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Marko Reimer | Utz Schäffer

Controlling – Trends & Benchmarks

Institute of Management Accounting and Control

Academic Directors of the WHU Controller Panel

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Foreword Controlling – Trends & Benchmarks
Findings from the WHU Controller Panel

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For more than fifteen years, the WHU Controller Panel has systematically documented controlling practices and continuously provided controlling-related insights to our panelists. Today, we are proud to report that the WHU Controller Panel comprises approximately 1,000 controllers and chief financial officers as members, making it the largest survey-based panel in the field of finance & accounting. This development exceeds by far Jürgen Weber and Utz Schäffer's expectations for the WHU Controller Panel when they started the project in 2007 in close collaboration with the International Association of Controllers!

For us at the IMC, the WHU Controller Panel is more than a series of surveys. From the start, the involved faculty and our dedicated panel team have aimed to build a platform for exchange and mutual learning. For this purpose, we invited panelists to the annual Campus for Controlling and other activities, such as occasional fireside talks and, most recently also, online webinars. In addition, we made sure to leverage the full potential of individual studies by complementing cross-sectional study reports with longitudinal analyses to create a better understanding of the development of controlling over time. We also invested heavily in communicating our results in practice-oriented outlets such as the *Controlling & Management Review*, the *Controller Magazin*, or *Controlling – Zeitschrift für erfolgsorientierte Unternehmenssteuerung*. In the academic arena, we were able to use our data for world-class scholarly research, which has been published in outlets such as *Accounting, Organizations & Society*, *Contemporary Accounting Research*, *Management Science*, *Journal of Management Studies*, *Management Accounting Research* and *European Accounting Review*. But with the growing number of study reports and articles over time, it became increasingly difficult not to get lost. We needed to ensure that the key facts and figures on controlling were readily accessible to our panelists and scholarly research! Therefore, in 2013, Jürgen Weber and Utz Schäffer produced a short summary under the title of "Controlling in Zahlen" and two years later, in 2015, published the first edition of "Controlling – Trends & Benchmarks". Today, we are proud to present an updated version of this documentation of controlling practice over time. As a part of our service to the controlling community, it is available free of charge to interested students, scholars, and executives.

Both, the new edition of "Controlling – Trends & Benchmarks" and the larger success story of the WHU Controller Panel would not have been possible without the help of our wonderful team! Hence, we want to use this opportunity to thank the current panel team consisting of Verena Kowalewski, Marina Metz, Victoria Honsel, and Philipp Sekol as well as former doctoral students and team members who supported the panel team, namely Christopher Ballmann, Thorsten Beer, Raphaela Erhart, Virginia Galster, Nadine Gerhardt, Keke Hiller, Tetyana Kellerhoff, Christian Krügerke, Jan Hendrik Lampe, Maria Martens, Jochen Rehring, Oliver Skiba, Mascha Sorg, Mario Thaten, Ludwig Voussem, Eric Zayer and Susanne Zubler. We also want to thank our colleagues Matthias Mahlendorf, Max Margolin, and Daniel Schaupp. Through their research efforts and friendly advice, whenever we tapped their expertise, they essentially helped to shape the WHU Controller Panel as we know it today. And last but not least, we want to pay our tribute to the spiritus rector of the WHU Controller Panel, our colleague emeritus and friend Professor Jürgen Weber. He passed the baton to Marko Reimer in 2019 and thereby provided Utz Schäffer with a great new partner in all controlling-related crimes. We hope you will enjoy reading, exploring, and working yourself through this publication.

Vallendar, December 2022

Marko Reimer

Utz Schäffer

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Reporting

On average, the standard report to management is prepared monthly and submitted nine days after the last day of the reporting period

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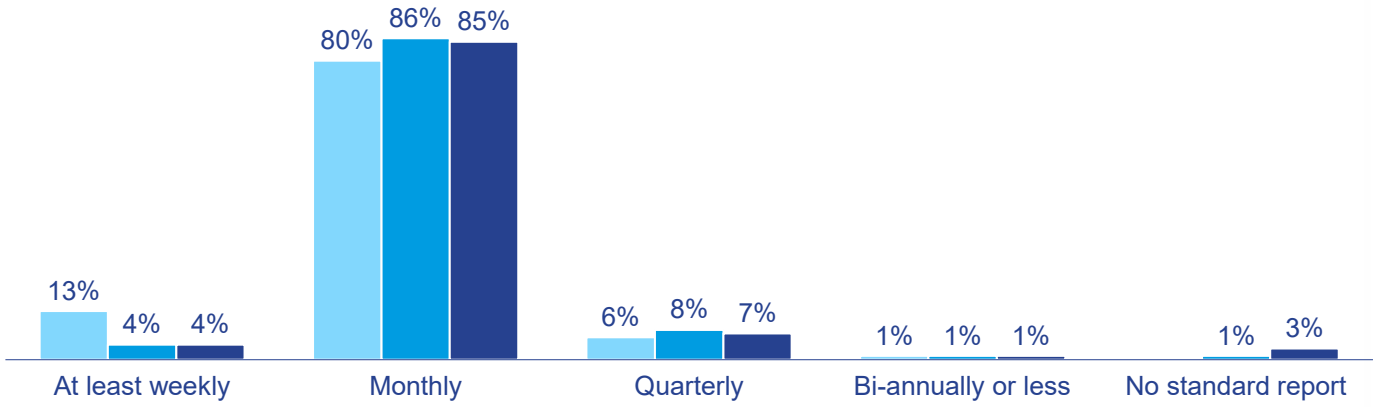
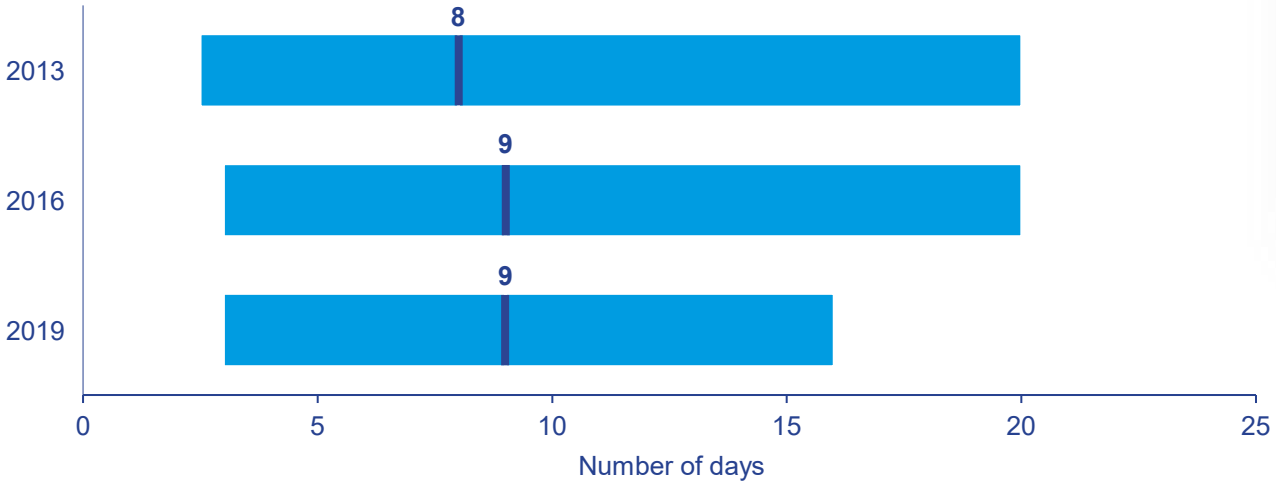
Frequency of submission of the standard report to management



Number of days after end of the reporting period for submitting the standard report to management



- Small companies deviate slightly more often from the monthly reporting cycle than large ones: 82% of small companies and 89% of large companies report monthly. In 11% of small companies, the report is submitted quarterly (large: 7%), and another 3% have no standard report (large: 0%).
- The report is available much earlier in large companies (on average seven days after the end of the reporting period) than in small ones (twelve days).
- If the data for reporting comes from an integrated system, the report is available after an average of eight days, otherwise after ten days.

Upper chart
- 2013
- 2016
- 2019

Lower chart
- Median
- 80% of the companies

Despite a growth in dashboard solutions, medium and small companies often use Excel for their standard report

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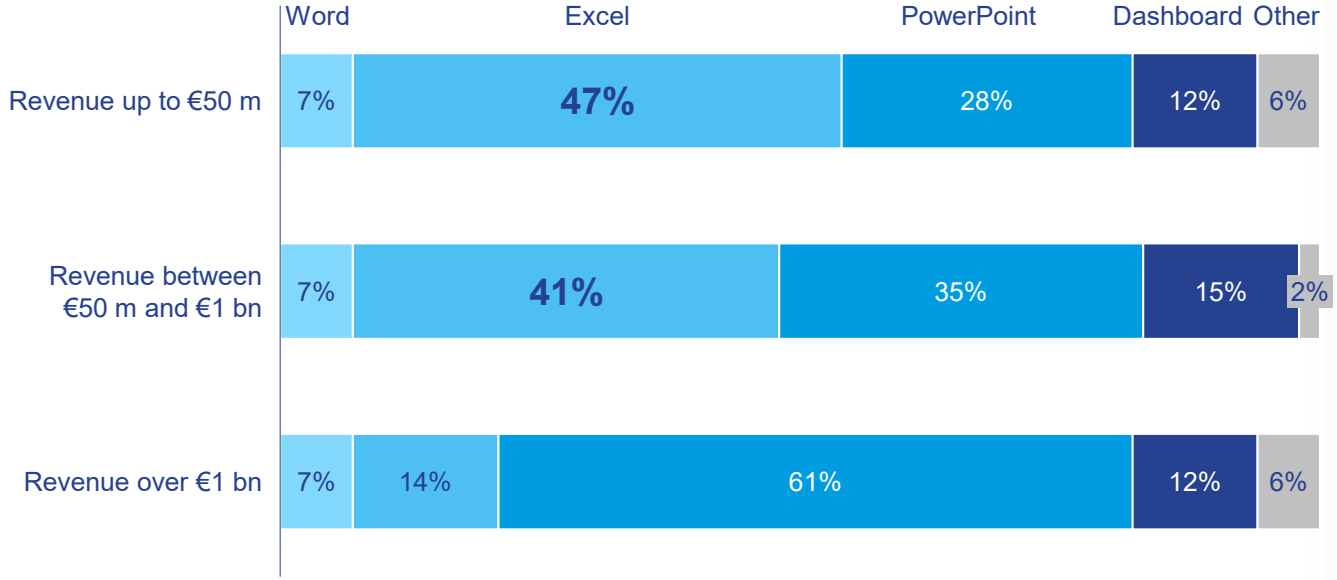
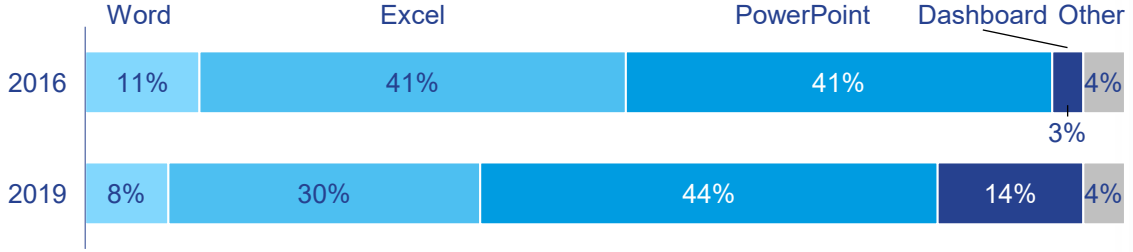
Software used for preparing the standard report for management – by company size



Software used for preparing the standard report for management – by year*



- Only every third company (31%) that has a dashboard solution creates the report from the dashboard. About the same number (33%) continue to rely on PowerPoint despite having dashboard solutions, while 27% create the report in Excel.
- There is a tendency for PowerPoint to be more widely used in management reporting by service companies (43%) rather than by manufacturing and retail companies (37% and 30%, respectively).
- Excel is used more frequently for reporting, especially where the data does not come from an integrated system (45% vs. 31% for companies with an integrated system).
- 4% do not rely on any of the four options Word, Excel, PowerPoint, or Dashboard in their management reporting. Among these companies, most create the report directly from the ERP system or BI tool. Occasionally, self-developed versions or mixed forms from several sources are used.

* The analysis refers to responses from participants who took part in both studies and did not change companies in the meantime (n=171).

Financial KPIs are mostly reported on a monthly basis, while non-financial KPIs tend to be reported less frequently

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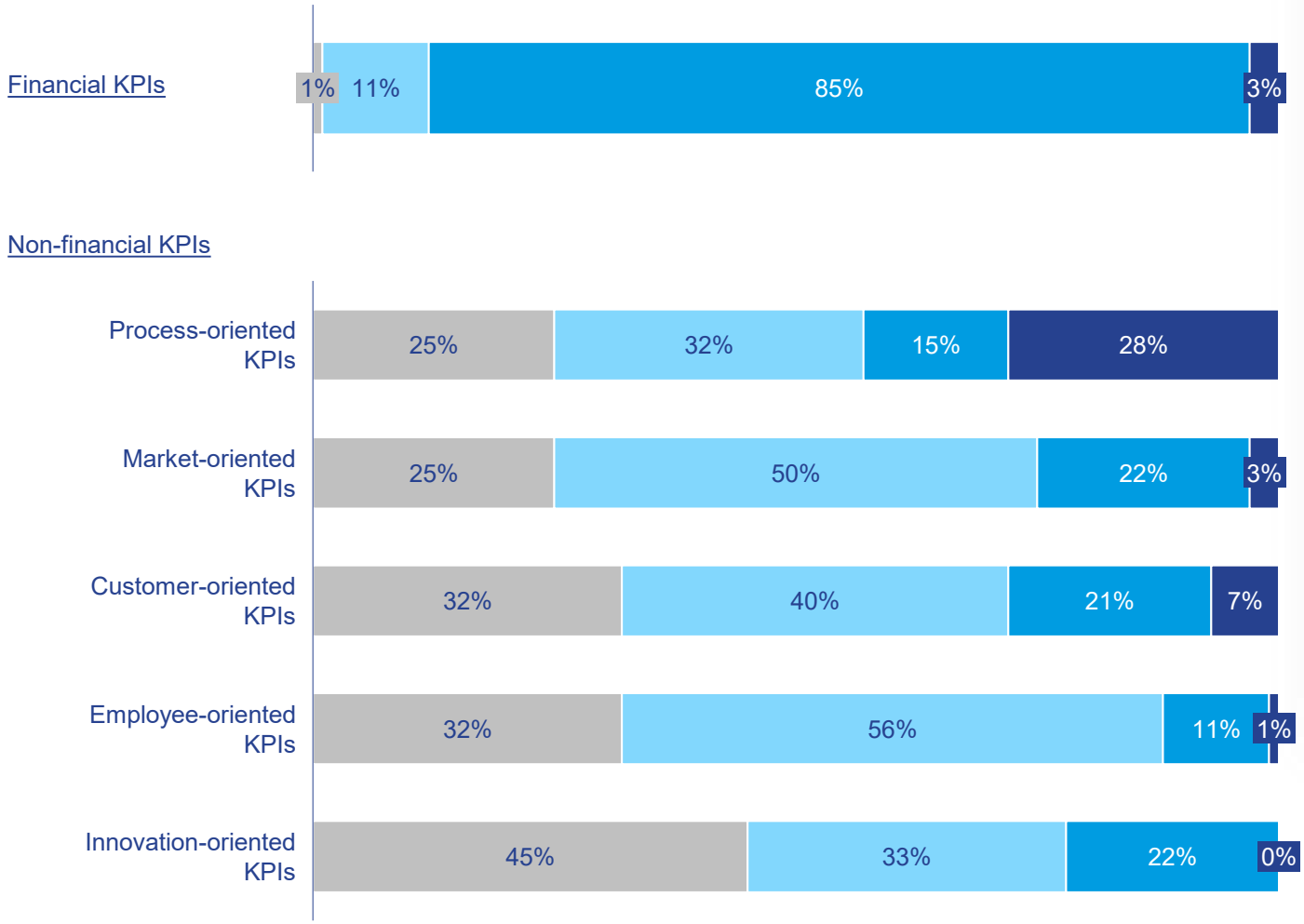
Frequency of reporting – by type of KPI



- In 34% of the companies, all KPIs surveyed are reported on a regular basis. In contrast, roughly one in ten companies reports a maximum of one non-financial KPI in a regular cycle in addition to financial KPIs.
- We find differences by company size in the case of customer- and market-oriented KPIs. Only 20% of the large companies, but 44% of the small ones, do not report customer-oriented KPIs to management in a standardized way. In the case of market-oriented KPIs, 7% of large companies but almost half (46%) of small companies do so.
- Innovation-oriented KPIs are regularly reported to management by 60% of companies with a product differentiation strategy, but only by 50% of companies with a cost leadership strategy.

In comparison to service providers, manufacturing companies tend to focus on process-oriented KPIs

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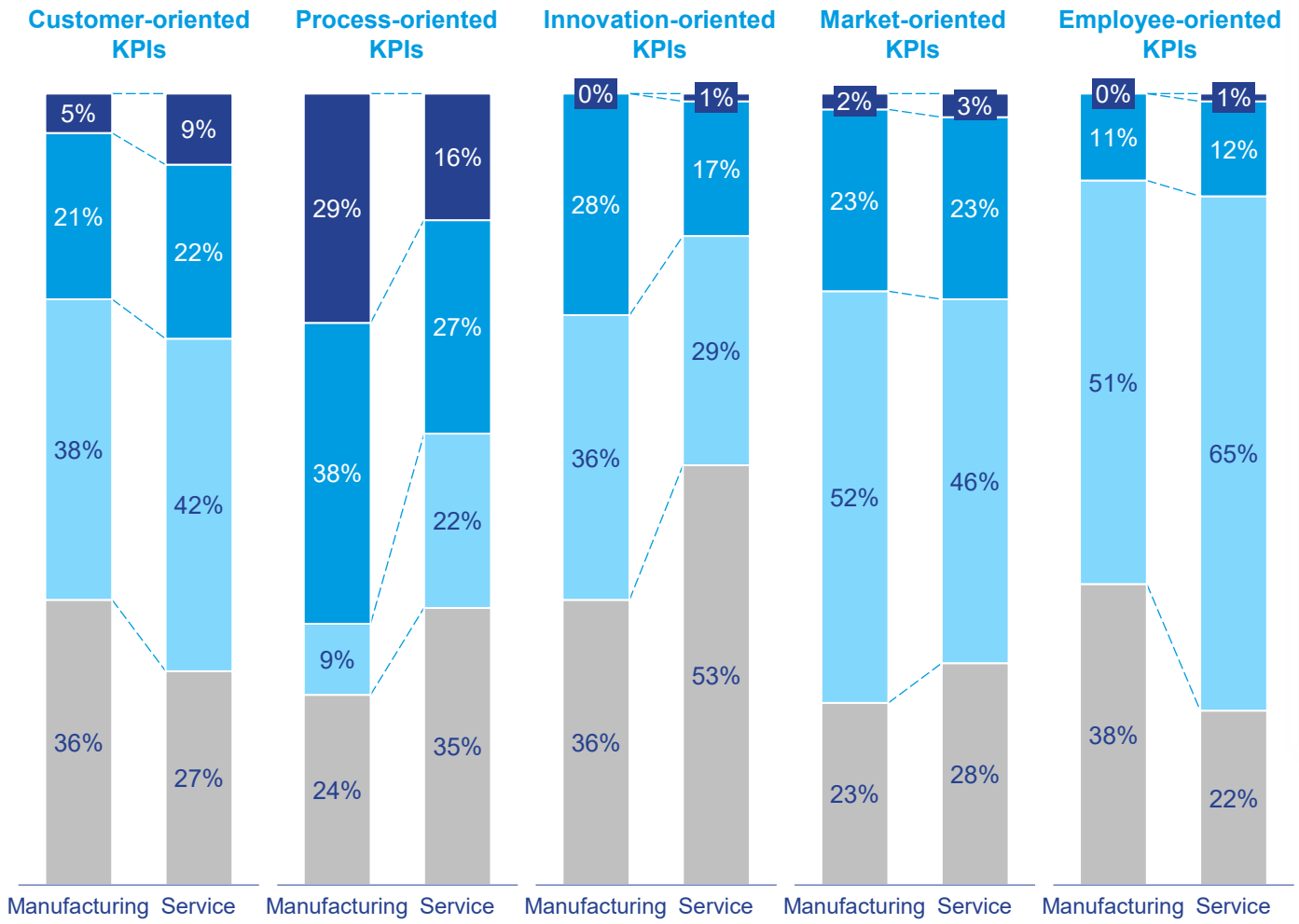
Frequency in standardized reporting of non-financial KPIs – by industry



- More than 90% of manufacturing companies report financial KPIs on a monthly basis, while only 76% of service providers do so. Financial companies and public administration companies, for example, often report on a quarterly basis.
- Companies reporting non-financial KPIs to management on a regular basis usually also include them extensively in the design of the standard report to management.
- Regardless of company size, a total of 27% of respondents say that non-financial KPIs are used intensively in their standard report.
- Here, too, a sector correlation can be observed: Around one in three service providers, but only one in five manufacturing companies, make intensive use of non-financial KPIs in the design of the standard report.

