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Action Strategies of Start-Ups

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There are quite a lot of opinions and little knowledge about the strategies of start-ups. The notions on this topic are inconsistent and with little agreement. Hypothetical works predominate and, although logically consistent, there is no empirical research that would provide verified scientific knowledge. Business strategies of start-ups should be a systematic object of research because start-ups have to compensate for a number of their natural limitations (weaknesses) with practical conduct that has the nature of an action strategy. The goal of the research is to identify a typology of start-up strategies that would clarify and specify the strategizing of start-ups based on their actual action. The research was conducted on a sample of 147 start-ups. Methods of descriptive statistics, factor analysis, hierarchical clustering, and ANOVA were used to analyse the research sample. The criteria describing the action of start-ups were divided (reduced) into two strategic dimensions using factor analysis, the combination of which, using clustering by the Ward method, there were identified four types of action strategies of start-ups: proactive leader, waiting leader, proactive follower, waiting follower. The main knowledge contribution of the research lies in the fact that the seemingly disorganized, spontaneous, and even chaotic action got clear contours that will allow a better understanding of the behaviour of start-ups. The research also included an assessment of the performance of the identified types of strategies.

Keywords: *Start-Up; Action; Factor Analysis; Clustering; Strategy.*

Introduction

A start-up is a small nascent enterprise that is looking for a place in an existing market or is trying to create a new market (Surbhi, 2016). The mission of a start-up is to create a new product or service in conditions of extreme uncertainty (Ries, 2011, p. 27). The start-up is expected to grow significantly and rapidly, and, therefore, Blank and Dorf (2012, p. XVII) consider scaling to be an important feature of a start-up. Start-up is destined to achieve a remarkable goal through extraordinary intellectual effort and unconventional company culture (Thiel, 2014, pp. 10–11). Newer concepts prefer the lean start-up (Dennehy *et al.,* 2019), (Gutbrod & Munch, 2018), which is based on a minimally viable product (Stayton & Mangematin, 2019), agile fast feedback (Silva *et al.,* 2020) and rapid learning (Leatherbee & Katila, 2020).

The primary goal of the start-up is to find a viable business model (Bortolini et al. (2018). Teece (2018, p. 40 – 49) notes, however, that business models are rarely successful for the first time and have to be softly tuned and sometimes fully redesigned before they become profitable engines. Business activity should, therefore, be directed to the industries (Felin *et al.,* 2020) that develop and apply new scientific knowledge and where there is an area for experimentation. Successful business making is characterized by active behaviour and good risk adaptation (Butler, 2017). The application of the business model, business experimentation, active action, and adaptation to unforeseen circumstances have a common denominator, which is the action strategy. Start-ups try to achieve their goals in real action, therefore, explicitly or implicitly competing and strategizing. The research should deal with the strategies of start-ups because these very small and young enterprises have probably different strategies from those of larger and older enterprises. Knowing the strategies of start-ups allows them to understand their action, and, thus, increase the chance of their survival and later business success.

Previous research on start-ups has mainly focused on business models (Weking *et al.,* 2019) and agile actions (Berg *et al.,* 2020), while business strategy remains on the fringes of scientific interest. These are usually calls for the application of a standard process of strategic management (Petrů *et al.,* 2019) or the identification of factors that help entrepreneurs to progress and be successful (Srinivasa *et al.,* 2019), and, therefore, they are labelled business strategy. Currently, there are efforts to bring the traditional strategic classification to the field of start-ups to fill the contextual gap like the one by Kim et al. (2022), evaluating the success of different strategies in ICT start-ups. However, the working paper from Cambridge university Centre for Technology Management by Dee et al. (2019) dealing with start-up incubation strategies suggests, that there is a need for more studies in this field because the current results are inconclusive. This paper contributes to creating a theoretical foundation for future meta-analysis to identify strategies aimed at start-up businesses and directly fill the theory gap in the context of start-ups.

The research aim is to get to know the strategies of start-ups, which are visible as a real action in the business area. Strategies in this sense are action strategies that are a manifestation of a start-up's viability. It is assumed that the result of the research based on the parameters describing the action of start-ups and with the help of factor and cluster analysis will be a clear and concise typology of start-up strategies. The theoretical (cognitive) contribution of the research is a typology of action strategies of start-ups based

on the analysis and generalization of real business operations. The practical contribution consists in the possibility of purposefully choosing a start-up strategy based on a limited number of variables aggregated into two relevant factors. The central research question is whether there it is possible to identify a limited and ordered set of entrepreneurial strategies of start-ups?

The knowledge published so far about start-ups and their business strategies is not organized into a typology that would be based on empirical research of business activities. The presented typology is the result of a study of business reality, and therefore should arouse the natural interest and confidence of budding entrepreneurs in a clear scheme that will serve as a guide for reasoned actions. The nature of start-up strategies, its essence and the factors that influence the choice of a generic strategy are not known. It is known that start-ups strategize, that they act in some way but more specific information is not available about the nature and essence of this phenomenon, and its absence can be considered a research gap.

The results of the research should interest international readers, because such a typological concept has not been published so far, and with a high probability neither have similar concepts, moreover, the presented concept is created on the basis of empirical research.

Start-Ups Strategizing

1. Start-up is **limited** by two principal circumstances. **First**, it enters the business usually for the first time, its founder is a novice whose only asset is a business idea. **Second**, the start-up is extremely constrained in all the resources that are necessary to establish and develop a company. Apart from a business idea, enthusiasm, drive, and the need for self-realization, the start-up no longer has anything that is necessary for business making. However, for a founder to build a business from almost nothing, he/she needs a strategy, a way to achieve goals. Descriptive statistics show that the absence of a business development strategy emerges as a key determinant of start-up failure in most cases (Cantamessa *et al.,* 2018). The start-up strategy is not diametrically different from the strategies of larger and mature companies, but it is not the same. A start-up must grow if it wants to survive. Demands for the growth rate of the start-up are significantly more demanding than for the growth of the mature company because exponential growth is expected, which is a typical and required feature of a start-up business making.

