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## CHALLENGES DETERMINING THE SUCCESS AND FAILURE OF A STARTUP IN THE OPINION OF REPRESENTATIVES OF GENERATION Z IN POLAND

The aim of this article is to identify the challenges faced by startups and determine their impact on the possibility of success or failure. It achieves its goal by reviewing the literature on the subject, conducting a survey, and employing statistical methods. The paper presents research conducted among Generation Z. From the results, it can be concluded that key factors in the success of a startup include the ability to take risks, obtain financing for development, gain a competitive advantage, find a scalable and repeatable business model, and implement effective marketing and promotion activities. According to the respondents, the biggest factor in the failure of a startup is lack of knowledge about the market and customer needs, as well as legal, accounting, and tax issues.

**Keywords:** startup, success, failure, challenges, Generation Z.

### 1. INTRODUCTION

The new reality brings many possibilities. Effective use of emerging opportunities and effective avoidance of threats requires the ability to take risks, use the competences of the organization, which determine gaining a competitive advantage. This is possible thanks to the optimal use of the potential, including intellectual capital (Kutela et al., 2020). According to the rationality model, making changes in the organization makes sense when the benefits exceed the costs (Mączyńska, Okoń-Horodyńska, 2020). Only intelligent organizations, able to flexibly adapt to changes, can meet the emerging challenges. In the era of globalization, digitization of processes, which is a consequence of Industry 4.0, it is difficult for traditional organizations that cannot accept the real and virtual plane to function and develop (Adamik, Nowicki, 2017). Traditional organizations that have fixed structures and processes of operation may be much worse at adapting to the rapid changes that occur in their environment or react to them with a considerable delay. This may be due

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to the complexity and lack of flexibility of their structure, which results in difficulties in quickly adapting to changes, especially those of strategic importance. It seems that an organization that meets the above requirements is a startup open to innovation, capable of delivering an innovative product. Startups can develop thanks to the development of niches that enable them to achieve international success, such as Facebook, Uber and Spotify. It is worth considering what challenges they have to face and how they can affect their success or failure.

In the world, most often people start startups at the age of 25–35 (<https://incredibleinspirations.com>), while in Poland it is people aged 20–40 (Polish Startup Report 2020). So we are dealing here with, among others, representatives of generation Z. The age of people starting business in this model is decreasing, which makes it interesting how the challenges related to the functioning and development of a startup are perceived by representatives of generation Z. An additional argument in favor of conducting research in this group of people is the fact that generation Z constitutes an increasing group on the labor market, and in 2025 it will constitute approx. 20.7% of people on the Polish labor market. It has therefore become interesting how they perceive the challenges that determine the success or failure of startups, which may not only be their potential workplace, but also a chance for creative development of their ideas (<https://startup.pfr.pl>). It is important to try to identify whether the challenges related to startups are perceived differently by women and men. In the literature, we do not find research in this area, which is why this topic seems to be interesting in the context of the predisposition of women and men to start-ups, and it may be an inspiration for further research.

The aim of the article is to identify the challenges faced by startups and determine their impact on the possibility of their success or failure. The work sought to verify the following research hypotheses:

H1: Generation Z women and men have different perceptions of startup success challenges.

H2: Generation Z women and men have different perceptions of the challenges that make a startup fail.

H3: The ability to take risks and obtain financing for development are factors that significantly affect the success and failure of startups.

The achievement of the goal and the verification of the hypotheses was possible thanks to the review of the literature and the conducted survey.

## 2. STARTUP IN ECONOMY 4.0

A contemporary organization operates in a turbulent environment. This requires the development of competences that condition its flexible adaptation to changes. Its competitiveness is determined not so much by financial and material resources as by intellectual capital. Employees, their knowledge, skills and experience play an important role in developing a competitive advantage (Tomaszczuk, 2014). Significant importance should be attached to the flexibility and effectiveness of reactions to changes taking place in the environment, including the behavior of competition or customer requirements (Szmitka, 2019). Global competitiveness requires the reduction of operating costs, which results in lower product prices, while meeting customer expectations. Therefore, one should strive to build an innovative strategy that determines the functioning and development of the organization. Meeting the challenges requires the implementation of innovations, including new technologies, or management approaches. This results in the

creation of structures conditioning the growth of the organization's intelligence, necessary for the effective use of knowledge, in order to improve existing solutions, use new tools to meet emerging challenges, and be able to effectively eliminate conflicts resulting from the introduced changes. Modern managers must be creative and enterprising in order to shape the potential of the organization.

