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PERCEPTION OF STARTUPS BY THE REPRESENTATIVES OF GENERATION Z IN POLAND

Abstract: *The aim of the article is to present an empirical analysis of startups perception by Gen Z representatives in Poland. The research was conducted in May-December 2021 via the Internet, and the questionnaire was completed by 500 people. It has become important to identify how Poles perceive startups by assessing their individual advantages and disadvantages. The achievement of the goal was made possible by literature studies and a questionnaire survey. In the work, particular attention was paid to defining the concept of a startup, identifying its advantages and disadvantages. An attempt was also made to define the attitude of Generation Z to their startups. The survey allows us to learn about the opinions of the new generation entering the labor market, and in 3 years' time it will constitute a significant part of it in Poland.*

Keywords: *startup, generation Z, innovations, advantages and disadvantages of startups*

1. Introduction

Political instability in the world and changes caused by the Covid-19 pandemic are contributing to the economic crisis in many countries. Economies must adapt to the new dynamics of changes in the modern world (Diaz et al., 2021). The organizations of the 21st century are facing many challenges, and the key ones include: (March, 2020):

- dynamically changing and complex environment, obliging the organization to function in conditions of risk and uncertainty,
- globalization, multiculturalism, diversity
- technical and technological progress (development of telecommunications, robotics),

- optimal use of employees' competences and motivating them to work,
- issues related to data security, cybersecurity,
- respecting the principles of industry 4.0.

Organizations wanting to survive in a turbulent environment are forced to look for sources of competitive advantage (Skawińska & Zalewski, 2016). Nowadays, the key competences of an organization include: the competences of the people employed in it, product innovation, the ability to create one's own sales market, or high flexibility of operation. It seems that innovation is a significant source of competitive advantage (Masrom et al., 2022). A new form of organization that

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meets these challenges is a startup, an organization looking for its own business model. Creating new innovative solutions is conducive not only to meeting the emerging challenges, but also enables establishing cooperation with organizations described as traditional, which are not always able to effectively overcome emerging threats.

The Silicon Valley should be considered one of the largest sturdiness ecosystems in the world where the first startups were created. There is no information in the literature on the date when the first startups were established in this area, but it is known that from the 1950s, enterprises related to advanced technologies were established here, and the name "Silicon Valley" was used for the first time in 1971 by an American journalist. Hoefler (http://www.netvalley.com/silicon_valley/D_on_Hoefler_coined_the_phrase_Silicon_Valley.html). In Poland, mentions of the dynamic development of micro-enterprises (the first versions of startups can be assumed) appeared after 1990. This topic became more interested only after Poland joined the EU (Rok, 2019). Interesting scientific articles dealing with startup problems published in Poland can be found from 2009-2011.

Startups are eagerly established by young and ambitious entrepreneurs who, having limited initial capital, want to build a learning organization that is able to flexibly respond to the challenges posed by its environment. Startups favor the development of the economy and society through (Kowalewski, 2020):

- participation in the creation of GDP and new jobs,
- development of intellectual capital,
- generating additional income from households,
- supply of public finances,
- generating innovations, also used by other organizations,
- improving the quality of work and life.

These factors affect the development of the economy, the course of its transformation to economy 4.0, requiring technological development.

Young people who efficiently use new technologies should have a particularly great ability to create innovative solutions. The generation that does not remember the times without the Internet and new technologies is generation Z. According to most sources, this is the generation born after 1995 (Rojewska, 2019). They do not know the world without a computer, telephone or electronic gadgets. From an early age, they dealt with information technology and grew up on it. Thanks to this, they are at home in the world of the Internet, they can search for information and are active in social media (Chomałowska, Żarczyńska-Dobiesz, 2014). The workplace is not a restriction for them, and mobility is their great advantage. The lack of problems with the use of new technologies makes it They are at home in the IT, e-marketing and Public Relations industries.

People from the Z generation appreciate practicality, usability and speed, thanks to which they save time (Mizuko, 2008, Friedrich & Peterson, 2010;). Generation Z representatives should work in places that ensure their continuous development and a variety of interesting tasks. The challenge for employers will be to keep the employee at work longer if he or she does not feel that he is learning new things. Representatives of this generation are ready to compete to achieve success. Due to the fact that in 3 years, i.e. in 2025, this group will constitute approx. 20.7% of people on the Polish labor market, it is interesting how they perceive startups, which may be not only their potential place of work, but also a chance for creative development (<https://linkd.pl/pe22r>).

The main purpose of the article is to present an empirical analysis of startups perception by Gen Z in Poland. The work sought to verify the following hypotheses:

Generation Z sees startups as an innovative form of organization.

There are significant differences in the assessment of the advantages and disadvantages of startups among the representatives of the Z generation.

The work attempts to define the concept of a startup, identify its advantages and disadvantages and how the respondents perceive them. The achievement of the chosen goal was possible thanks to a literature review and a questionnaire survey. The research also allowed for an attempt to determine the attitude of Generation Z to establishing startups.

2. Literature overview

2.1. The concept and essence of startups

It is difficult to find an unequivocal definition of the term startup in the literature. It is worth reviewing the definition of this concept, as it is perceived differently by the authors. According to the American dictionary (Merriam-Webster Dictionary, 2019), a startup is any new venture (this is how the term is commonly used in the USA). In specialist literature, a startup is defined as an organization from the high technology sector (Tomaszewski, 2019). Blank & Dorf (2013) stated that it is a temporary organization that is looking for a repeatable, scalable and profitable business model. Ries (2011) recognizes it as a company whose key goal is to create new products perceived as an experiment under conditions of extreme uncertainty. Therefore, it has a relatively high growth potential, driven by technology and knowledge necessary to produce an innovative product (PwC, 2013).

This means that it is a new economic entity at the initial stage of development (Stankiewicz, 2014; Fong, 2011). Graham (2012) writes that it was designed for rapid growth. Damodaran (2009) considered it a

young enterprise, operating for less than 2 years. This organization is characterized by a low level of income, the possibility of an operating loss, high dependence on foreign capital and low financial liquidity. Skala (2017) recognizes that a startup is an organization with very limited resources and uncertain demand for its products (or no demand at all). In turn, McClure (2013), in his definition, presented him as an entity not sure who his client is, how the product offered by him will be received and what its optimal revenue model is.

