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MANAGEMENT CONTROL FOR START-UP COMPANIES – FRAGMENTED EFFORTS OR A UNIFIED FRAMEWORK?

KONTROLA ZARZĄDCZA W PRZEDSIĘBIORSTWACH TYPU START-UP – FRAGMENTARYCZNE DZIAŁANIA CZY JEDNOLITY MODEL?

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Summary: The rationality of implementing management control in start-ups has not been confirmed in research studies so far. On the contrary, it was suggested that formality may negatively affect innovativeness of a business. Despite a scarcity of positive evidence, the authors initiated research testing whether managers and employees witnessed benefits of MC to start-ups. The study was conducted on a sample of 45 enterprises. It showed, that although only 4 companies appointed a controller, over a half of the sample monitored effectiveness of work, production or services and installed cost or quality management. The start-ups appreciated use of non-financial ratios in their performance management. Finally, lower intensity of using MC methodology was not observed among the youngest companies.

Keywords: management control, start-up company.

Streszczenie: Celowość wdrażania controllingu w start-upach nie została dotąd potwierdzona w badaniach. Wskazywano nawet, że formalizacja może wywierać negatywny wpływ na innowacyjność przedsiębiorstwa. Pomimo braku przesłanek literaturowych, autorzy podjęli badania służące weryfikacji czy menedżerowie i pracownicy start-upów dostrzegają korzyści płynące z controllingu. W badaniu wzięło udział 45 start-upów. Dostrzeżono, że choć jedynie 4 organizacje wyodrębniły stanowiska kontrolne, ponad połowa przedsiębiorstw monitorowała efektywność pracy, produkcji, świadczenia usług lub wdrożyła metodykę sterowania kosztami i jakością. Badane start-upy dostrzegały korzyści stosowania mierników niefinansowych. Młodsze start-upy stosowały metody controllingu w zakresie zbliżonym do jednostek starszych.

Słowa kluczowe: controlling, przedsiębiorstwa start-up.

1. Introduction

The research on management control (MC) in start-ups is important not only from a microeconomic perspective but also from a macroeconomic one. It is so, since survival and growth of those companies is what stimulates innovativeness and competitiveness of national economies. For example, in 2017 there were nearly 3 thousand start-ups operating in Poland, active mostly in software development [Beauchamp et al. 2017]. They stimulated generation of human and intellectual capital which also world leading IT companies, establishing their offices in Poland, benefited from.

In the foregoing context this paper aims at determining whether management control (MC) in start-ups has proactive or reactive nature. The first implies that information provided by MC stimulates or helps to sustain a dynamic growth of a company. The other would suggest that information is requested by ‘bosses’ only when business difficulties emerge [Kluge, Kuźdowicz 2004, p. 18].

The objective of the paper will be attained by analysing management control environment of 45 start-up companies from Poland. The study pays attention to such problems as: institutional framework of management control, a budgeting process and its formalisation, functional areas supported by management control and control tools in use. The research was designed in such a way, that potential and actual benefits of management control to the examined companies were analysed both from the perspective of managers and regular employees.

2. Start-ups and business conditions of their operations

There exists no single definition of start-ups as a group of entities in the literature, however, certain features of such businesses are identified. M. Granlund and J. Taipaleenmäki [2005], when addressing start-ups, refer to young and small businesses which belong to the so-called new economy – new economy firms (NEFs). Start-ups include fast-growing companies characterised by intensive research and development activities and knowledge accumulation [Granlund, Taipaleenmäki 2005], for example, those active in ICT or biopharmaceutical sectors. Polish Start-up Foundation in its study defined this group as those entities which satisfy at least one of the following conditions. The first, is that a company belongs to the digital economy, and thus data processing and derivative technologies constitute one or more pillars of its business model. The second one is that they develop new technologies related to the Internet or other communication platforms [Beauchamp et al. 2017, p. 12].

It should be emphasised that both definitions refer to features which are hardly verifiable for non-insiders. Therefore, the authors will understand start-ups as young (not older than 7 years), small or medium-sized enterprises which are growing fast (there are substantial changes in their operations or structures observed on a year-to-year basis).