Globalization, technical and technological progress (e.g. digitization of processes) or socio-cultural progress generate a number of changes. Organizations must function in a specific and hitherto unknown environment, in which there are real and virtual activities that determine their competitiveness (Adamik, & Nowicki, 2017). New technological solutions (e.g. CPS systems, Big Data, Internet of Things, or Services) gave rise to the fourth industrial revolution generating changes in the functioning of the organization. Therefore, their ability to achieve lasting success, understood as the ability to develop in the long term, depends on (<https://rada.wib.org.pl/>):

- investments in technologies (the need to incur costs related to the adaptation of the organization to their implementation),
- acceptance of the new business model (development of the competences of the organization conditioning flexible adaptation to changes),
- the ability to improve employees' competences (the possibility of their continuous development).

Nowadays, digitization applies not only to industrial processes, but also to everyday human life. This requires the transfer of decision-making processes from the real world to the virtual world (<https://innovatingautomation.pl>). The concept of industry 4.0 promotes an intelligent organization (smart factory), based on the Internet of Things and cyber-physical systems, whose task is to monitor physical processes and make decisions using self-organization mechanisms. The Internet of Things determines effective communication and effective cooperation of systems with each other and with people. The Internet of Services is also of great importance. In practice, it enables the implementation of internal and external services and the operation of websites used by users of the value network. The fourth industrial revolution takes place in three stages. They are (Hawksworth, Berriman, Goel, 2018):

- the algorithm stage (analysis of computational tasks, structural data),
- expansion stage (interaction with office support technology, automation of repetitive activities and tasks),
- the stage of autonomy (work automation, problem solving).

In today's world, we should strive to create intelligent organizations capable of meeting the individual needs of stakeholders, primarily customers. The dynamics of business and engineering processes allows us to introduce changes in production to ensure flexibility in response to failures or new expectations of stakeholders, primarily customers (Schneider, 2018).

Industry 4.0 from a strategic point of view generates a digital transformation of business models based on (Mülle & Buliga, 2018): qualified employees capable of using new digital opportunities (managing them in a multifunctional way), cooperation, ability to make alliances, strategic partnership, community involvement, or data management and ensuring their security. The development of digitization, integration and the increase in the complexity of systems lead to the emergence of digitized market models, increasing their competitiveness by eliminating barriers between information and physical structures. Product innovation, their new features and capabilities contribute to changing customer

expectations (Ilic, Markovic, Milosevic, 2017). This is the result of the integration of production, organizational and social systems, the transformation of activities, their optimal organization and automation through the use of IT systems (Adamik, 2018). This requires a change in the perception of customers or employees. It is necessary to review the competences of the organization, update the existing processes and the evolution of culture (Schwab, 2017). It is connected with the necessity of changes: employees' skills, leadership mechanisms, or the created organizational structure. This means that success depends on the competences of the leaders in the field of talent management (Wyrwicka, Mrugalska, 2017).

However, when implementing the concept in question, one should take into account potential threats that may arise during this process. One of the requirements facing the organization is the increase in productivity, taking into account the reduction of resource consumption (McKinsey Global Institute). In addition, it is necessary to ensure harmonization of the implemented innovations with the created system in order to improve the course of identified processes, from design, programming through use, to product maintenance (Tilley, 2017).

The response to the turbulent environment should be the willingness to create conditions conducive to the emergence and functioning of organizations that gain their competitive advantage thanks to knowledge. Organizations should be characterized by such features as (Makulska, 2012):

- the ability to produce products, the value of which is more than 50% of knowledge, which is an advantage over manual work,
- employing high-class specialists,
- significant influence of intellectual capital on the market value, which means its higher relation to the book value of the organization.