Thiel and Masters (2014) see it as an organization that creates new solutions. Wasserman (2012) writes that a startup follows a market opportunity regardless of the resources it has, "and Mohout and Kiemen (2016) point out that they are" hyper-scalable entities ". According to the European Commission (2014), it is an entity that operates in the field of technological entrepreneurship in the digital market. An important feature of a startup in its definition was emphasized by Fairlie et al. (2015) who wrote that it is an innovation-oriented enterprise that has been employing at least one non-partner for one year.

In the literature, you can find various definitions in which the startup is shown as:

- a capital company, not listed on the stock exchange, which did not distribute profits, and was not created as a result of a merger (PARP, 2016),
- a newly established organization that defines and tests its business assumptions (Glinka & Pasiieczny, 2015),
- technological organization, intended for quick sale "na pniu" (Cieślak, 2014),
- an enterprise at the initial stage of development, with high growth potential, looking for an optimal business model (Łuczak, 2014),
- a newly established high-risk organization implementing

innovations (Gemzik-Salwach, 2014),

- an organization using external financing at an early stage of development (up to 5 years) (Bursiak, 2013).

Startups are characterized by: independence, innovation, ability to respond to customer needs, business scalability and uncertainty (Table 1).

Table. 1. Features of startups (<https://www.private-equity.pl/co-to-jest-startup/>)

Feature	Description
Independence	Startup is established by natural persons who bear the risk, but have a significant impact on its functioning, that is: strategies, finances, operating activities or investments.
Innovation	Innovation concerns both the product (features, functionality) and the process (e.g. the way the product is manufactured).
Response ability for the needs customers	A startup defines a user's problem, which is then solved by his activity, thus creating a target market for himself.
Uncertainty	The operation of a startup is characterized by high internal risk (acquiring appropriate employees, financial liquidity, management errors) as well as external (incorrect identification of customers and their needs, and inappropriate solutions).
Scalability of business	The ability to increase revenue without increasing operating costs.

In addition, Łopusiewicz (2013) distinguished such features of a startup as:

- relatively low start-up costs,
- very high risk of undertakings, greater than standard,

- high return on investment, much higher than in the case of standard projects..

All these features make a startup a different organization than traditional. They make it able to introduce to the market innovative products with a very high risk, looking for a scalable and repeatable business model, but at the same time having a great chance for high returns on investment. Most often we call an organization a startup until 3.5-5 years of its operation or reaching the break-even point.

2.2. Advantages and disadvantages of startups

A startup has advantages that affect the willingness to set it up. It also has disadvantages of concern. It seems, however, that the positive aspects of starting startups prevail. It is worth paying attention to the fact that the startup has relatively low start-up costs. In some cases, the founder himself is able to finance himself over a long period of time. Their founders have the ability to achieve quick financial success, which depends on the effectiveness of the venture and the ability to select talented associates. It is necessary to offer a product adapted to the needs of the market. This requires the exploitation of intellectual capital and intangible assets (Łopusiewicz, 2013).

Investing in a startup organization is beneficial due to the possibility of obtaining a large return on invested funds, which attracts potential investors (Czyżewska et al., 2019). Startups are characterized by the ability to gain invaluable experience in operating on the domestic and foreign market, thanks to their flexibility and ability to adapt to needs (Bartoszewski, 2015), providing innovative products (Skala, 2017) and rapid growth ensured by technological advantage (Nieć, 2019).

For many, the independence of startup founders is a very important advantage

(Lemańska-Majdzik, 2018). Employees also have great freedom of action, whose influence on shaping the workplace and implementing their own ideas is significant (Okulska, 2020). The startup is also characterized by high flexibility in implementing new solutions (Moschner et al., 2019). It is provided by a discontinuous form of development, based on the life cycle of a startup that includes the possibility of return, i.e. changing the operating model (Andrejczuk, 2020). A startup does not have an imposed business model, which allows it to develop its own, effectively tailored to the current needs (Blank & Dorf, 2013). A startup has the potential to increase innovation and competitiveness, not only of the organizations cooperating with it, but most of all the economy (Skawińska, Zalewski, 2020).

The greatest fear of establishing a startup is raised by the high risk of failure (Łopusiewicz, 2013). The problem may be: high dynamics of changes in the organization, lack of structured processes (the need to create them on an ongoing basis), sudden and unpredictable changes. When working in a startup, you should expect a wide range of duties at individual positions, which are subject to constant modifications. Not everyone can accept this form of work. During its development, there is a high rotation of employees, because many of them do not accept the need for flexibility and continuous increase of their competences (Okulska, 2020)

A startup is often perceived as an uncertain and inexperienced cooperation partner. Due to the offer of innovative products, it is not possible to use historical data, which is a point of reference. Often, its success or failure is determined by the selection of the first employees, and premature scaling of the product may lead to the collapse of the entire company (Sobczyk & Dudczyk, 2016).

The advantages and disadvantages of a startup are intertwined when considering the

decision to start it. In fact, it may turn out that some of the potential disadvantages see advantages, and this depends, among other things, on the human approach and competences.

In the last 5 years, the potential of Polish startups has increased significantly. You can observe not only a dynamic increase in their number, but also the interest in their activities on the part of the public sector. The size and scale of Venture Capital investments (both domestic and foreign) prove that we can expect further increases in this market. Currently, about 60% of Polish startups are less than 2 years old (Polish Startups 2020 Report). It is estimated that there are between 4,300-4,700 startups in Poland, and 60% of them operate exclusively in the IT / ICT industry. Most startups are located in Warsaw, Wrocław, Kraków, Lublin and the Tri-City (Polish Startup Report 2019).

According to The Global Startup Ecosystem Report 2020, most startups are created in Silicon Valley, New York, London, Beijing and Boston. The United States is undoubtedly the leader in terms of the registered number of startups (<https://impicode.pl/blog/startupy-w-liczbach/>). Startups are therefore established in places with a high concentration of qualified employees, where there are many scientific units, e.g. universities, and there are a large number of companies and potential investors.

In the last few years, many startups have achieved international success, and we cannot imagine our lives without the products they provide. Examples include Facebook, Uber, Airbnb, Dropbox, Spotify, or the Polish startup Booksy (<https://startupacademy.pl/najwieksze-startupy-swiata>). The founders of these startups have achieved international success, with revenues reaching millions of dollars. Certainly, the success of these startups was influenced by various determinants related to its functioning. Sobczyk and Dudycz

(2016) indicate: business model, team, financing, product development and validation. However, it is worth considering how the competences of a startup determine the quality of a product, i.e. an element without which its functioning does not make sense.