2. The start-up faces three strategic challenges. **The first task** is to establish, build and develop a company. **The second task** is to enter the market, compete and outperform competitors. Gulati and Desantola (2016) identified four critical activities for the successful development and growth of a start-up. The new company must employ experts, create a management system, build planning and forecasting capabilities and establish a company culture. A clearly articulated strategy can ensure (Collis, 2016) that each component of the organization is designed to support the customer value proposition. Collis (2016) further writes that three elements of the strategy are essential, namely goal, scope, and competitive advantage. **The first strategic task** is to formulate a development strategy that shapes the structure of company resources = building a company. **The second strategic task** is to formulate a business strategy that is formed in the competitive battle = building a position. The concept of *a business strategic compass* by Gans et al. (2018) connects building company and position in consideration of two competing trade-offs: collaborate or compete and storm a hill or build a moat. The compromises result in four strategies that systematize building a company and finding a competitive position.

The concept of a business strategic compass has been criticized by practitioners and entrepreneurs (Shah *et al.,* 2018), who claim that most start-ups do not use these four strategies. In their opinion, successful start-ups come from the vision of the founders and their insatiable drive to build something that will capture the customer. Excessive emphasis on strategy can lead to a pointless analysis of which way to go. Start-ups need to perceive a starting point and grow aggressively. It is unwise to ask them to look for the best possible strategy because they will probably never follow it. Entrepreneurs and investors tend to agree on deadlines and want to see if the stated tasks and goals are being achieved, which demonstrates progress.

The cooperation of start-ups with large companies was the topic of research Usman and Vanhaverbeke (2017) conducted. The content of the cooperation was open innovations that left the start-up to a large company (outbound open innovation) or came from a large company to a start-up (inbound open innovation). They identified the benefits and challenges that this collaboration brings to start-ups. For start-ups, the motives for cooperation are the benefits that help them overcome the disadvantage of inexperience and smallness.

The third strategic task is the choice between plan and adaptation. Schramm (2018) has great doubts about planning and rejects it as a tool for establishing, developing, and running a new company. According to Schramm, the new company has to do one thing: come up with a new product and go public with it. What happens next is a matter of learning by doing. The debate of experienced entrepreneurs (Shah *et al.,* 2018) also recommends planning less, acting more and proving something, gaining momentum, and maintaining it. How start-ups really act, how they strategize, and how they compete will only become apparent in practice, in a competitive space.

A purposeful strategy is convenient, but if it is too rigid, it can lose touch with reality. The emergent strategy complements and corrects the company's actions, which develop as a result of everyday incremental decisions. Collis (2016) concludes the whole debate on a lean strategy for start-ups with a solution that integrates the concept of a bottom-up lean start-up with the concept of top-down strategic management. In an iterative (repetitive) way, the company builds new capabilities and revises the original strategy in response to what it finds or learns.

According to Gans et al. (2019), the strategic process happens between uncertainty and learning. There is no single best strategy. The selection process results in several equal viable strategies and the entrepreneur must choose one and actively experiment with it. The result is conditioned by the existence of four axioms: freedom, restriction, uncertainty, and inaccurate knowledge. The ABCD model (Yin *et al.,* 2019) is also a consequence of the limitation of

the planned strategy and the necessity to retain a space for an unplanned, emergent, or action strategy. It is a strategy based on agility, benchmarking, convergence and dedication.

3. The scientific literature so far deals with the strategies of start-ups to a very limited extent, and therefore an overview of the current state of knowledge on this topic will also be based on **the strategies of small and new companies**, whose prerequisites for strategizing are similar to start-ups. Umar et al. (2018), who researched small companies, consider the creation of a strategy in a competitive environment as a condition for competitiveness and bankruptcy protection. Strategy is therefore a condition of survival. Gartner et al. (1999) write that surviving start-ups differ from non-surviving ones mainly by choosing a focal strategy and doing business in high-growth industries. According to Sciascia et al. (2006), companies that can survive must be competitive. At the heart of competitiveness are innovative strategies that respond to environmental dynamics. This dynamic forces companies to innovate products and markets if they want to remain competitive.

4. At the end of their research, Innocenti and Zampi (2018) state that the condition for sustainable **growth** of innovative start-ups is an investment in internal R&D and technological specialization, which will be the driving force of innovation and growth. This has strategic and growth implications, e.g. start-up localization and identification of research goals. Pugliese et al. (2016) examined the factors that influence start-up growth. In principle, all assessed factors can be considered strategic (resources and capabilities, entrepreneurship and business team, marketing and strategy, ecosystems and context), although most of them focus on internal growth assumptions, the role of the external environment is less clear.

The building up of the company and its growth show the procedural sequence described by Salamzadeh and Kirby (2017). The creation of a start-up involves identifying an idea or opportunity by an entrepreneur, who then groups a series of activities, mobilizes resources, and builds competencies as he/she uses his/her networks in the external environment to create value. The growth and development of the start-up are also conditioned by large investments in qualified human resources because knowledge is the main asset of the start-up. Strategy supporting the progress of start-ups in this way had been named knowledge-based strategy by Iazzolini et al. (2019). In their research, they dealt with the level that an individual start-up can reach when implementing a knowledge-based strategy.

Steinz et al. (2016) examined the barriers that foreign cleantech start-ups encountered in entering the Chinese market and the strategies that helped to overcome these barriers. The main strategy, in this case, is to come well prepared in terms of resources and time, to know Chinese society and culture, and, if possible, to speak the language. Entrepreneurs can predict which barriers will be relevant in their situation, but they must always be flexible and able to easily adapt to new circumstances.

Many studies of Korean start-ups have highlighted critical factors for survival and growth, including entrepreneurship, innovation, and technology. However, these factors do not guarantee market success. In addition to technical skills, a good set of strategies is needed. Research has shown (Yin *et al.,* 2019) that scaling up and a global strategy are important for Korean start-ups. The ABCD model and the GVC (global value chains) strategy were used to analyse the success factors of fast-growing start-ups. The ABCD model explains how a company can be more competitive than its competitors, even if it does not have top resources or is situated in similar or inferior resource conditions. Internationalization through the GVC strategy, in turn, allows start-ups to use international resources to help them overcome their shortages and circumvent domestic regulations.