Organizations based on knowledge also face challenges such as the ability to continuously learn or effectively manage knowledge in order to be able to remain competitive (Chodorek, 2016). In the new economy, there is space for the emergence of modern organizational forms, such as a learning or an intelligent organization. A startup that fits this concept can be considered such a form of organization. Startup is a concept ambiguously defined by scientists. It is still a relatively new form of organization. In the literature on the subject, you can most often find a startup defined as a project implemented to produce new products under conditions of uncertainty (Ries, 2011), an organization created to search for a repeatable and scalable business model (Blank, Dorf, 2013). It is a company in the first stage of development, which uses modern technological and innovative solutions (Kariv, 2013). Therefore, it is an organization with high uncertainty in terms of the market and technology being introduced (Giardino, Unterkalmsteiner, Paternoster, Gorschek, Abrahamsson, 2014), in the phase of growth and market research related to technologically advanced projects with high growth potential (Čalopa, Horvat, Lalić, 2014).

The startup's operation is based on identifying the problem faced by users, creating a way to solve it, and developing a business model (Chan Kim & Mauborgne, 2004). Startups are better at agility and risk taking (compared to traditional organizations) and are known for their culture of experimentation and the founders' vision (Baloutsos, Karagiannaki, Pramataris, 2022). The startup is also characterized by (Kühnapfel, 2015):

- innovation of a product, technology, method of operation or seeking financing,
- competitive advantage based on innovation,

- acquiring funds for development from external investors,
  - growth and reacting to market changes, which is facilitated by a flat organizational structure,
  - uncertainty, high risk associated with every aspect of its operation,
- Startups are organizations worth creating because of (<https://startup.pfr.pl/>):
- low costs of running a business,
  - delivering an innovative product to the market that solves the problem or need of a selected group of recipients,
  - the possibility of testing your business idea in safe conditions, obtaining funding for innovative projects,
  - substantive support in many areas (law, accounting, marketing, etc.), gaining experience by the founders.
  - the possibility of creating a company that can be a leader, obtaining a high return on investment,
  - cooperation of startups with other organizations, which positively influences business transformation of companies (Steiber, Alänge, 2021).

No wonder that young people more and more often decide to set up startups, giving them the opportunity to develop and implement innovative ideas. However, before a startup is successful, it has to face many challenges. A startup must have the ability to learn effectively, which allows it to flexibly respond to changes, implementing appropriate solutions, using employee commitment.

This means that it is a learning organization that should be characterized by intelligence (Penc 2012; Łukasiński, Bieńczycki, Dorocki, 2021):

- innovative, necessary in the process of creating and shaping new solutions, better than those known and implemented so far, are created by startups a powerful driving force for innovation processes, innovative, necessary in the process of creating and shaping new solutions, better than those known and implemented so far (...),
- information, allowing agile acquiring, processing and using information in the decision-making process in order to effectively generate solutions,
- technological conditioning of the optimal use of the opportunities resulting from technical and technological progress in order to effectively adapt the product to the market needs,
- socio-cultural necessary to meet the needs of stakeholders, including customers and employees of the organization,
- marketing ensuring identification of market changes, adapting the offer to the needs of the recipient
- financial conditioning the rationality of investing funds in various projects,
- organizational, enabling flexible adaptation of the organizational structure to implemented action strategies, conditioning the effectiveness of self-improvement of the organization,
- environmental (ecological) conducive to the creation of solutions aimed at eliminating the harmful effects on the natural environment.

The development of a startup is possible thanks to the growth of intelligence, which facilitates meeting emerging challenges (Table 1).

Table 1. Challenges affecting the creation, operation and development of a startup