In the last few years, startups have been gaining more and more popularity among young, ambitious entrepreneurs with outstanding ideas for their own business. An organization of this type is more and more often chosen by them due to its characteristic features, which in the case of innovative products become extremely important. The European Startup Monitor 2016 research shows that the average age of startup founders (CEO) has increased, which for the analyzed countries is over 34 years. Nevertheless, most often people start their first activity in this model at the age of 25-35 (<https://incredibleinspirations.com/>). In Poland, startups are established by people aged 20-40 (Polish Startup Report 2020).

3. Research methodology

The information obtained from the literature review shows that it becomes rational to conduct research among the representatives of the Z generation. It is important to identify their perception of a startup. Based on the literature review, a questionnaire was prepared and made available to the representatives of Generation Z in Poland. The survey was conducted in May-December 2021 via the Internet. The questionnaire was completed by 500 adult representatives of Generation Z. They were people from 19 to 27 years of age. Among them, 62% were women and 38% men. 7.6% of the respondents are people employed in managerial positions.

In order to achieve the goal and verify the hypotheses, the following steps were carried out;

- analysis of the literature on the subject allowing for a theoretical review and

identification of the advantages and disadvantages of establishing startups,

- surveys were conducted among representatives of the Z generation, which was considered the target group,
- interpret the results obtained from the survey and draw conclusions.
- In order to interpret the obtained results, the arithmetic mean and the coefficient of variation were calculated. The coefficient of variation determines the degree of variation of the variable value. Its high value means high differentiation of the feature and proves the heterogeneity of the studied population, while its low value means low variability of the feature and homogeneity of the studied population. The value of the coefficient is expressed as a percentage, and its interpretation depends on the size of the coefficient, where: below 25% there is low volatility, between 25% and 45% - average volatility, between 45% and 100% - strong volatility, and above 100% - very strong volatility.

The research was conducted to determine the perception of startups by generation Z, which enters the labor market. They are creative and creative people, able to effectively use new technologies. There is a high probability that in the future they may work in startups or even start them. Identifying the key advantages and disadvantages of starting startups should help increase their chances of success.

4. Results

In order to identify knowledge about the startup, the respondents were asked to indicate a maximum of 3 most accurate definitions for them. The respondents could choose from among 7 indicated on the basis of the literature review. Among them, one was intentionally incorrect (Table 2)

Table 2. The definition of a startup in the opinion of the respondents

Description	Number of responses	Structure in % taking into account the number of responses	Structure in % taking into account the number of respondents
A startup is a new, innovative form of organization.	357	25,66%	71,40%
A startup is an organization that uses external financing and methods to find the optimal way to create value for customers based on innovation, which can then be replicated on a global scale.	317	22,79%	63,40%
A startup is an institution created to build new products in conditions of extreme uncertainty.	234	16,82%	46,80%
A startup is a temporary organization that is looking for a profitable and scalable business model.	205	14,74%	41,00%
A startup is a temporary organization early in the life cycle.	143	10,28%	28,60%
A startup is any organization with very limited resources and uncertain demand.	82	5,90%	16,40%
A startup is any new organization.	53	3,81%	10,60%

Among the respondents, the most frequently indicated startup definitions were responses related to the innovativeness of the organization itself and its creation of value for customers based on innovation. The respondents concluded that startups are created to create new products in conditions of uncertainty and are looking for a profitable and scalable business model. It is therefore clear that Generation Z associates the concept of a startup with innovation, new products and flexibility in the operation of the organization. These features seem to be important for the Z generation and reflect what they expect from the products delivered to the market. The least frequently respondents indicated a definition that is in fact untrue and was included in the study on purpose. This proves the high awareness of the respondents. In the past, a startup was often unequivocally identified with a new company, now generation Z is aware of the difference between these concepts.

Based on the results, it should be concluded that a startup is a new, innovative form of organization, using external financing, the purpose of which is to build innovative products that provide new value to the client. It is characterized by extreme uncertainty and the drive to create a business model that enables scaling.

Another question was about the advantages of startups. The respondents were asked to indicate 7, in their opinion, key advantages of a startup, which were distinguished on the basis of a literature review. The results are presented in a Table 3.

Most respondents indicated that the lack of an imposed business model and providing an innovative product is the most important advantage of startups. Flexible implementation of solutions, effective adaptation of the product to market needs, low start-up costs or high profits are the advantages of a startup that are appreciated by the surveyed representatives of Generation Z in Poland.

Table 3. The advantages of startups in the opinion of the respondents

Description	Number of responses	Structure in % taking into account the number of responses	Structure in % taking into account the number of respondents
No imposed business model, the ability to develop your own, effectively adapted to the needs of the organization.	339	9,69%	67,80%
Providing an innovative product.	331	9,46%	66,20%
High flexibility in implementing new solutions.	292	8,34%	58,40%
Adaptation of the delivered product to the needs of the market.	289	8,26%	57,80%
The possibility of obtaining a large return on invested funds.	275	7,86%	55,00%
Low start-up costs.	256	7,31%	51,20%
Quick financial success (in the case of an effective project and competent associates).	241	6,89%	48,20%
Gaining invaluable experience in operating on the domestic and foreign market.	234	6,69%	46,80%
Potential in increasing innovation and competitiveness not only of the organizations themselves, but above all of the economy.	231	6,60%	46,20%
Independence of the founders.	217	6,20%	43,40%
Great influence of employees on shaping the workplace and implementing their own ideas.	214	6,11%	42,80%
Rapid growth thanks to technological advantage.	166	4,74%	33,20%
Continuity of generating technological progress.	155	4,43%	31,00%
A discontinuous form of development, based on the life cycle of a start-up, containing the possibility of return, i.e. changing the operating model.	143	4,09%	28,60%
Exploitation of intellectual capital, intangible assets.	117	3,34%	23,40%

It can be noticed that the lack of imposed patterns, the ability to manufacture products for specific solutions to problems, and the relatively high profits that can be obtained in the case of achieving significant success are the potential of Startup perceived by the representatives of Generation Z. These results show a picture of the new generation, which can be seen as potential and competences will direct towards development and innovation. Attention is drawn to the fact that only 4.09% of the responses were received by a discontinuous form of organization, and 3.34% by the exploitation of intellectual

capital and intangible assets. It follows that for Generation Z, freedom of action and novelty are important. In this case, you can see a clear impact of access to the world thanks to the Internet, which had a significant impact on the upbringing of this generation, which shaped in it the need to constantly obtain new products that would improve the quality of their lives. Then, the respondents were asked to rate on a scale of 1 to 5 how much impact the individual advantages have on the willingness to set up their startups (1-they do not affect, 5- they have a significant impact). In Table 4 presents the obtained results taking into account the gender of the respondents.