Business activity of start-ups is subjected to high risk due to young age, small size and a turbulent environment [Langenberg 2008]. A short history causes that those companies lack experience gained through coping with challenges, interactions with other companies or experimenting. It takes time until an enterprise is ready to codify its procedures into a consistent management control system [Davila 2005]. J. Langenberg [2008] points out that young companies initially rely on commonly available knowledge and do not define precise roles of individual employees. Moreover, when organisational structures and functional frameworks are shaped, uncertainty and conflicts, leading to an increase in inefficiency, may arise. Another problem of young companies is that they have not yet build firm relationships, founded on trust, with their external stakeholders.

Limited financial and human resources in small enterprises negatively affect possibilities of their survival at a market [Langenberg 2008]. Difficulties in raising necessary capital to grow result in a high level of dependence on work efficiency of few multi-tasking employees. In this situation organisational control and coordination includes frequent but informal interactions with employees. However, when a company grows and interpersonal relations become more complex, informal control may be ineffective and too time consuming, and thus control mechanisms need to be formalised [Davila 2005].

The internal organisational environment in start-up companies is volatile, due to intensive, or even aggressive, innovation processes and a rapid growth in turbulent surroundings [Langenberg 2008]. Moreover, after some time managing owners-founders of a start-up will delegate authority to professional managers who introduce formal structures and rules. Visionary leadership leaves space to planning and control, and – as pointed out by G.E. Willard et al. [1992] or E. Flamholtz and Y. Randle [2000] – such a strategic transformation is what keeps small high-tech companies on their growing path. A smooth shift of focus from technological innovativeness to a market perfection is required. Internal changes may be triggered by an involvement of venture capital at an early growth phase of a start-up. An external investor expects substantial growth of a market value of a company what entails optimisation of internal processes. Capital providers act in this respect as mentors, providing business knowledge and market networks [Sapienza et al. 1996; Robie et al. 1997]. One should note that industries and markets, where start-up operates, are also in their growing phase. The market rules are not yet established, there are lower entry barriers, and protection of intellectual property may be weaker – all of which forces even maturing start-ups to remain flexible and ready for a change [Langenberg 2008].

3. The rationale for management control in start-up companies

An attempt to answer a question whether start-up companies require management control or not, leads to the problem of how management control (MC) is understood and how it is seen nowadays. The Anglophonic literature initially applied the term

MC to all activities related to performance measurement and control, including also those addressing human actions and behaviour in conformity with organisational norms and values, as well as those referring to social dimension of performance, including employees motivation and development [Ouchi 1979]. The foregoing understanding of MC has been modified and expanded since then by a number of influential researchers (see more in [Dyczkowska 2015]). With regard to start-ups, studies on MC adapt the idea of a control leverage (see [Davila, Foster 2007; Davila et al. 2015], developed by R.L. Simons [1995]), where interactive control representing creative and inspirational powers was counterbalanced by diagnostic control representing judging and limiting forces.

S. Jänkälä [2007] identified three research streams within MC, targeted at micro- and small enterprises, including: designing and applying MC [Nayak, Greenfield 1994; Reid; Smith 2000], identifying models of MC in various groups of companies [Howorth, Westhead 2003], and examining influence of MC on organisational performance [Gul 1991].

Although there exist success stories about how management control methodology helped start-ups to recover from a crisis situation [Lee, Cobia 2013], the literature reports that microenterprises use information provided by MC in their decision-making processes to a limited extent and in a selective rather than a comprehensive way [Nayak, Greenfield 1994]. Some concerns about a formal nature of MC are expressed as well, since the latter may negatively impact creativity, innovativeness and an entrepreneurial spirit [Bhide 2000]. On the other hand, it is observed that MC contributes to a growth of start-ups measured with their income and employment [Davila, Foster 2007; Sandino 2007; Davila et al. 2009, 2010].

It was also investigated whether development of management control in young and small companies was conditioned by such challenges of a teething age as: a liquidity crisis, difficulties in securing financing when strategic investments were on their way, or a period when innovations were commercialised [Reid, Smith 2000]. The attention was paid to formalisation of project management or costing methodologies as well as to an implementation of advanced ICT tools. The research showed [Reid, Smith 2000] that in a situation of a liquidity crisis or undercapitalisation small companies were more likely to implement just-in-time management, activity based costing or value based management. They were also willing to look for ICT support to their operations. A similar observations were made in the period when innovations were commercialised. However, in that time more attention was paid to introducing formalised methodologies of project management and financial modelling.