A majority of companies manage their business with a small set of KPIs

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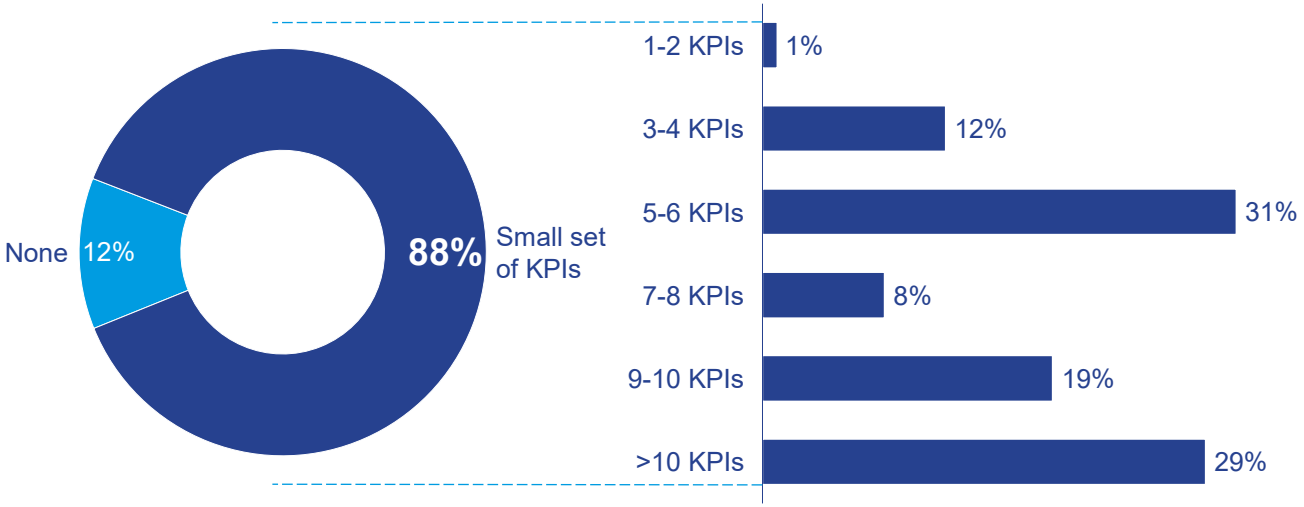
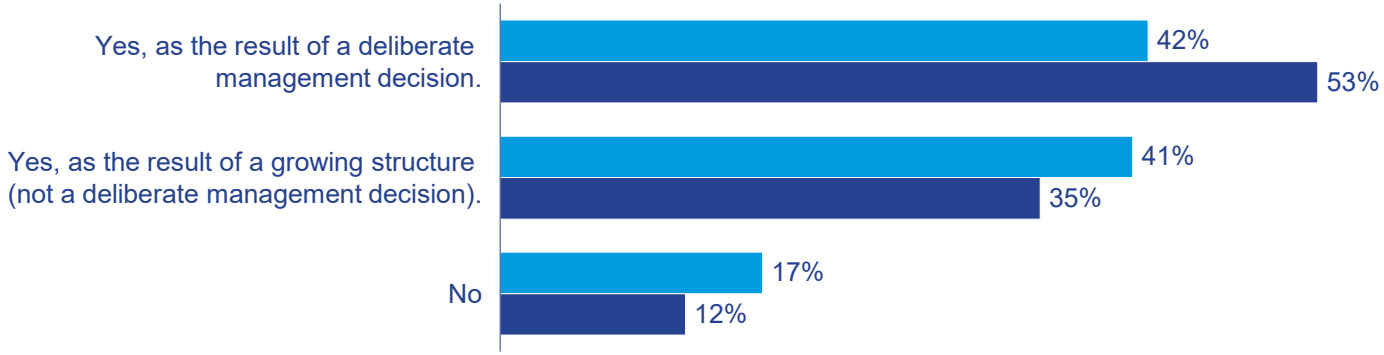
Number of KPIs that are the focus of management control*



- Large companies more often deliberately focus their management control on a small set of KPIs (65%) than medium-sized or small companies (48% and 46%, respectively).
- 60% of the companies that use a dashboard solution manage according to a small set of KPIs. If a dashboard solution is concretely planned, the figure is similar at 54%. Where a dashboard solution is neither used nor planned, the figure is only 38%.

"Is a small set of KPIs the focus of management control?" – by year*



* The analysis refers to responses from participants who took part in both studies 2016 and 2019 and have not changed companies in the meantime (number of KPIs n=141 / small set of KPIs n=173).

Lower chart

2016
2019

In 78% of large and 49% of small companies, the data for reporting is based on an integrated system

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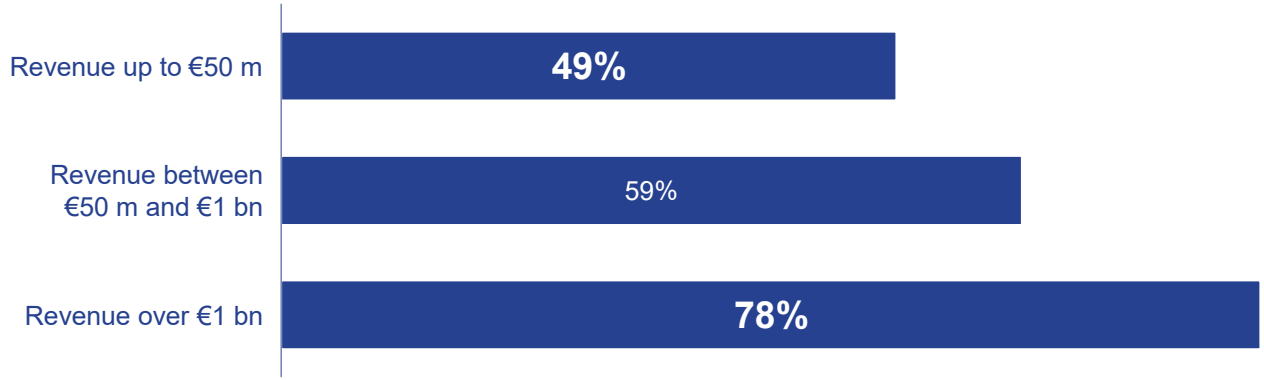
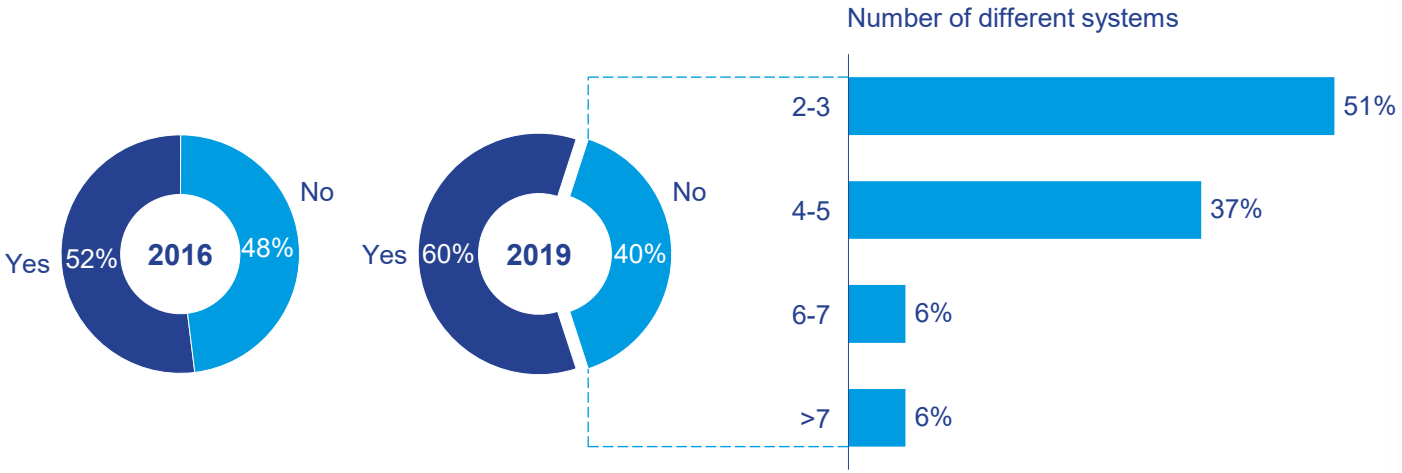
Existence of an integrated system – by company size



Existence of an integrated system – by year



- An integrated system is available in 63% of companies pursuing a product differentiation strategy, compared to 48% of companies seeking cost leadership.
- Companies that already have a dashboard solution in place are significantly more likely to have an integrated system (77%) than companies that are only planning a dashboard solution (53%). If a dashboard solution is not even planned, it is only 45%.
- There is a correlation between system integration and the presence of daily updated data in the dashboard solution. Where daily updated data is available in the dashboard solution, the data comes from an integrated system in 80% of the companies. If the data in the dashboard solution is not up-to-date, it comes from an integrated system only in 67% of cases.

39% of companies use a dashboard solution, 30% have no plans to do so

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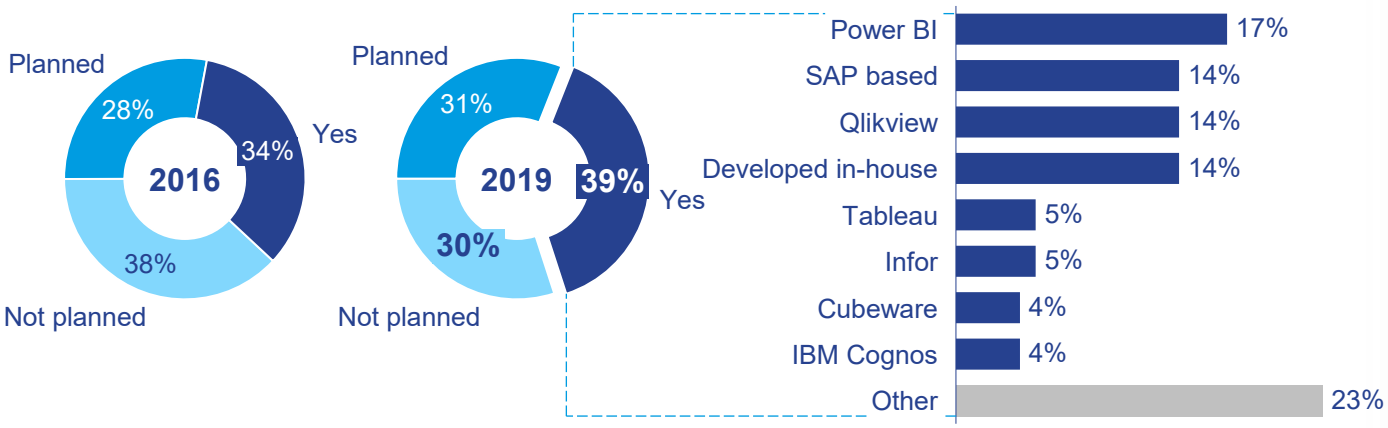
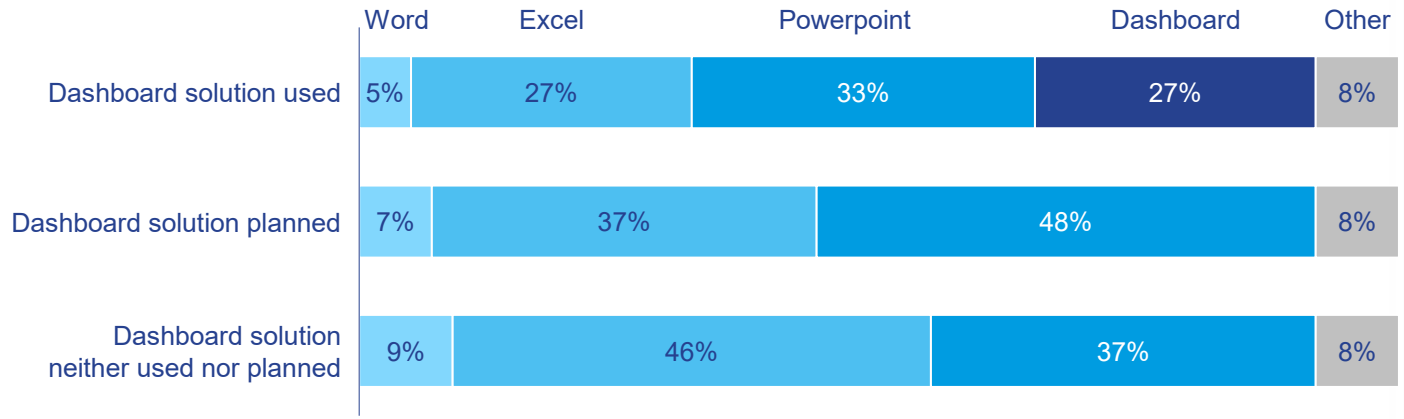
Existence of a dashboard solution and tools used



Software used for preparing standard reports – by existence of a dashboard solution



- In the course of digitalization, dashboards are being used more frequently. On the one hand, they serve as an individual source of information, but on the other hand, they are also used in reporting. There is currently a large number of solutions from different providers on the market; the less common ones are bundled as “Other”.
- There are significant differences in the pace of implementation: 41% of those who planned to implement a dashboard three years ago now have a solution in place. But 16% of those who had no dashboard plans three years ago have also introduced a dashboard solution in the meantime.
- If a dashboard solution is used, on average, the key non-financial KPIs are also reported more frequently.
- In addition, the standard report is available earlier on average when using a dashboard solution, although this is essentially an effect of integrated systems: When using a dashboard solution, the data comes from a single system in 77% of companies (vs. 50% without a dashboard solution).

Small companies are catching up in the use of dashboard solutions

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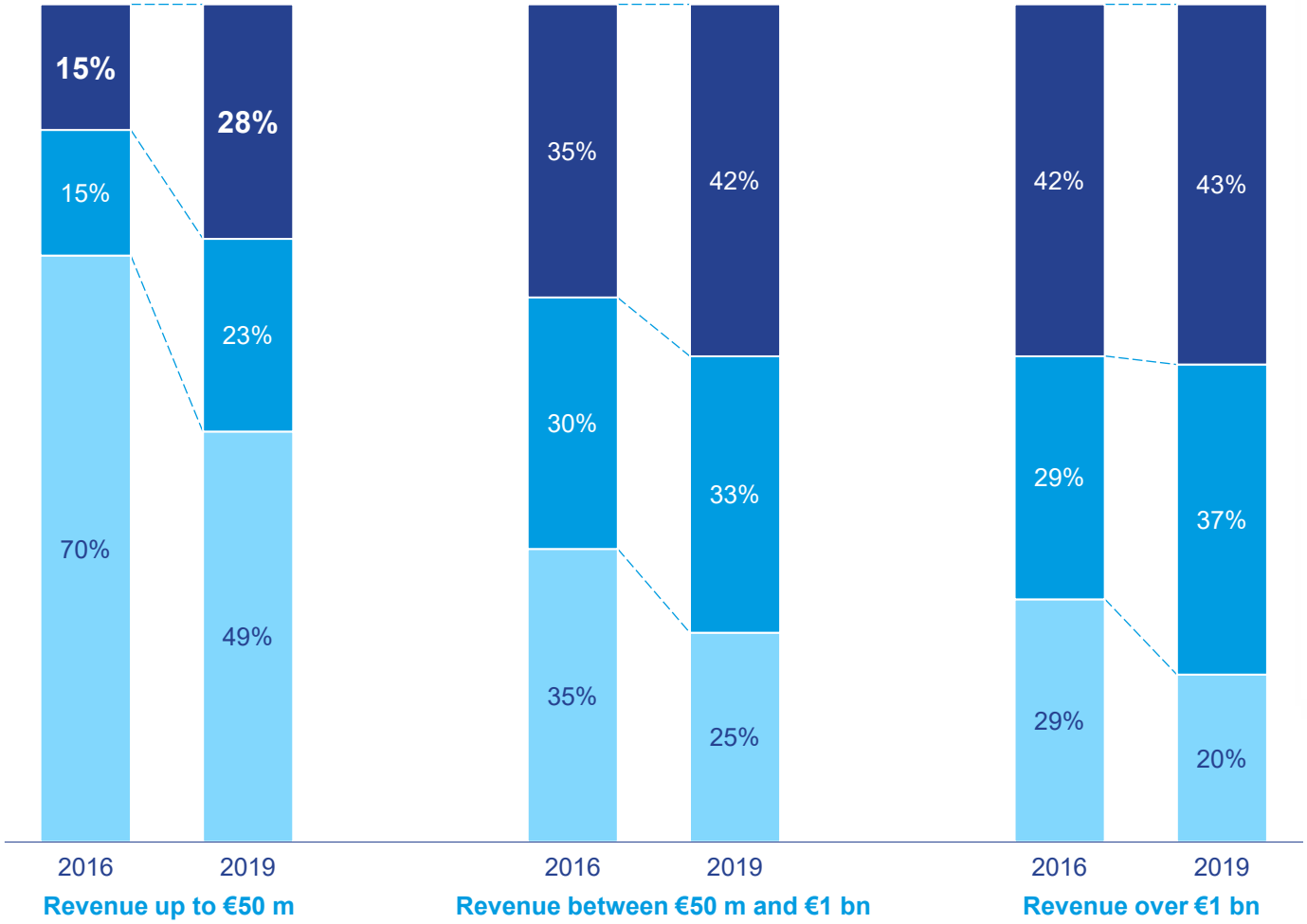
Existence of a dashboard solution – by company size



- Which small companies use a dashboard solution? One third of them are business units of larger groups from the manufacturing industry, another third are relatively “large” small companies (15-50 million €) across all industries. The remaining third are small companies (<15 million €) in the service sector.
- The tool most frequently used by small businesses is Power BI (33%). Another 20% use a self-developed solution.
- Among medium-sized companies, there are several preferred solutions: Qlikview (16%), Power BI (14%), self-developed tools (13%) and SAP-based solutions (11%).
- Large companies predominantly use self-developed tools (24%), closely followed by SAP-based solutions (21%). Tableau is also widely used (14%).

In 77% of the companies that use a dashboard solution, selected KPIs are available at least on a daily basis, in 23% even in real-time

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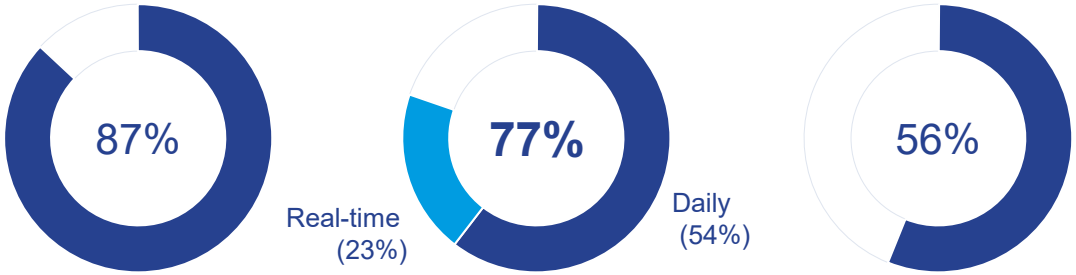
Characteristics of dashboard solutions

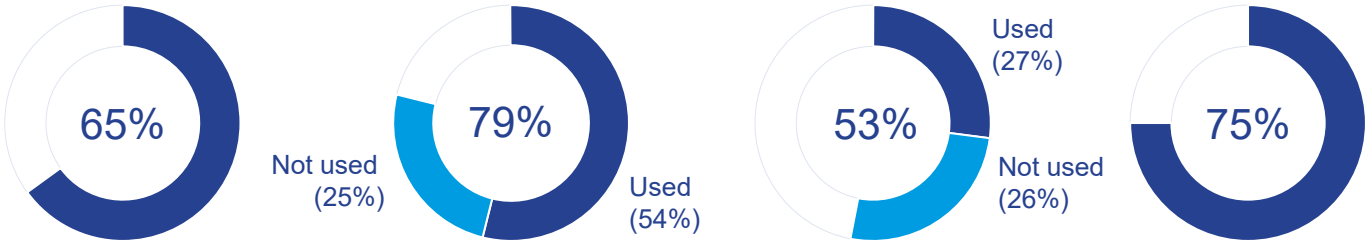


Interactive
Functions such as drilldown and filtering included

Real-time
Selected KPIs available in real time

Mobile
Dashboard available via an app

Features of dashboard solutions



Individual reports

Standardized reports
(used for reporting)

Alerts
(used by controllers)

Change in display format
(e.g., between tables and diagrams)

- Interactivity is a central characteristic of dashboard solutions. The majority of the 13% of respondents who state that they do not use an interactive solution use self-developed or SAP-based solutions, which presumably have more of a front-end character and offer basic functionalities.
- The timeliness of data has increased between 2016 and 2019: Whereas only 64% of respondents had updated* data available daily three years ago, 77% can now access data at least updated daily. Medium-sized companies take the top spot here with 85% (vs. 67% of small and 59% of large).
- Mobile availability is becoming increasingly important: 56% of respondents can now also access their dashboard solution via an app (vs. 29% in 2016).
- Compared to three years ago, dashboards are significantly more likely to offer the ability to create standardized reports (79% vs. 64%) – and this capability is also increasingly being used for reporting (54% vs. 46%).

* In 2016, “daily” and “real-time” were not recorded separately. Therefore, no statement can be made about the distribution in 2016.