Specification	Description
Startup notion	One of the most important challenges resulting from the startup definition is finding a scalable and repeatable business model (Łopusiewicz, 2013). In order to receive support for development from external funds, it is necessary to show how and how quickly potential investors will get a return on the invested money, therefore showing a business model scaling plan is extremely important ( <a href="https://ichi.pro/pl/">https://ichi.pro/pl/</a> ). However, it is not easy because the startup has a very high risk of failure (Ries, 2011).
Startup functioning	Another challenge for startup founders is gaining knowledge about the market and customer needs. Although a startup creates its market by creating customer needs, it must have a lot of knowledge about similar ones that operate alongside it. Not only for startups, but also for classic organizations, gaining a competitive advantage is one of the most important challenges that constantly accompany their founders (Tomaszewski, 2018). Startups must face the challenge of commercializing the product in the extremely uncertain environment we are currently dealing with (Ries, 2011). It may be helpful to establish cooperation with corporations and constantly broaden your horizons. For a product to develop, it is necessary to find a group of loyal customers to the product. In order to achieve this, it is necessary at the very beginning to characterize the product, its purpose and the need it satisfies (Bierzyńska-Sudoł, 2019). We should strive to achieve synergy of human competences and modern technologies.
Startup development	It is important to prevent critical errors, i.e. errors preventing the user from accessing the product for a specified period of time. Critical errors, especially at the beginning of the operation, may discourage customers from using the product ( <a href="http://startuplife.pl/">http://startuplife.pl/</a> ). Working on product recognition and building a customer base is a difficult task that requires effective marketing activities. In order to be able to undertake more and more new activities and develop the product and organization, it is necessary to obtain financing ( <a href="https://www.technologpark.pl">https://www.technologpark.pl</a> ). Currently, organizations, mainly startups, have to deal with a complex legal, accounting and tax system. The excess of bureaucracy and formalities is a heavy burden on the founders (Polish Startup Report 2019).

Source: Own elaboration based on the literature provided in the table.

Thanks to the effective coping with challenges, a startup has a chance to achieve success and development, the lack of the required competences leads to failure. Therefore, it seems reasonable to identify the challenges that may affect the success or failure of a startup.

### 3. METHODOLOGY OF THE RESEARCH

Based on the analysis of the literature on the subject, an attempt was made to identify the challenges that determine the success or failure of startups. On this basis, a questionnaire was created, which was used in the process of collecting information. The study was conducted in May 2021 through May 2022 via the Internet.

The questionnaire was completed by 500 representatives of Generation Z, i.e. people up to 27 years of age. Among them, there were 62% of women and 39% of men. In order to interpret the obtained results, the arithmetic mean and the coefficient of variation conditioning the determination of the degree of differentiation of the variable value were used. 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 Student's t-test is a statistical method used to compare two means with each other if we know the number of people tested, the arithmetic mean and the value of the standard deviation or variance. This is one of the most frequently used statistical tests used to verify hypotheses. Thanks to it, you can find out whether two different means are different as a result of chance or are statistically significantly different.

Cluster analysis was also carried out in the work, which aims to group the tested elements into similar groups. The idea of cluster analysis is to group the examined factors in such a way that, according to the established criteria, similar entities are separated into separate groups.

#### 4. SURVEY RESULTS

In order to identify the perception of challenges by the representatives of Generation Z in Poland, a questionnaire survey was carried out. It is important to identify which of them has a key impact on the success or failure of the startup. Based on the literature review, a questionnaire was prepared and made available to the respondents. The study was conducted in May 2021 through March 2022 via the Internet. The questionnaire was completed by 500 representatives of Generation Z, i.e. people up to 27 years of age. Among them, there were 62% of women and 38% of men, of which 7.6% were people employed in managerial positions. The respondents were asked to indicate up to 7 key challenges for startups (Table 2).

Table 2. Challenges for startups in the opinion of respondents

Specification	Number of responses	Structure in % (allowing for the number of responses)	Structure in % (allowing for the number of respondents)
The ability to take risks	335	9.5%	67.0%
Acquiring financing for development	329	9.4%	65.8%
Gaining a competitive advantage	296	8.4%	59.2%
Scalable and repeatable business model	278	7.9%	55.6%
Effectiveness of marketing activities	276	7.8%	55.2%
Finding competent employees	268	7.6%	53.6%
Gaining knowledge about the market and customer needs	267	7.5%	53.4%
Avoiding fatal errors (no user access to the product)	227	6.4%	45.4%
Achieving synergy of human competences and modern technologies	226	6.4%	45.2%
Ability to deal with legal, accounting and tax issues	200	5.6%	40.0%

Table 2 (cont.). Challenges for startups in the opinion of respondents

Specification	Number of responses	Structure in % (allowing for the number of responses)	Structure in % (allowing for the number of respondents)
Shaping the company's potential	196	5.5%	39.2%
Commercialization of a product in an uncertain environment	189	5.3%	37.8%
Cooperation with corporations	188	5.3%	37.6%
Constant broadening of horizons	170	4.8%	34.0%
Product characteristics	76	2.1%	15.2%

Source: Own study based on the survey conducted.