4. Research methodology

The following part of the paper will present results of research on management control in Polish start-up companies and conclusions which stem from this examination. The study included a group of 45 young and growing companies which at the time when

the research was made (end of 2016 – end of 2017) were active at a market for no longer than 7 years. The study was conducted using a comprehensive survey with elements of an interview. Respondents from particular enterprises provided answers to 20 semi-open questions (with six close-ended answer options and a possibility to add an open response) and to 40 open questions combined with an evaluation of each problem using 5-grade Likert scale. The questions were grouped in five main subjects of interest, including: planning, control, reporting, communication and IT support. In addition, 6 questions aimed at characterising enterprises were included, and referred to: a legal form, business domain of core activities, size (employment, revenue on sales, total assets), age, geographical markets of operations and recent organisational changes. The research model used by the authors is presented in Figure 1.

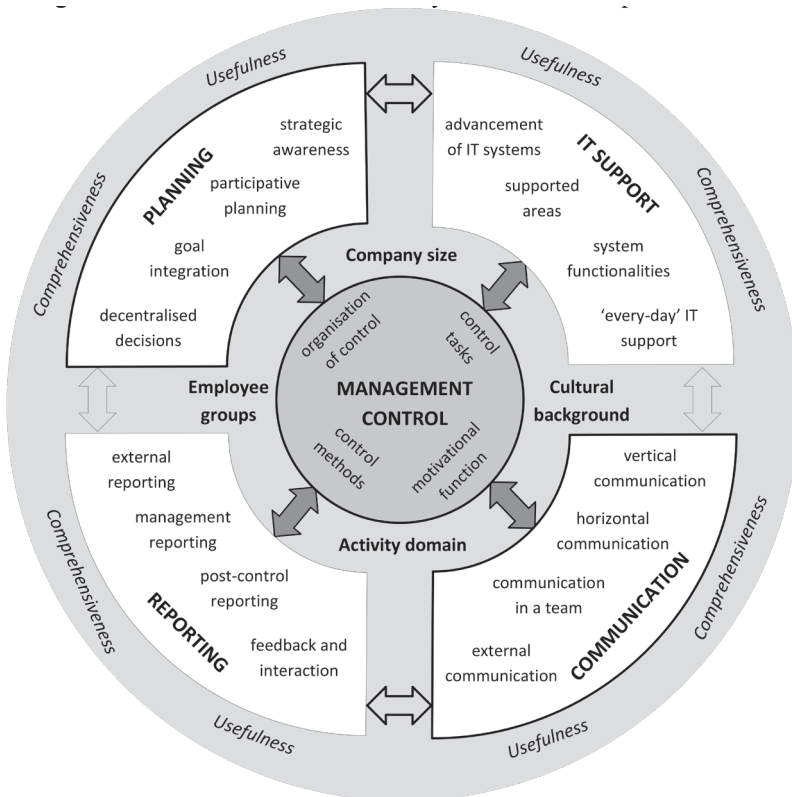


Figure 1. The research model

Source: own presentation.

An important element which distinguishes the research from typical survey-based studies, is that it considered a broad range of opinions, including those of

the management, as well as of employees representing financial, technological and supporting functions in a company. Moreover, mixed forms of questions (closed-ended, open or grading ones) enabled to analyse the empirical data collected using both quantitative methods (differences in mean values) as well as text mining. Those methods aimed at finding responses to the following three research questions.

***RQ1:** To what extent MC supported planning and control processes in start-ups?*

***RQ2:** Did the scope of MC change along with an age of a company?*

***RQ3:** How contribution of MC to start-ups' development was perceived by managers and employees?*

Before the results of the study are presented, 45 enterprises which made a non-random research sample, should be introduced. Firstly, 18 enterprises were qualified to younger start-ups (up to 4 years) and the other 27 to more mature ones (up to 7 years of existence). In terms of size, 18 objects represented microenterprises, 21 small and 6 middle-sized companies. Considering a type of core activities, 16 organisations belonged to manufactures, whereas 29 offered services. Regarding a scope of business operations 9 enterprisers acted on an international market, 19 targeted the whole Poland, and the other 17 operated on a local scale. It can be concluded that the research sample encompassed diverse start-ups, what should enable to identify a broad range of approaches to MC at various stages of its implantation.

5. Empirical findings on management control in Polish start-ups

The conditions for qualifying companies to the start-up category adopted by the authors – namely a young age and organisational dynamism – implied every single organisation in the sample undergoing at least one substantial change (of those presented in Table 1) in the year preceding the examination. In case of 21 enterprises vital changes were observed in no more than 3 of 10 areas, another 14 organisations reported up to 5 changes, whereas in 10 start-ups dynamic changes occurred in more than a half of examined domains. Three companies declared substantial year-to-year changes in each of the 10 areas listed in Table 1 – what meant that those companies were simply different than a year before.