Large companies run an integrated system, use a dashboard solution and focus on a small set of KPIs more often than small ones

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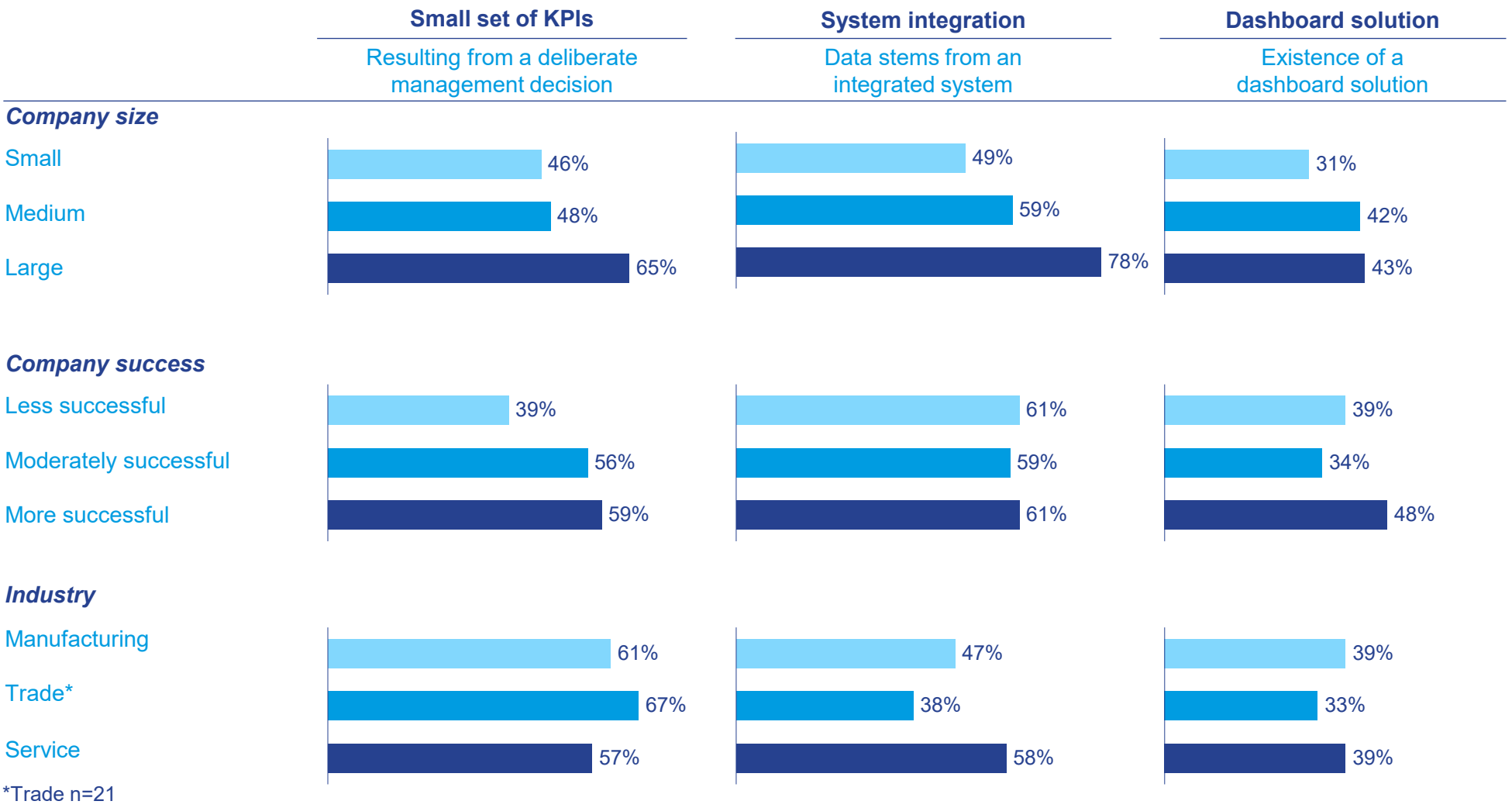
Reporting characteristics – by company size, company success and industry



*Trade n=21

Although reporting is considered successful in 50% of the companies, roughly one in four controllers criticizes the process

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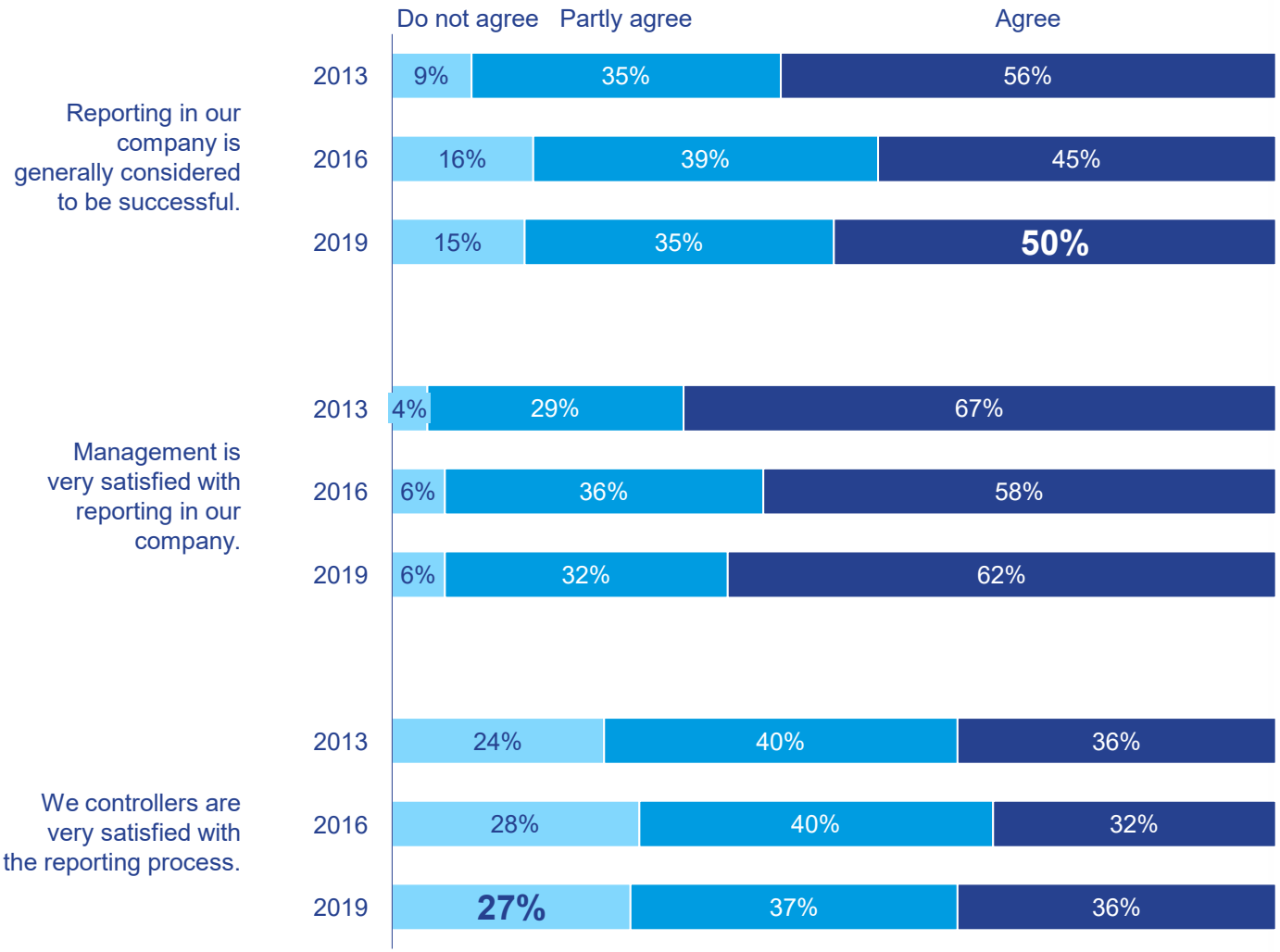
Satisfaction with management reporting* – by year



- Satisfaction overall is higher where non-financial KPIs are reported more regularly and used more intensively in reporting.
- Another driver for satisfaction is the link between reporting and the company's strategy. For example, only 13% are satisfied with reporting when the link to strategy is weak, whereas 65% are satisfied when the link to strategy is strong.
- Satisfaction with reporting is related to the success of the company. In successful companies, 56% are satisfied overall, in less successful companies only 37%.
- There is a correlation between the satisfaction of the controllers and their position in the company hierarchy. 40% of heads of controlling, but only 27% of the controllers in lower positions are satisfied with reporting. This could be due to greater opportunities to influence management reporting at higher hierarchical levels.
- Satisfaction with reporting by both controllers and managers shows no correlation with company size.

* as assessed by controllers

In companies that have a dashboard solution or work with an integrated system, satisfaction with management reporting is higher

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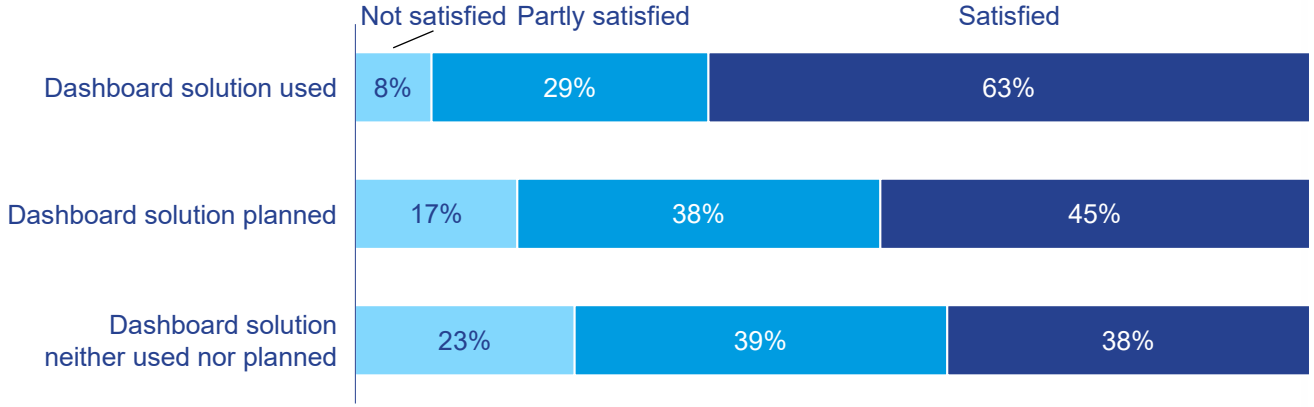
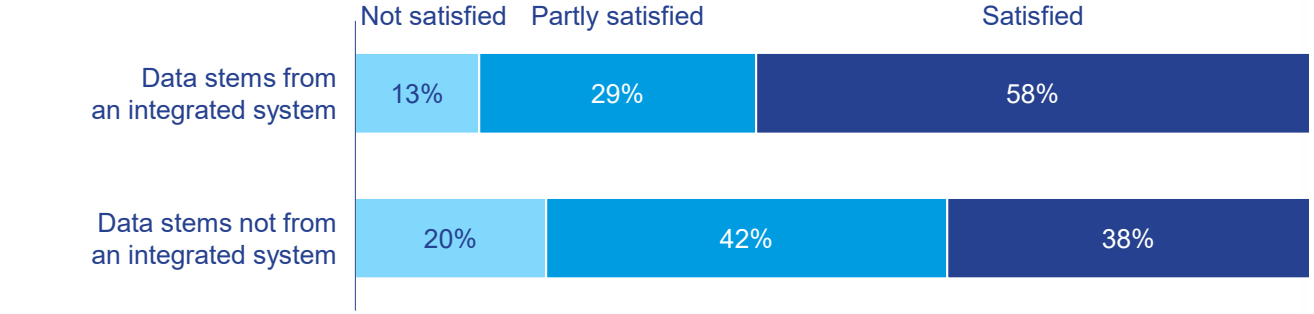
Satisfaction with management reporting* – by existence of a dashboard solution



Satisfaction with management reporting* – by existence of an integrated system



- If a dashboard is available, the reporting process in particular is assessed more positively by the controllers. In contrast, the availability of a dashboard does not play a role in assessing how satisfied management is with reporting.
- The form in which the report itself is available to management – whether from a dashboard solution or as a PowerPoint document, for example – is irrelevant to satisfaction with the reporting overall.
- An important factor for the satisfaction of controllers and managers is the time required for making the report available. In companies where the report is available in less than five days after the end of the reporting period, only 3% of respondents express dissatisfaction. If the report is available six to ten days after the end of the reporting period, the figure is 15%, and 21% if it is available only after ten days.

* as assessed by controllers

Only half of controllers are satisfied with the dashboard solution – performance, visualization, and functionality could be improved

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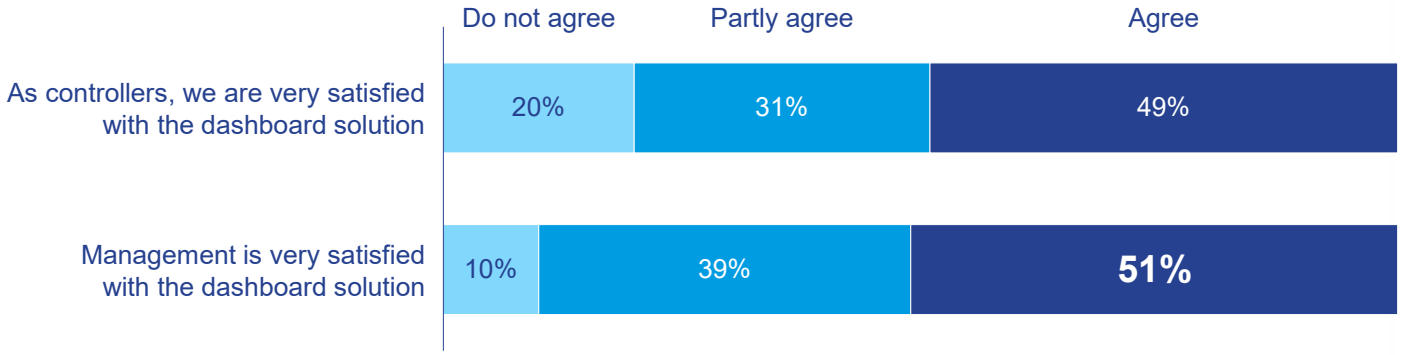
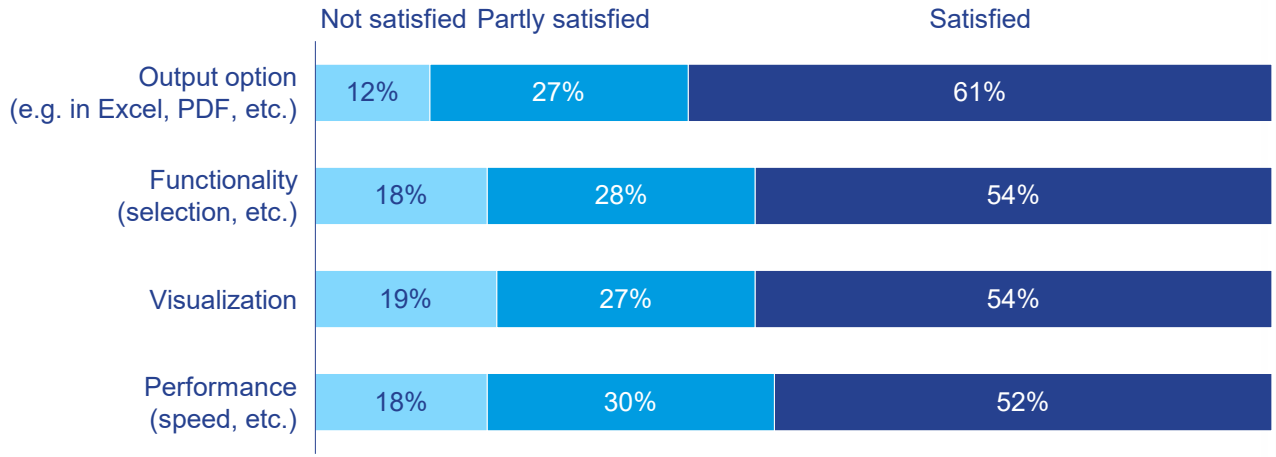
Satisfaction with the dashboard solution*



Satisfaction with different aspects of the dashboard solution*



- Satisfaction with the dashboard solution has not changed since 2016: About 50% of controllers and managers are largely satisfied with the dashboard solution.
- The satisfaction of controllers with the implemented dashboard solution essentially depends on the concrete design of the dashboard solution: If it is possible to create individual reports, 54% are satisfied (vs. 40% if there are no individual reports). If it is possible to create automated alerts, the satisfaction is as high as 61% (vs. 37%). If the solution is also available as an app, 61% describe themselves as largely satisfied (vs. 40%).
- When it comes to management satisfaction with the dashboard solution (as assessed by controllers), other points are more important: If standardized reports from the dashboard are used for management reporting, 60% state that management is largely satisfied with the dashboard solution (vs. 38%). Mobile access is equally valued by management (63% vs. 43%) as daily updates (57% vs. 33%).

* as assessed by controllers

59% of the companies use KPIs that are derived from their strategy for reporting

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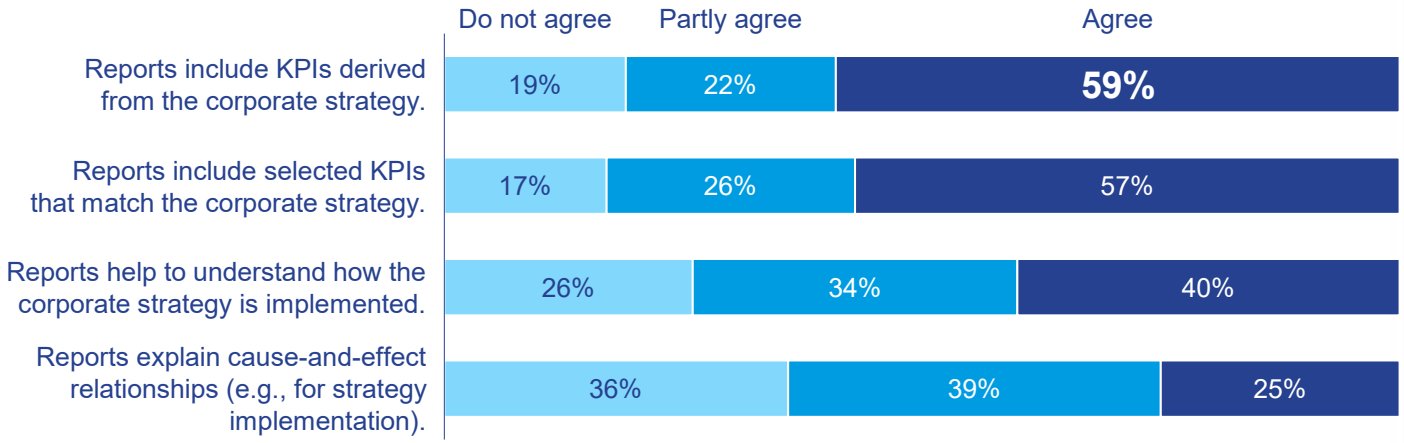
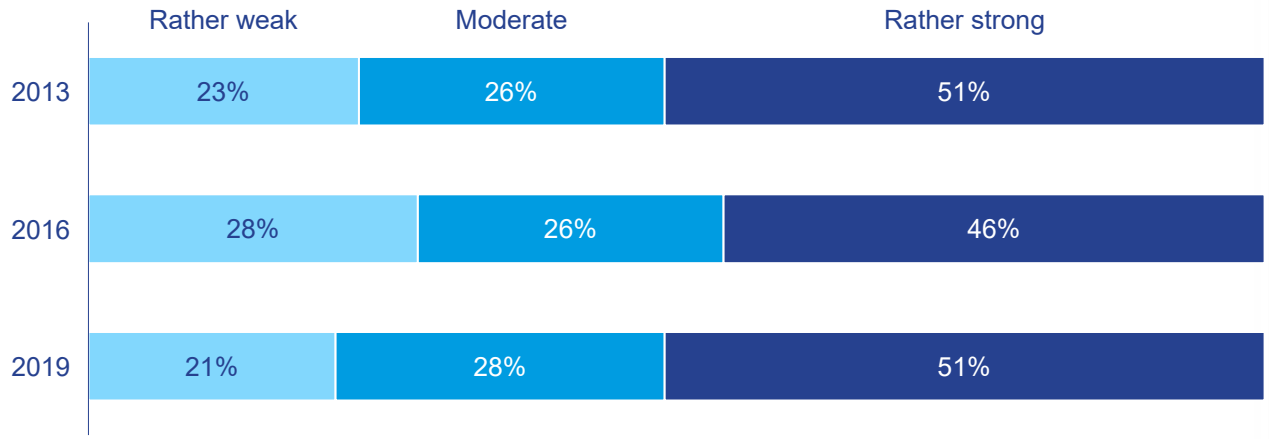
Link to strategy – different aspects



Link to strategy – by year



- The link between reporting and strategy is nearly unchanged compared to previous years: Only half of the respondents see a strong link between reporting and corporate strategy.
- In large companies, management reporting is significantly more strongly linked to strategy: 56% of respondents rate the link to strategy as rather strong (vs. 50% in medium-sized and 48% in small ones).
- This goes hand in hand with a focus on a small set of KPIs: If management consciously decides on a small set of KPIs, there is a strong link between strategy and reporting in 66% of the companies. If there is no such set or if it is the result of an evolved structure (not a conscious management decision), the share drops to one-third.
- There are also differences across industries: 60% of service companies strongly link their reporting to strategy (vs. 48% in retail and 45% in manufacturing companies).
- Link to strategy and satisfaction are closely intertwined: With a strong link to strategy, 65% of respondents are largely satisfied (vs. 13% with a weak link to strategy).