5. It is undeniable that start-ups also **strategize** and think about how to survive, move forward, be successful and achieve goals, although these considerations are free and informal in nature and take minimal formalization at the request of the investor. Start-up strategies take several forms. It is **a strategy of company building**, which is natural just for an emerging micro-enterprise. The second form of the strategy is **an action strategy**, which consists in constant, regular verification of the results of a business idea development in the market with a potential customer and comparison with the competition, it contains the characteristics of an emergent and opportunistic strategy. According to Motamedi (2020), an action strategy is agile strategic action in real-time and implemented in a volatile, rapidly changing environment. It arises as a result of the evolving future and emerging opportunities and risks. The action strategy consists of five processes: perception, diagnosis, selection, discovery, intervention, and outcomes. The whole process is supported by action knowledge, which is tacit but also codified in procedures (He, 2016). Collis and Rukstad (2008) explicitly set out the basic elements of a strategic statement (competitive game plan), but despite all efforts to act unambiguously, there remains considerable scope for adaptive, respectively action strategy due to the ambiguous behaviour of competitors and customers.

In researching open strategy, Appleyard and Chesbrough (2017) noticed that **two branches of strategy** emerged. The content branch deals with economic (internal, source) preconditions for sustaining open innovations, and the process branch deals with the participation of internal and external actors in improving the strategy. The action of external actors is usually unpredictable, it will only be reflected in their specific acts, which can only be corrected by an action strategy. Powell (2017) writes that the prerequisite for achieving the top performance of the company is not only the achievement of competitive advantage but also sophisticated action. The traditional perception of the strategy prefers setting goals, understanding the industry structure, planning the competitive position, and analysing the sources of competitive advantage. In an environment of equality of choice, chance, and demanding and uncertain implementation, success depends more on tireless disciplined action than on a "grand strategy".

Poor resources, little business experience, the necessity for fast and urgent action, and a volatile, uncertain, complex, and ambiguous (VUCA) environment force start-ups much more to take an action than planned strategy (Bennis & Nunes, 2003). Based on an overview of the existing literature on the strategies of companies and especially start-ups, it can be stated that there are quite a lot of opinions on

this topic that are inconsistent, with little agreement, and often antagonistic. Theoretical/hypothetical works are strongly represented in the scientific discussion, and although they are logically consistent, there are no empirical studies enabling to generate a verified scientific knowledge.

6. The result of the literature analysis is that the topic of strategy also affects start-ups, it is even considered important, but it does not lead to the essence of strategy and describes only **accompanying or complementary topics**, such as the business model of a start-up (Faria *et al.,* 2020), agile actions (Alamaki *et al.,* 2021, Ghezzi *et al.,* 2020), financing (Diaz-Santamaria, 2021; Keogh *et al.,* 2021), intellectual property protection (Baran *et al.,* 2018), open innovation (Rahman *et al.,* 2021). The topic of strategy possibly deals with the support of start-ups from external sources (Srinivasa *et al.,* 2019) or recommends using a well-known strategic management process (Petrů *et al.,* 2019). The process of literature analysis is shown in the summary overview in figure 1.

1. Limitations of start-ups → 2. Three strategic tasks of start-ups → 3. Strategies of small and medium enterprises → 4. Strategic themes of start-ups: growth, growth obstacles, success factors → 5. Strategizing start-ups: business building strategy and action strategy, two branches of strategy (content and action) → 6. Accompanying and complementary strategic topics → 7. Result: research gap → absence of a clear typology of action strategies of start-ups and absence of description and explanation of their nature.

Figure 1. The process of Analysing the Literature on Start-Up Strategies and Strategizing and its Result

7. There is a lack of a typology of start-up strategies that would clarify and specify the occurrence of action strategies. It should provide knowledge about their distribution in the category of start-up companies and explain the reasons for distribution and the action (strategizing) of start-ups. Seemingly disordered, unsystematic, or emergent to chaotic behaviour can get clear outlines that allow a better description of start-up behaviour. The specific action of companies, which can be described by an external observer, is a manifestation of their strategy, even a manifestation that is all the more valuable and objective because it describes the implemented and not planned strategy. Thompson et al. (2013, p. 128) set several parameters, including their scaling, on the basis of which the rival's strategy could be described, e.g.: strategic scope, market share, competitive position, and strategic position. The advantage of the characteristics of the strategy, which is derived from the description of the company's activities, is that it can be identified without confidential knowledge of the company's internal environment, does not require complicated analyses, hence adequate expertise in industry conditions is sufficient to give a true picture of it.

Goals, Research Sample, and Research Methods

The goal of the research is to identify the strategies of start-ups based on their real action in the business area, and thus to arrive at a typology of strategies based on explicitly stated criteria that clearly distinguish the identified types of strategies. The result of the research should not be just a typology that formally differentiates the action of start-ups. The action strategies also state to some extent the nature and purpose of this action. Part of the considerations about the research results is the formulation of two hypotheses.

Based on the previous analysis of the scientific literature, it can be concluded that there are no organized and named sets of business strategies that would have the character of a basic typology. There is only evidence that a vague idea of strategy is the cause of start-up failure (Cantamessa *et al.,* 2018), a clearly articulated strategy supports the offer for the customer (Collis, 2016), strategy is formed in the competitive struggle (Gans *et al.,* 2018), strategy is not only a plan but also a real action (Shah *et al.,* 2018), strategy as an action is also emphasized by Yin *et al.* (2019). Strategy is a condition of competitiveness (Umar et al. (2018), strategy is opportunistic and spontaneous, and therefore also actionable (Motamedi, 2020), the actions of external actors can only be corrected with an action strategy (Appleyard & Chesbrough, 2017) or clever action (Powell, 2017). Identifying the typology (H1) will contribute to a better understanding and explanation of start-up strategizing, which appears to be chaotic and unclear.

Hypothesis H1: If start-ups act, but their individual action appears to be too heterogeneous, then after cluster analysis, their action will appear to be arranged in the form of several well-distinguished (different) and interpretable clusters.

After cluster analysis of the start-ups acting, based on identified dimensions from factor analysis, well-explainable and theory-consistent clusters representing strategies are identified. This is a procedural hypothesis testing whether is possible to identify some fundamental strategies. Otherwise, this approach will not lead to a theoretical concept.