It can be noted that the examined start-ups developed fast in the area of human resources, where as much as 60.0% of the sample reported substantial changes leading to positive results. In 48.9% of organisations work conditions and salaries were improving. Slightly lower a share (44.4%) of start-ups reported an expansion in a scope of their activities. Modernised infrastructure and implementations of new ICT solutions were also frequently reported (by 42.2 and 35.6% of enterprises, respectively). On the other hand, the examined start-ups were characterised by a relative stability in terms of their organisational framework, since any kind of changes in ownership, organisational structures or activity domains were reported less frequently (in 13.3, 26.7 and 24.4% of organisations respectively). This is a positive signal, since it confirms that start-ups in

majority developed according to the strategy they adopted rather than grew in a chaotic way. Finally, it should be emphasised that none of the surveyed companies witnessed substantial deterioration of their situation in any of ten investigated areas, and only three companies reported any negative changes. All that proves that management control in the organisations in question could not have been conditioned by organisational problems, but – on the contrary – it would have been triggered by growth.

Table 1. Organisational dynamics of start-ups (in %)

Type of a change	No changes	Evaluation of an economic situation after changes*			
		worse	the same	better	much better
Ownership	86.7	–	8.9 (66.7)	4.4 (33.3)	–
Organisational structure	73.3	–	4.4 (16.7)	13.3 (50.0)	8.9 (33.3)
Business domain	75.6	–	6.7 (27.3)	15.6 (63.6)	2.2 (9.1)
Scope of activity	48.9	2.2 (4.3)	4.4 (8.7)	26.7 (52.2)	17.8 (34.8)
Employment	26.7	4.4 (6.1)	8.9 (12.1)	48.9 (66.7)	11.1 (15.2)
Work conditions and salaries	46.7	–	4.4 (8.3)	31.1 (58.3)	17.8 (33.3)
New infrastructure	51.1	–	6.7 (13.6)	22.2 (45.5)	20.0 (40.9)
New ICT	55.6	–	8.9 (20.0)	28.9 (65.0)	6.7 (15.0)
New operational methods	77.8	–	2.2 (10.0)	15.6 (70.0)	4.4 (20.0)
New management methods	64.4	2.2 (6.3)	8.9 (25.0)	15.6 (43.8)	8.9 (25.0)

*Numbers in brackets refer to those companies only where changes were observed.

Source: own presentation.

Table 2 presents answers to close-ended questions about planning (strategic planning and budgeting), control (its formalisation, scope and methods used), as well as about management reporting in the analysed start-ups. Beside a number of organisations which stated that certain situations applied to them (more than one option could be selected), evaluations of those situations (using 5-grade Likert scale), both from a perspective of a whole organisation and that of individual employees (and differences between the two), were indicated. Results beyond 3 points represented positive evaluations, whereas those below that threshold demonstrated negative attitude toward a situation or a method. Scores in organisational perspective reflected responses to questions about relevance of particular solutions to an activity domain of a start-up and a scope of their activity (labelled as ‘comprehensiveness’ in the research model), whereas those representing employee perspective were obtained with questions about satisfaction of employees with the solutions or methods (labelled as ‘usefulness’ in the research model).