As of 2019, more than one in two companies plan fundamental changes in their management reporting

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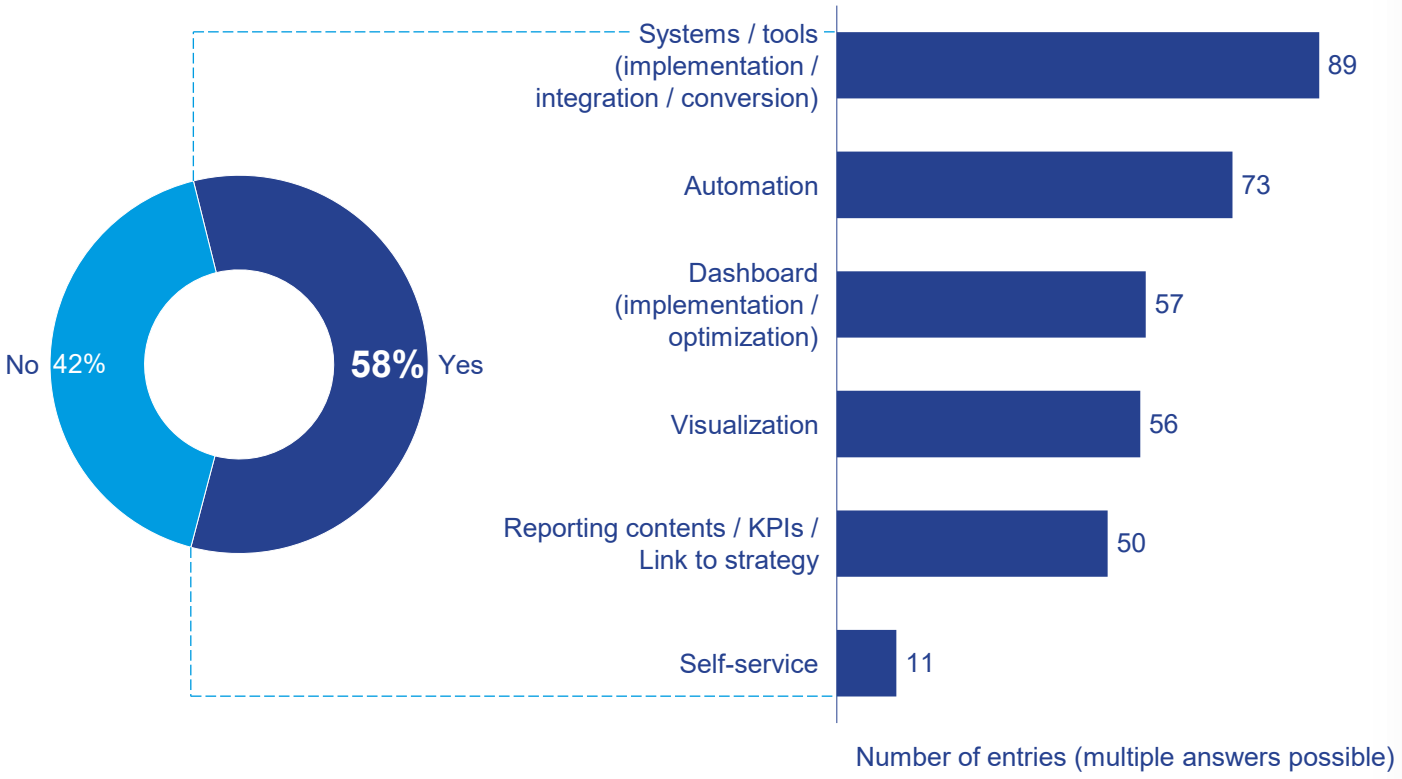
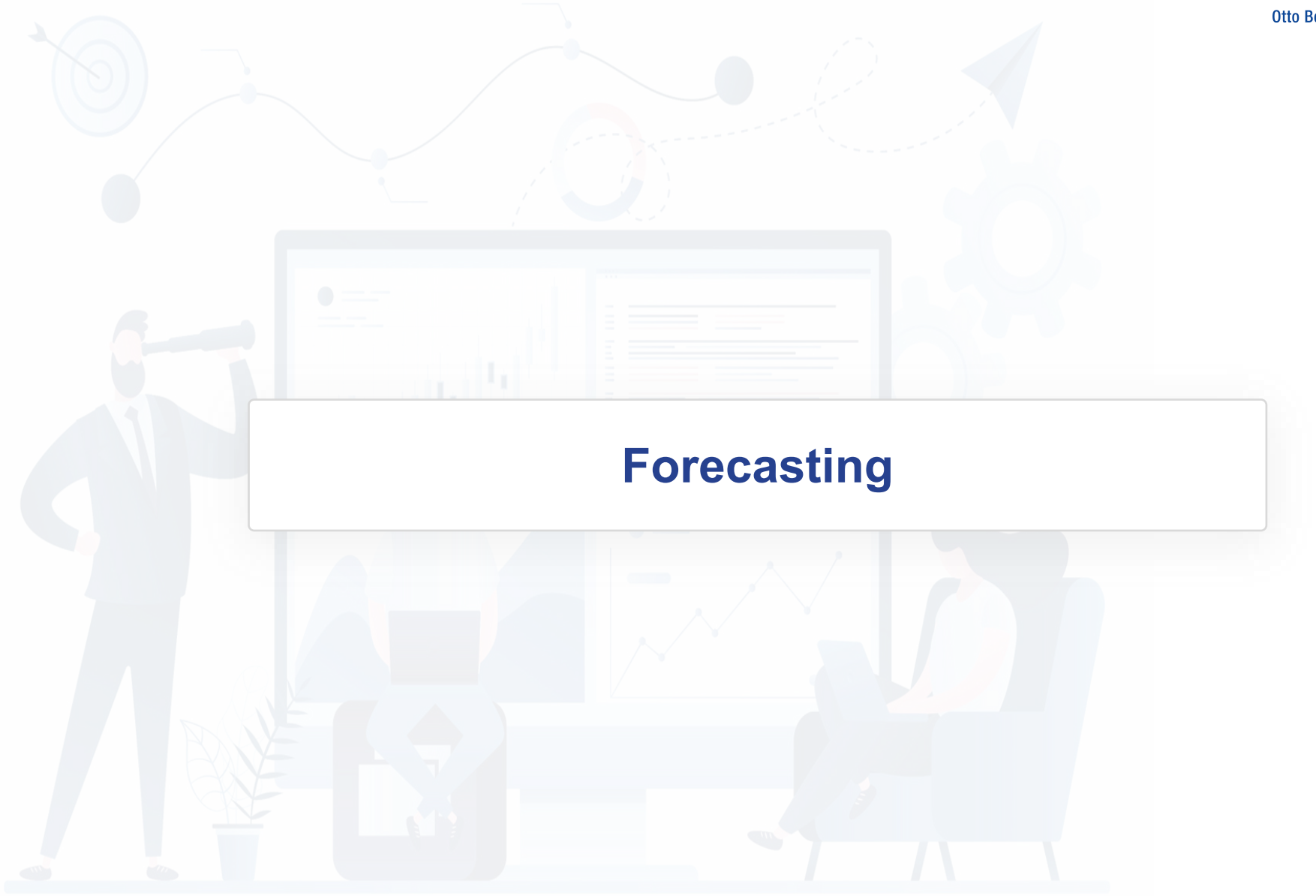
Planned changes in management reporting



- Revisions and changes are planned where both management and the controllers themselves are dissatisfied with their management reporting. If controllers are predominantly satisfied, a revision of the reporting is planned in only 48% of the companies, and in 71% of the companies where controllers are dissatisfied. In terms of manager satisfaction (as assessed by controllers), the percentage is similar (54% vs. 76%).
- Looking only at satisfaction with the existing dashboard solution, only management satisfaction appears to be a driver for revision. If management is assessed to be very satisfied, only 38% of companies are planning to make changes. If they are assessed to be dissatisfied or only partially satisfied, the figure is almost 70%.
- In 2016, it was mainly large companies that were planning fundamental changes in their management reporting. In 2019, there are plans across all company sizes to revise reporting.



Forecasting

The financial forecast is primarily used for operational planning

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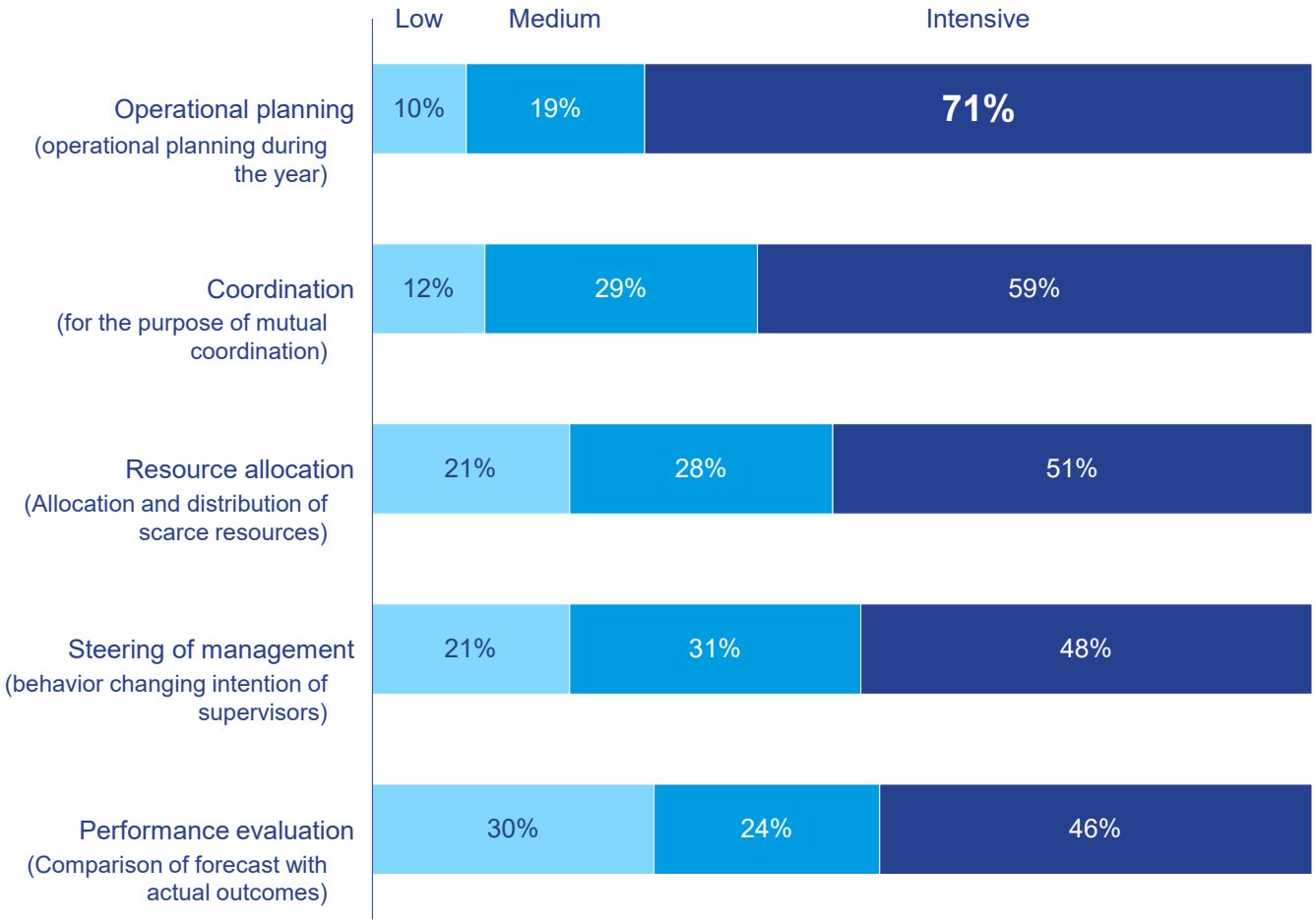
Use of standard financial forecast for various purposes



- Manufacturing companies use the forecast more often for operational planning than service companies.
- Large companies use the forecast more frequently for coordination and steering of management than small companies.
- Companies seeing themselves rather as cost leaders use the forecast more for performance evaluation. Companies with a product differentiation strategy, instead, use forecasting more frequently for resource allocation.
- Companies that also prepare an “ad-hoc” forecast in addition to the standard financial forecast use the forecast more frequently for operational planning, resource allocation and steering of management.

37% of companies prepare their financial forecast as fully or partially rolling

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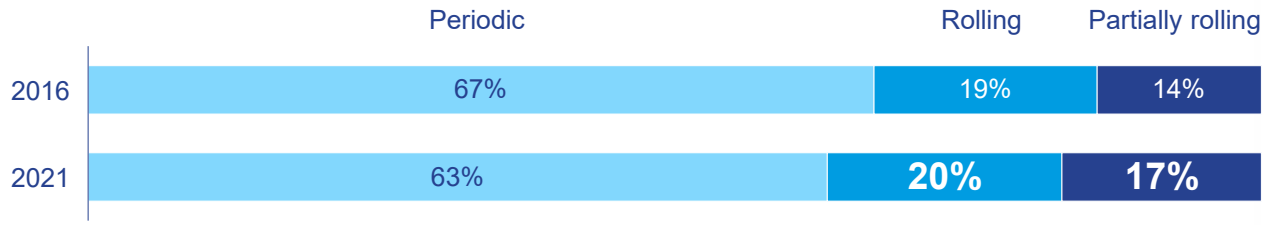
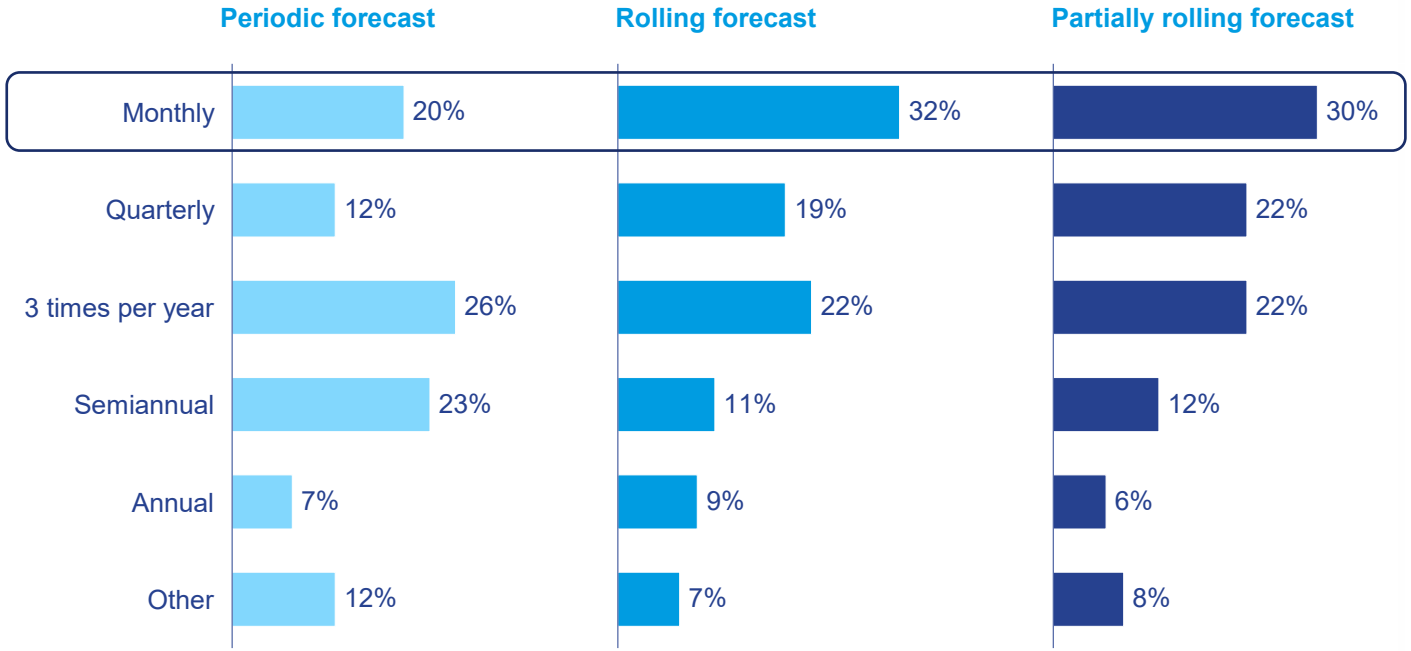
Prevalence of forecast types – by year



Frequency of forecast – by forecast types



Definition of forecast types

- **Periodic forecast** at a fixed point in time (e.g., usually at the end of the fiscal year)
- **Rolling forecast** (i.e., with a fixed forecast period, the forecast is rolled forward over the course of the year beyond the boundary of the current fiscal year)
- **Partial rolling forecast** (e.g., standard forecast at the end of the fiscal year; in the third quarter, the time horizon is extended to include the twelve months of the following year).
- There is no correlation between the size of the company and the type or frequency of the forecast.
- The less frequently the forecast is prepared, the more likely there are acceptance problems due to deficits in the timing, frequency and duration of preparation.

In half of the companies, the preparation of the financial forecast in controlling requires no more than one week

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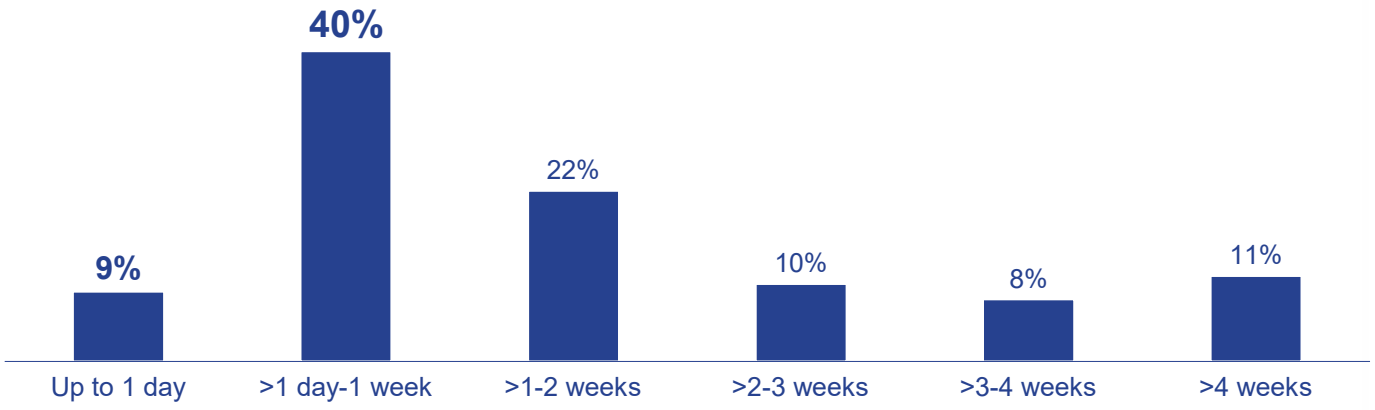
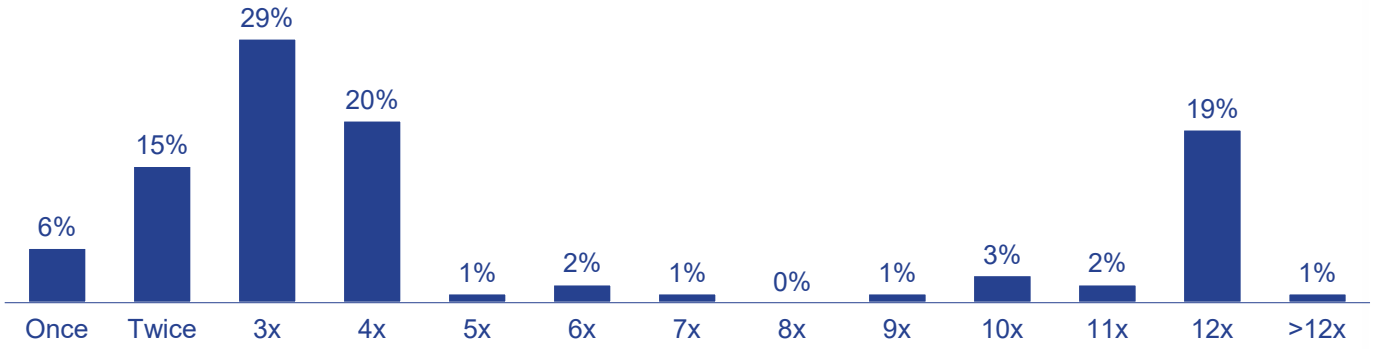
Preparation time of the standard financial forecast in controlling



Frequency of standard financial forecast per year



- The preparation time refers to the length of time from data acquisition up to when the company-wide results are prepared.
- The respondents perceive the forecasting process to be efficient if the preparation in controlling requires only a few working days. If the preparation takes up to a week, 53% consider the process to be efficient. If the preparation time is longer than three weeks, only 29% do so.
- A larger number of forecasts typically means the preparation time is shorter. 73% of the companies that prepare 12 forecasts a year take no longer than one week to prepare each forecast. In comparison, only 33% of the companies that prepare three forecasts a year can prepare them so quickly.
- If the preparation time is shorter, then the respondents are more likely to agree that the forecast timing, frequency, and preparation time are in line with the cycle of the business model / environment.