The identified strategies should bring or be the source of a certain business performance in order to justify the usefulness of their existence. There is no relevant knowledge available in the available literature about the relationship between business strategy and business performance of a start-up (H2). There is only knowledge, rather expectations that the strategy will fulfil the set goals (Collis, 2016), entrepreneurs and investors want to see if the set goals are achieved (Shah *et al.,* 2018), the original strategy is revised according to the results achieved (Collis, 2016), the strategy should support the advancement of the start-up (Iazzolini *et al.,* 2019), the action strategy should bring results (Motamedi, 2020), part of strategizing is achieving top performance of the company (Powell, 2017).

Hypothesis H2: If start-ups act with the intention of achieving success, it is expected that there is no statistically significant difference between the number of successful companies that act according to the identified clusters (action strategies). Successful companies are placed in the best quartile of the appropriate performance indicator.

Position in the best quartile is important for the strategy framework implication, so the company has a similar chance to succeed with any one of the proposed strategies. Otherwise, only the dominant strategy would be identified.

The research sample included 186 start-ups originally but had been reduced to 147 start-ups, as companies with incomplete data and companies whose nature did not correspond to the characteristics of the start-up were excluded. Studied start-ups were founded in 2015 and later, with the exception of eight start-ups based in the years 2012–

2014. The average number of employees in surveyed start-ups is 8.2. Excluding the five start-ups employing more than 50 employees, so the average number of employees will fall to 7.3. Industry incorporation of researched start-ups according to SK NACE (Nomenclature statistique des économiés économiques dans la Communauté européenne):

A - Agriculture (forestry and fishing): 1
C - Industrial production: 22
F - Other building completion and finishing work: 3
G - Wholesale and retail trade: 24
I - Accommodation and food services: 3
J - Information and communication: 41
K - Financial and insurance activities: 1
M - Professional, scientific and technical activities: 28
N - Administrative and support service activities: 12
P - Education: 3
R - Arts, entertainment, and recreation: 4
S - Other activities: 5

Method. Field research took place in the period from September to November 2020 in Slovakia in start-ups, which were located mainly in the capital Bratislava and its surroundings. To collect the data, a non-probability sampling method was used. There was created a list of start-ups and allowed the fieldworkers to choose from the list by convenience. As it was based on the personal relation of the fieldworkers, all the start-ups that were contacted also cooperated. Each start-up was reviewed by one member of the research team, who personally recorded the evaluations and answers of the founder in a questionnaire. The structure of research questions monitors the vivid, real action of the start-up. The action strategy is described using five parameters: 1. perception and sensitivity to external stimuli, 2. dynamics and speed of action, 3. competitive position, 4. difference from the action of competitors, 5. unambiguity of action, 6. activity of action. The impetus for the selection and evaluation of parameters is derived from the characteristics of turbulence, which is a typical and significant feature of the business environment since the 1990s. The signs of turbulence were examined by Ansoff and Sullivan (1993) and expressed through the variability (discontinuity) and predictability of the environment in which the company operates. They described the turbulence through four factors, which are divided into five levels. Ansoff and Sullivan argue that in order for a company to survive and succeed in a particular industry, it must reconcile the aggressiveness of its strategic behaviour and its sensitivity to external change, with the variability of demand and market opportunities. Ansoff and Sullivan believe that the more turbulent the environment, the more aggressive a company must compete, do business, or change its orientation and be more sensitive to its environment if it is to succeed.

Application of statistical methods. 1. Description of the research sample using descriptive statistics. 2. Application of exploratory factor analysis, which reduced six variables to two dimensions for better and easier interpretation of results. The suitability of factor analysis was verified using KMO criteria, Bartlett test, and correlation analysis. 3. Factors are uncorrelated, and therefore factor analysis with varimax rotation could be used. 4. A matrix with two dimensions has been created, which serves to verify whether it is possible to clearly distinguish the strategies/actions of the investigated start-ups. 5. Using hierarchical clustering by the Ward method, four clusters were identified that are clearly different and therefore well interpretable using the identified dimensions. 6. The occurrence of statistically significant differences between the performance of start-ups in the identified clusters was tested using analysis of variance (ANOVA). The object of testing was the difference in the number of companies in the highest quartile. Performance is measured by the number of users, the number of paying users, and revenue. Results are considered statistically significant if $p < 0.05$. The data were processed in the statistical software StataSE 16.

Action parameters of start-ups/variables.

* *Perception and sensitivity to external stimuli/speed of perception*. Scale: 1 - low/over a year; 2 - moderate/year; 3 - higher/half-year; 4 - high/quarter year; 5 - very high/week. The ability of a company to perceive its surroundings is considered a component of the strategy by several academics, e.g. Thompson et al. (2013) recommend to observe macro-environment, industry, and competitive environment. The dynamics and ability to act in describing the strategy are reported by Smith et al. (2001) and Chen and Miller (2012). Motamedi (2020) links the description of the action strategy to the perception of external stimuli. Sull and Eisenhardt (2012) formulated a concept of strategy in the form of simple rules, the purpose of which is to quickly adapt to external stimuli.

* *Dynamics and speed of action*. Scale: 1 - low/over a year; 2 - moderate/year; 3 - higher/half-year; 4 - high/quarter year; 5 - very high/week. Similar to the previous criterion, Thompson et al. (2013) consider as a component of the strategy not only the perception of the environment but also the action of the company based on external stimuli. The dynamics and speed of action in describing the strategy are reported by Smith et al. (2001) and Chen and Miller (2012). Part of the action strategy as described by Motamedi (2020) is the ability to respond agilely to opportunities and adapt to a changing environment. The strategy in the form of simple rules by Sull and Eisenhardt (2012) is also based on a rapid adaptation to external stimuli.

* *Competitive position*. Scale: 1 - marginal; 2 - weak; 3 - average; 4 - stronger; 5 - prominent.

