

## **BEHAVIORAL PREFERENCES MODELS DETERMINING SPECIFIC FEATURES OF THE KEY SUBJECTS OF ECONOMIC ACTIVITY'S GOALS AND MOTIVATIONAL ATTITUDES FORMATION**

The section contains additional data to the article “Behavioral preferences models determining specific features of the key subjects of economic activity’s goals and motivational attitudes formation”, to present in detail the findings of the research on creation of the system of qualitative criteria for evaluating innovative and entrepreneurial projects.

## Appendix A

Table A.1. Calculation of discrepancies between model values and RRs<sup>1</sup> responses in absolute ( $D_k$ ) and relative ( $R_k$ ) indicators

BPM and RR	Discrepancy, $D_k$			Discrepancy, $R_k$		
	$D_{ABC}$	$D_{AB}$	$D_A$	$R_{ABC}$	$R_{AB}$	$R_A$
BPM Investor and RR Investor	1	0	0	3	0	0
BPM Investor and RR Manager	4	3	3	14	18	33
BPM Investor and RR Epigone	13	8	5	45	47	56
BPM Investor and RR Innovator	29	17	9	100	100	100
BPM Manager and RR Investor	8	5	3	28	29	33
BPM Manager and RR Manager	6	4	2	21	24	22
BPM Manager and RR Epigone	11	7	4	38	41	44
BPM Manager and RR Innovator	20	12	6	69	71	67
BPM Epigone and RR Investor	18	11	6	62	65	67
BPM Epigone and RR Manager	13	8	3	45	47	33
BPM Epigone and RR Epigone	6	5	3	21	29	33
BPM Epigone and RR Innovator	11	6	3	38	35	33
BPM Innovator and RR Investor	28	17	9	97	100	100
BPM Innovator and RR Manager	24	14	6	83	82	67
BPM Innovator and RR Epigone	15	9	4	52	53	44
BPM Innovator and RR Innovator	2	0	0	7	0	0

<sup>1</sup> RRs stands for reference respondents.

Table A.2. Calculation of the maximum discrepancy in responses,  $Z_k$

Priority	Variables, i	Model response for BPM "Investor"	Model response for BPM "Manager"	Model response for BPM "Epigone"	Model response for BPM "Innovator"	Maximum discrepancy in responses, $Z_i$	Maximum discrepancy in responses, $Z_k$
A	Willingness to risk-taking in business	1	2	3	4	3	$Z_A = 9$
A	Business motivation	1	2	3	4	3	
A	Business orientation	1	2	3	4	3	
B	Systematic approach	1	1	2	3	2	$Z_{AB} = 17$
B	Attitude to errors	1	2	3	4	3	
B	Decision-making	1	2	3	4	3	
C	Effectiveness	1	2	3	4	3	$Z_{ABC} = 29$
C	Project uniqueness degree	1	1	1	0	1	
C	Anti-ideality	1	1	2	3	2	
C	Aptitude for risk	1	0	1	1	1	
C	Aptitude for creativity	0	0	1	1	1	
C	Project implementation type	1 or 2	2	1 or 2	1	1	
C	Life position	1	2	3	4	3	

Table B.1. The BI residents' response matrix, and the projects distribution as a result of clustering