Table 4. Influence of startups 'advantages on the respondents' willingness to establish them - breakdown by gender

Description	Average			Dominant			Standard deviation			Coefficient of variation		
	A	M	W	A	M	W	A	M	W	A	M	W
Low start-up costs.	4,17	4,08	4,23	5	5	5	1,03	1,10	0,99	24,75%	26,92%	23,40%
The possibility of obtaining a large return on invested funds.	4,33	4,24	4,38	5	5	5	0,83	0,86	0,82	19,26%	20,21%	18,69%
Quick financial success (in the case of an effective project and competent associates).	4,23	4,17	4,26	5	5	5	0,91	0,91	0,92	21,61%	21,72%	21,52%
Exploitation of intellectual capital, intangible assets.	3,39	3,21	3,50	3	3	3	0,93	0,99	0,88	27,57%	31,03%	25,18%
Adaptation of the delivered product to the needs of the market.	3,78	3,66	3,85	4	4	4	0,95	1,00	0,90	25,00%	27,40%	23,36%
Gaining invaluable experience in operating on the domestic and foreign market.	3,92	3,67	4,07	4	4	5	0,99	1,06	0,91	25,22%	28,81%	22,38%
No imposed business model, no possibility to develop your own, effectively adapted to the needs of the organization.	4,02	3,76	4,18	5	4	5	0,92	0,98	0,85	22,96%	25,96%	20,36%
Providing an innovative product.	4,01	3,88	4,09	4	4	5	0,90	0,95	0,86	22,53%	24,47%	21,14%
Independence of the founders.	4,00	3,78	4,14	5	5	5	0,98	1,04	0,91	24,47%	27,60%	22,04%
Great influence of employees on shaping the workplace and implementing their own ideas.	3,76	3,78	3,77	4	4	4	0,99	0,88	0,94	26,31%	23,24%	24,78%
Rapid growth thanks to technological advantage.	3,77	3,74	3,79	4	4	4	0,96	0,93	0,91	25,57%	24,77%	24,08%
Continuity of generating technological progress.	3,60	3,60	3,59	4	4	4	0,98	0,95	0,95	27,27%	26,47%	26,50%
A discontinuous form of development, based on the startup's life cycle, which enables a change in the operating model.	3,33	3,31	3,35	3	4	3	0,98	0,96	0,95	29,35%	29,05%	28,22%
Potential in increasing the innovativeness and competitiveness of the organization and the economy.	3,55	3,59	3,58	4	4	4	1,00	0,98	0,99	28,31%	27,34%	27,73%
High flexibility of implemented solutions.	4,01	4,02	4,05	4	4	4	0,91	0,91	0,88	22,73%	22,59%	21,83%

Legend - W (women), M (men), A (all)

According to the respondents, the propensity to establish startups is to the greatest extent influenced by: the possibility of obtaining a large return on invested funds, low start-up costs, quick financial success, high flexibility and product innovation. Generation Z turns out to be entrepreneurial, strongly focused on the financial results of the organization. The respondents are encouraged to set up a

startup organization by the possibility of achieving high profits in a relatively short time, which makes them the so-called unicorn. This was the case with the founders of well-known organizations such as Facebook, Airbnb, Uber or Spotify, which they use on a daily basis. Once again, the research results indicate that product innovation is of key importance for this generation, which may be due to the fact that they grew up in times of

prosperity, where the number of products available on the market is enormous and the interest in the product of a large group of recipients is extremely difficult for the organization.

The smallest impact (average below 3.55) on the willingness to establish startups was achieved by: discontinuous form of organization and exploitation of intellectual capital, intangible assets, increasing the innovativeness of the economy and generating continuous technological progress. It follows that the representatives of Generation Z do not perceive the establishment and operation of a startup in the long-term context and its impact on the growth of innovation in the economy. Such an attitude raises some anxiety as to the future of the startup's development in Poland. In practice, it may turn out that a large number of Generation Z representatives will not be interested in the development of their startups and the pursuit of the technological development of the country. Their actions can be market-oriented and fundraising from various sources.

Based on the results presented in tab. 5, it can be observed that men assessed the impact of individual advantages lower on the propensity to establish startups. When it comes to the dominant assigned values, no gender differences are noticed. In most cases, the standard deviation is close to 1. In the case of most of the advantages, a small variation in the values can be observed (less than 25%). The average variability of values (over 25% - greater differentiation of responses) occurs in the case of the following advantages: exploitation of intellectual capital, intangible assets, generating technological progress, discontinuous form of development, the potential to increase innovation and the competitiveness of the organization and the economy. Thus, only in the case of two advantages, the

respondents showed greater differences in opinions, and in the remaining ones they were relatively unanimous as to their assessment. On this basis, it can be concluded that the research results are credible and actually reflect the perception of the benefits of startups by the representatives of the Z generation.

In Table 5, the results of the impact of the advantages on the propensity to establish startups are also presented, but taking into account the division of respondents according to the positions held (managerial and non-managerial).

It can be observed that the respondents on driving assess the benefits in favor of the benefits in favor of the progress to the start, refer to the person to the non-eligible persons. Only two advantages, i.e. the possibility of obtaining a new return on account of the financial investment (as part of securing new employees and future position), competent development of the future 4. If a future position is created in the position of non-referral at the beginning of the website 4. It follows that it may With the beginning of the page, the position of the person in the position gains the advantage of the Improvement station in the fixation and fixation of the improvements. In the case of two advantages: the independence of the founders and the influence on the shaping of the working position, also different dominant in individual successes can be observed. It is clearly visible that people do not see the positioning of positioning until a decision is made to place the technology in the founders of the founders. Standard deviation in.

