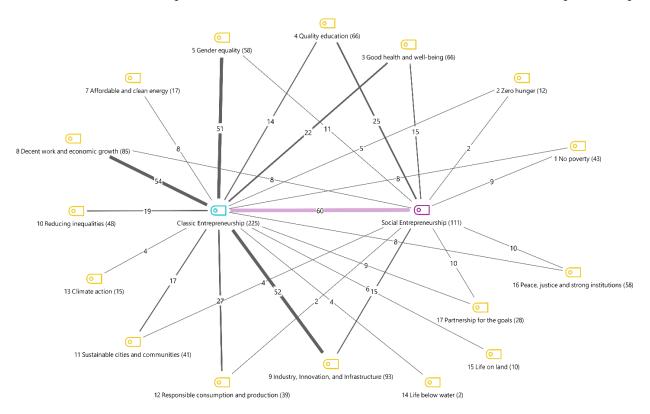


Figure 2. Map of relationships between social and classical entrepreneurship and SDGs.

The results of considering the sustainable entrepreneurship theme together with sub-categories of the SDG themes are listed in Table 5. Accordingly, while sustainable entrepreneurship is heavily mentioned together with some SDGs, it has considerably little contact with others. It is striking that there are intensity differences between the sub-categories of sustainable entrepreneurship in terms of SDGs goals.

As can be seen in Table 5, social entrepreneurs under sustainable entrepreneurship place more emphasis on quality education than classical (commercial) entrepreneurs. It is thought that this situation represents a perspective that is very rare in the literature. Although there are many studies on entrepreneurship education under sustainable entrepreneurship, the emphasis on quality education is very rare [47]. Classical (commercial) entrepreneurs seem to place more emphasis on gender equality, decent work, and economic growth and innovation. Accordingly, it is seen that their view of sustainable entrepreneurship from the axis of innovation and economic growth is compatible with the literature [48]. It is thought that the emphasis of classical entrepreneurs on gender equality is due to the increasing influence of women in commercial enterprises [49].

	Sustainable Entrepreneurship	
	Social Entrepreneurship	Classic Entrepreneurship
SDGs1 No poverty 2 Zero hunger 3 Good health and well-being 4 Quality education 5 Gender equality 6 Clean water and sanitation 7 Affordable and clean energy 8 Decent work and economic growth 9 Industry, Innovation, and Infrastructure 10 Reducing inequalities 11 Sustainable cities and communities 12 Responsible consumption and production 13 Climate action 14 Life below water 15 Life on land 16 Peace, justice and strong institutions 17 Partnership for the goals		

Table 5. Sustainable entrepreneurship and SDGs.

4.2.1. Social Entrepreneurship and SDGs

It is striking that social entrepreneurship, which is one of the sub-categories of sustainable entrepreneurship, is predominantly considered together with SDG 4, qualified education. Moreover, the goal of qualified education is associated with the concept of social entrepreneurship rather than classical entrepreneurship. Here are two excerpts that exemplify this relationship:

"So if you look, as I did, through this tour, and by looking at about a hundred case studies of different social entrepreneurs working in these very extreme conditions, look at the recipes that they come up with for learning, they look nothing like school." (Education innovation in the slums)

"Folks like Ann Cotton, who started a group called CAMFED in Africa, because she felt girls' education was lagging. And she started it about 10 years ago, and today, she educates over a quarter million African girls." (My journey into movies that matter)

It was found that considering social entrepreneurship together with the other SDGs remains relatively rare; indeed, it does not appear to coincide with some SDGs.

At this point, it should be considered that social entrepreneurship does not have a relationship with noncoincident goals of the SDGs, and it would be wrong to make a general comment about this outside of TED Talk presentations. Here, the prominent findings are interpreted through such presentations and evaluated specific to a platform where innovative entrepreneurs take to the stage, such as TED Talks. It is possible to find social and social entrepreneurs that are associated with the other goals of the SDGs. However, it is thought that the reason this relationship could not be observed for the TED Talk presentations is that innovative social entrepreneurs do not participate much on the platform on issues other than qualified education. Yet, it is known that social entrepreneurs contribute to the goals of the SDGs, as demonstrated by many successful examples [50]. On platforms such as TED Talks, where innovative and groundbreaking short presentations are made, the fact that social entrepreneurs make little mention of some of the SGDs suggests that innovative social enterprise ideas are decreasing and/or the focus is shifting.