Project	Cluster	Type	Spacing*	Willingness to risk-taking in business (A)	Business motivation (A)	Business orientation (A)	Systematic approach (B)	Attitude to errors (B)	Decision-making (B)	Effectiveness (B)	Project uniqueness degree (C)	Anti-ideality (C)	Aptitude for risk (C)	Aptitude for creativity (C)	Project implementation type (C)	Life position (C)
1	3	Epigone	2,061	3	3	3	1	4	3	4	1	2	0	0	2	2
2	1	Investor	2,528	1	2	2	1	2	2	2	0	3	0	0	2	1
3	4	Innovator	1,767	4	3	3	1	4	2	3	1	2	1	0	2	3
4	1	Investor	1,179	2	2	3	1	2	2	2	1	1	0	0	2	2
5	1	Investor	2,528	3	1	3	1	3	1	3	1	2	0	0	2	3
6	1	Investor	1,261	2	2	2	1	2	2	2	1	1	0	0	2	2
7	4	Innovator	1,962	3	3	4	1	4	3	4	1	2	1	0	2	3
8	1	Investor	2,278	3	3	3	2	4	2	2	1	1	0	1	2	1
9	4	Innovator	2,203	4	4	4	3	4	3	4	1	2	0	0	1	4
10	4	Innovator	2,652	4	4	2	3	4	1	4	1	2	1	1	1	4
11	3	Epigone	1,803	4		4	2	4	4	4	1	2	1	0	2	3
12	3	Epigone	1,284	4	3	3	2	4	4	3	1	2	1	0	1	3
13	4	Innovator	1,634	4	4	3	2	4	2	3	1	2	0	0	2	3
14	3	Epigone	1,881	3	4	3	2	4	4	4	1	1	0	0	1	3
15	3	Epigone	2,544	4	1	3	2	3	4	4	1	2	0	1	2	2
16	3	Epigone	2,176	3	4	2	1	4	4	3	1	1	0	0	2	3
17	4	Innovator	1,916	3	3	4	2	2	2	3	1	2	1	0	2	4
18	2	Manager	2,808	1	4	1	2	1	1	4	1	2	1	0	1	3
19	1	Investor	2,718	3	4	2	1	4	1	2	1	2	0	1	2	2
20	3	Epigone	3,531	4	1	1	2	4	4	1	1	1	1	0	1	3
21	3	Epigone	1,627	3	3	3	3	4	4	3	1	2	0	1	2	3
22	2	Manager	2,808	1	3	3	1	4	1	3	1	2	0	1	2	4
23	2	Manager	2,674	3	3	2	1	4	1	4	1	2	0	0	2	2
24	2	Manager	1,831	3	3	3	1	3	1	3	1	2	1	0	2	3
25	4	Innovator	2,720	4	4	4	2	1	1	4	1	2	1	0	2	4
26	2	Manager	1,698	3	3	3	2	1	2	3	1	2	0	0	2	3
27	1	Investor	1,091	2	2	2	1	3	2	2	1	1	0	1	2	2
28	1	Investor	2,322	1	3	3	1	4	2	2	1	1	1	0	2	3
29	4	Innovator	1,577	3	4	3	1	4	2	4	1	2	0	0	2	4
30	3	Epigone	1,962	4	3	3	3	4	4	3	1	1	1	0	1	4
31	3	Epigone	3,142	1	1	3	2	4	4	4	1	2	0	0	1	4
32	2	Manager	1,954	3	3	3	2	1	2	4	1	2	0	1	2	3
33	2	Manager	2,560	3	3	1	2	3	2	2	1	2	0	0	2	3
34	2	Manager	2,133	1	3	3	2	1	2	4	1	1	1	0	2	3
35	1	Investor	2,965	1	1	3	2	1	2	1	1	1	0	0	2	1
36	4	Innovator	3,746	3	3	4	1	1	4	4	0	3	0	1	1	4
37	2	Manager	2,843	3	3	1	1	4	1	4	1	2	0	0	2	3
38	2	Manager	2,649	1	3	3	2	4	1	3	1	1	0	0	1	3
39	4	Innovator	1,939	3	4	3	1	4	1	4	1	2	1	0	1	3
40	2	Manager	3,133	4	1	3	1	1	1	4	1	2	0	0	2	3

Project	Cluster	Type	Spacing*	Willingness to risk-taking in business (A)	Business motivation (A)	Business orientation (A)	Systematic approach (B)	Attitude to errors (B)	Decision-making (B)	Effectiveness (B)	Project uniqueness degree (C)	Anti-ideality (C)	Aptitude for risk (C)	Aptitude for creativity (C)	Project implementation type (C)	Life position (C)
41	4	Innovator	1,661	4	4	4	2	4	1	4	1	2	1	0	2	4
42	2	Manager	1,988	3	3	2	2	1	1	3	1	1	1	0	2	3
43	1	Investor	1,841	1	3	3	2	3	2	3	1	1	0	1	2	2
44	2	Manager	2,546	1	3	3	1	1	3	3	1	1	0	0	1	3
45	2	Manager	2,313	1	3	3	2	1	3	3	1	2	0	0	2	3
46	2	Manager	2,637	1	3	4	2	1	1	4	1	2	0	0	1	4

\* Spacing is a measure of similarity between each respondent's response and the cluster center (calculated behavior type). The closer to zero, the more similarity.