In the case of the above division into positions, it is greater than in the case of the division into sex of the respondents and does not fluctuate so significantly around 1. It can also be observed that in most cases there is a higher variability of values (average variability > 25%) than in the case of the division into sex.

Table 5. Influence of startups 'advantages on the respondents' willingness to establish them - division into managerial and non-managerial positions

Description	Average		Dominant		Standard deviation		Coefficient of variation	
	M	N	M	N	M	N	M	N
Low start-up costs.	3,92	4,19	5	5	1,32	0,96	33,74%	22,98%
The possibility of obtaining a large return on invested funds.	4,13	4,34	5	5	1,07	1,00	25,89%	23,06%
Quick financial success (in the case of an effective project and competent associates).	4,03	4,24	5	5	1,26	0,86	31,36%	20,27%
Exploitation of intellectual capital, intangible assets.	3,21	3,40	3	3	1,12	1,04	34,85%	30,54%
Adaptation of the delivered product to the needs of the market.	3,45	3,81	4	4	1,03	0,88	29,93%	22,97%
Gaining invaluable experience in operating on the domestic and foreign market.	3,76	3,93	4	4	1,05	0,93	27,93%	23,65%
No imposed business model, the ability to develop your own, effectively adapted to the needs of the organization.	3,82	4,04	3	4	0,98	0,89	25,75%	22,14%
Providing an innovative product.	3,92	4,02	4	4	1,05	0,91	26,77%	22,71%
Independence of the founders.	3,76	4,02	3	5	1,10	1,13	29,26%	28,18%
Great influence of employees on shaping the workplace and implementing their own ideas.	3,61	3,77	3	4	1,15	1,09	31,95%	28,99%
Rapid growth thanks to technological advantage	3,47	3,79	5	4	1,25	0,78	35,88%	20,47%
Continuity of generating technological progress.	3,37	3,62	4	4	1,10	1,06	32,68%	29,27%
A discontinuous form of development, based on the life cycle of a start-up, containing the possibility of return, i.e. changing the operating model.	3,39	3,33	3	3	1,13	0,92	33,23%	27,66%
Potential in increasing innovation and competitiveness not only of the organizations themselves, but above all of the economy.	3,53	3,54	4	4	1,01	0,95	28,54%	26,81%
High flexibility of implemented solutions.	3,95	4,01	4	4	0,90	1,04	22,77%	26,01%
Legend: M - managerial position, N - non-managerial position								

This means that in the case of the division into positions, there are much more differentiated assessments than in the case of the division into gender. In this case, therefore, there were differences in the assessment of individual advantages by representatives of managerial and non-managerial positions. The same advantages were rated the lowest as in the case of the gender division of the respondents. Therefore, it confirms that generation Z focuses more on meeting their own needs, and then on the impact of

their activities on economic development and technological progress.

In the next question, the respondents were asked to indicate up to 3, in their opinion, key flaws of a startup. The results are presented in a Table 6.

The largest number of respondents considered the main disadvantage of a startup to be a high risk of failure, instability, uncertain demand for a product, sudden and unforeseen changes, or the perception of a startup as an uncertain partner.

Table 6. Disadvantages of a startup in the opinion of the respondents

Description	Number of responses	Structure in % taking into account the number of responses	Structure in % taking into account the number of respondents
High risk of failure.	403	16,12%	80,60%
Instability.	349	13,96%	69,80%
Uncertain demand for products.	331	13,24%	66,20%
Sudden and unpredictable changes.	294	11,76%	58,80%
Perception of a startup as an uncertain and inexperienced cooperation partner.	254	10,16%	50,80%
The selection of the first employees may determine the success or failure of a startup.	179	7,16%	35,80%
Lack of structured processes and their creation "on the fly".	150	6,00%	30,00%
Scaling a product prematurely can lead to the collapse of the entire company.	135	5,40%	27,00%
High dynamics of changes in the organization.	129	5,16%	25,80%
Due to the innovative nature of the product, it is not possible to use historical data or reference points.	127	5,08%	25,40%
A wide range of duties for individual positions, which is constantly modified.	81	3,24%	16,20%
A large number of employees hiring shortly (in the development phase).	68	2,72%	13,60%

Therefore, it can be concluded that the uncertainty and risk in many aspects of startups' operation may be the main factor inhibiting a person seeking to establish them. On the other hand, research shows that a wide range of duties and a large number of employees hired in a short time are not such a big problem. The results of the research confirm that the representatives of Generation Z are focused on change, therefore high employee turnover is not a significant disadvantage for them. Any changes in the scope of employees, duties or the dynamics of the organization are for them a new and interesting challenge rather than

a disadvantage. Openness to change is a typical feature of this generation, which is confirmed by the results of the research.

Later, the respondents were asked to rate on a scale from 1 to 5 how much impact, in their opinion, particular disadvantages have on their reluctance to set up startups (1- do not affect, 5- have a significant impact). The obtained results, broken down by gender, are presented in Table. 7.

According to the respondents, the reluctance to establish startups is to the greatest extent influenced by: high risk of failure, instability, and sudden and unforeseen changes, i.e. flaws that they previously considered the most important.

Table 7. The impact of startup flaws on the willingness of respondents to establish them - breakdown by gender

Description	Average			Dominant			Standard deviation			Coefficient of variation		
	A	M	W	A	M	W	A	M	W	A	M	W
High risk of failure.	4,49	4,51	4,48	5	5	5	0,81	0,80	0,82	18,02%	17,64%	18,28%
High dynamics of changes in the organization.	3,51	3,41	3,56	4	3	4	0,91	0,93	0,90	26,02%	27,35%	25,17%
Lack of structured processes and their creation "on the fly".	3,37	3,23	3,46	3	3	3	0,97	1,05	0,92	28,90%	32,53%	26,47%
Sudden and unpredictable changes.	4,04	3,88	4,14	4	4	5	0,92	0,97	0,86	22,66%	25,10%	20,89%
Instability.	4,21	4,13	4,26	5	5	5	0,88	0,91	0,85	20,87%	22,02%	20,06%
Uncertain demand for products.	4,11	4,08	4,13	5	5	5	0,91	0,91	0,91	22,15%	22,35%	22,07%
A wide range of duties at individual positions, which are constantly modified.	3,13	3,03	3,19	3	3	3	0,93	1,02	0,87	29,70%	33,64%	27,26%
Perception of a startup as an uncertain and inexperienced cooperation partner.	3,60	3,52	3,64	4	4	4	1,06	1,10	1,04	29,55%	31,19%	28,52%
A large number of employees (rotation) hired in a short time (in the development phase of the stream)	2,99	2,93	3,04	3	3	3	1,03	1,12	0,97	34,36%	38,37%	31,84%
No possibility to use historical data, reference points	3,18	3,11	3,24	3	3	3	1,12	1,16	1,09	35,07%	37,42%	33,54%
Making the success or failure of a startup dependent on the selection of the first employees	3,40	3,32	3,45	3	3	3	1,05	1,07	1,04	30,97%	32,21%	30,18%
Scaling a product prematurely can lead to the collapse of the entire company.	3,53	3,39	3,61	3	3	4	0,98	0,95	0,99	27,79%	28,15%	27,34%