### 4.2.2. Classical Entrepreneurship and SDGs

It is noteworthy that, compared to other goals, classical entrepreneurship comes forward in three SDGs goals: from most to least prominent, they are gender equality (5), decent work and economic growth (8), and industry, innovativeness, and infrastructure (9).

It is also notable that the goal of gender equality, which is the matter at hand with classical entrepreneurship (as can be seen in Table 5), is one of the two categories that are mostly considered together.

"So I went out reporting and within a day I met Narcisa Kavazovic who at that point was opening a new factory on the war's former front lines in Sarajevo. She had started her business squatting in an abandoned garage, sewing sheets and pillow cases she would take to markets all around the city." (Women entrepreneurs, example not exception)

As can be seen in the above excerpt, women entrepreneurs clearly explain both their own and other women's experiences in classical entrepreneurship at TED Talks. In these presentations, many examples of gender inequality are mentioned. Women who form businesses of various sizes by entering into entrepreneurship do not constitute a few exceptional examples; many examples can be found where the gender bias filter is removed.

"Let me take you back to the early 1960s. To get past the gender issues of the time, I set up my own software house at one of the first such startups in Britain. But it was also a company of women, a company for women, an early social business." (Why do ambitious women have flat heads?)

In these presentations, examples are given showing that the obstacles for women entrepreneurs include being subjected to discrimination not only in areas related to gender inequality, but in accessing funds as well.

"Well, despite the comparability of companies in my sample, male-led start-ups went on to raise five times as much funding as the female-led ones." (The real reason female entrepreneurs get less funding)

It is reported that funders discriminate in this way implicitly and often unwittingly. It is mentioned that women funders also approach women entrepreneurs with different question patterns without realizing it.

"So to my female entrepreneurs out there, here are a couple simple things you could do. The first is to recognize the question you're being asked. Are you getting a prevention question? If this is the case, answer the question at hand by all means, but merely frame your response in promotion in an effort to garner higher amounts of funding for your start-ups. The unfortunate reality, though, is that both men and women evaluating start-ups display the same implicit gender bias in their questioning, inadvertently favoring male entrepreneurs over female ones." (The real reason female entrepreneurs get less funding)

Another goal where classical entrepreneurship and SDGs intersect is industry, innovation, and infrastructure (9). It can be said that industry and production are formed as a result of the activities of classical entrepreneurs [51]. It has been shown that innovation is an integral part of entrepreneurship, particularly classical entrepreneurship, since the first half of the 20th century [52]. For this reason, we can interpret that it is normal for the SDG of industry and innovation to be seen together with classical entrepreneurship in our research findings.

"Over the next few years as we start serving private health care facilities, we'll also use that mobile payment platform to collect fees for deliveries. So innovation leads to more innovation leads to more innovation." (How we're using drones to deliver blood and save lives)

"No amount of foreign aid is going to sustainably employ 250 million African youth. And the jobs that these kids may have gotten 10 years ago are largely being

automated or are being changed dramatically by technology. So they are looking for new skill sets, new competitive advantages. They're looking for start-ups. So why aren't there more start-ups that are tackling these global problems that are faced by billions of people in developing economies? The reason is that investors and entrepreneurs are totally blind to the opportunity." (How we're using drones to deliver blood and save lives)

As can be seen in the excerpts above, it is frequently emphasized that innovation has a very important role in all economies, regardless of distinctions such as developed, developing, underdeveloped, and undeveloped countries. On the other hand, the idea that this innovation will be implemented by classical entrepreneurs who also use the driving force of competition is being proposed. Another important point addressed in these quotes is the notion that investors and entrepreneurs in developed countries are starting to fall behind in generating creative ideas for global problems. While innovation is common for technological products that will be produced in developed countries with economies of scale and sold to the whole world, it is speculated that niche innovations that appeal to a smaller market, in line with the SDGs, will remain weak. It is reported that such innovations have started to come from entrepreneurs in underdeveloped and undeveloped regions such as African countries, and are increasing every day.

"This lady, she developed a herbal pesticide formulation. We filed the patent for her, the National Innovation Foundation. And who knows? Somebody will license this technology and develop marketable products, and she would get revenue." (India's hidden hotbeds of invention)

Notably, there are presentations giving examples indicating that a similar situation is experienced in developing countries such as India.