## SPECIFIC FEATURES OF THE EMPIRICAL SAMPLE (THE BI'S RESIDENTS)

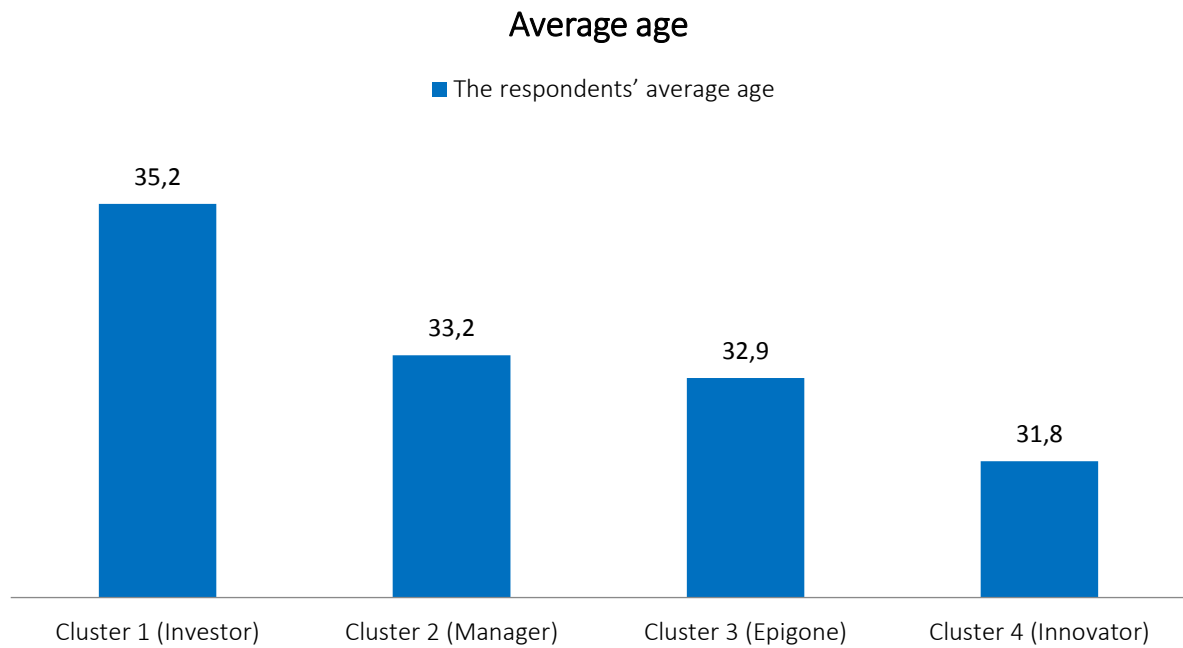


Fig. C.1. Average age of the respondents selected for various BPMs in different empirical clusters <sup>2</sup>

<sup>2</sup> Respondents from different clusters practically do not differ in age. Statistical verification by the variance analysis confirmed the unreliability of differences between average age of respondents from the Investor group, and average age of respondents from the other groups.