The respondents considered the ability to take risks, obtain financing for development, gain a competitive advantage, find a scalable and repeatable business model and effective marketing activities as the greatest challenges. The challenges identified mostly by the respondents result from the definition of a startup and constitute its core. Such choices of the respondents testify to a good understanding of the concept and essence of a startup. It cannot be denied that these challenges are key to the startup's existence, success or failure. Meeting them effectively can shape a stable and developing organization. It turns out that the continuous broadening of horizons and the characteristics of the product are not a big challenge for the respondents. Perhaps they are something natural for young people, which may inspire optimism about the future in which generation Z will play an increasingly important role in the labor market. Such an attitude will certainly be conducive to the development of the organization in the future.

Then, the respondents were asked to determine, on a scale of 1 (low impact) to 5 (key impact), the impact of the identified challenges on the startup's success (Table 3).

Table 3. The impact of challenges on the success of startups in the opinion of the respondents

Sym- bol	Specification	Average			Coefficient of variation			Student's t-test
		A	M	W	A	M	W	CA <sup>3</sup>
a	Scalable and repeatable business model	3.99	4.03	3.97	23.8%	23.8%	23.7%	0.8595466816
b	Avoiding fatal errors (no user access to the product)	4.01	4.00	4.01	22.3%	23.3%	21.7%	-0.224154501
c	Effectiveness of marketing activities	4.20	4.03	4.30	22.2%	25.0%	20.2%	-4.573249142
d	Acquiring financing for development	4.26	4.12	4.35	20.2%	22.7%	18.4%	-4.146827487
e	Ability to deal with legal, accounting and tax issues	3.68	3.50	3.79	27.4%	30.7%	25.1%	-4.52652449

<sup>3</sup> Critical area (with a confidence factor of 0.05);  $(-\infty; -1.9647) \cup (1.9647; +\infty)$



Table 3 (cd.). The impact of challenges on the success of startups in the opinion of the respondents

Symbol	Specification	Average			Coefficient of variation			Student's t-test
		A	M	W	A	M	W	CA
f	Gaining knowledge about the market and customer needs	4.14	3.99	4.23	21.2%	22.5%	20.2%	-4.340309261
g	The ability to take risks	4.23	4.05	4.35	20.9%	23.5%	18.9%	-5.360200374
h	Gaining a competitive advantage	4.17	4.03	4.26	21.3%	23.1%	20.0%	-4.075113502
i	Commercialization of a product in an uncertain environment	3.72	3.66	3.75	24.7%	25.9%	23.9%	-1.597711445
j	Cooperation with corporations	3.61	3.35	3.77	27.2%	31.6%	23.8%	-6.779495289
k	Constant broadening of horizons	3.79	3.63	3.89	25.0%	27.1%	23.5%	-4.41292993
l	Finding competent employees	4.10	3.93	4.21	22.6%	25.2%	20.6%	-4.819400012
m	Shaping the company's potential	4.01	3.87	4.09	22.3%	25.8%	20.0%	-3.871160362
n	Product characteristics	3.62	3.46	3.71	27.7%	32.1%	24.8%	-3.877013565
o	Achieving synergy of human competences and modern technologies	3.90	3.74	3.99	24.1%	27.3%	21.9%	-4.096871323
Legend – W (women), M (men), A (all)								

Source: Own study based on the survey conducted.

The respondents indicated that the success of a startup is influenced by such challenges as: obtaining financing, the ability to take risks and the effectiveness of marketing activities. Both women and men pointed to the significant impact of these challenges on the success of startups. There is little variation in responses (<25%) among the respondents, which proves their compliance with the main challenges affecting the startup's success. Generation Z, therefore, notices that in every organization where continuous development is most important, funds are needed for continuous product improvement and its expansion, and marketing activities undertaken in order to promote it are an inseparable element influencing its development. A new and innovative product generates a high risk of failure in the era of enormous market competition. According to the respondents, the characteristics of the product and establishing cooperation with corporations have a smaller impact on the startup's success. Gen Z does not see the significant impact of corporate support. This may result from a lack of understanding of the principles of cooperation of

such organizations with a startup, or identifying it with being absorbed by corporations. Women rate the impact of particular challenges on a startup's success higher than men. This may be due to the greater optimism of the female gender. The coefficient of variation indicates that the values of variables in individual groups remain at a low level (<25%). The only exception are the responses to establishing cooperation with corporations, where a greater diversity of responses can be observed among men.