The competitive position is considered the core of the business and competitive strategy and at the same time the result of strategic effort. A competitive position is an outward manifestation of competitive advantage that results from a combination of resources and capabilities (Porter, 1980; Dolinger, 2008; Teng & Cummings, 2002). The company must carry out the transformation of internal assumptions into external reality, which confronts with competitors (Dollinger, 2008) and eventually results in a competitive position. Thompson et al. (2013) also identified the competitive position as a feature of the strategy.

* *Difference from the action of competitors*. Scale: 1 - match; 2 - small difference; 3 - bigger difference; 4 - big difference; 5 - complete difference. The difference from the behaviour of competitors appears like a uniqueness. Porter (1996) argues too that the strategy is to create a unique position, similarly to Casadesus-Masanell and Ricard (2011). Buzzell et al. (1975) found that more successful companies have unique competitive strategies.

* *Unambiguity of action*. Scale: 1 - chaos; 2 - opportunism; 3 - partial intentionality; 4 - greater

intentionality; 5 - complete intentionality. The company improvises or plans its action. Minzberg (1978) introduces the concept of unambiguity and explicitness in relation to strategy, and Gulati and Desantola (2016) have identified the need for planning skills, which are a prerequisite for purposeful action. Collis and Rukstad (2008) consider a clear articulation of strategy as a condition for deliberate action.

* *Activity of action*. Scale: 1 - defensive; 2 - mostly defensive; 3 - approximately balanced defensive and offensive; 4 - mostly offensive; 5 - offensive. The company either protects its position or actively seeks to expand its market presence to a direct confrontation with competitors. Yannopolus (2011) and Valentin (2005) present the concept of offensive and defensive strategic management as an extension of SWOT.

Research Results

Table 1 shows the values of parameters/variables that describe the behaviour of the investigated start-ups. It is obvious that most start-ups have a high sensitivity to external stimuli as well as high dynamics of the reaction itself. Most of the examined start-ups are in a better competitive position than competitors, they differ significantly from the action of competitors, they have a high level of deliberate and systematic action and mostly offensive activity.

Table 1

Characteristics and Distribution of Action of Investigated Start-Ups (n = 147)

Action parameters of start-ups/variables	Number	Share (%)
1. Perception and sensitivity to external stimuli		
low/over a year	1	0,7
moderate/year	18	12,2
higher/half-year	33	22,4
high/quarter year	66	44,9
very high/week	29	19,7
2. Dynamics and speed of action		
low/over a year	2	1,4
moderate/year	19	12,9
higher/half-year	33	22,4
high/quarter year	65	44,2
very high/week	28	19
3. Competitive position		
marginal	2	1,4
weak	9	6,1
average	55	37,4
stronger	55	37,4
prominent	26	17,7
4. Difference from the action of competitors		
match	0	0
small difference	30	20.4
bigger difference	59	40.1
big difference	44	29.9
complete difference	14	9.5
5. Unambiguity of action		
chaos	0	0
opportunism	12	8.2
partial intentionality	25	17
greater intentionality	72	49
complete intentionality	38	25.9
6. Activity of action		
defensive	0	0
mostly defensive	7	4.8
approximately balanced offensive a defensive	55	37.4
mostly offensive	62	42.2
offensive	23	15.6

Both the KMO and Bartlett test values are at an acceptable level and therefore the data are suitable for the use of factor analysis. Using factor analysis (Table 2), which examined the six parameters of start-ups, two dimensions/factors of strategy were identified that are latent and externally manifest themselves as parameters of start-ups. The extracted factors explain 100 % of the variance, the first factor explains 65.9 %, and the second is 34.1 % (Table 3). Varimax rotation was used to simplify interpretation. The identified strategy dimensions/factors can be considered uncorrelated and therefore describe the business strategy well (Figure 1). Each variable shows correlation features with at least one other variable with a correlation coefficient ranging from 0.266 to 0.711 (Table 4), and therefore variables are suitable for factor extraction.