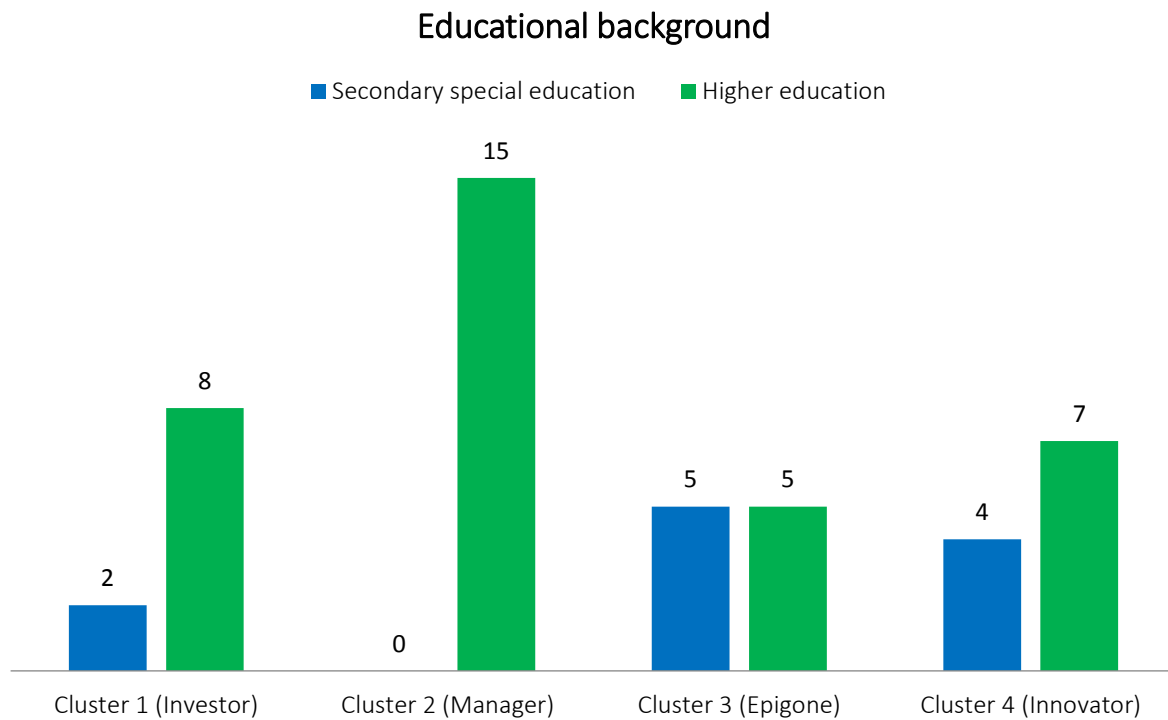


Fig. C.2. Educational background of respondents selected for various BPMs in different empirical clusters <sup>3</sup>

<sup>3</sup> According to their education background, respondents with different behavioral preferences are also fairly evenly distributed. Despite the visible differences in education background in Cluster 3 (Epigone), statistical testing by the Pearson Chi-square test did not reveal their veracity, in comparison with other Clusters: in each Cluster, there is a tendency in predominance of respondents with higher education (with some exception, as already mentioned, for the Epigone Cluster).

### Correlation of the respondents' educational background with their business activities

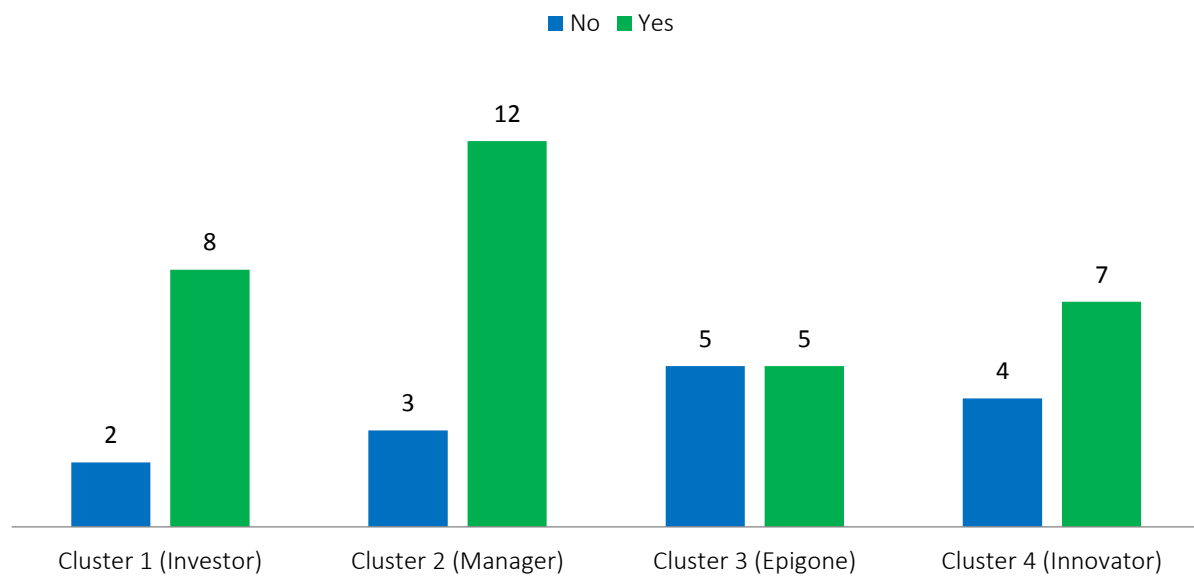


Fig. C.3. Correlation of the respondents' educational background with their business activities<sup>4</sup>

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<sup>4</sup> In this case, the similar difference in correlation of respondents' educational background to their business activities (Cluster 3 "Epigone") can also be observed. Nevertheless, it seems possible to conclude that, generally, in all Clusters, the respondents' educational background corresponds to their business activities.