Student's t-test showed that there are statistically significant differences between the answers of women and men when it comes to as many as 12 out of 15 challenges (c, d, e, f, g, h, j, k, l, m, n, o) affecting startup success. This means that women and men have significantly different opinions on this topic. Therefore, the hypothesis that women and men from Generation Z perceive the challenges affecting the success of a startup differently has been positively verified.

Challenges affecting the success of a startup were grouped using cluster analysis (Fig. 1).

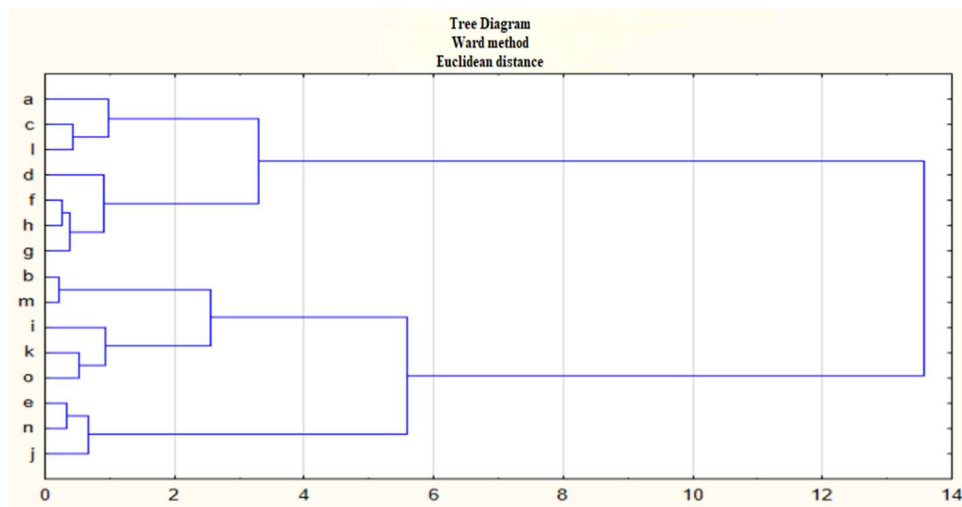


Figure 1. Dendrogram of challenges affecting the success of startups

Source: Own elaboration based on research results.

The analysis shows that the challenges affecting the success of a startup can be divided into two main groups. The first of them are the challenges: a, c, l, d, f, h, g, which seem to result from the specificity of the startup organization. The second group of challenges: b, m, i, k, o, e, n, j is to a greater extent related to the functioning and development of startups. In this context, it is clear that there are two areas that pose a challenge on the way to success for a startup.

Then, the respondents were asked to rate, on a scale of 1 (low impact) to 5 (key impact), the impact of the identified challenges on the startup's failure (Table 4).

Table 4. The impact of challenges on the failure of startups in the opinion of the respondents

Sym- bol	Specification	Average			Coefficient of variation			Student's t-test CA <sup>4</sup>
		A	M	W	A	M	W	
a	Scalable and repeatable business model	3.46	3.49	3.44	33.2%	33.7%	33.0%	0.7680267842
b	Avoiding fatal errors (no user access to the product)	3.54	3.57	3.53	34.6%	33.9%	35.1%	0.5129789112
c	Effectiveness of marketing activities	3.38	3.39	3.38	38.5%	36.5%	39.7%	0.1768182723
d	Acquiring financing for development	3.52	3.52	3.52	34.0%	31.4%	35.5%	0.05781253355
e	Ability to deal with legal, accounting and tax issues	3.36	3.18	3.47	33.4%	37.0%	31.0%	-4.067624536
f	Gaining knowledge about the market and customer needs	3.55	3.55	3.55	33.7%	34.2%	33.4%	-0.02027724329
g	The ability to take risks	3.61	3.65	3.59	32.5%	31.9%	32.9%	0.8003012157
h	Gaining a competitive advantage	3.43	3.49	3.39	34.7%	31.8%	36.5%	1.287413933
i	Commercialization of a product in an uncertain environment	3.42	3.34	3.46	31.0%	31.7%	30.6%	-1.931300716
j	Cooperation with corporations	3.24	3.21	3.26	33.6%	33.9%	33.4%	-0.6509294123
k	Constant broadening of horizons	3.25	3.11	3.33	34.8%	35.1%	34.5%	-3.146110181
l	Finding competent employees	3.44	3.48	3.41	35.2%	33.6%	36.3%	0.8678802526
m	Shaping the company's potential	3.37	3.36	3.37	35.5%	34.8%	36.3%	-0.2089862495
n	Product characteristics	3.13	3.03	3.19	36.9%	37.9%	36.6%	-2.23255345
o	Achieving synergy of human competences and modern technologies	3.36	3.34	3.37	34.4%	34.2%	34.5%	-0.3432817081
Legend – W (women), M (men), A (all)								

