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## **Innovation in construction firms of different sizes: Drivers and strategies**

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Table I. Innovation drivers for construction firms of different sizes

Driver	Total mean (n=64)	Common driver ranking	Small firms (n=33)		Medium firms (n=15)		Large firms (n=16)	
			Mean	Ranking	Mean	Ranking	Mean	Ranking
H&S improvement	4.234	1	4.303	3	4.067	3	4.250	1
Customer/user satisfaction	4.234	1	4.394	2	4.000	5	4.125	3
Pursuit of best practice	4.172	3	4.303	3	4.133	2	3.937	5
Cost savings	4.109	4	4.515	1	4.067	3	3.312	13
New business opportunities	4.031	5	4.182	6	3.933	8	3.812	9
Market competition	4.000	6	4.030	7	4.000	5	3.937	5
Changing business environments	3.906	7	3.758	11	4.200	1	3.937	5
Sustainable construction	3.859	8	3.788	10	3.667	12	4.187	2
Client demands	3.828	9	3.970	8	3.800	10	3.562	10
Corporate image	3.813	10	3.636	12	4.000	5	4.000	4
Development of competitive advantages	3.766	11	3.909	9	3.933	8	3.312	13
Growth of productivity	3.547	12	3.636	12	3.733	11	3.188	15
Survival and prosperity	3.375	–	4.273	5	2.733	–	2.125	–
Integration of design and construction	3.281	–	2.939	–	3.400	15	3.875	8
Technological advances	3.187	13	3.061	14	3.467	14	3.187	16
Change in regulations	3.031	–	2.515	–	3.600	13	3.562	10
Global competition	2.500	–	1.970	–	2.733	–	3.375	12

“–” denotes that the item is not identified as an innovation driver in a group or a common innovation driver.

Table II. Innovation strategies for construction firms of different sizes

Strategy	Total mean (n=64)	Common strategy ranking	Small firms (n=33)		Medium firms (n=15)		Large firms (n=16)	
			Mean	Ranking	Mean	Ranking	Mean	Ranking
Effective use of existing resources	3.656	1	3.970	1	3.600	4	3.063	13
Enhancement of technical capabilities	3.578	2	3.576	4	3.600	4	3.562	7
Matching resources to strategies	3.531	3	3.758	2	3.533	8	3.062	14
Continuous improvement of innovation performance	3.406	4	3.303	6	3.600	4	3.437	8
Education and training of employees	3.344	–	2.788	–	3.600	4	4.250	2
Top management support	3.297	5	3.394	5	3.267	14	3.125	11
Encouragement of learning and innovation culture	3.281	6	3.182	10	3.667	2	3.125	11
Business vision	3.281	6	3.152	11	3.400	11	3.437	8
Recruitment of new and skilled employees	3.234	–	2.667	–	3.533	8	4.125	3
Investment in R&D	3.203	–	2.576	–	3.400	11	4.312	1
Moving from reactive to proactive innovation	3.203	–	2.636	–	3.733	1	3.875	4
Focus on long-term benefits	3.187	–	2.758	–	3.533	8	3.750	5
Extension of business fields	3.094	–	2.970	–	3.267	14	3.187	10
Linking individual projects to overall businesses	3.094	–	2.727	–	3.333	13	3.625	6
Knowledge exchange and sharing throughout the firm	3.047	–	2.848	–	3.667	2	2.875	–
Timely identification of the need for innovation	3.047	–	3.212	8	3.067	16	2.687	–
Quick response to changing environments	3.047	–	3.758	2	2.600	–	2.000	–
Making the right decision at the right time	2.953	–	3.273	7	2.800	–	2.437	–
Establishment of incentive mechanisms	2.906	–	3.030	13	2.933	–	2.625	–
Getting everyone involved in innovation	2.875	–	3.212	8	2.733	–	2.312	–
Early identification of associated risks and uncertainties	2.797	–	3.091	12	2.600	–	2.375	–

“–” denotes that the item is not identified as an innovation strategy in a group or a common innovation strategy.

Table III. Innovation strategies with significant differences among the three groups

Trend	Strategy	Small firms (n=33)	Medium firms (n=15)	Large firms (n=16)	ANOVA	
					<i>F</i>	<i>Sig.</i>
Ascending (Positive relationship)	Investment in R&D	2.576	3.400	4.312	24.684	0.000
	Recruitment of new and skilled employees	2.667	3.533	4.125	16.788	0.000
	Moving from reactive to proactive innovation	2.636	3.733	3.875	16.672	0.000
	Education and training of employees	2.788	3.600	4.250	12.765	0.000
	Focus on long-term benefits	2.758	3.533	3.750	7.780	0.001
	Linking individual projects to overall businesses	2.727	3.333	3.625	6.857	0.002
Descending (Negative relationship)	Quick response to changing environments	3.758	2.600	2.000	31.816	0.000
	Effective use of existing resources	3.970	3.600	3.063	9.902	0.000
	Matching resources to strategies	3.758	3.533	3.062	7.659	0.001
	Making the right decision at the right time	3.273	2.800	2.437	6.974	0.002
	Getting everyone involved in innovation	3.212	2.733	2.312	6.334	0.003
	Early identification of associated risks and uncertainties	3.091	2.600	2.375	5.973	0.004
Inverted U-shape	Knowledge exchange and sharing throughout the firm	2.848	3.667	2.875	5.843	0.005