The financial forecast contains an average of 25 items – mostly independent of company size, industry or business environment

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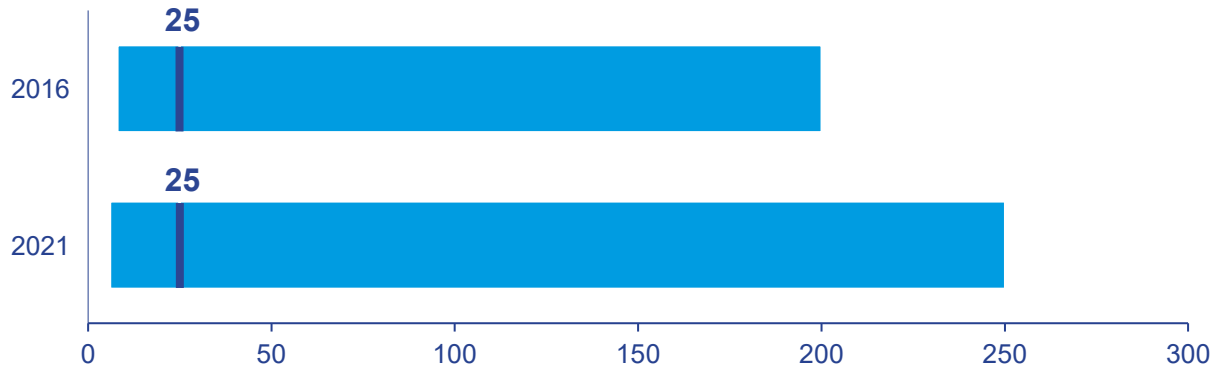
Number of items in the standard financial forecast – by year



Number of items in the standard financial forecast – by company characteristics

Company size		Industry		Company success		Business environment	
Revenue up to €50 m	24,5	Manufacturing	30	Less successful	20	Rather certain	32,5
Revenue between €50 m and €1 bn	25	Services	20	Moderatly successful	20	Average	30
Revenue over €1 bn	22,5			More successful	30	Rather uncertain	20

- One would expect that companies whose forecasts contain fewer items prepare their forecasts more frequently. However, we find no significant correlation between the frequency of preparation and the number of items.
- Nevertheless, there is a significant correlation between the number of items in the forecast and the (perceived) efficiency of the forecasting process. If the forecasting process is perceived as efficient, the forecast contains more than 50 items in only 15% of the companies. If the forecasting process is perceived as less efficient, this is the case for 35%.
- The number of items has no significant influence on the accuracy of the forecast or the satisfaction with the forecast.

Upper chart

Median

80% of the companies

In 40% of the companies, the number of items in the forecast and in planning / budgeting is identical

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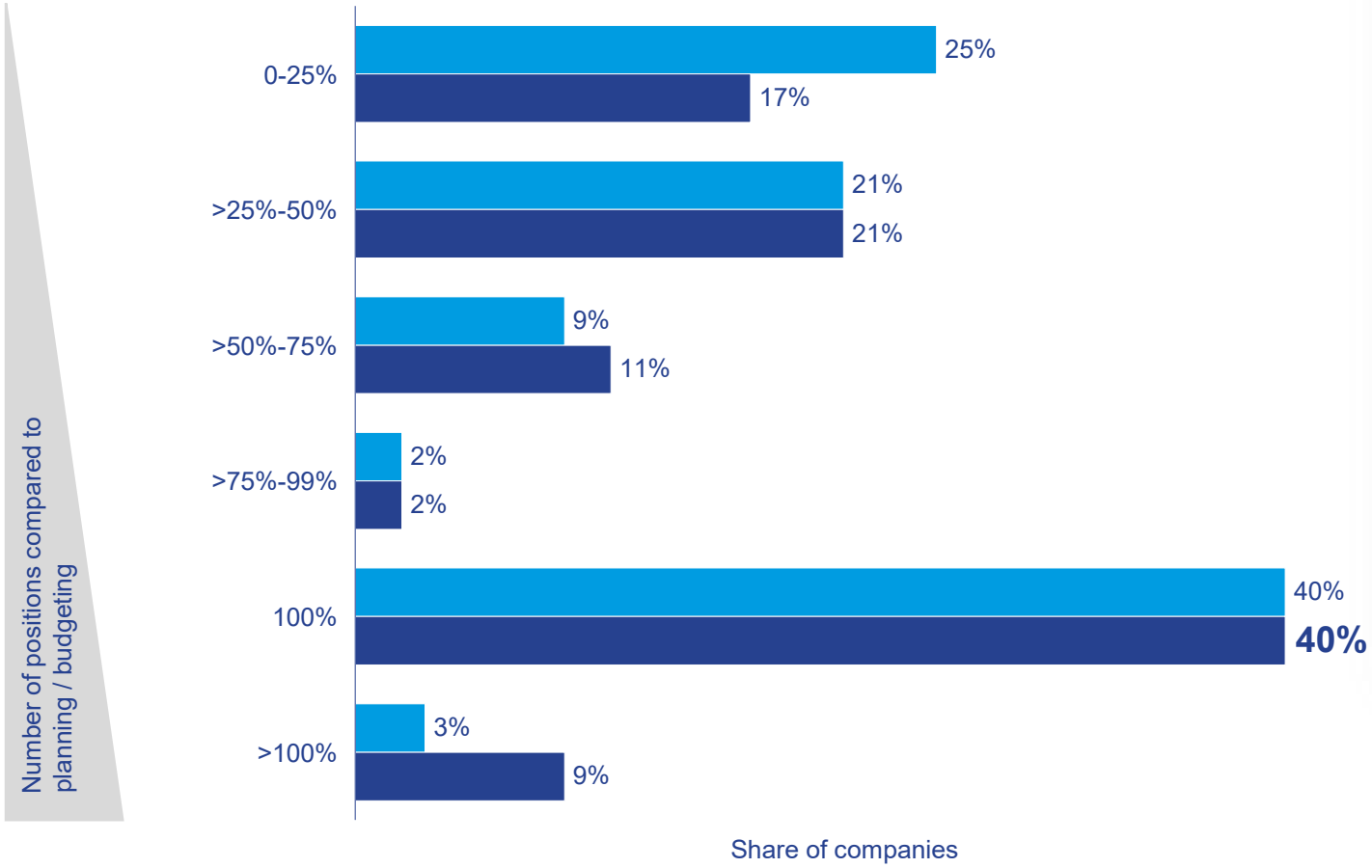
Number of items in the standard financial forecast in relation to that in planning / budgeting

Forecast contains ... % of positions compared to planning / budgeting



- 46% of service companies use the forecast and budget planning identically (1:1 relation of the positions), only 26% have a significantly slimmed down forecast (≤50% of the positions from the budget planning).
- By comparison, only 37% of manufacturing companies have the same number of items in their forecast and budget planning. 42% have a significantly streamlined forecast.
- In companies with a 1:1 relationship between the items of forecast and planning / budgeting, the respondents more frequently see acceptance problems with the forecast due to a lack of transparency of the preparation process. These problems are less frequent in companies that work with a significantly leaner forecast.

Benchmarks of the financial forecast vary only slightly by industry, company size, and company success

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Benchmarks (median) – by industry, company size, and company success

	Most frequent type of forecast	Frequency (times per year)	Preparation time in controlling (working days)	Scope (number of items)	Accepted variances (%)
Industry					
Manufacturing	Periodic	3	8	30	5%
Trade	Periodic	3	10	27.5	2.75%
Services	Periodic	4	7	25	5%
Company size					
Small	Periodic	4	5	25	5%
Medium	Periodic	3	8	25	5%
Large	Periodic	4	10	30	5%
Company success					
Less successful	Periodic	4	10	30	5%
Moderately successful	Periodic	3	5	25	5%
More successful	Periodic	3	7	28	5%

58% of large companies prepare ad-hoc forecasts in addition to standard forecasts

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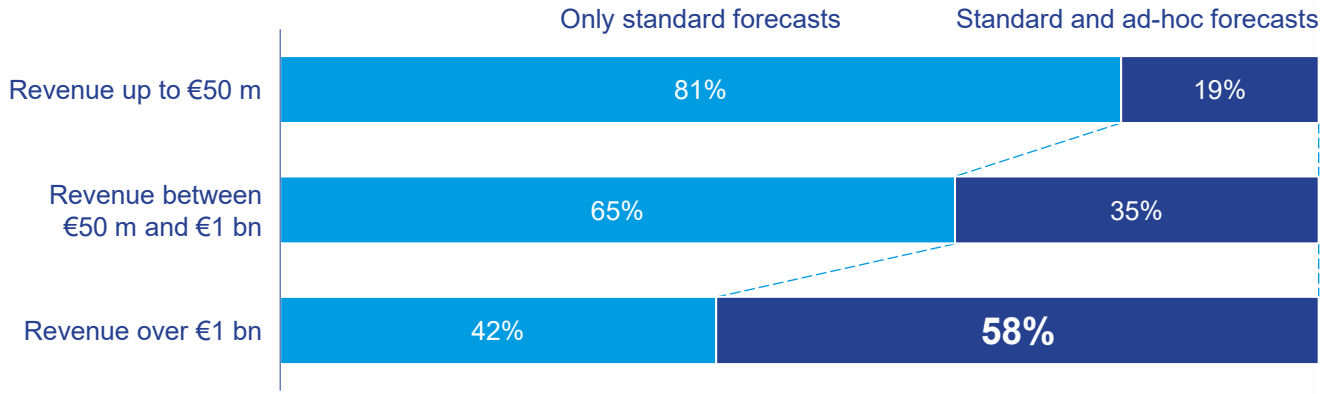
Forecasts – by company size



Reasons for introducing ad-hoc forecasts

- 41% of companies that regularly prepare a financial forecast currently have ad-hoc forecasts (i.e., a slimmed-down version with a lower degree of detail) in addition to the standard forecast. Ad-hoc forecasts were typically introduced within the last seven years (74% between 2010 and 2016).
- As expected, companies use ad-hoc forecasts more often if they operate in a more dynamic environment (48% vs. 31% in less dynamic environments).

Ad-hoc forecasts typically have a narrow scope and shorter preparation time than standard forecasts

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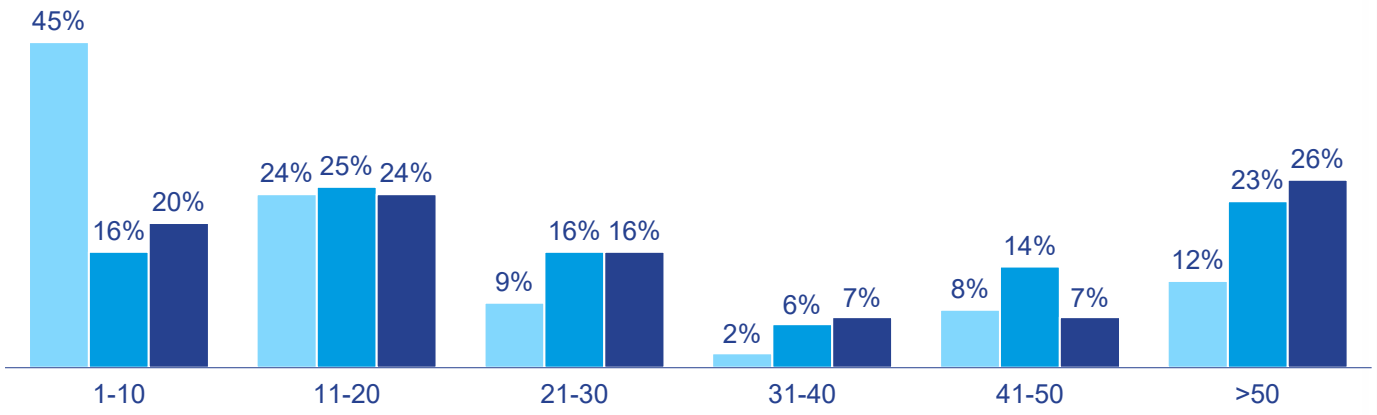
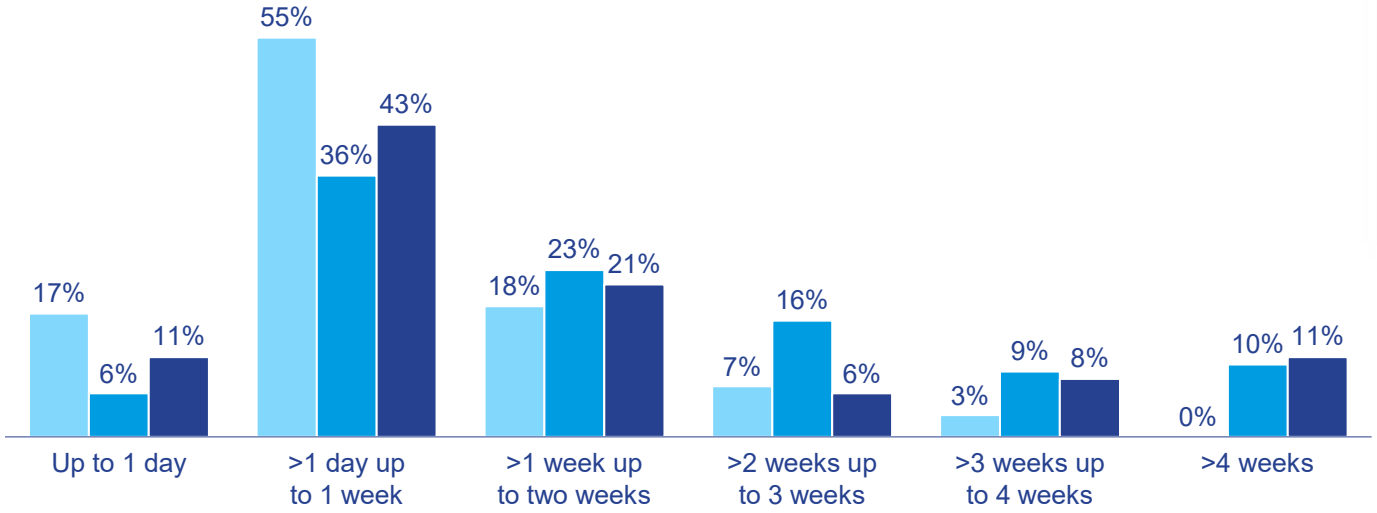
Number of items in ad-hoc forecasts and standard forecasts



Preparation time in controlling for ad-hoc forecasts and standard forecasts



- Companies with ad-hoc forecasts prepare an average of 10.6 forecasts per year (4.7 standard and 5.9 ad-hoc). Companies that only prepare standard forecasts prepare an average of 6.0 forecasts per year.
- In 52% of companies with ad-hoc forecasts, the forecasts have up to half as many items as a standard forecast. However, in 32% of companies with ad-hoc forecasts, the number of items in the two forecasts are identical.
- In 55% of companies, the preparation of ad-hoc forecasts takes half the time required for a standard forecast. In 21% of the companies, there is no difference in preparation time.
- Companies with ad-hoc forecasts are more likely to consider the forecasting process to be efficient (50%) than those that only prepare standard forecasts (40%).

Ad-hoc forecast
Standard forecast (companies with ad-hoc forecasts)
Standard forecast (companies without ad-hoc forecasts)

Time series and / or causal models are complemented by subjective assessments

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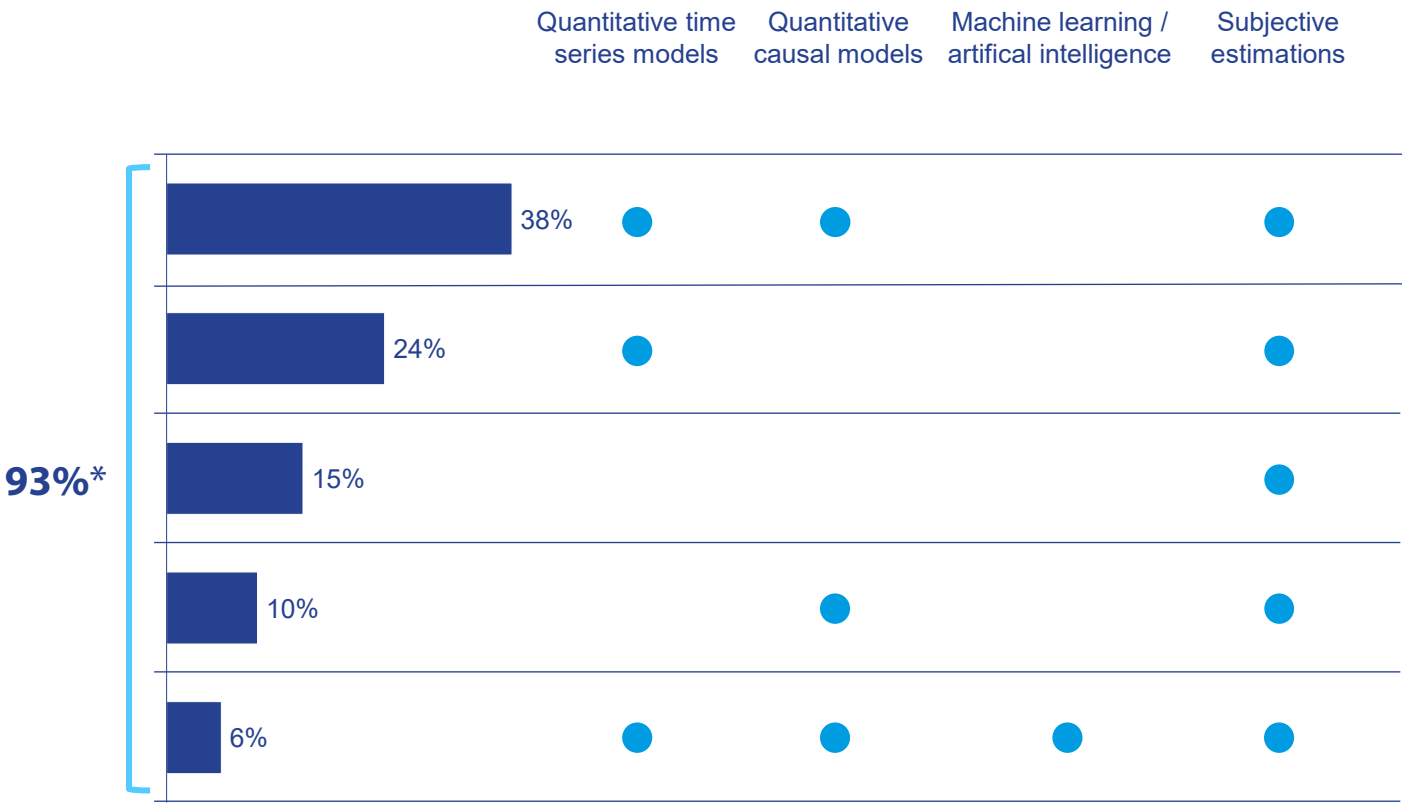
Forecasting methods: TOP 5 combinations



- Among quantitative forecasting methods, we distinguish between time series models (extrapolation of developments based on past data) and causal models (driver models or the modeling of causal relationships).
- One method is only rarely used alone. There is almost always a combination of two or more forecast preparation methods. The chart shows the frequency of the combinations. A method is marked as "used" if a 3, 4 or 5 was assigned on the 5-point Likert scale (medium to intensive use).
- Typically, an initial forecast is created on the basis of time series and / or causal models. In a second step, this is supplemented by subjective estimations from controllers, managers or experts (e.g., from other departments such as marketing, sales, etc.). This possibility of "fine-tuning" appears to be widely used.

* The remaining combinations account for the missing 7%.

Only very few companies work already with artificial intelligence in forecasting

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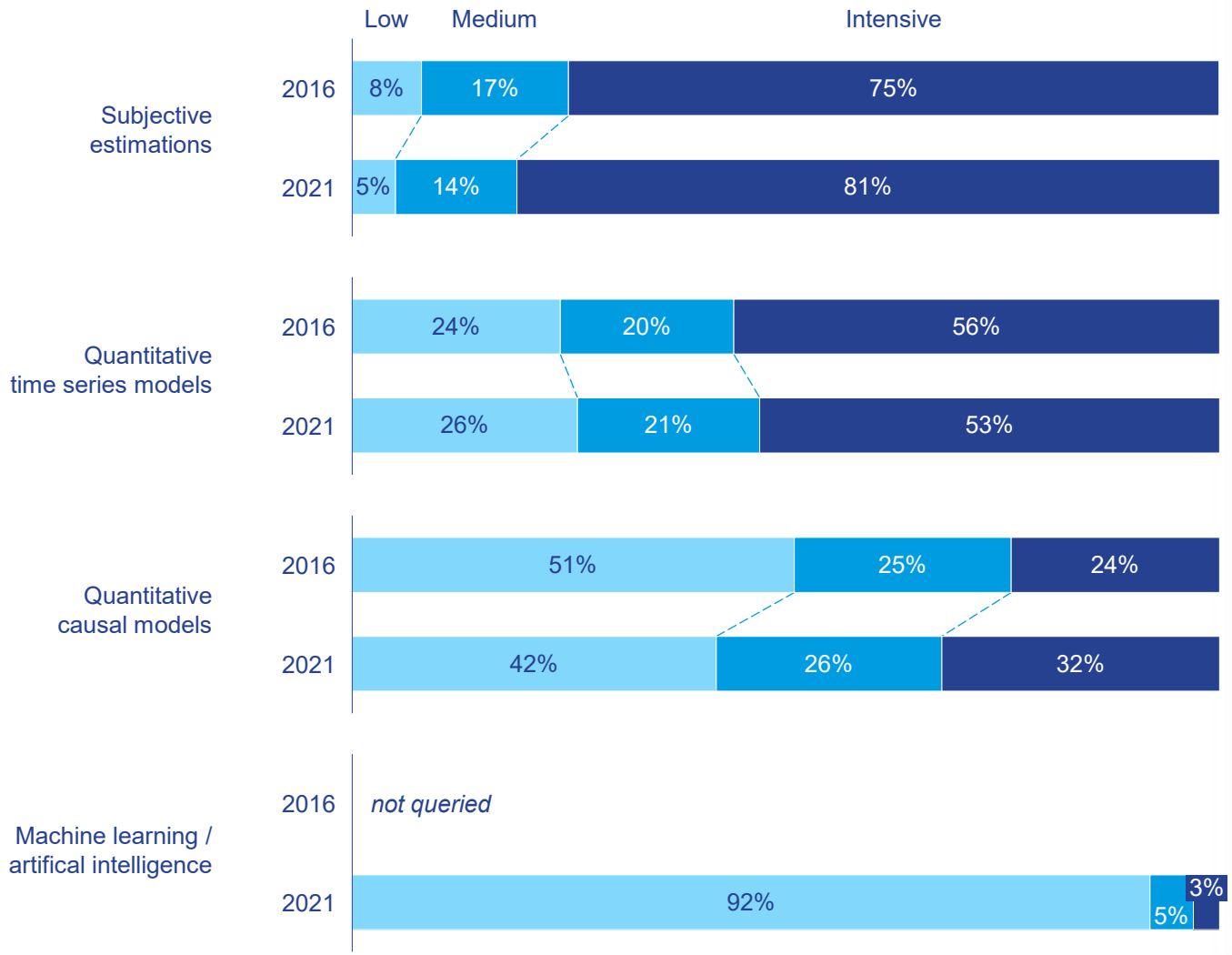
Use of forecasting methods – by year



- Since 2016, there are only minor shifts: Only the use of causal models has increased significantly in 2021.
- "Machine learning / artificial intelligence" was asked for the first time in 2021 and, as expected, has played only a minor role in forecasting to date (n=9 for "rather intensive use").
- The use of machine learning / artificial intelligence shows a correlation with data quality. This is not surprising, since a good database is an indispensable prerequisite for the use of this method(s).
- The use of causal models obviously drives acceptance of the forecast: Here, there are only a few complaints about unclear or inconsistent assumptions or because of a lack of comprehensibility in the forecast. This forecast preparation method also scores best in terms of efficiency and accuracy.