Legend - W (women), M (men), A (all)

The surveyed representatives of Generation Z have concerns about the uncertainty and instability of startups, they see this as a problem for this type of organization. On the other hand, the least influence on the reluctance to establish startups, in line with the results, has: a large number of employees hired in a short time (in the development phase) and a wide range of duties in given position. Research shows that generation Z is open to novelties and changes, does not follow the usual patterns and strives to shape their own solutions.

Based on the research results, it can be concluded that, as in the case of advantages, men assessed lower the impact

of individual disadvantages on the reluctance to establish startups. It can also be observed that the impact of more than half of the defects was assessed below an average of 3.5. This means that the respondents do not see such a significant impact on the reluctance to establish startups. In case of defects the average variability of the values can be observed (> 25%). This means that the variability of the data (differences in the opinion of the respondents) in the case of assessing the disadvantages affecting the propensity to establish startups compared to the advantages are greater. These observations show, therefore, that generation Z sees a greater strength of the advantages encouraging

the creation of startups than the disadvantages discouraging their creation. In table 8. the results of the impact of defects on the reluctance to establish

startups were also presented, but taking into account the division of the respondents into the position held (managerial and non-managerial).

Table 8. Impact of startup flaws on the willingness of respondents to establish them - division into managerial and non-managerial positions

Description	Average		Dominant		Standard deviation		Coefficient of variation	
	M	N	M	N	M	N	M	N
High risk of failure.	4,34	4,50	5	5	0,88	0,81	20,23%	18,02%
High dynamics of changes in the organization.	3,63	3,50	3	4	0,88	0,91	24,31%	26,16%
Lack of structured processes and their creation "on the fly".	3,39	3,37	3	3	0,86	0,98	25,20%	29,19%
Sudden and unpredictable changes.	4,00	4,04	5	5	1,01	0,91	25,34%	22,43%
Instability.	4,18	4,21	5	5	0,93	0,87	22,13%	20,77%
Uncertain demand for products.	4,21	4,10	5	5	0,87	0,91	20,78%	22,26%
A wide range of duties at individual positions, which are constantly modified.	3,18	3,13	3	3	0,93	0,93	29,07%	29,76%
Perception of a startup as an uncertain and inexperienced cooperation partner.	3,76	3,58	4	3	1,10	1,06	29,26%	29,54%
A large number of employees (rotation) hired in a short time (in the development phase of the stream)	3,29	2,97	3	3	0,93	1,03	28,19%	34,78%
No possibility to use historical data, reference points	3,26	3,18	3	4	1,00	1,13	30,80%	35,46%
Making the success or failure of a startup dependent on the selection of the first employees	3,58	3,39	3	3	1,08	1,05	30,21%	30,99%
Scaling a product prematurely can lead to the collapse of the entire company.	3,39	3,54	3	3	1,00	0,98	29,49%	27,67%

Legend: M - managerial position, N - non-managerial position

In the case of the impact of disadvantages on the reluctance to establish startups, only four were rated at or above the average 4 They were: high risk of failure, instability, uncertain demand and sudden and unforeseen changes. Most of the disadvantages of the respondents in managerial positions, as in the case of advantages, assessed lower their impact on the reluctance to establish startups. The standard deviation is greater than in the case of the division into the sex of the respondents and does not fluctuate so significantly around 1. It can also be observed that in most cases there is an average variability of the values (average variability > 25%). This means that there

were significantly more differentiated ratings than for the gender breakdown. The same disadvantages were rated the lowest as in the case of the gender division of the respondents, i.e. a large number of employees hired in a short period of time (in the development phase of the stream) and a wide range of duties in a given position.

The survey shows that Generation Z:

- understands the concept of a startup correctly, associates it with innovation, new products, flexibility of the organization's operation,
- sees great potential for establishing startups, especially in terms of the possibility of generating high

financial results if they run an organization in the future,

- especially values innovation due to the prosperity in which they were brought up and the availability of many products, but does not see the essence of establishing startups in the context of the development of innovativeness of the national economy, growth of technological progress, science,
- is open to changes and novelties, they are characterized by a lack of well-established patterns, which may affect the future success of their startups, but is afraid of the risk and uncertainty associated with setting them up.

The conducted research made it possible to verify the hypotheses.

Hypothesis 1 was positively verified. It has been shown that Generation Z perceives startups as an innovative form of organization. Of the given definitions of a startup, 71% of respondents directly drew attention to innovation. In turn, hypothesis 2 was verified negatively. Among the surveyed representatives of Generation Z, there were no significant differences in the assessment of the advantages and disadvantages of startups. This was demonstrated by the coefficient of variation, which was at a low or average level in all criteria, indicating a slight differentiation of responses among the surveyed population.

The research allowed us to see the startup through the eyes of Generation Z representatives in Poland. Based on them, it can be concluded that Generation Z can contribute a lot to startup ecosystems.

5. Discussion

The increase in interest in the topic of startups results in new information on this topic. There are new definitions of this term. On this occasion, the authors pay

special attention to the characteristic features of this type of organization as well as its advantages and disadvantages.