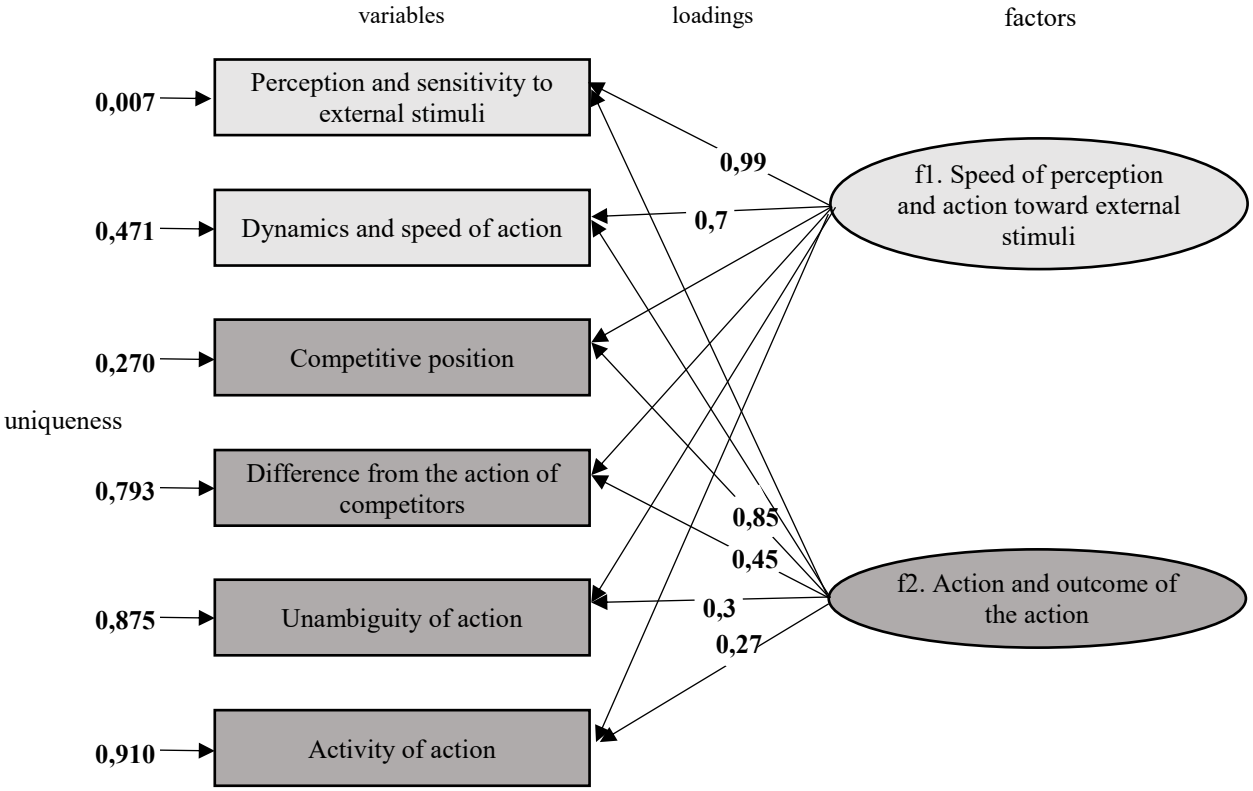


Figure 1. Factor Analysis of Start-Ups Action

Table 2

Factor Loadings and Commonalities for Varimax Rotated Two-Factor Solution for 6 Items (N=147)

Parameters of strategy	Factor loading		Commonality
	1	2	
Unambiguity of action	0.07	**0.35**	0.13
Activity of action	0.12	**0.27**	0.09
Perception and sensitivity to external stimuli	**0.99**	0.08	0.99
Dynamics and speed of action	**0.70**	0.20	0.53
Competitive position	0.12	**0.85**	0.73
Difference from the action of competitors	0.03	**0.45**	0.21

Table 3

Eigenvalues, Percentages, and Cumulative Percentages for Two Factors

Factor	Eigenvalue	% of variance	cumulative %
1	1.762	65.89	65.89
2	0.912	34.11	100.00

Table 4

Correlation Matrix of Start-Up Parameters

Action parameters of start-ups/variables	1.	2.	3.	4.	5.	6.
1. Perception and sensitivity to external stimuli	1					
2. Dynamics and speed of action	0.711*	1				
3. Competitive position	0.199*	0.224*	1			
4. Difference from the action of competitors	0.059	0.117	0.377*	1		
5. Unambiguity of action	0.065	0.173*	0.310*	0.168*	1	
6. Activity of action	0.151	0.130	0.266*	0.146	0.035	1

*p<0.05

The first dimension/factor, **the speed of perception and action towards external stimuli**, is based on two variables, namely perception, and sensitivity to external stimuli and the dynamics and speed of action. It expresses how sensitively and rapidly the company can perceive stimuli from the environment. This dimension is characteristic for companies that can perceive weaker stimuli, opportunities, or threats that other companies notice

later or not at all. The second part of the factor is the ability to respond to external stimuli. It is not enough to identify the opportunity or threat, it is necessary to respond to it accordingly.

The second dimension/factor, **the action, and the outcome of the action** are based on four variables, namely the competitive position, the difference from the competition, the unambiguity of the action, and the activity of the action. It expresses the company's internal ability to turn opportunities into results or to avert threats. The variables, namely difference, unambiguity, and activity show a high degree of uniqueness and a low degree of shared variability, however, the variables are left in the model due to the coherence and internal consistency of the model. Hierarchical clustering by Ward's method identified four well-interpretable clusters. The clustering result is shown in Figure 2 and Figure 3 (Annexes). Clusters of start-ups are well described by the studied dimensions/factors and parameters of action strategy because they are naturally bounded by axes of factors and are evidently divided into particular quadrants. The most numerous is the cluster of proactive leaders (57/38.8 %), then proactive followers (38/25.9 %), waiting followers (29/19.7 %) and the smallest is the cluster of waiting leaders (23/15.6 %). There are slightly more leaders (54.4 %) than followers (45.6 %), and proactive action (64.7 %) significantly exceeds waiting game (35.3 %).

The waiting leader (cluster 1) is a strategy of a start-up, which more slowly perceives and responds to external stimuli or opportunities. However, its resultant action is more of an offensive nature, it seeks to increase market presence, is more different from its competitors, has a deliberate future action, and achieves a prominent competitive position.

The waiting follower (cluster 2) is a strategy of a start-up, which has a less precisely determined future action. It is not aimed solely at gaining market share and therefore protects and builds barriers around its position in today's market. Such a company may not have a leading position and is also less different from its competitors. The waiting follower tends to perceive and respond more slowly to external stimuli or opportunities.

The proactive leader (cluster 3) is a strategy of a start-up, which perceives external stimuli in relatively short periods and responds to them. However, his resultant action is more of an offensive nature, it seeks to expand its market position, is more different from its competitors, has a thoughtful future action, and achieves a leading competitive position.

The proactive follower (cluster 4) is a strategy of a start-up, which perceives external stimuli relatively quickly and responds to them. It sets its future action less rigidly, is not exclusively focused on gaining new market share, and at the same time protects and creates barriers around its position in the current market. Such a company may not have a leading position and is also less different from its competitors.

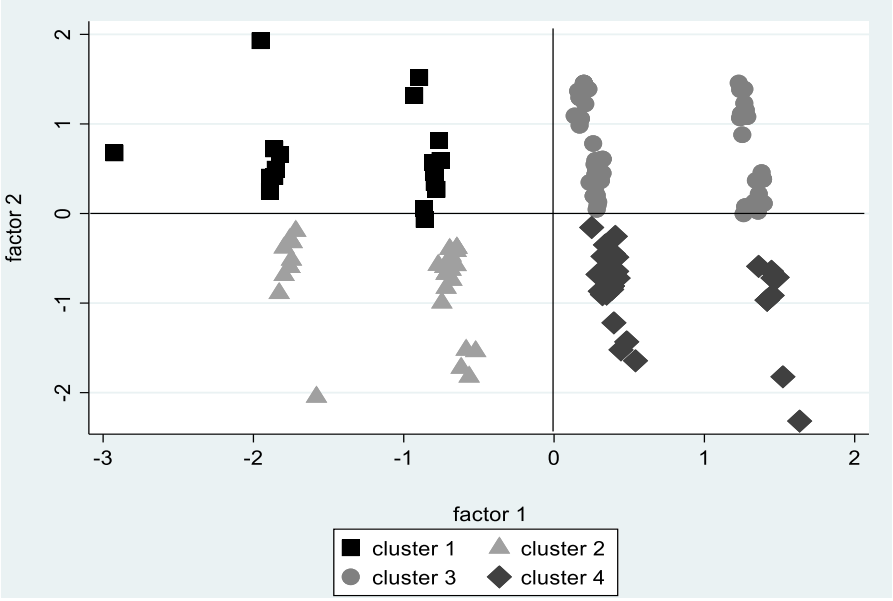


Figure 2. Action Strategies of Start-Ups

The criterion for the success of the identified strategies is the number of start-ups, which were placed according to the performance indicators in the best/upper quartile out of the total studied set (Table 5, 6, 7). No statistically significant differences were found between these indicators, and therefore can be claimed that the start-ups in the studied sample implement four different strategies expressed by two dimensions/factors, hence each strategy being approximately equally successful.