In around 60% of companies, the forecast has to be approved by upper management

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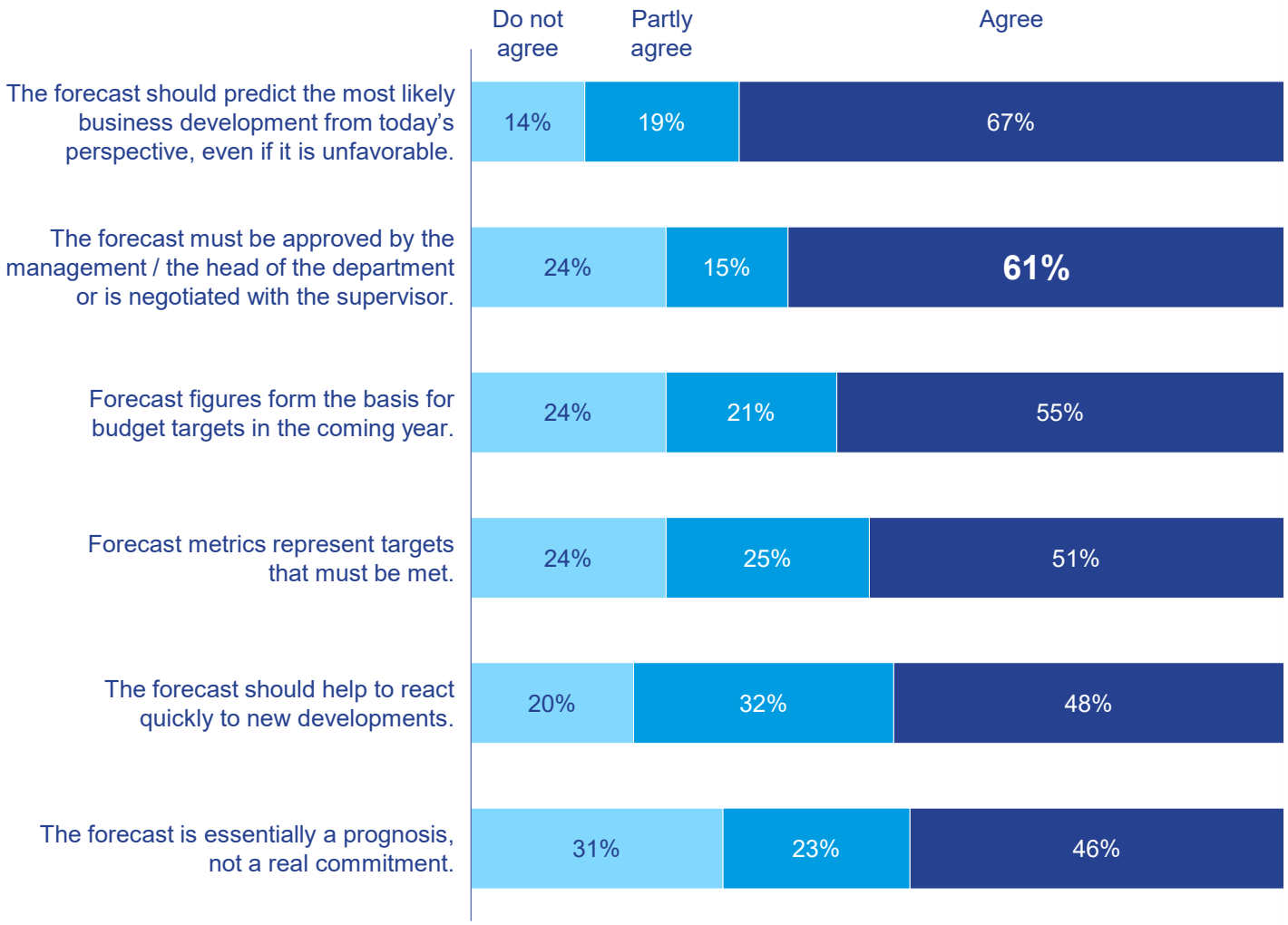
Preparation and use of forecasts



- In 60% of large companies, the forecast should predict the most likely business development, even if it is unfavorable, while this is the case in 67% of small and in 70% of medium-sized companies.
- In 55% of the more successful companies, forecast figures constitute targets that must be met. This is only true for 42% of the less successful companies.
- In 68% of the rather successful companies, the forecast figures form the basis for budgeting targets, while this is the case for only 40% of the less successful companies.
- For 81% of the companies in which the controllers are satisfied with the forecast, the forecast reflects the most likely business development. If the controllers are rather dissatisfied, this applies to only 40% of the companies.
- In companies where controllers tend to be satisfied with the forecast, the forecast is used to react quickly to new developments (64%).

A majority perceived no systematic forecast bias: Only 20% of the respondents believe the forecast metrics to be overstated or understated

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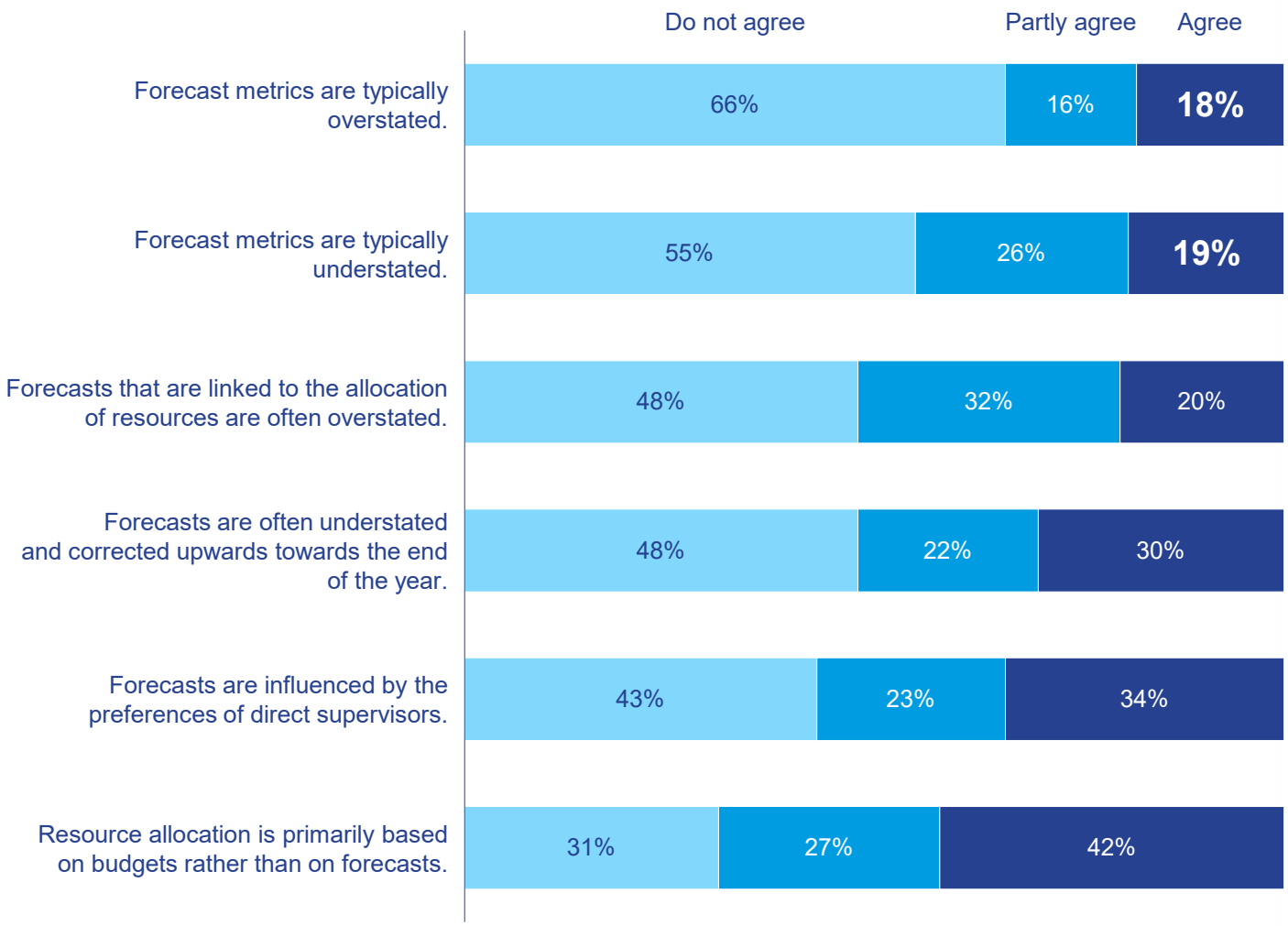
Reasons for systematic forecast biases



- The preferences of direct supervisors have a stronger influence on the forecast if the forecast is created primarily on the basis of subjective assessments. If driver models or time series models are used more, the influence of supervisors is lower.
- Overall, forecasts are found to be less systematically biased when the forecast includes more data.
- We don't find support for a correlation between company success and systematic forecast biases.
- In companies where controllers tend to be satisfied with the forecast, forecasts are rather not over- or understated (58% each).
- By comparison, in companies in which controllers tend to be dissatisfied with the forecast forecasts tend to be overstated (51%) or understated (30%).

Controllers in smaller companies report fewer forecast biases

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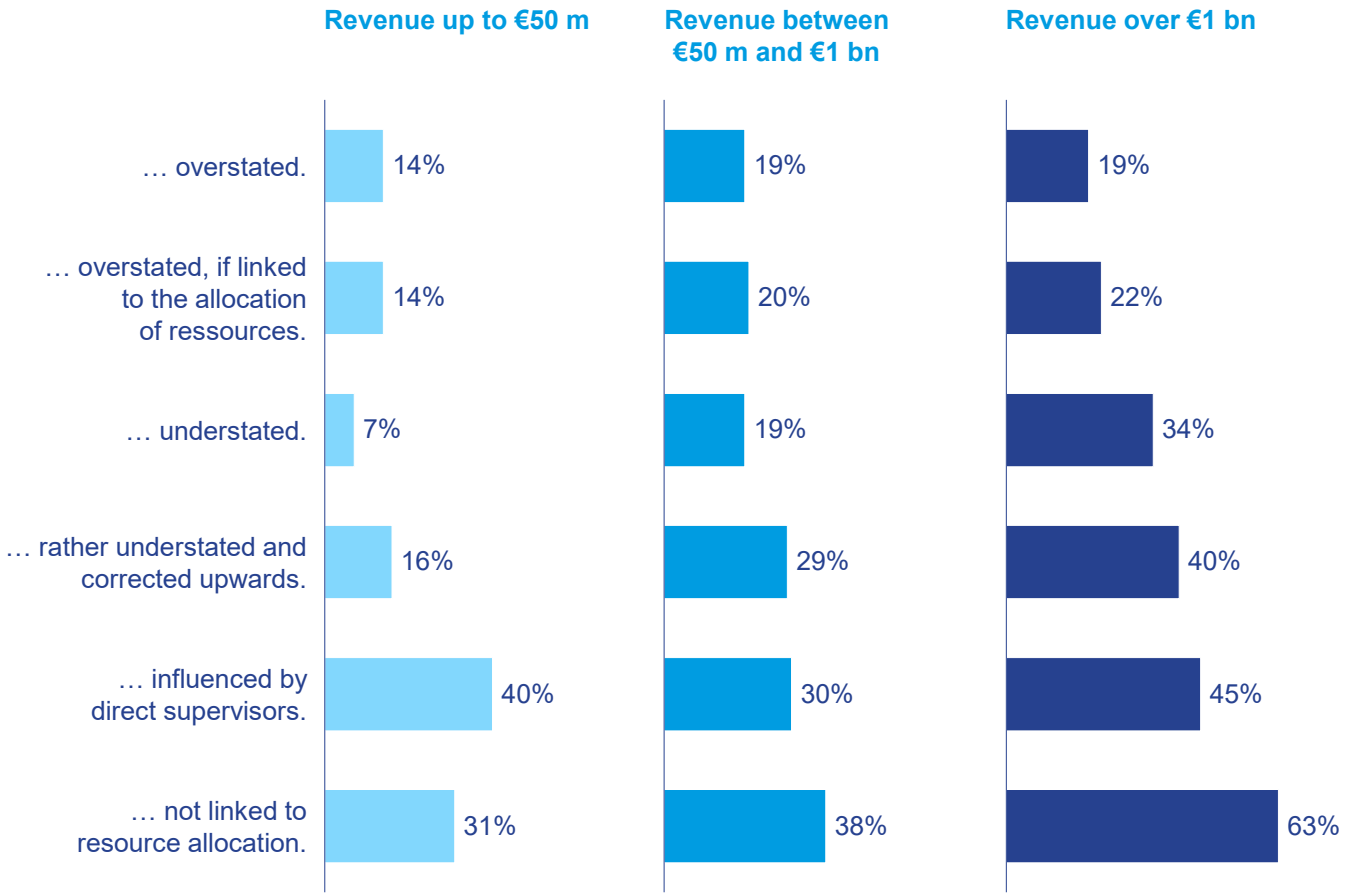
Forecasts are deliberately … – by company size*



- Forecast biases vary according to the size of the company. In large companies, forecasts are most likely understated and then corrected upwards, while small companies report less errors.
- 63% of large companies do not use forecasts for resource allocation. In 27% of the large companies that do not use the forecast for resource allocation, the forecast is nevertheless deliberately overstated.
- In small companies, the use of driver models reduces overstated forecasts. This also applies if the forecasts are linked to resource allocation.

* Shown here is the share of respondents with strong agreement (6 or 7 on a 7-point Likert scale).

In 2021, forecast variances were smaller than five years ago

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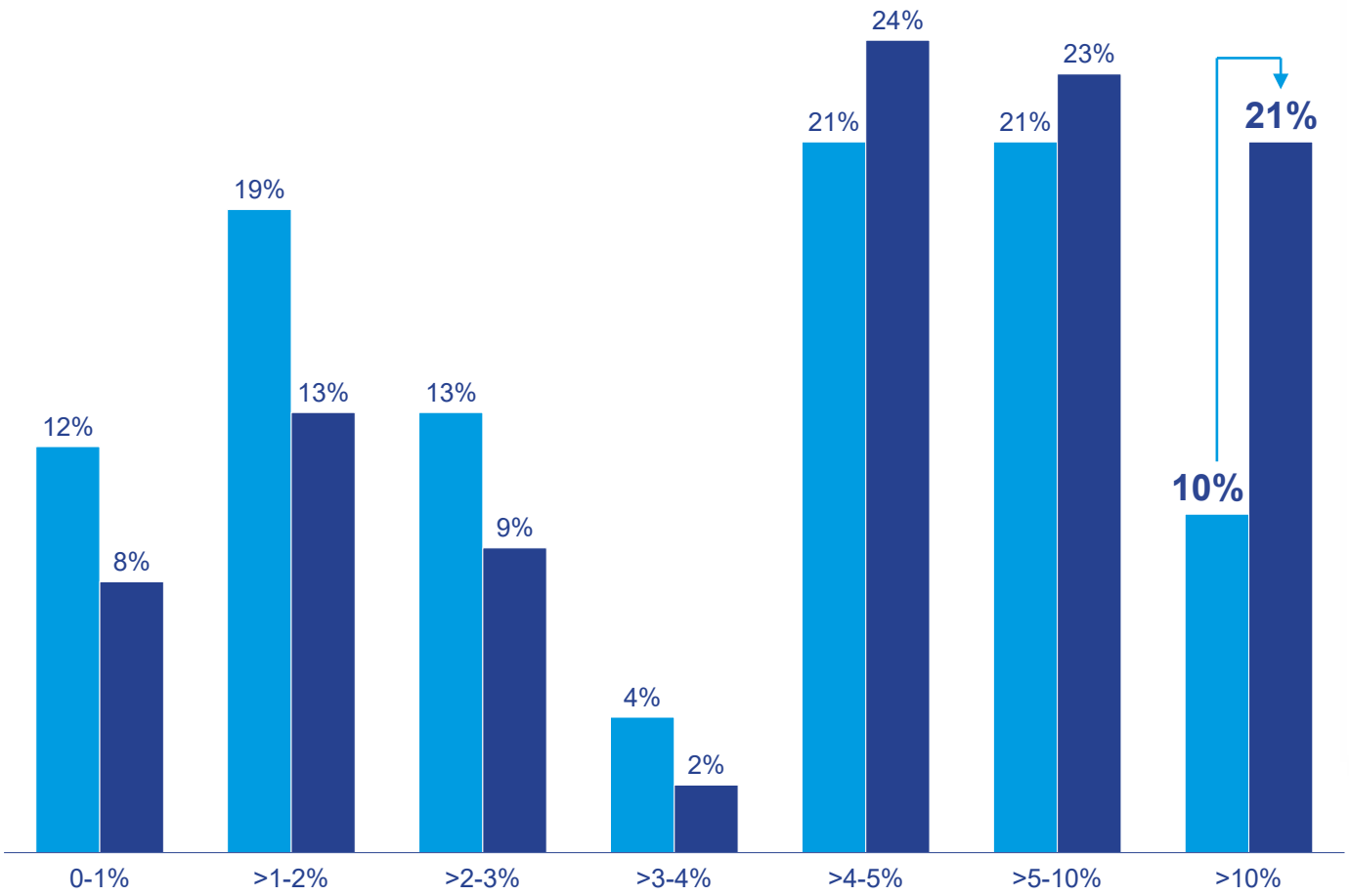
Forecast accuracy (average variance between realized sales and forecast) – by year



- The variance between realized sales and forecast ranges from -69% to +90%. In 80% of the companies, the accuracy lies between -13% and +10% (median +2%).
- Large companies forecast more accurately than small ones. In large companies, the average variance between sales and forecast is just under 6%, in small companies about 10%.
- If forecast figures are explicitly seen as targets to be met, they are – unsurprisingly – also more accurate, with an average variance of 7%. In companies that do not consider forecasts as targets to be met, the average variance is 11%.

Only a few companies incentivize forecast accuracy although it tends to contribute to a more reliable forecast

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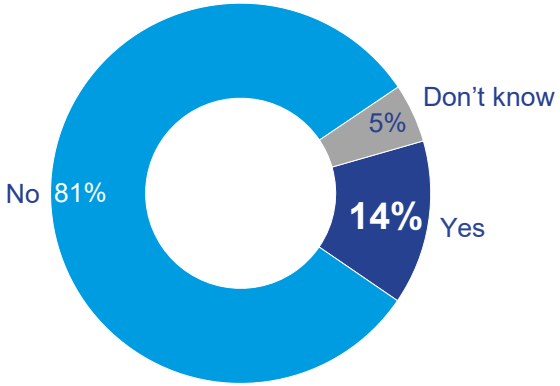
Forecast accuracy is part of the incentive system



Average variance between realized sales and forecast depending on incentivization

- Large companies incentivize slightly more often than small ones (16% vs. 12%).
- Incentivizing forecast accuracy tends to be a tool in younger, less traditional companies. On average, companies that incentivize started operations about 13 years later than those that do not.
- If forecast accuracy is incentivized, the number of items in the forecast and budget planning is more often identical. Without incentivizing the forecast accuracy, the forecast is leaner with an average of 80% of the items in budgeting / planning.
- Companies that incentivize accuracy are more likely to use the forecast to make decisions or solve specific problems than companies that do not incentivize.