Table 2. Selected characteristics of management control in start-ups

Analysed situation	Responses		Perspective		
	<i>n</i>	%	organisation	employee	difference
1	2	3	4	5	6
Strategic planning and strategic awareness					
Participative strategic planning	10	22.2	4.40	4.50	+0.10
Strategic plans formulated by managers, but known to employees	23	51.1	4.04	3.96	-0.09
Strategic plans known only to managers	5	11.1	3.40	3.20	-0.20
Very general long-term plans	11	24.4	3.82	3.55	-0.27
Plans covering up to one year	13	28.9	3.85	3.92	+0.08
No formalised planning	7	15.6	3.86	2.86	-1.00
Budgeting and decentralised financial decisions					
Bottom-up budgeting	5	11.1	4.20	3.80	-0.40
Top-down budgeting consulted with departments	9	20.0	4.22	3.78	-0.44
Top-down budgeting	5	11.1	4.20	4.00	-0.20
Budgets developed for selected for selected activity areas or projects	12	26.7	4.33	3.75	-0.58
Very general policy on expenditure	9	20.0	4.00	3.44	-0.56
Expenses approved ad hoc	21	46.7	4.10	3.76	-0.33
Organisation of control and responsibility sharing					
A specialised control unit	-	-	-	-	-
A financial controller	4	8.9	4.00	4.25	+0.25
Decentralised control activities (accounting, sales, quality management units)	6	13.3	3.83	3.83	-
Control exclusively performed by managers or owners	33	73.3	3.85	3.88	+0.03
Control supported by external parties	3	6.7	3.33	3.33	-
Not defined responsibility for control	2	4.4	3.00	3.00	-
Control activities and control support to operations of a start-up					
Monitoring revenue and cost	28	62.2	4.04	3.68	-0.36
Monitoring manufacturing or service rendering process and quality	23	51.1	4.26	3.74	-0.52
Monitoring work organisation	29	64.4	4.17	3.97	-0.21
Monitoring risk	3	6.7	5.00	4.33	-0.67
Monitoring conformity with legal regulations and internal procedures	7	15.6	4.00	3.86	-0.14
No control activities	1	2.2	5.00	4.00	-1.00

Table 2, cont.

1	2	3	4	5	6
Control methodology and its relevance					
Financial ratios	13	28.9	4.08	3.54	-0.54
Non-financial ratios	15	33.3	4.20	3.67	-0.53
Plan vs. Execution	17	37.8	4.00	3.35	-0.65
Evaluation forms	2	4.4	4.00	3.00	-1.00
Surveys among customers or employees	13	28.9	4.08	3.69	-0.38
No systematic control	9	20.0	3.11	2.56	-0.56
Management reporting and its scope					
Reports generated on-demand from IT system	8	17.8	4.50	4.38	-0.13
Regular performance reporting	8	17.8	4.13	4.50	+0.38
Regular task reporting to managers	15	33.3	4.07	4.47	+0.40
Various analysis – if requested	20	44.4	3.75	3.85	+0.10
Annual activity reports	14	31.1	4.00	3.79	-0.21
No management reports	10	22.2	3.20	3.00	-0.20

Source: own presentation.

Even though strategic planning reaches beyond core tasks of management control, the authors decided to include this area in their analysis, considering its importance at an early phase of a company development and its inseparable ties to financial planning. Strategic planning will include not only a vision of technological and organisational development, but – above all – formulate commercialisation interface, including investment planning (capital budgets) and funding (strategic investors). Thus, a defined growth path and consciousness of it among a start-up team may stimulate formalisation of management practices and determine a need for management control with its methodologies.

The examined start-ups turned out to pay a lot of attention to strategic planning, and in most of cases either integrated their staff in that process or made employees aware of what a company wanted to achieve in years to come. Although, logically, management was involved in the process of strategy formulation or revision, the most welcome situation – both from organisational perspective and that of employees – was when a start-up team was involved in strategy formulation (positive evaluation of 4.4–4.5). That situation was seen as substantially better than the one when plans were formulated by managers, but revealed to the staff. Interestingly, a situation when strategic planning existed, but no information was passed to employees was seen worse than having no plans, if organisational perspective was adopted, or not much better, when employees' viewpoint was considered – what resulted from a feeling of exclusion, and what could be interpreted as a signal of uncertain future.

It should be stressed that the authors did not intend to include in their research those start-ups only which openly declared development of a management control

system or which delegated management control activities to an individual employee or a team. What mattered was whether planning, control and reporting activities were conducted in a formalised way. Nonetheless, only 4 examined start-ups created a position of a financial controller. In the majority of situations control activities remained exclusively linked to managers or were distributed among various employees. It should be added, that according to employees, consolidating management control tasks in hands of a financial controller was the most welcome option (evaluated for 4.25 out of 5 points possible).

Looking at control areas, one can note that start-ups focused mostly on: organisation of work and tasks performed by employees (64.4% of the sample), revenue and cost (62.2%), as well as manufacturing- or service-related processes and quality (51.1% share). This is a positive observation, since the aforementioned areas are strictly related with economic effectiveness and efficiency, and represent an approach characteristic to management control. It should be pointed out that three start-ups developed risk control procedures, what was found highly desired both in organisational and employees' perspectives. Surprisingly, one examined start-up (a young microenterprise) did not formalise its control procedures, and this situation was found suitable for the organisation, and not inconvenient to their employees.