Table D.1. Algorithm for determining the BPM of each respondent

Variables, i	The respondent's responses	BPM "Investor"	BPM "Manager"	BPM "Epigone"	BPM "Innovator"	Discrepancy between the model response and the respondent's response			
						Investor	Manager	Epigone	Innovator
Willingness to risk-taking in business	4	1	2	3	4	3	2	1	0
Business motivation	4	1	2	3	4	3	2	1	0
Business orientation	3	1	2	3	4	2	1	0	1
Systematic approach	3	1	1	3	4	2	2	0	1
Attitude to errors	4	1	2	3	4	3	2	1	0
Decision-making	2	1	2	3	4	1	0	1	2
Effectiveness	3	1	2	3	4	2	1	0	1
Project uniqueness degree	1	1	1	1	2	0	0	0	1
Anti-ideality	3	1	1	3	4	2	2	0	1
Aptitude for risk	2	1	2	1	1	1	0	1	1
Aptitude for creativity	2	2	2	1	1	0	0	1	1
Project implementation type	2		2		1		0		1
Life position	3	1	2	3	4	2	1	0	1
						$D_{ABC} = 21$	$D_{ABC} = 13$	$D_{ABC} = 6$	$D_{ABC} = 11$

$D_{ABC}^*$	
<b>INVESTOR</b>	<b>21</b>
<b>MANAGER</b>	<b>13</b>
<b>EPIGONE</b>	<b>6</b>
<b>INNOVATOR</b>	<b>11</b>

\* The closer to zero, the more similarity.

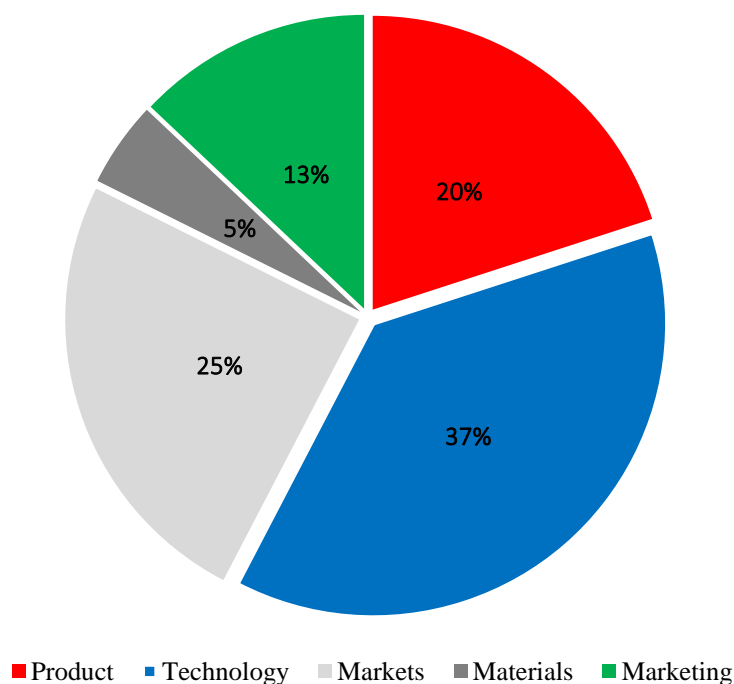


Fig. E.1. Projects distribution by categories in the Combinatorics Unit <sup>5</sup>

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<sup>5</sup> According to the analysis of this Unit, the innovation component of projects is more related to production of new technologies (37%), access to new markets (25%), as well as production of a new product (20%), and less related to innovations in the field of marketing (11%), and production of new materials (5%). It is fair to note that in this case, innovations of very different levels are represented: from minor innovations to patents. However, only 8 residents of the innovative BIs out of 46 ones believe that thanks to implementation of their business idea, they manufacture a radically new product (3 respondents) or technology (5 respondents).