Forecast data receive a high level of acceptance

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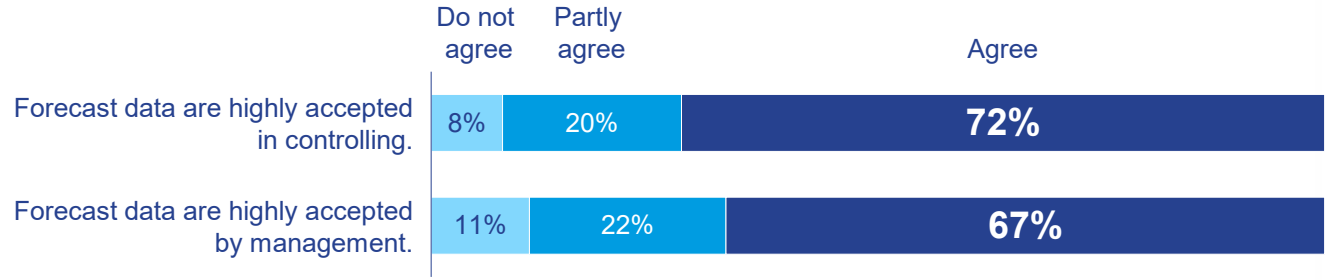
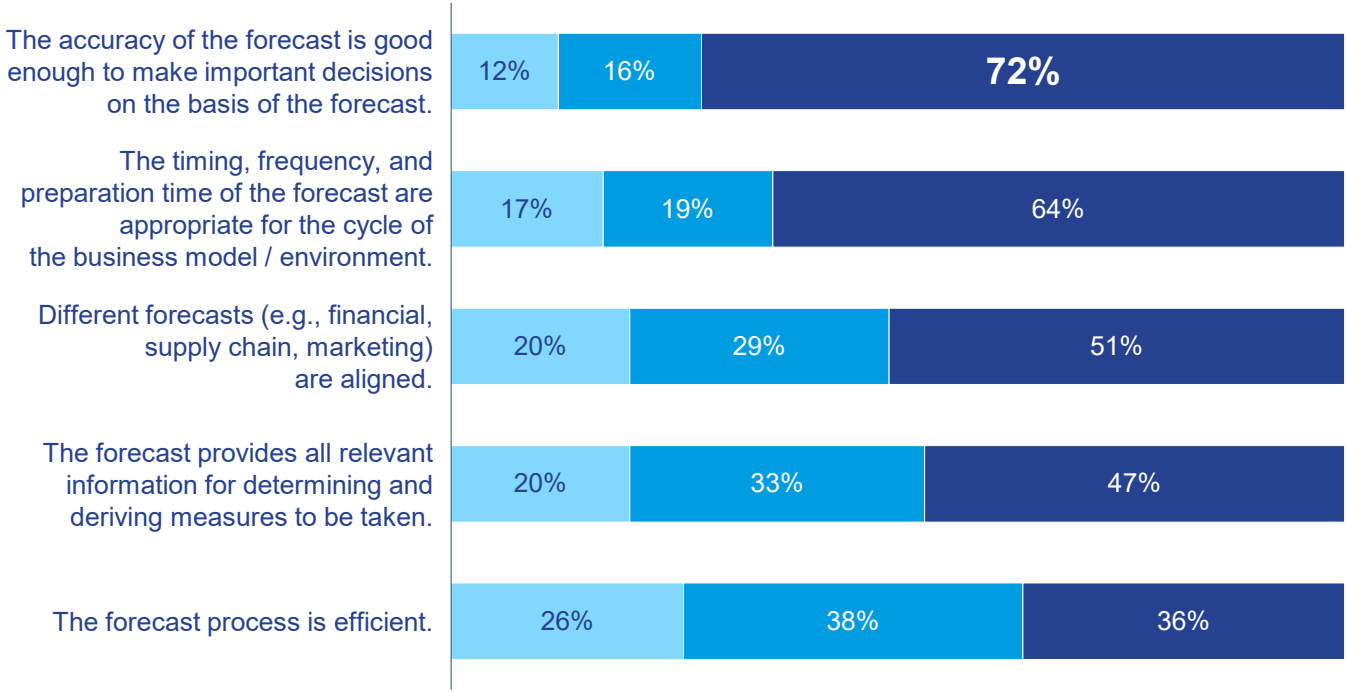
Acceptance of forecast data in controlling and management



Forecast quality criteria



- There is a clear correlation between the acceptance of forecast data and the various forecast purposes: The more the forecast is used for operational planning, for coordination, for resource allocation, for performance evaluation and for steering of management, the higher the acceptance of forecast data both in management and in controlling.
- Accuracy and relevance for decision-making, process efficiency, good coordination of the various forecasts in the company, as well as appropriate timing, frequency and preparation time also significantly increase the acceptance of forecast data.
- Forecast data is more likely to be accepted if the forecast reflects the most likely development of the business – rather than defining targets to be met.
- Ad-hoc forecasts and management approval of forecasts are also important for management acceptance.
- Company size does not play a role in the acceptance of forecast data by management or controlling.

While forecasts are considered better aligned in 2021, efficiency in the forecasting process is valued lower

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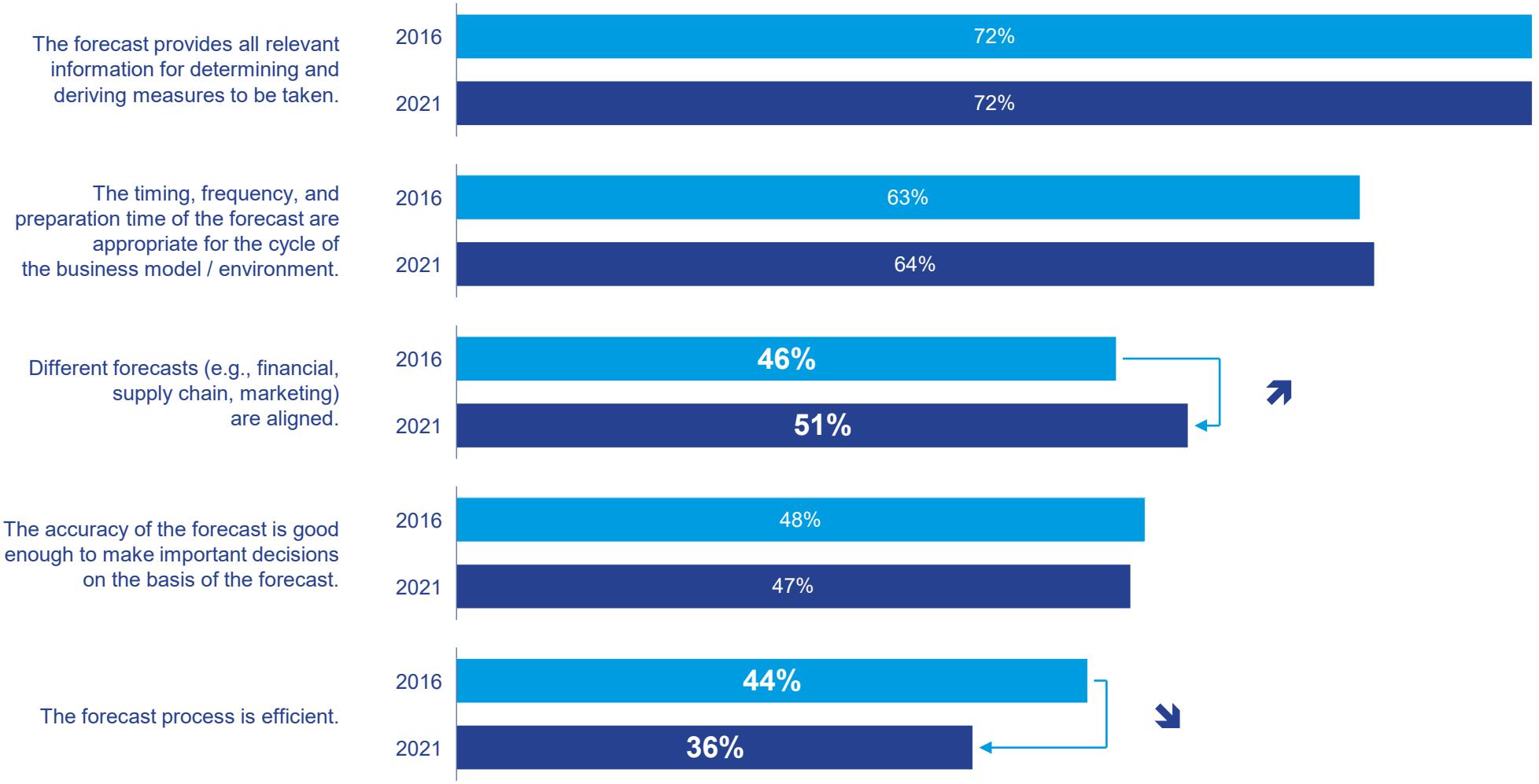
Quality criteria of the forecast (4 or 5 on the 5-point Likert scale) – by year



In 2021, one in four controllers considered the forecasting process to be inefficient

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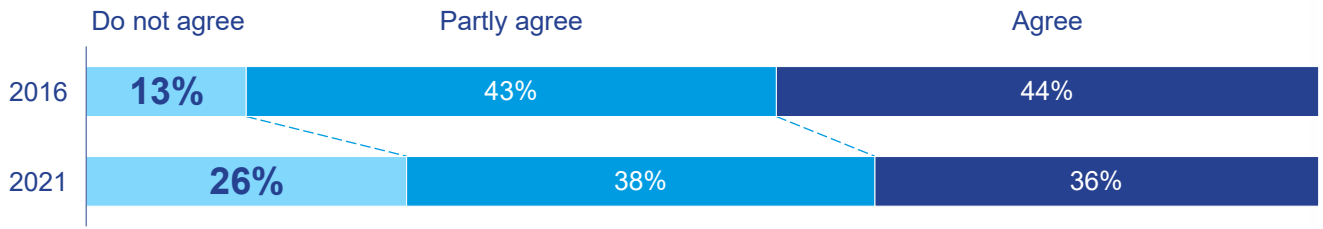
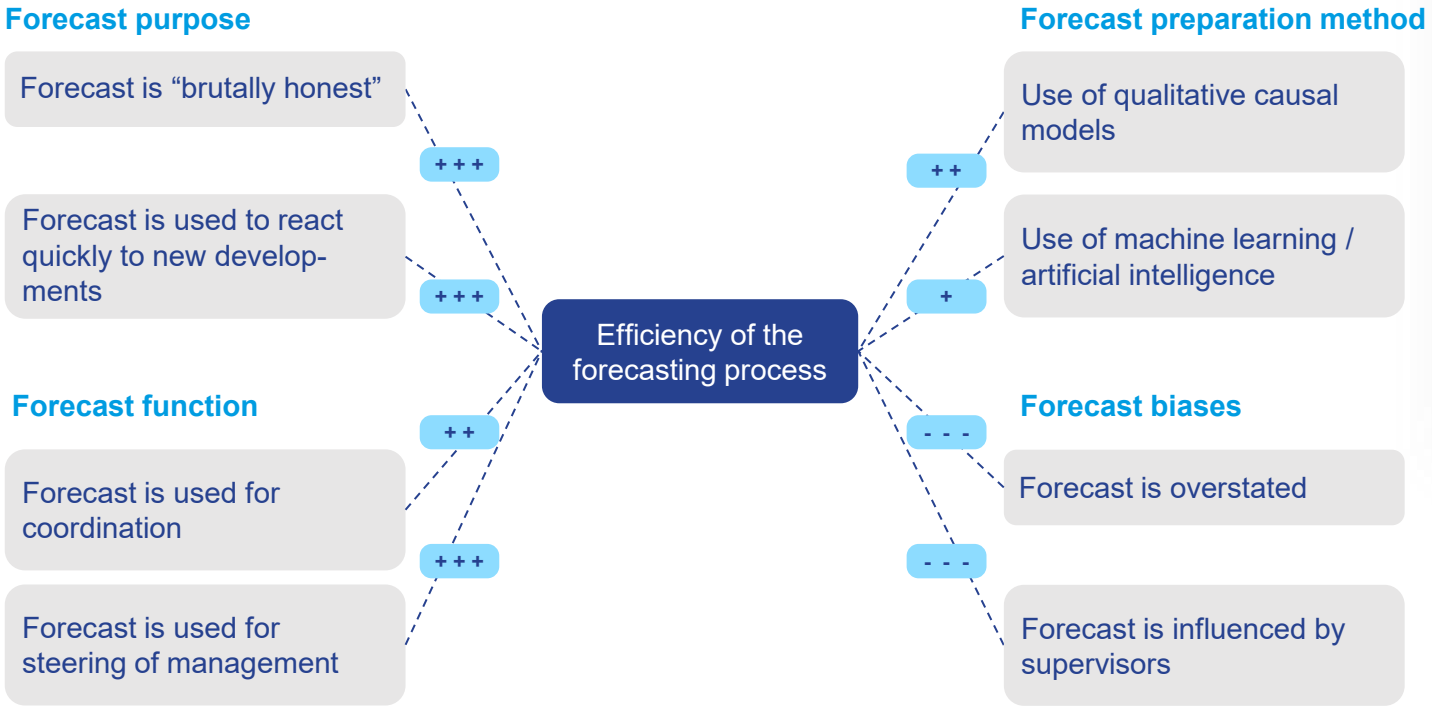
“The forecast process is efficient.”



Efficiency of the forecasting process in relation to other factors



- Why has the efficiency of the forecasting process declined so much between 2016 and 2021? Or to put it another way: Why is the process perceived so much less efficient?
- On the one hand, this could be due to the fact that despite the availability of many technical options for more efficient forecasting, these have only been used to a limited extent or not consistently.
- On the other hand, it is also possible that the forecast serves less to predict the most likely business development as accurately as possible, even if unfavorable, but is rather influenced by the preferences of supervisors or deliberately overstated. If the forecast is influenced by such "political" factors, it loses efficiency and can no longer be used to react quickly to new develop-ments.

Strength of relationship:

+++/---	strong, significant relationship
++/--	moderate, significant relationship
+/-	weak, significant relationship

Lacking efficiency in the forecasting process is the main reason for for a lack in forecast acceptance

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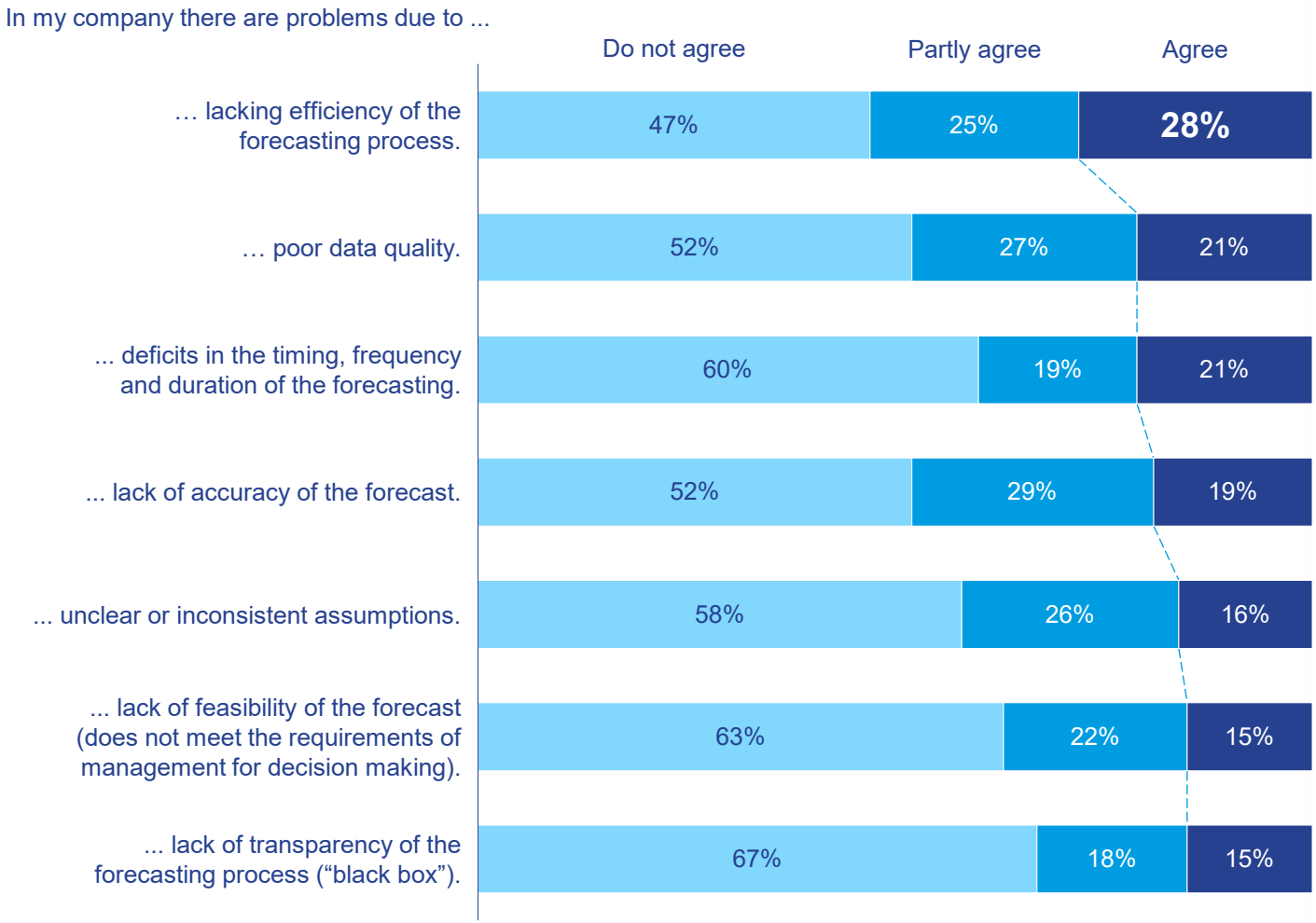
Reasons for lacking forecast acceptance



- If we look for reasons for lack of forecast acceptance, we find some prominent influencing factors:
- Poor data quality and feasibility, unclear or inconsistent assumptions, and deficits in the timing, frequency, and duration of the forecast are especially an issue if the preferences of the supervisor have a strong influence on the forecast or if the forecast is over- / understated for other reasons. The size of the company does not play a role here.
- The efficiency of the forecasting process, on the other hand, is only related to the size of the company: In large companies, the lack of efficiency is complained about twice as often as in small companies (40% vs. 21%).

If the forecasting process is rather inefficient and / or the forecast inaccurate, controllers are particularly dissatisfied

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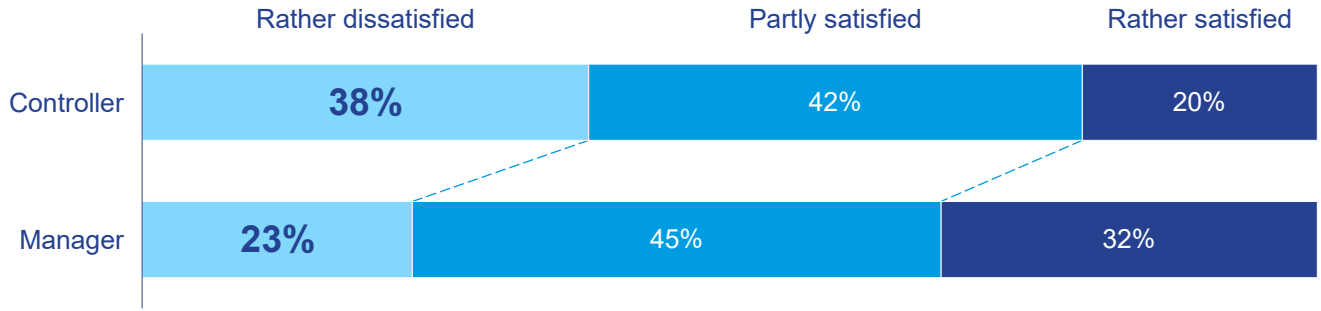
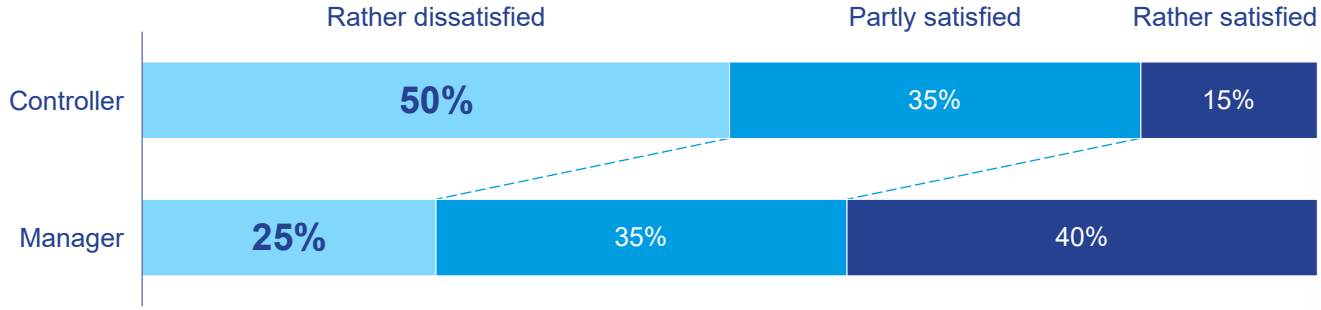
Satisfaction with forecasts*, if the forecasting process is rather inefficient



Satisfaction with forecast*, if the forecast does not predict the most likely business development ("not brutally honest")



- The efficiency of the forecasting process contributes highly to the satisfaction of controllers and managers (as assessed by controllers) with the forecast.
- Another decisive factor for the satisfaction of controllers and managers is whether the forecast fulfills a number of purposes: Does it serve to react quickly to new developments? Does it forecast the most likely business development even if it is unfavorable ("brutally honest")? If the answer to these questions is no, satisfaction plummets: If the forecast is not "brutally honest", 50% of the controllers and 25% of the managers are dissatisfied. If it is not used to react quickly to new developments, 26% of controllers and 10% of managers are dissatisfied.
- In addition, there are other influences on the satisfaction of controllers and managers with the forecast: The fewer forecast biases there are, the more satisfied controllers and managers are with the forecast. Likewise, all quality criteria of the forecast are associated with higher satisfaction.