In case of a control methodology high level of diversity was found. Although comparisons of plans and executions were used the most frequently, non-financial and financial ratios or surveys among customers or employees were popular, as well. Non-financial ratios were considered the most relevant from the point of view of an entire organisation (level of 4.20). On the other hand, none of the methods used received a very positive reception of employees (moderate at best). Moreover, employees of 9 start-ups where no specific control methods were used over a longer period found that situation unwelcome (negative score of 2.56).

Finally, when management reporting was scrutinised, it turned out that a possibility to generate reports on-demand directly from IT systems was the most desired. Employees in general considered any forms of regular reporting useful. Nonetheless, the most frequent situation was that management reports were generated on request rather than on a regular basis. In 22.2% of start-ups no specific management reports were created. Interestingly, such a situation was not perceived as a negative one, mostly due to a small size of organisations, and a relatively high level of familiarity with their economic situation among employees.

In order to understand how management control in start-ups develops, answers obtained in a group of younger companies (operating at a market for no more than 4 years) were compared with the rest of the sample, by testing differences in mean values between the two groups. Few statistically significant differences (of 120 answer options to 20 close-ended questions) are presented in Table 3.

Referring to Table 3, it should be pointed out that in case of nearly all answer options to close-ended questions (111 of 120) there were no statistically significant differences observed between the groups of younger and more mature start-ups.

Table 3. Differentiation of management control practices in start-ups of different age

Analysed factor	Average level of variables		<i>p</i> *
	Age up to 4 years (%)	Age 5-7 years (%)	
Distinctive differences between the youngest and more mature start-ups			
Participation of employees in strategic planning	38.9	11.1	0.028
Links between remuneration and individual or group performance	61.1	29.6	0.037
Annual performance reporting	50.0	18.5	0.025
Informal, sometimes emotional communication in teams	5.6	29.6	0.049
Possible differences between the youngest and more mature start-ups			
Participative goal-setting	33.3	11.1	0.071
Lack of precise goals for individual employees	33.3	59.3	0.092
Standardised evaluation forms used for control processes	11.1	0.0	0.080
Effective communication with managers based on discussion	100.0	81.5	0.054
Good information flow in working teams	88.9	66.7	0.093

*Calculated for distributions of underlying continues variables.

Source: own presentation.

Considerable differences ($p < 0.05$) were observed in four areas only. In younger start-ups employees were more frequently involved in strategic planning, they had their salaries more often linked with performance, and such companies paid more attention to annual management reporting. On the other hand, with time, communication in start-up teams tended to become emotional rather than formal, and thus often ineffective. Another five areas of possible discrepancies between the two groups were presented in the lower part of the table, and included: more frequent participative goal-setting in younger companies, standardised evaluation forms used for control sake, as well as a perfect communication with managers coupled with more effective communication in teams, than in case of more mature start-ups. Employees of elder start-ups reported more frequently that they were not given precise individual goals, what might have led to potential conflicts when results were evaluated.

Small number of differences between the two groups and not very intuitive results – one could expect that with age management control methodology should be installed to a greater degree – may be attributed to a small research sample. Therefore, it cannot be stated for sure whether younger start-ups felt greater pressure on effects and efficiency, and thus more traces of management control were detected there, or – on the contrary – they optimistically interpreted fragmented efforts for a management control system. Any possible explanation requires more profound research with a larger sample of companies. In this context it is worth considering another probable division

line – between start-ups involved in manufacturing activities and those which intended to offer innovative services to their customers. The reason for this assumption is that manufacturing may entail more complex internal processes, tighter relations with external partners (e.g. suppliers), as well as higher initial investment needed, and

Table 4. Differentiation of management control practices in start-ups of different age

Analysed factor	Average level of variables (%)		<i>p</i> *
	production	services	
Possible differences between manufactures and companies providing services			
Very general long-term plans	43.8	13.8	0.025
Bottom-up budgeting	25.0	3.4	0.028
Control exclusively performed by managers or owners	93.8	62.1	0.021
Regular performance reports prepared for external stakeholders (investors)	56.3	17.2	0.006
Annual activity reports	62.5	13.8	0.000
Various performance analysis prepared if requested	37.5	6.9	0.009
Ineffective communication with managers which affects performance negatively	18.8	0.0	0.015
Use of integrated ERP systems	31.3	3.4	0.008
Limited use of IT systems in a business	0.0	24.1	0.033
Possible differences between manufactures and companies providing services			
Goals linking tasks and budgets allocated to business units	18.8	3.4	0.088
Decentralised control activities (accounting, sales, quality management units)	0.0	20.7	0.052
Not defined responsibility for control	12.5	0.0	0.053
Management reports generated on-demand from IT systems	31.3	10.3	0.082
No management reporting	6.3	31.0	0.057
No meetings organised where performance is discussed	12.5	0.0	0.053
Formal communication with managers based on order – reporting principle	25.0	6.9	0.091
One way communication between management and employees (no discussion)	12.5	0.0	0.053
Ineffective communication with other teams which affects performance negatively	12.5	0.0	0.053
Discussion forum for external stakeholders of a company	0.0	17.2	0.081
Advanced business analyses with database systems and spreadsheets	31.3	10.3	0.082