Undoubtedly, the most common advantage indicated by the authors is the low start-up costs of startups (Łopusiewicz, 2013; Bogacz, 2020; Naborowski, 2022). Startup founders often use bootstrapping, i.e. self-financing, as the initial costs of running a startup are usually low. The “Startups in Poland 2019” report shows that as many as 73% of respondents indicated this form of financing when setting up a startup. However, in order to develop a business, it is necessary to obtain external financing. A valued advantage of startups (especially for investors) is the fact that startups have a much higher return on investment compared to other organizations (Gemzik-Salwach, 2014). This is particularly important for external investors such as Venture Capital Funds. According to the Polish Startups 2021 research, in the first three quarters of 2021, Polish startups raised PLN 1.46 billion, while in the entire 2020 it was PLN 1.23 billion, and the number of transactions after three quarters of this year has already exceeded the number transactions made throughout 2020. Therefore, there is a huge interest of these funds in investing in these types of projects. Perhaps one of the features they value startups for is innovation. As the “Startups in Poland 2019” report indicates, startup owners are more likely to believe that they are offering a new product or service to their customers than owners of other young companies – 6 times more often startup founders believe that the product they offer is a novelty for all customers.

At the same time, startups are burdened with a very high risk and uncertainty. According to the “Startup Genome Report Extra on Premature Scaling” report developed by researchers from Stanford and Berkeley Universities, up to 92 percent of startups fail within the first three years of operation. startups (Marmer, 2011). Patel (2015) claims that as many as nine out of ten established startups fail. The main reasons for the failure of startups are premature scaling of the

organization with an underdeveloped business model. Bania also shows too little involvement of the founders, who often simultaneously work full-time or run other activities (<https://startupacademy.pl/3-glowne-powody-porazek-startupow/>). It is also inadvisable to develop a startup for too long alone or with a few people leading to failure. According to the Deloitte report (2016), as many as 65% of Polish startups are enterprises employing up to four people. The research shows that a large number of employees employed in a short time does not have a positive impact on the development of startups. It follows that the pace of hiring employees and their number can also determine the ultimate failure or success of a startup.

6. Conclusion

The article attempts to define the concept of a startup, indicating its characteristic features, including advantages and disadvantages. An outline of the perception of the startup environment in Poland is presented. Conclusions were drawn on the basis of the literature review and the survey conducted.

1. There are many definitions that try to more or less precisely reflect the essence of the form of organization which is a startup. Based on the results, it can be concluded that a startup is a new, innovative form of organization that uses external financing, the purpose of which is to build innovative products that provide new value to the client. It is characterized by extreme uncertainty and the drive to create a business model that enables scaling.

2. The advantages and disadvantages of establishing a startup are intertwined when considering the decision to set up a startup. In fact, it may turn out that some of the disadvantages may become an advantage for some, and it will only depend on the approach and competences of a person.

3. The key advantages that lead to the establishment of a platform are: product innovation, creating your own sales market, response to customer needs, and independence of the founders. On the other hand, the disadvantages discouraging this: high risk of failure, uncertainty of demand, sudden and unforeseen changes, instability.

4. Startups are created in places with a high concentration of highly qualified employees, where there are many scientific units such as universities and there are a large number of companies and potential investors

5. Openness to change is a typical feature of the Z generation. They do not duplicate patterns and strive to create solutions. Product innovation becomes a key value, which may result from the fact that they were brought up in times of prosperity, where the number of products available on the market is huge.

6. The results show that Generation Z associates the concept of a startup with innovation, new products and flexibility in the operation of an organization. These features seem to be important for the Z generation and reflect what they expect from the products delivered to the market. A startup is no longer associated with every new organization, as it was a few years ago.

7. Generation Z does not look at the establishment and operation of a startup in the long-term context and its impact on the growth of economic innovation or technological progress. Generation Z focuses more on meeting their own needs.

8. These results show a picture of a new generation that will direct its potential and competences towards development and innovation. Any changes in the scope of employees, duties or the dynamics of the organization are for them a new and interesting challenge rather than a disadvantage.

The research shows that generation Z sees a greater strength of the advantages encouraging the creation of startups than the disadvantages discouraging their creation. This research is one of the first conducted in Poland and may inspire others.

References:

- Andrejczuk, M. (2020). *Definition challenges of startups*. *Górnośląskie Studia Socjologiczne. Nowa series*, 11, 54-66.
- Bartoszewski, S. (2015). *What is StartUp and what are its benefits?* Retrieved from <https://www.kopalniapracy.pl/czym-jest-startup-i-jakie-wynikaja-z-niego-korzysci> (1.08.2021)
- Blank, S., & Dorf, B. (2013). *Startup Guide. Building a great company step by step*. Gliwice: Wydawnictwo Helion.
- Bogacz, D. (2020). *Startup Nation*. Retrieved from <https://cfm.uek.krakow.pl/media/files/85/1c/MMONOGRAFIA%20studencka%20CMQ%202020.pdf> (24.04.2022)
- Bursiak, L. (2013). Diagnosis and positioning of the financial situation of start-up companies and companies from the Newconnect market in 2011, *Scientific Papers of the University of Szczecin. Finances. Financial markets. Insurance*, 59, 49-58.
- Cieślak, J. (2014). *Entrepreneurship, politics, development*. Warsaw: Wydawnictwo Akademickie Sedno.
- Czyżewska, M., Kozioł, K., & Pitera, R. (2019). Analysis of the possibility of applying enterprise valuation methods to startups. *College of Management and Finance, Scientific Journal*, 174, 47-63.
- Damodaran, A., & Valuing, Y. (2009). *Start-Up and Growth Companies: Estimation Issues and Valuation Challenges*. Retrieved from <https://ssrn.com/abstract=1418687> or <http://dx.doi.org/10.2139/ssrn.1418687> (23.09.2021)
- Diaz, M. L. A., Ramirez, O., & Munoz, R. A. T. (2021). Open innovation and public policies in developing countries, *International Journal for Quality Research*, 14(3), 787-804.
- Fairlie, R. W., Morelix, A., Reedy, E. J., & Russell, J. (2015). *The Kauffman Index 2015: Startup Activity, National Trends*. Retrieved from <https://ssrn.com/abstract=2613479> (dostęp: 4.06.2021).
- Friedrich, R., & Peterson, M. (2010). *The Rise of Generation C. Implications for the World of 2020*, Available at: <http://www.strategyand.pwc.com/> (6.04.2014).
- Gemzik-Salwach, A. (2014). Using the Dave Berkus method to analyze the development potential of start-up companies in Poland. *Acta Universitatis Lawodsis. Oeconomica foil*, 300(2), 111-122.
- Glinka, B., & Pasieczny, J. (2015). *Creation of an enterprise: opportunities, implementation, development*. Warsaw: Scientific Publishers of the Faculty of Management at the University of Warsaw.
- Graham P. (2012.) *Startup Equals Growth, Graham's Essays on entrepreneurship* Retrieved from <http://www.paulgraham.com/growth.html> (dostęp: 15.09.2021).
- Kowalewski, K. (2020). Effective development of startups as a challenge for modern management, *Journal of Marketing and Market Studies*, 10.
- Lemańska-Majdzik, A. (2018). *Reasons for running a small business*. Retrieved from http://www.humanitas.edu.pl/resources/upload/dokumenty/Wydawnictwo/Zarzadzanie_zeszyt/Zarz%201_2013%20pdzielone/lemanska%20majdzik.pdf (23.04.2022)
- Łopusiewicz, A. (2013). *Start-up From Idea To Success*. Warsaw: Edgard-Samo Sedno Publishing House, 8-9.