Source: Own study based on the survey conducted

<sup>4</sup> Critical area (with a confidence factor of 0.05);  $(-\infty; -1.9647) \cup (1.9647; +\infty)$

On the basis of the obtained results, it can be concluded that the respondents did not clearly indicate the challenges that affect the failure of this type of organization. Perhaps this is due to their little experience and knowledge of the reasons for the failure of the organization beyond standard bankruptcy. In their opinion, the lack of knowledge about the market and customer needs as well as legal, accounting and tax issues have the greatest impact on the failure of a startup. These challenges are also important for traditional organizations and do not distinguish a startup in this respect. The characteristics of the product and establishing cooperation with corporations have the smallest impact on the failure of a startup, according to the respondents. When analyzing the information obtained, there are no clear differences in the answers given by men and women. On the other hand, a higher rate of response variability can be observed ( $> 25\%$  – moderate variability). This means that the respondents responded less unanimously than in the case of the impact of challenges on the success of startups, their responses were more varied. This indicates that there is no clear perception of the impact of challenges on startup failure. It can be argued that this is the result of failing to meet several challenges at once, and not one that should be given key importance. Student's t-test test showed that there are statistically significant differences between the answers of women and men only in the case of 2 out of 15 challenges (e, k) that affect the failure of startups. This means that women and men do not have a significant difference of opinion on this topic. It can be said that hypothesis 2 has not been positively verified, because both women and men similarly perceive the impact of challenges on the failure of the startup. Challenges that could generate a startup failure were grouped using cluster analysis (Fig. 2).

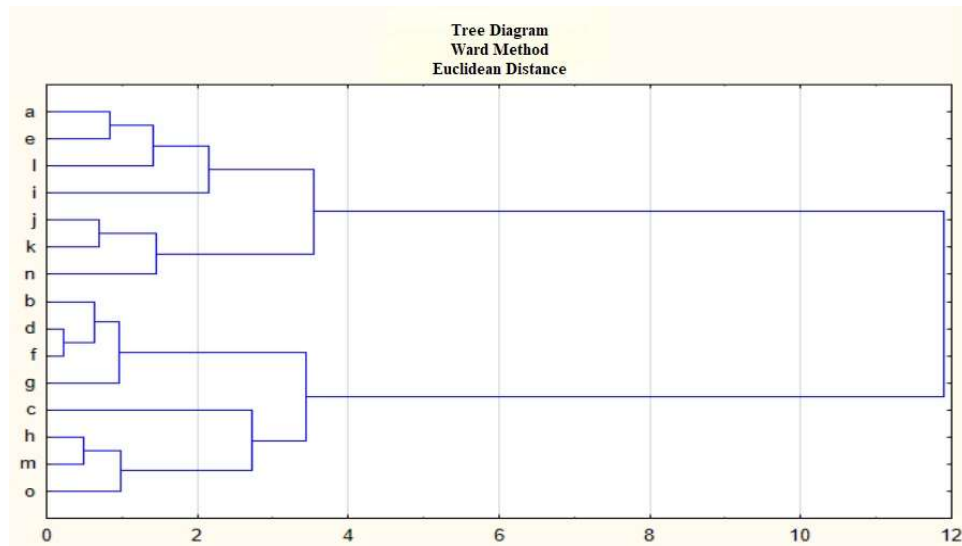


Figure 2. Dendrogram of challenges affecting the failure of startups

Source: Own elaboration based on research results.