"I will close by saying that, if we solve this for the local market, it could be impactful not only for the coders in Nairobi but also for small business owners who need reliable connectivity, and it can reduce the cost of connecting, and hopefully collaboration within African countries. The idea is that the building blocks of the digital economy are connectivity and entrepreneurship. The BRCK is our part to keep Africans connected, and to help them drive the global digital revolution." (Meet BRCK, Internet access built for Africa)

It is emphasized that innovation is important not only for the entrepreneurs who actualize it, but also for other entrepreneurs who benefit from the innovations. Considering the global entrepreneurship ecosystem, in which the settled belief is that an innovative idea destroys and extinguishes the previous idea and makes it dysfunctional, it is possible to express that the viewpoint emphasized above is quite different [13]. From this, it can be concluded that entrepreneurship and innovation have many dimensions, and the focus on them has begun to spread from developed countries to all parts of the world.

"What's required, and again where the private sector can make a huge difference, is coming up with this big, creative thinking that drives advocacy." (The simple power of hand-washing)

In a presentation that emphasizes SDG 3, good health and well-being, the importance of classical entrepreneurship and innovation is discussed.

"The technologies do not exist to do that. Who is going to invent the technology for the green revolution? Universities? Forget about it! Government? Forget about it! It will be entrepreneurs, and they're doing it now." (Want to help someone? Shut up and listen!)

Again, it is clearly seen that the technological solutions and innovations related to SDGs regarding the environment will be developed by entrepreneurs. Even the excerpt above shares the opinion that it would not be possible for these solutions to come from a structure other than entrepreneurs.

Another SDG that stands out in relation to classical entrepreneurship is decent work and economic growth (8). The relationship between entrepreneurship and economic entrepreneurship is explained in the literature section. It can be seen that there are parallel approaches in the literature on the examined TED Talk presentations:

"The sum of the solutions that we have in our society really is our prosperity, and this explains why companies like Google and Amazon and Microsoft and Apple and the entrepreneurs who created those companies have contributed so much to our nation's prosperity." (Beware, fellow plutocrats, the pitchforks are coming)

"But it is important to remember that when we excessively punish those who fail, we stifle innovation and business creation, the engines of economic growth in any country." (Don't fail fast—fail mindfully)

In the presentations, a positive relationship is shown between classical entrepreneurship and economic growth, and it is emphasized that entrepreneurship is the prominent factor for economic growth. Similarly, there are opinions that classical entrepreneurship is also related to creating decent employment opportunities:

"But in my personal experience, I've also seen the other side of the story. Where online marketplaces, like Gojek in Indonesia or Jumia in Africa, have helped their business ecosystems and the communities around them." (How online marketplaces can help local economies, not)

The women entrepreneurs who give presentations claim that entrepreneurship is the most basic solution for women's employment:

"It is time for us to aim higher when it comes to women, to invest more and to deploy our dollars to benefit women all around the world. We can make a difference, and make a difference not just for women, but for a global economy that desperately needs their contributions." (Women entrepreneurs, example not exception)

It can be seen that classical entrepreneurship, which is examined as a sub-dimension of sustainable entrepreneurship, is in intense contact with the three goals of the SDGs in the examined TED Talk presentations. These contacts, which are shown by the selected excerpts above, explain that entrepreneurship (especially classical entrepreneurship) has a great influence on meeting the SDGs, and that the dominant role will be assumed by entrepreneurs and the SDGs offer opportunities for sustainable initiatives.

### 4.3. Evaluation of SDGs and Sustainable Entrepreneurship before and after 2015

Based on the year in which the TED Talk was given, two groups were formed: before 2015, and 2015 and after. The reason for taking 2015 as the basis was that this was the year when the SDGs were accepted and ratified by UN member countries.

When we review Figure 3 and Table 6, it is difficult to say whether there are huge differences before and after 2015. As stated previously, there is an almost equal distribution of presentations among the specified date groups (51.62% before 2015, 48.78% during and after 2015). When we consider the coded categories, it is notable that both social and classical entrepreneurship are relatively less coded in 2015 and later. However, when considering all presentations, no evidence to support this finding could be found from the contents of the presentations. It can be speculated that the decline stems from the length of the presentations. When SDGs are considered, it is difficult to say whether an increase or decrease occurred in 2015 and beyond. While some goals remained the same, some decreased by a small amount and others increased by a small amount. No evidence was found to link these increases and decreases in content among year groups.