- Łuczak, K. (2014). Accounting for innovation on the example of enterprises referred to as start-ups, *Scientific Papers of the University of Szczecin. Finance, Financial Markets, Insurance*, 70, 79-87.
- March, P. (2020). Challenges of modern entrepreneurs and the success of Silicon Valley. *Annales Universitatis Mariae Curie-Skłodowska, section H - Oeconomia*, 54(4). <http://dx.doi.org/10.17951/h.2020.54.4.69-81>.
- Marmer, M. (2011). *Startup Genome Report Extra on Premature Scaling*. Retrieved from <https://integral-entrepreneurship.org/wp-content/uploads/2016/07/Startup-Genome-Premature-Scaling.pdf> (23.04.2022)
- Masrom, N. R., Daut, B. A. T., Rasi, R. Z., & Keong, L. W. (2022). Innovation as a mediating factor between total quality management and competitive advantage among manufacturers, *International Journal for Quality Research*, 16(1), 243-260.
- Mizuko, I. (2008). *Living and Learning with New Media: Summary of Findings from the Digital Youth Project*, MacArthur Foundation Reports on Digital Media and Learning, The MIT Press, Massachusetts. Retrieved from <https://files.eric.ed.gov/fulltext/ED536072.pdf> (13.02.2022)
- Mohout, O., & Kiemen, M. (2016). *A Critical Perspective to Exponential Organizations and its Hyper Scalability*. Available at: http://mixel.be/files/pdf/Critical-to-exponential_preprint.pdf, (dostęp: 23.07.2021)
- Moschner, S. L., Fink A. A., Kurjuweit, S., Wagner, S. M., & Herstatt, C. (2019). Toward a better understanding of corporate accelerator models. *Bus. Horiz.*, 62, 637-647.
- Naborowski, A. (2022). *How to Start a Startup | 2. Advantages and disadvantages of starting a start-up*. Retrieved from <https://firmbee.com/pl/wady-i-zalety-zalozenia-start-upu> (26.04.2022)
- Okulska K. (2020). *Working in a startup - advantages and disadvantages. Opinions of employees from 22 startups*. Retrieved from <https://interviewme.pl/blog/praca-w-startupie> (10.01.2022)
- Patel, N. (2015). *90% of Startups Fail: Here's What You Need To Know About The 10%*. Retrieved from <https://www.forbes.com/sites/neilpatel/2015/01/16/90-of-startupswill-fail-heres-what-you-need-to-know-about-the-10/> (access date: 24.08.2021)
- PwC, *The Startup Economy. How to support tech startups and accelerate Australian innovation*, Available at: www.digitalpulse.pwc.com.au (dostęp: 24.05.2021)
- Report Startups in Poland 2019, Retrieved from <https://startuppoland.org/report/polskie-startupy-raport-2019/> (14.03.2022)
- Report Startups in Poland 2020, Retrieved from <https://pfrventures.pl/dam/jcr:97b2797b-5c3c-4f0a-8e38-ba42098244bf/Polskie%20Startupy%202020%20COVID%20EDITION.pdf> (18.01.2022)
- Report Startups in Poland 2021, Available at: https://startuppoland.org/wp-content/uploads/2021/11/Raport_Polskie_Startupy_2021.pdf (14.01.2022)
- Ries, E. (2011). *The Lean Startup*. London.
- Rojewska, M (2019). *Millenials, generation Z, Y, X, baby boomers generation - who is it ?* Retrieved from <https://interviewme.pl/blog/pokolenie-z> (24.03.2022)
- Skala A. (2017). Spiralna definition of a startup. *Organizational Review*, 9, 33-39.
- Skawińska, E., & Zalewski, R. (2016). Competitiveness - key success factors of enterprises in the 21st century. *Organizational Review*, 3(16).

- Sobczyk, R., & Dudczyk, H. (2016). Success and Failure Determinants of Internet Start-ups, *Annales Oeconomia, Sectio H*, 50(2), 81-92.
- Sobczyk, R., & Dudycz, H. (2016). Determinants of success and failure of Internet start-ups, *Venture Incubator S.A.*, 1(2).
- Stankiewicz, M. (2014). Today an idea, tomorrow a product: start-up - examples of projects on the IT market, *Scientific Papers of the West Pomeranian Business School Firma i Rynek*, 2, 31-45.
- Thiel, P. A., & Masters, B. (2014). *Zero to One: Notes on Startups, or How to Build the Future*. New York. Crown Publishing Group.
- Tomaszewski, A. (2019). Startups as a strategic choice of enterprises. *Collegium of Management and Finance Warsaw School of Economics, Scientific Papers*, 175, 201-212.
- Year (ed). 2019. *Positive impact startups, Radical Social Innovation Report*. Warsaw: Kuzmiński Business Hut.
- <https://impicode.pl/blog/startupy-w-liczbach/> (access date: 24.07.2021)
- <https://incredibleinspirations.com/> (access date: 20.11.2021)
- <https://linkd.pl/pe22r> (access date: 20.03..2022)
- <https://poradnikprzedsiębiorcy.pl/-pokolenia-w-pracy-cz-4-pokolenie-z> (access date: 24.07.2021)
- <https://startupacademy.pl/najwieksze-startupy-swiata/> (access date: 24.07.2021)
- <https://www.quora.com/Entrepreneurship/What-is-the-proper-definition-of-a-startup/answer/Dave-McClue> (access date: 10.01.2022)
- http://www.netvalley.com/silicon_valley/Don_Hoefler_coined_the_phrase_Silicon_Valley.html (access date: 24.07.2021)

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