*Calculated for distributions of underlying continues variables.

Source: own presentation.

thus dependence on investors who provide funding. The valid differences out of 120 answers options to 20 close-ended questions are presented in Table 4.

The analysis of results presented in Table 4 indicates the existence of certain differences between manufacturing and non-manufacturing start-ups, even though, out of 120 possible areas of differentiation only 20 proved to be relevant. The first area where discrepancies were observed was planning. The results indicated on more frequent long-term planning in manufacturing companies, on budgeting processes which integrated all organisations units due to its bottom-up nature, as well as on goals being linked to tasks and resources allocated to them in this sector. Dissimilarities were also observed in case of control, where a very high involvement of managers and owners of manufacturing start-ups in control activities versus more decentralised control activities in service providers was seen.

Differences between the two analysed subgroups of start-ups were also observed in case of information flow in a form of management reporting but also within reporting which targeted needs of external stakeholders, as well as in case of communication within a company (both between managers and employees, and among teams). First of all, it was detected that performance reports addressing information needs of external stakeholders (what suggests that start-up involved in manufacturing required external funding, and thus were accountable to their stakeholders) were much more frequent. The same situation referred to annual performance reports which were prepared by nearly 2/3 of manufacturing start-ups and hardly any service providing companies. Secondly, manufacturers more often prepared various analyses on demand of internal units, often with the support of specialised IT systems. Every third service provider, on the contrary, did not generate any management reports. It can be noted as well that manufacturers benefited more from advanced IT technologies, or database and spreadsheet software, which also increased their capacity to process business data and to use information collected for managerial purposes.

On the other hand, manufacturers appeared to struggle with communication, and in particular with that between managers and their subordinates. Such communication was sometimes ineffective, and not always involved feedback (during meetings or individual discussion) or was more formal than in case of service providers. In individual situations, ineffective communication between teams of manufacturing start-ups was also observed. It turned out also that service providers were more open for communication with and suggestions of their external stakeholders and tried to create opportunity for them to do so.

All the things considered, it appears that manufacturing start-ups due to the external pressure of stakeholders, formalised planning and control, as well as their less flexible organisational structures had already integrated elements of management control methodology in their operations. Again, the small research sample does not allow to generalise the observations.

The identified limitations of the research resulting from a small size of a sample may be lifted by analysing answers to open questions included in the questionnaires.

Consequently, the authors applied text mining methodology. Figure 2 presents results of such an analysis based on answers to questions about management control tasks and ways in which MC supported the examined start-ups.