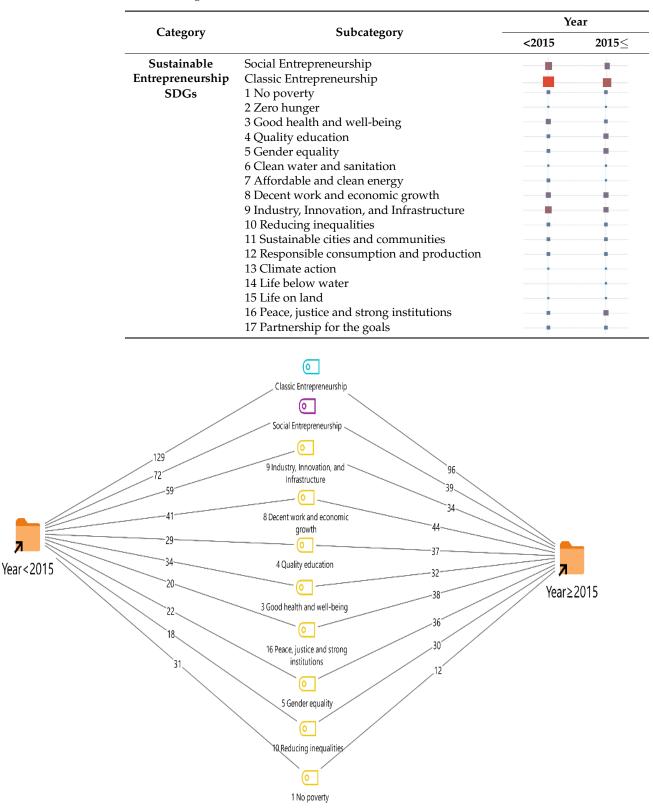


Table 6. Categories assessed before and after 2015.

Figure 3. Prominent categories and coding numbers before and after 2015.

# 5. Discussion and Conclusions

Although the United Nations and its member countries approved the SDGs in 2015, similar goals have been targeted before and a certain distance has been taken [53]. En-

trepreneurs, like other segments, addressed some of the goals within the scope of the SDGs before 2015 and took initiatives in this direction. It is clear that entrepreneurs have played a key role in the achievement of the SDGs before, during, and after 2015, and will continue to do so in the future. It is underlined that entrepreneurs have many different roles in the context of the SDGs. The SDGs offer opportunities to entrepreneurs, without discriminating between developed or developing regions. Social entrepreneurs have duties with regard to many headings of the SDGs [54].

The type of entrepreneurship that carries out activities within the scope of the SDGs has begun to be called sustainable entrepreneurship. This represents a structure that handles economic, social, and environmental components together to ensure the welfare of future generations. Sustainable entrepreneurs use resources rationally and contribute to economic growth with an awareness of not harming the environment [27]. There are two subdivisions of sustainable entrepreneurship, covering mainly social and economic aspects.

By putting the emphasis on sustainable entrepreneurship in TED Talks, in which prominent people make short presentations on many different topics, it was seen that some SDG headings came to the fore. Within the predominantly social subtype of sustainable entrepreneurship, quality education, representing SDG 4, stands out. In the humanistic education model, which centers students, various social purposes are also taken into consideration [55]. The emphasis of social (sustainable) entrepreneurs who think they can achieve many social benefits directly or indirectly through quality education becomes understandable. It can be claimed that conveying this emphasis through the TED Talk platform may also serve as a manifesto.

It can be seen that classical entrepreneurs, for whom the economic aspect of sustainable entrepreneurship predominates, focus on SDGs 5, 8, and 9 in their presentations. The presentations by women entrepreneurs emphasizing gender equality (5) are quite interesting. The supposition that women, and especially women investors, discriminate against women entrepreneurs is clearly stated in two presentations. It is also striking to find that the biggest task in eliminating this inequality falls on women entrepreneurs.

The goal industry, innovation, and infrastructure (9) offers opportunities for sustainable entrepreneurship. Contrary to common views and the literature, some believe that the focus of innovators has shifted from developed countries or regions to other regions. Forced innovation arising from a kind of desperation offers opportunities to all entrepreneurs, particularly sustainable entrepreneurs, in developing, underdeveloped, and undeveloped countries/regions. In this regard, companies and entrepreneurs in developed countries have started to miss out on innovation for various reasons; in a manner of speaking, they have begun to experience innovation myopia. It is also emphasized that the technological infrastructure was and continues to be established by innovative, sustainable entrepreneurs in almost every country or region.

It is considered natural to determine the concentration on decent work and economic growth (8) in the sub-type of sustainable entrepreneurship with a predominant economic aspect. Many of the presentations discuss that economic growth largely depends on sustainable entrepreneurs, who play important roles in increasing employment in general and in women's employment in particular.