Criterion number of users. The best/upper quartile in the number of users is 5000 users. Of all the start-ups surveyed, 75.5 % had an equal or smaller number of users than 5000. Data for particular clusters are given in table 5.

Table 5

Performance of Start-Ups Measured by the Number of Users

Cluster	number of start-ups	min	max	mean	>5000*	% >5000*
Waiting leader	23	0	100001	9981.3	3	13
Waiting follower	29	0	50000	4516.3	6	20.7
Proactive leader	57	0	1800000	113785.2	21	36.8
Proactive follower	38	0	100000	7451.1	11	28.9
Total	147	0	1800000	48499.6	41	27.9

Criterion number of paying users. The best/upper quartile in the number of paying users is 1000 paying users. Of all the start-ups surveyed, 75.5 % had an equal or smaller number of paying users than 1000. Data for individual clusters are given in table 6.

Table 6

Performance of Start-Ups Measured by the Number of Paying Users

Cluster	number of start-ups	min	max	mean	>1000*	% >1000*
Waiting leader	23	0	100001	22160	5	21.7
Waiting follower	29	0	10000	6014	6	20.7
Proactive leader	57	0	1800000	70336	21	36.8
Proactive follower	38	0	20000	8300	10	26.3
Total	147	0	1800000	25981	42	28.6

Criterion revenues. The best/upper quartile in the revenue is 237 845 euros. Of all the start-ups surveyed, 75.5 % had equal or smaller revenues than 237 845 euros. The data for a particular cluster is shown in table 7.

Table 7

Performance of Start-Ups Measured by Revenue Size

Cluster	number of start-ups	min	max	mean	>237845*	% >237845*
Waiting leader	23	0	6654849	1474725	7	30.4
Waiting follower	29	0	1350000	543599	4	13.8
Proactive leader	57	0	19600000	2949119	19	33.3
Proactive follower	38	-203	4723189	1033699	7	18.4
Total	147	-203	19600000	2047747	37	25.2

Hypothesis 2, whether there is a significant difference in success between companies in particular clusters, was tested using analysis of variance (ANOVA). The number of companies in the most performing quartile was compared between particular clusters. The criteria for success were again the number of users, number of paying users, and revenues. No significant difference in company performance was identified between clusters at $p < 0.05$ in the number of users [$F(3.37) = 1.94$, $p = 0.1402$], in the number of paying users [$F(3.38) = 0.87$, $p = 0.4659$] and in revenues [$F(3.33) = 0.72$, $p = 0.5454$]. The hypothesis was confirmed that there is no significant difference between the success of the identified strategies, and therefore each strategy leads to success although in other circumstances. The research did not identify statistically significant differences in performance between clusters, but it is clear that according to all three performance indicators, the proactive leader has the largest share of successful companies, although they do not achieve better results than other types of strategies. It would be useful to investigate this phenomenon to determine whether it is accidental or a consequence of the strategy.

Discussion

After the application of cluster analysis, the research sample of start-ups is divided into four types of strategies, which are evidently different and well interpretable. Action strategies are distinguished by two latent respectively aggregated dimensions, which relevantly characterize the four types of strategic behaviour of start-ups and therefore *hypothesis 1* can be considered confirmed.

Based on the results of the analysis of variance, *hypothesis 2* can be confirmed. It means, that each type of identified strategy has a chance of success. The chosen strategy, therefore makes sense, each path leads to the goal, but there is the question to what extent the goal will be met. Standard typologies from Porter (1980) and Ansoff (1957) also assume that each chosen strategy has the potential to succeed in some situations. Which strategy and in what situation leads to success, however, there is already a topic for further research.

Differences in the incidence of clusters: The proactive leader is the largest cluster (57/38.8 %), the second position is occupied by the proactive follower (38/25.9 %), the waiting follower (2/19.7 %) is in third place and the last position was taken by the waiting leader (23/15.6 %).

Proactivity versus waiting game: Proactive action (64.6 %) significantly outweighs waiting game (35.4 %), while proactive action is divided into leading (60.0 %) and following actions (40.0 %) and waiting game is divided into leading (44.2 %) and following actions (55.8 %).

Leader versus follower: Leader action (54.4 %) slightly outweighs follower action (45.6 %). Leader action is divided

into proactive (71.3 %) and waiting actions (28.7 %) and follower action is divided into proactive (56.7 %) and waiting actions (43.3 %).

Proactive and leadership action prevail in the business practice of the examined start-ups. This action is based on perception and sensitivity to the external environment and dynamic and fast action. This statement is also supported by the share of the explained variance of factor 1 (65.89 %) and previous balances: activity versus waiting game and leader versus a follower. Waiting and following action are less represented. It is based on the unambiguity of the action, a difference from competitors, competitive position, and activity (defensive - offensive). This statement is also supported by a significantly smaller share of the explained variance of factor 2 (34.11 %) and both previous balances.

The explanation for the noticeable predominance of proactive action over waiting game and leaders over followers resides probably in the largely pioneering courage of founders of nascent companies and the lack of suitable resources and time to carry out more detailed analyses of the unknown environment. Analyses and lengthy considerations are substituted by proactive and bold action in a less competitive environment. The founders and leaders act first, they experiment and then correct their actions based on short and fast feedback. Preference for action and experimentation of start-ups is also recommended by Bocken et al. (2020), but without further specification. A smaller share of more prudent action can be attributed to business inexperience, negative business experience from the past, more intensive competition, and insufficient resources for the growth and development of the company. Founders and leaders are observing more courageous entrepreneurial patterns, they follow them or wait for how the market and industry situation will develop.