The first group of challenges affecting the failure of startups (a, e, l, i, j, k, n) is a group of factors related to the growth of the organization and its scaling. The second group of

challenges affecting the failure of startups (b, d, f, g, c, h, m, o) included challenges related to competitive advantage, uncertainty or high risk of operation.

Based on the results obtained, it can be concluded that there are several areas within which challenges affecting the success or failure of a startup can be distinguished.

## 5. DISCUSSION

The research shows that the challenges faced by startups can be the source of both their success and failure, it depends on the competencies of the organizations that condition them to meet them. Nevertheless, in the opinion of Generation Z, it is the ability to meet the challenges related to the functioning and development of a startup that leads them to success more often. The success of a start-up depends on the ability to raise funds, willingness to take risks, or finding competent employees. Failure is influenced by the lack of risk-taking ability or improper recognition of the market and customer needs. Most often, these are challenges related to the organization's lack of competence that determines scaling or the ability to function in a situation of uncertainty, which is associated with failures.

There are many references in the literature to the challenges faced by startups. Thavorn and Chandrachai (2020) see the important role of team members, i.e. the potential of employees (intellectual capital), which affects the creation and then the development of startups. For the main development factor among startups Pramono et al. (2021) recognize the technology that startups will use in virtually every aspect of their operation. Bańka et al. (2022) draw attention to the benefits of cooperation between startups and corporations. They showed that cooperation affects the development of both startups and corporations. Mai et al. (2022) emphasize the important role of employee and managerial competences in the process of organizational learning and its impact on development. Thanks to this, they can react to the dynamic environment and develop in a sustainable and sustainable way. Keogh and Johnson (2021) draw attention to the network of contacts that must be created when building a new organization. It is important that the founders have the ability to establish contacts, a large number of which can have a positive impact on the development of the organization, while a small number is a limitation. Kuester (2018), in turn, draws attention to the challenge of risk management in organizations aimed at reducing (minimizing) threats. This skill in startups can definitely make the difference between success and failure. In this context, team relationship management becomes important as it is positively related to the ability of startups to cope with crises (Mai et al., 2022).

The limitation of the study is the fact that the determinant that was not included in the study is political stability, which has now been shaken by the war in Ukraine. The question can be asked what impact it will have on the Polish startup market. However, it certainly has an impact on Ukrainian startups, which have huge problems with obtaining foreign funds. Poland as a frontier country may also turn out to be an unattractive and too risky investment destination for many investors and lead to failure (<https://www.rp.pl/>).

## 6. SUMMARY

Startups develop in a dynamically changing and turbulent environment that presents them with new challenges. These, in turn, may affect their functioning in a positive or negative way, depending on the involvement in the development of competences. Based on the study, it can be concluded that:

- the ability to take risk, obtain financing for development, obtain a competitive advantage, find a scalable and repeatable business model and implement effective marketing activities, have a key impact on the ability to achieve success by a startup,
- respondents understand the essence of a startup, and broadening their horizons is something natural for them and they do not perceive it as a challenge, because such action is part of the process of their development,
- the development of the stream requires raising funds for product improvement and the implementation of marketing and promotion activities,
- the respondents do not see a significant impact of the corporation's support and the characteristics of the product on both the achieved success and possible failure,
- there is no key challenge that determines the success or failure of a startup, it is the lack of competences of the organization to face several at the same time that determines its fate,
- there are challenges that may contribute to a startup's success as well as failure, the result depends on the organization's competences conditioning adaptation to the situation.

Thanks to the results obtained from the conducted research, 2 out of 3 hypotheses were positively verified. It has been shown that women and men from generation Z differently perceive the impact of challenges on the success of startups and the ability to take risks and obtain financing for development are factors that significantly affect the success of startups. However, it has not been confirmed that women and men from Generation Z perceive the challenges that affect the failure of a startup differently.

The research hypothesis presented in the article was confirmed. There is no single challenge that alone affects the success or failure of a startup.

It is optimistic that for the surveyed representatives of the generation, broadening horizons and developing competences are something natural, which is equated with running a modern organization. This research is one of the first conducted in Poland and may inspire others.

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