## RESPONDENTS' ESTIMATION RANGE

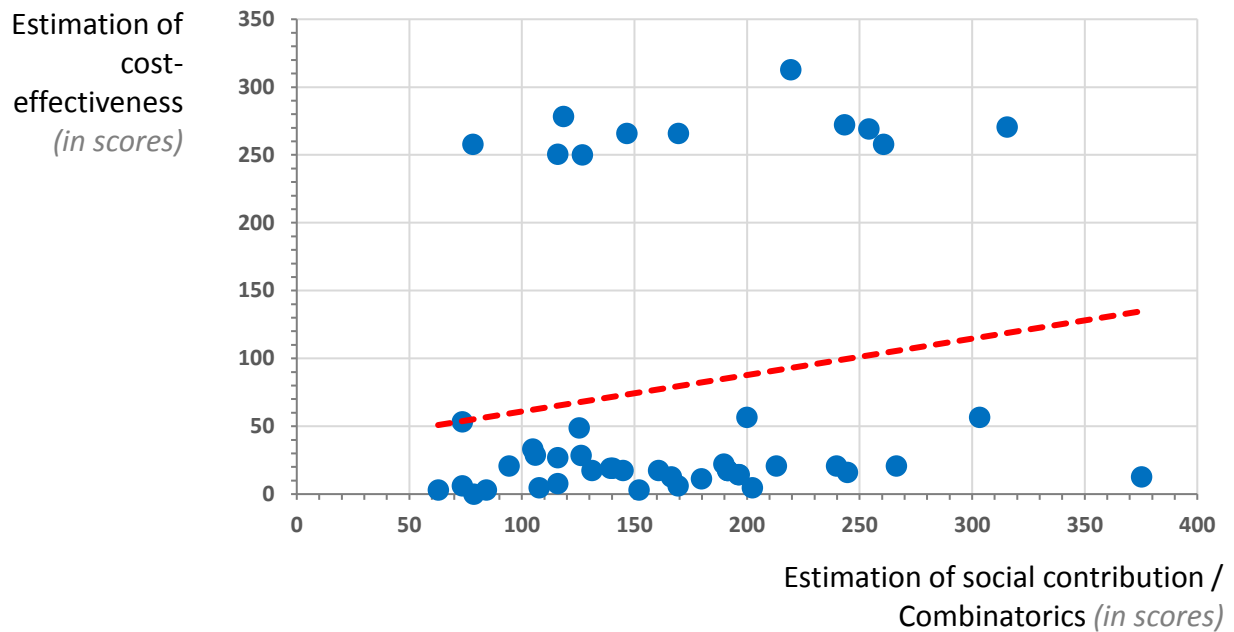


Fig. E.2. Respondents' distribution estimation range <sup>6</sup>

Final scores

## FINAL DISTRIBUTION

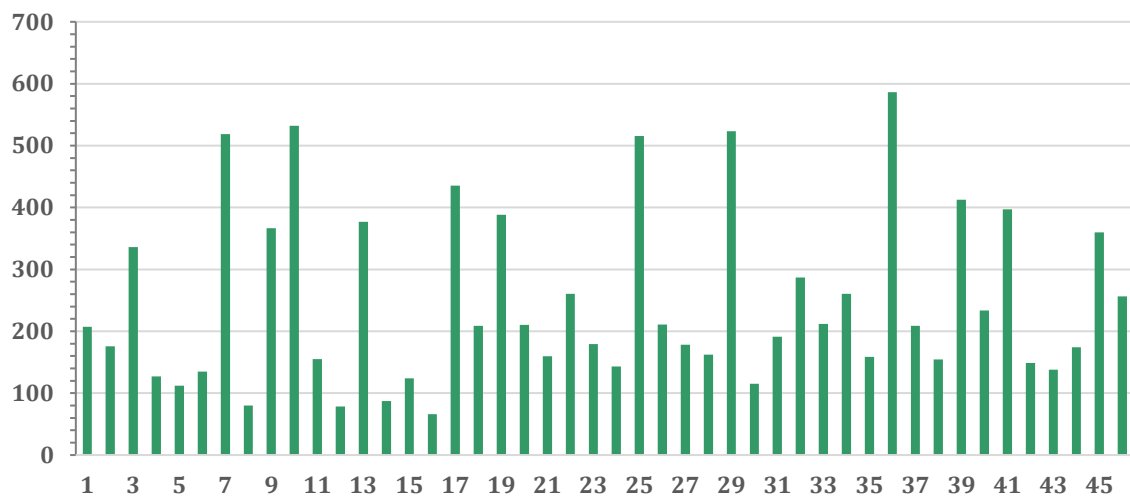


Fig. E.3. – Final distribution of respondents according to the integrated estimation <sup>7</sup>

<sup>6</sup> For most projects, it is possible to define “a trend line”, i.e. relationship between cost-effectiveness and social significance of the project. 11 of 46 startups managed to achieve considerable economic indicators, and only 5 of them have a high level of social significance.

<sup>7</sup> According to final distribution of the MDP scoring results, startups 7, 10, 25, 29, 36 scored the highest number of points, and are characterized by considerable potential in terms of development.