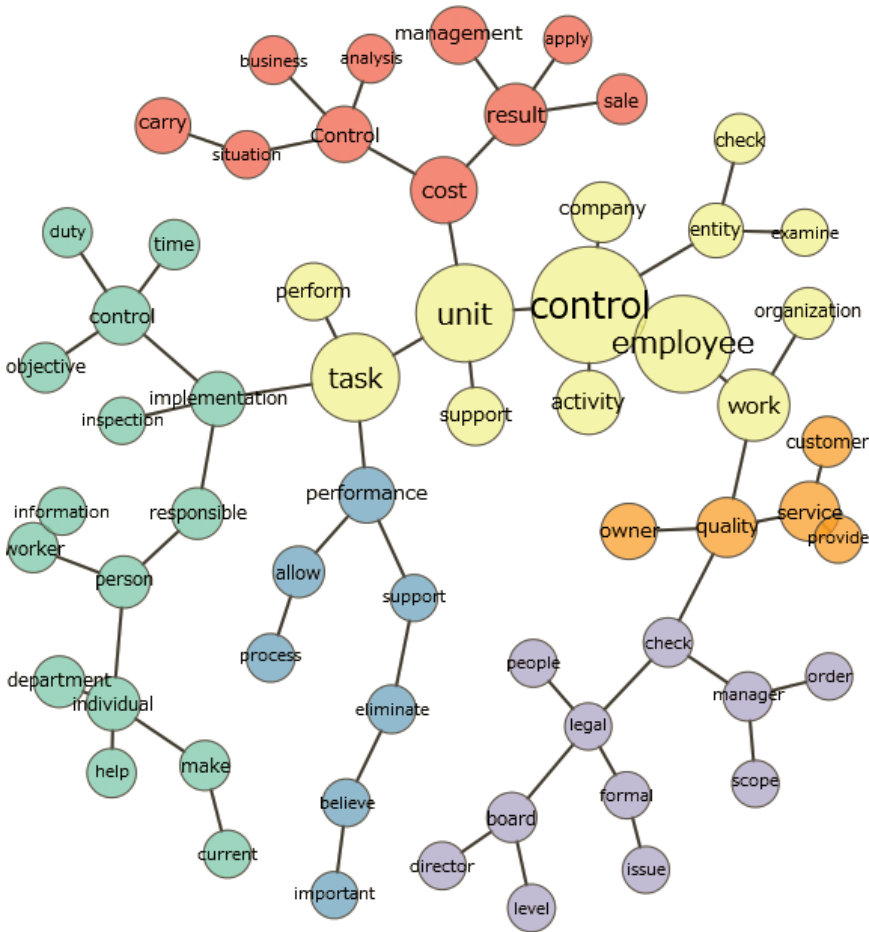


Figure 2. Contextual analysis of management control in start-ups

Source: own study.

The visualisation presents a minimum spanning tree. It was built based on 66 most frequent words included in the answers and 150 strongest relations between those words, based on Jaccard correlation coefficient (> 0.204). Sizes of knots depict frequency of words in the text, whereas the linking edges show words being in close ties. Word clusters, where a maximum distance between words is lower than a minimum distance to another groups are presented in different colours. The analysis was conducted using KH Coder software based on the pre-processed Polish text.

The presented analysis indicated the existence of six separate groups of topics related to the perception of management control in start-ups. The starting point was to control how individual employees performed their work but at the same time to scrutinise all activities of a company – both in order to effectively support business units in performing their tasks. The evolution towards management control implied cost and sales management, as well as business analyses. The first targeted managers' information needs, whereas the other was initiated by financial controllers in problematic situations (the word 'Control' with capital 'C' in Figure 2 represented 'controlling' – a term applied for management control in Poland). Another direction in which control in start-ups could evolve was that related to increase in quality and improving customer service. Interestingly, this was the area in which owners of companies were the most interested in. Upgrading management control to the third level entailed performance management and optimising business processes. Finally, it was possible to develop and formalise management control, mostly by decentralising tasks and delegating responsibility for control activities to various departments of a company. It should be pointed out that control activities focusing on legality and formal procedures were located at the outskirts of management control and referred to organisations of more complex or multi-tier management structures.

6. Conclusions

To sum up the research presented in this paper, it should be emphasised that even though management control in start-up companies was hardly ever institutionalised, the scope of support received by managers and employees of those companies from an application of methods and tools typical for management control was significant. On the one hand, only 4 examined start-ups delegated tasks related to management control to specialised employees, on the other one, management control methods related to performance evaluation were used in majority of the examined companies. More than a half of start-ups used ratios measuring efficiency of work, production or service processes, or such which enabled to manage sales, cost and quality. It should be noted that both in an organisational perspective and in that of employees, benefits of using all examined MC methods and tools were reported. Interestingly, the scope of applying MC methodology in younger start-ups did not differ from that of more mature ones (active in a market for up to 7 years). This indicates proactive rather than reactive attitude towards management control in the examined companies.

The presented research is not free of limitations. The first, and the major one, is a small and a non-random sample. The second one is a difficulty to judge whether all young and growing companies included in the study could have been actually seen as start-ups. The assumed criterion of dynamic organisational changes did enable to select from a larger group of young and small companies those with a potential to grow, however, it did not exclude organisations which might have not intended to build their competitive advantage on knowledge and innovativeness. On the other

hand, restrictive approach to an identification of start-ups – as such companies which operate in ICT or biotechnological industries could have also generated a research bias. Beyond doubts, information collected, both of quantitative and qualitative nature, may trigger further research on those enterprises which are meant to propel industries and economies of the future.

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