Comparison with the results of other researchers: A similar research about start-ups (Slavik *et al.,* 2018) using the cluster method (K-mean cluster) identified four types of strategy based on the parameters of Porter's typology (differentiation, costs, segmentation). They are differentiator (share of the research sample: 22.64 %), combinator (45.28 %), stuck in the middle (15.09 %), and smart operator (16.98 %). In this research, only three parameters (differentiation, cost, segmentation) were used to describe the strategy, and therefore the types of strategy appear to be more consistent. However, a larger number of parameters of the strategy more faithfully record the start-up's action which proves to be less consistent than in the comparative research.

Intersections with the results of comparative studies are small. A certain similarity can be seen between the proactive strategy (proactive leader), combinator strategy, and super-achiever strategy (Carter *et al.,* 1994), possibly with the tendency of ordinary companies to distinguish by differentiation. Comparative typologies are not based on action criteria/actionability and therefore there is no visible link between action strategies of start-ups and other typologies.

Research on business strategies of start-ups performed by Slavik et al. (2020) figured out that about 50 % of start-ups strategizing can be explained by ambitious and active action which pursue by about three-fifths of start-ups in the research sample. In this case, the similarities are more pronounced because almost two-thirds of the sample analysed in this research have active behaviour. Research by Aldianto et al. (2021) brings only indirect, implicit references to the cultivation of resilience and agile behaviour of start-ups.

Ambitious and action strategizing also has its averted face which is a failure. Forsman (2021) states three typical failure stories which are passionate innovator, solo innovator, and developer innovator. The research results show that the most common and joint factor in innovation failure is the occurrence of several incidents during the innovation process which slowly contribute to complete failure. Waiting game and following position, on the other hand, can largely eliminate a failure.

The research results are to some extent also a small contribution to effectuation theory (Ruiz-Jimenez *et al.,* 2021) which assumes that a nascent entrepreneur has a limited set of resources and unclear goals which are gradually emerging in the process of deploying resources. This process acquired several types of strategies/real actions of a start-up in the presented research. The sense of effectuation (emergent action) for novice entrepreneurs is also confirmed by Ruiz-Jimenez et al. (2021): „The causation seems to be the determinant of firm performance in experts' ventures only whereas effectuation is relevant for both experts and novices".

Scientific research and articles in scientific journals hardly address the strategies of start-ups. Topics on business models, failures, and venture capital dominate. Research of strategy is not considered attractive because the lifespan of start-ups is usually very short and it seems that strategizing is not happening. However, the results of this research have shown that start-ups really act to achieve their goals, their action can be typed/standardized and thus better understand at least the external manifestations of their behaviour. The results of the research can contribute to the self-reflection of the founders of start-ups and the qualified decision-making of investors and venture capitalists.

Conclusions

Strategies of start-ups are vaguer and less rigid in comparison with mature company strategies. Start-ups find a notion of the future position of the company in the course of real action intuitively, spontaneously, and adaptively. The volatile and difficult-to-predict business environment combined with the imperfection and inexperience of start-ups greatly complicates the emergence of well-thought-out and planned strategies. Start-ups are companies in their infancy who are still looking for and developing a business idea, therefore, do not have the capacity for a sophisticated strategy, and so they are suited with or they must be satisfied with a simple action strategy. Implicitly, however, they prove by their action that they are aware of the meaning of the strategy which is one of the serious conditions how to succeed.

The research identified two dimensions describing a strategy of action character. Based on the speed of perception and action dimension to external stimuli and the action and outcome dimension, four strategies of start-ups were identified through hierarchical clustering, namely a proactive/waiting leader and a proactive/waiting follower.

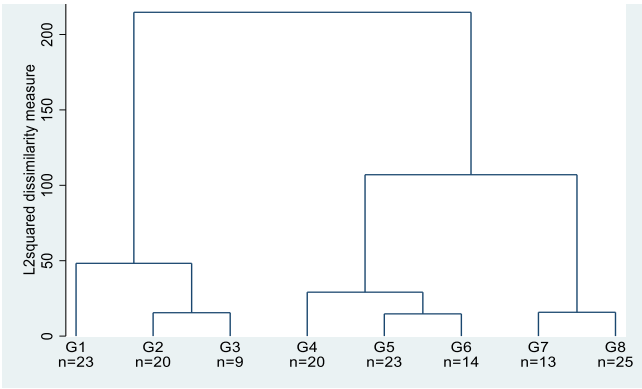
Analysis of variance confirmed that the strategies are full-valuable because each type of strategy has a chance of success in a certain situation.

The practical consequences of the new knowledge are the limitation of the chaotic, intuitive and random behaviour of start-ups, which happens by the method of trials and errors; strategizing according to identified and objectively existing patterns; supporting strategic thinking with the help of strategies that have the nature of strategic standards; avoiding unrealistic strategy variants.

The research results primarily bring new knowledge about start-up strategies. However, the application is possible. The start-up founder can do a thought experiment and compare his strategy with the identified typology and make a correction, or he/she can express his action/strategy according to published criteria, scales and factors and record the position of the strategy in the published Figure 2. He/she has an objective scheme available to complement intuitive strategizing; can think systematically about a strategy that is expressed by a set of criteria that complement the open-ended verbal descriptions of the strategy; can think systematically about a strategy that is rationally justified; can count on an increased probability that the strategy thus identified will be realistic and successful.

The research results describe the external, well-visible behaviour of start-ups which contributes to unbiased and undistorted knowledge. However, the research is limited to external observations only and, therefore, the explanation of the internal reasons for action of start-ups is hypothetical. The theme of further research can be the cognition of internal conditions and motives which influence the choice of identified types of strategies with regard to a specific or standardized situation.

Annexes



G1 = 23/waiting leader
G2/G3 = 29/waiting follower
G4/G5/G6 = 57/proactive leader
G7/G8 = 38/proactive follower

Figure 3. Dendrogram for Cluster Analysis

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