To reiterate, we do not claim that the TED Talks included in this study do not address other SDG headings. The objective of the study was to determine that sustainable entrepreneurship together with its subtypes focused on certain headings of the SDGs. Within this scope, it would be appropriate to say that there is a focus on the SDG headings described above.

No meaningful conclusions could be drawn from the evaluation of sustainable entrepreneurship and SDGs according to the year of TED Talks. A clear emphasis on before or after 2015 among the presentations reviewed could not be determined.

Keeping in mind that the study only examined presentations emphasizing entrepreneurship and SDGs in TED Talks, it does not seem possible to generalize the findings to all entrepreneurs or sustainable entrepreneurs. As a result, it can be seen that the TED Talks discussed offer interesting and important implications for sustainable entrepreneurship and the SDGs. Entrepreneurs emphasize quality education, gender equality, economic growth, and innovation among the SDGs. It is thought that the prominence of these issues in sustainable entrepreneurship compared to other SDG objectives can provide a perspective for policy-makers and decision-makers. In addition, following these issues in the future will provide new study opportunities for other researchers.

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# Appendix A

Table A1. TED Talk presentations included in the study.

Title	Speaker	Year	Sex
A bath without water	Ludwick Marishane	2012	Male
A new way to fight corruption	Shaffi Mather	2009	Male
A teacher growing green in the South Bronx	Stephen Ritz	2012	Male
Beware, fellow plutocrats, the pitchforks are coming	Nick Hanauer	2014	Male
Creative problem-solving in the face of extreme limits	Navi Radjou	2014	Male
Don't fail fast—fail mindfully	Leticia Gasca	2018	Female
Education innovation in the slums	Charles Leadbeater	2010	Male
Excuse me, may I rent your car?	Robin Chase	2012	Female
Freeing energy from the grid	Justin Hall-Tipping	2011	Male
How architectural innovations migrate across borders	Teddy Cruz	2013	Male
How cryptocurrency can help start-ups get investment capital	Ashwini Anburajan	2018	Female
How doctors can help low-income patients (and still make a profit)	P. J. Parmar	2018	Male
How I became an entrepreneur at 66	Paul Tasner	2017	Male
How I'm fighting bias in algorithms	Joy Buolamwini	2016	Female
How online marketplaces can help local economies, not hurt them	Amane Dannouni	2019	Male
How to grow a forest in your backyard	Shubhendu Sharma	2016	Male
How urban agriculture is transforming Detroit	Devita Davison	2017	Female
How we can help young people build a better future	Henrietta Fore	2018	Female
How we're using drones to deliver blood and save lives	Keller Rinaudo	2017	Male
How women in rural India turned courage into capital	Chetna Gala Sinha	2018	Female
In praise of macro—yes, macro—finance in Africa	Sangu Delle	2014	Male
India's hidden hotbeds of invention	Anil Gupta	2009	Male

Title	Speaker	Year	Sex
Let's raise kids to be entrepreneurs	Cameron Herold	2010	Male
Meet a young entrepreneur, cartoonist, designer, activist	Maya Penn	2013	Female
Meet BRCK, Internet access built for Africa	Juliana Rotich	2013	Female
My journey into movies that matter	Jeff Skoll	2007	Male
Poverty, money—and love	Jessica Jackley	2010	Female
The global learning crisis—and what to do about it	Amel Karboul	2017	Female
The link between unemployment and terrorism	Mohamed Ali	2013	Male
The mind behind Tesla, SpaceX, SolarCity	Elon Musk	2013	Female
The real reason female entrepreneurs get less funding	Dana Kanze	2017	Female
The simple power of hand-washing	Myriam Sidibe	2014	Female
To help solve global problems, look to developing countries	Bright Simons	2019	Male
Uber's plan to get more people into fewer cars	Travis Kalanick	2016	Male
Want to help someone? Shut up and listen!	Ernesto Sirolli	2012	Male
What a world without prisons could look like	Deanna Van Buren	2017	Female
When workers own companies, the economy is more resilient	Niki Okuk	2016	Female
Why do ambitious women have flat heads?	Dame Stephanie Shirley	2015	Female
Why it's too hard to start a business in Africa—and how to change it	Magatte Wade	2017	Female
Why you should shop at your local farmers market	Mohammad Modarres	2019	Male
Women entrepreneurs, example not exception	Gayle Tzemach Lemmon	2011	Female

## Table A1. Cont.

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