* as assessed by controllers

Rolling forecasts significantly increase the satisfaction with the forecast

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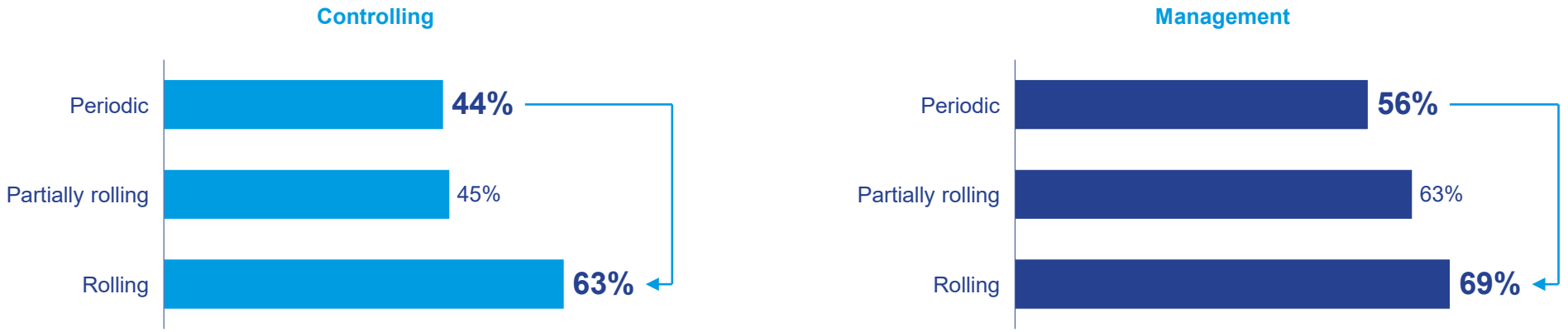
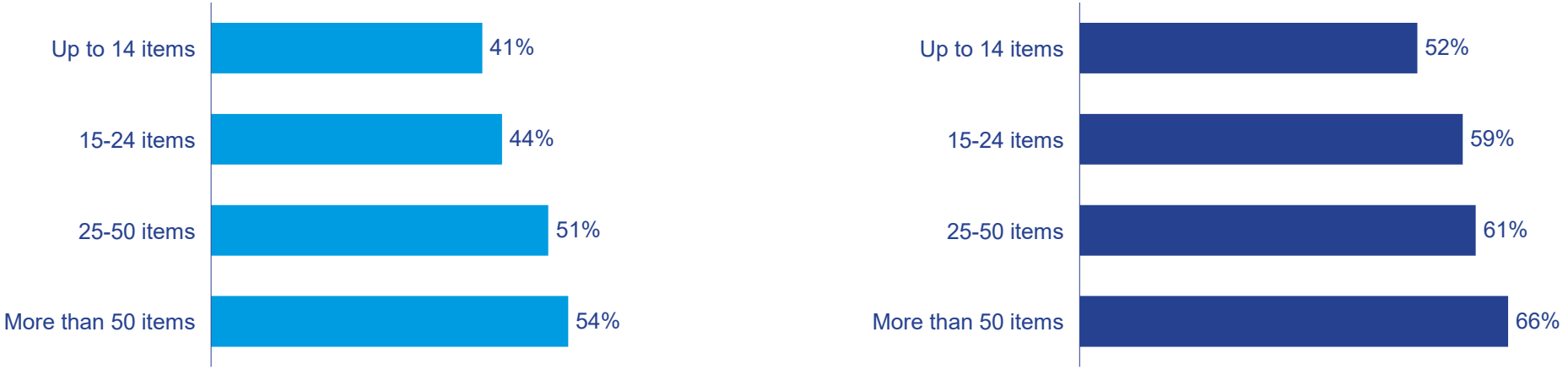
High satisfaction with forecast in controlling and management (as assessed by controllers) – by forecast type



High satisfaction with forecast in controlling and management (as assessed by controllers) – by number of items



All quality criteria of the forecast contribute significantly to the satisfaction of controllers and managers

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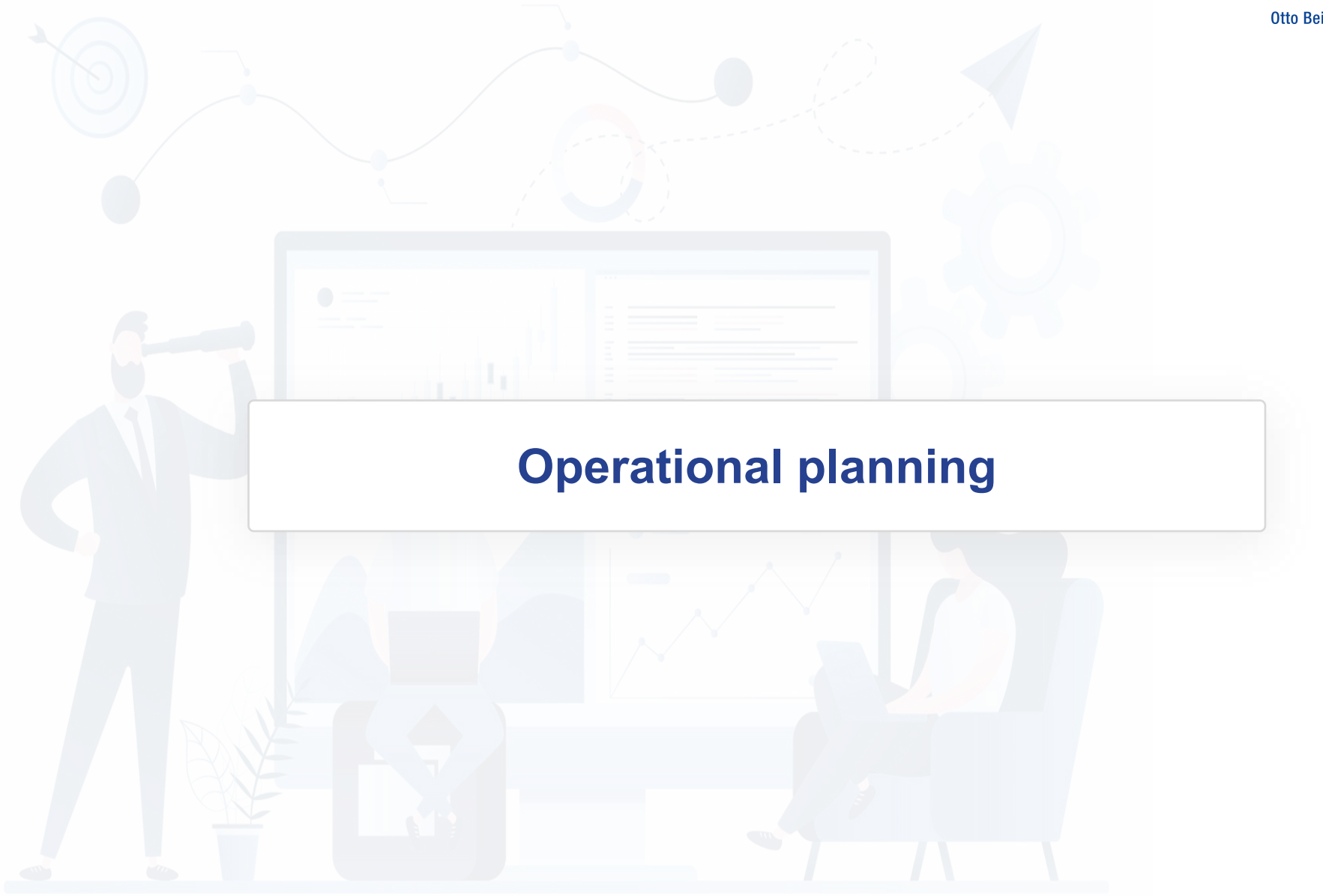
Satisfaction with the forecast in controlling and management (as assessed by controllers) depending on the quality criteria of the forecast



Operational planning

Budget planning is a time-consuming process: While small companies need on average eight weeks, larger companies need sixteen

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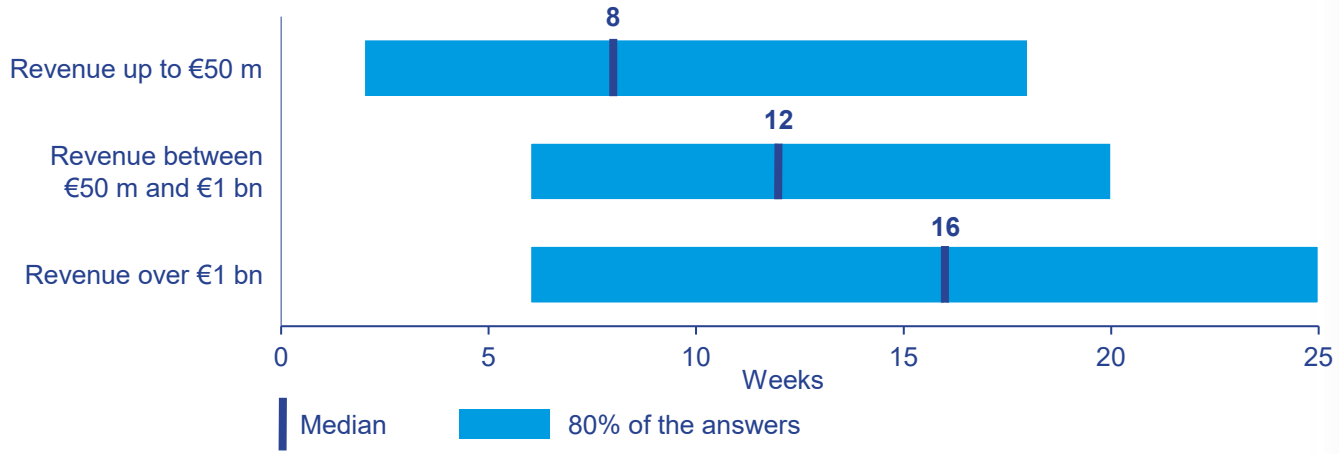
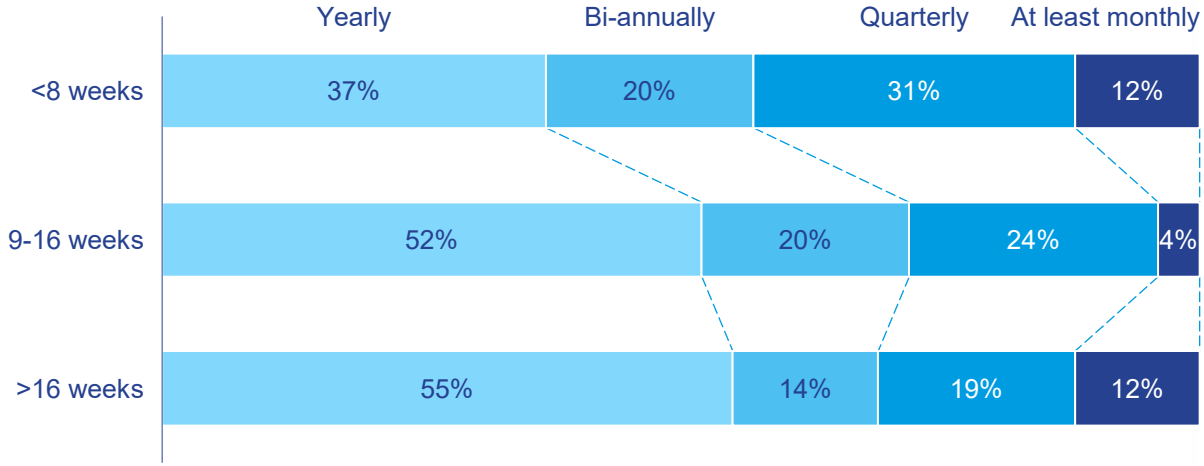
Time required for the annual budgeting process – by company size



Frequency of budget update – by time required for the annual budgeting process



- The time required for the annual budgeting process has remained unchanged for years across different company sizes.
- Service companies tend to have a shorter budgeting process. 44% prepare their budget in a maximum of eight weeks. Among manufacturing companies, only 30% manage to prepare their budgets in the same time.
- Especially when there is a very strong link between budget and medium-term planning, the budgeting process seems more complex. Companies with a strong link need an average of 15 weeks for budgeting. If the link is weaker, it takes eleven to twelve weeks.
- One factor in the frequency of budget updates is the importance of meeting budget targets. For example, the budget is updated at least every three months in just under 50% of the companies in which the promotion of managers is based primarily on meeting budget targets. If meeting budget targets does not play a role in promotions, only 27% of companies update at least every three months.

Large companies use budgeting more for resource allocation and performance measurement, less for securing liquidity than small ones

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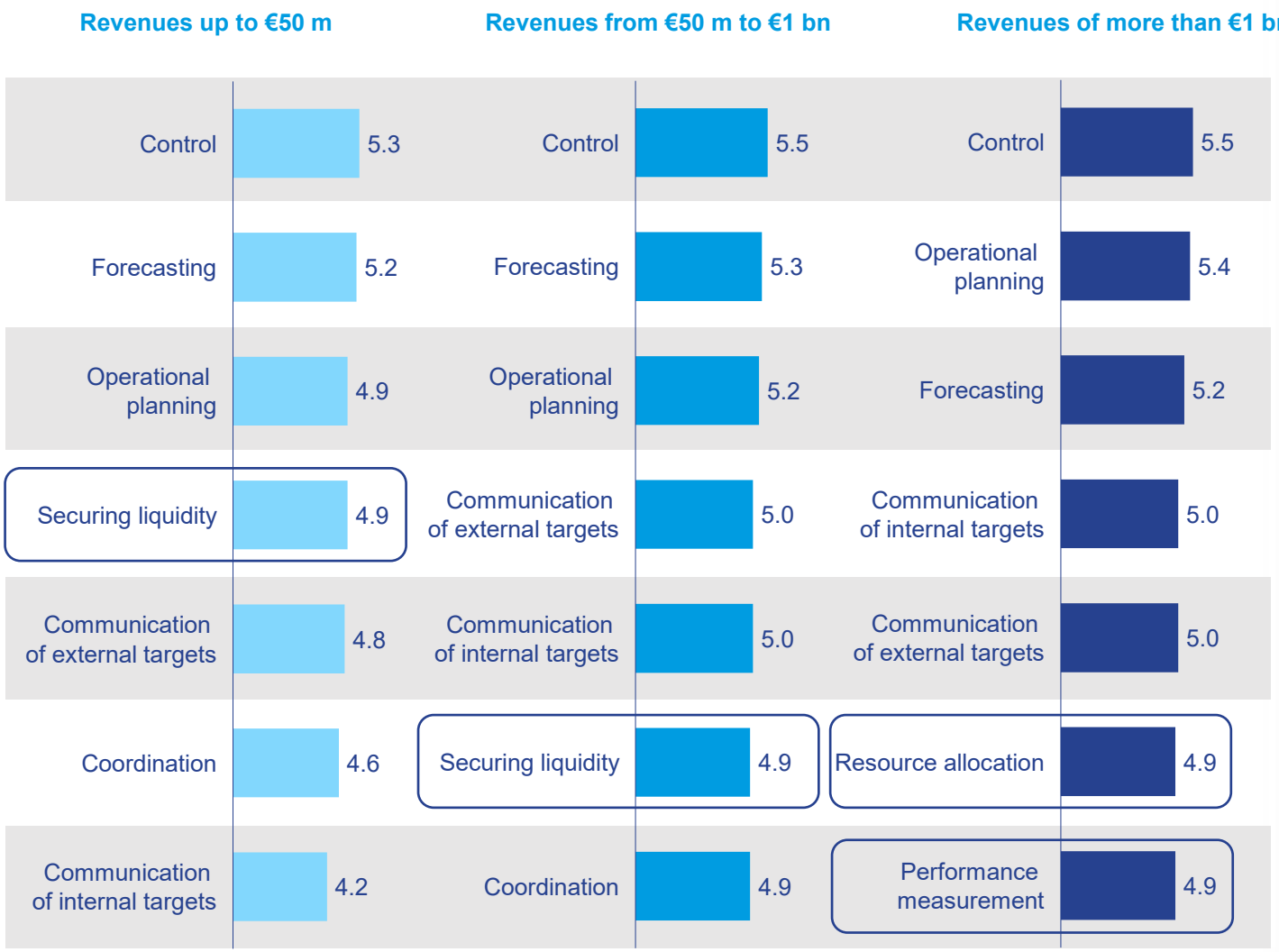
TOP 7 most important functions of budgeting in management control – by company size



Definition of terms

- **Control:** Comparison of actual performance with plans and variance analysis
- **Forecasting:** Estimation of short-term future developments and their impact on the company's results
- **Operational planning:** Derivation of targets and measures based on the company's objectives
- **Securing liquidity:** Forecasting and planning of cash requirements
- **Communication of external targets:** Communication of targets to external stakeholders (e.g., shareholders, analysts)
- **Communication of internal targets:** Communication of targets to business units and employees
- **Coordination:** Coordination of business unit activities based on plans (e.g., staffing requirements based on sales plans)
- **Resource allocation:** Allocation of scarce resources in the face of competing demands
- **Performance measurement:** Measurement of managers' performance (e.g., bonus assessment based on meeting budget targets)

Process management and technical budgeting tasks are mainly performed by controllers – content-related tasks are shared equally

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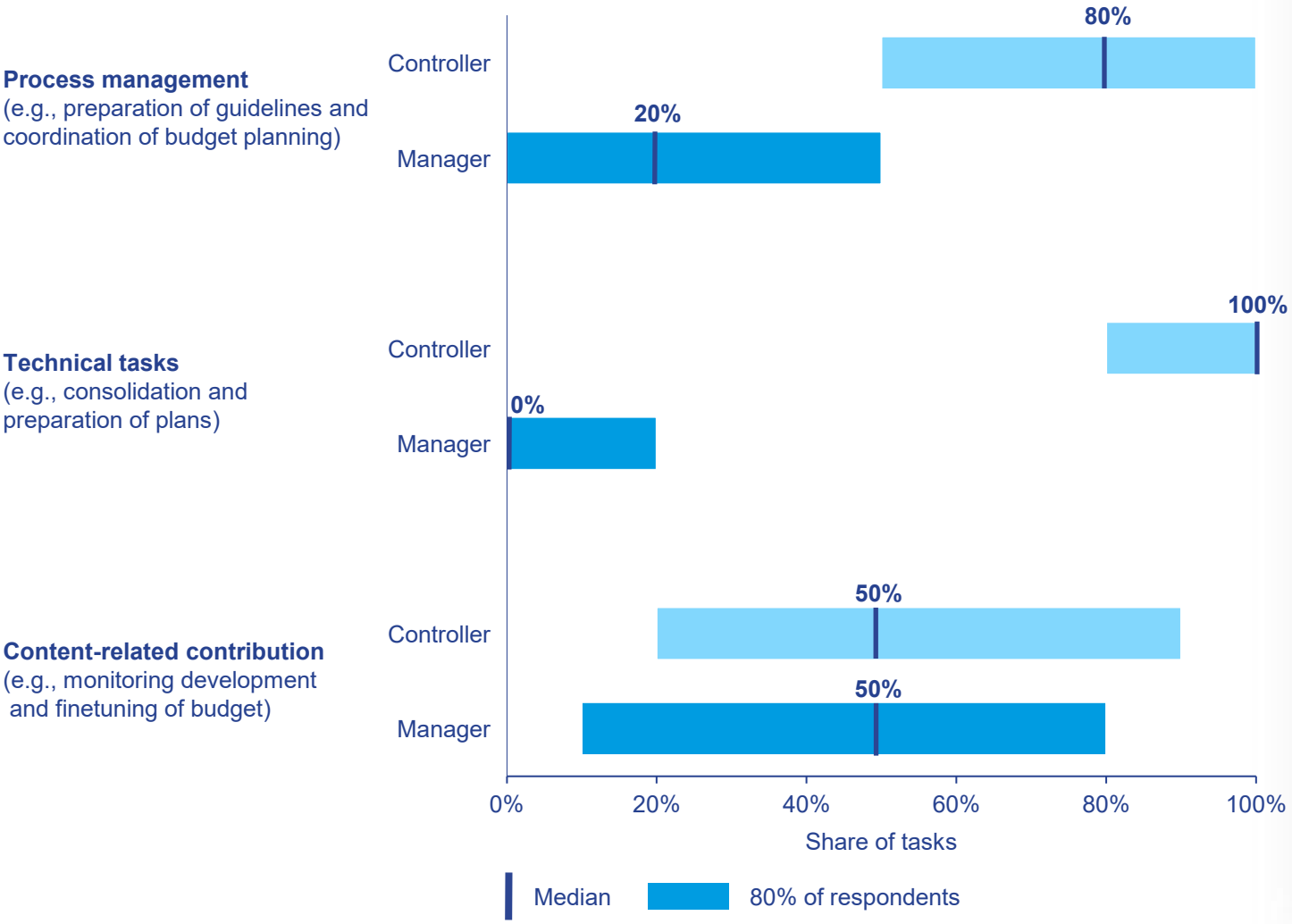
Distribution of budgeting tasks between controllers and managers



- The distribution of tasks between managers and controllers in process management is related to the frequency of plan updates. If the plan is updated annually, managers take on an average of 18% of the tasks; if it is updated monthly, they are more involved with a share of 37%.
- The opposite is true for technical tasks. With annual updates, the average task share of managers is close to 0%; with monthly updates, it increases up to 14%.
- Where the role of the critical counterpart is very important, the controller's share of process management tasks is also higher.
- A strong management participation is reflected in the task share of the content-related contribution.
- In general, the technical tasks form the basis of the controller's work in budgeting. At the same time, a high share of technical tasks for controllers goes hand in hand with higher shares of process management and content-related contribution.

The plan-actual variance is significantly greater in large companies than in small ones

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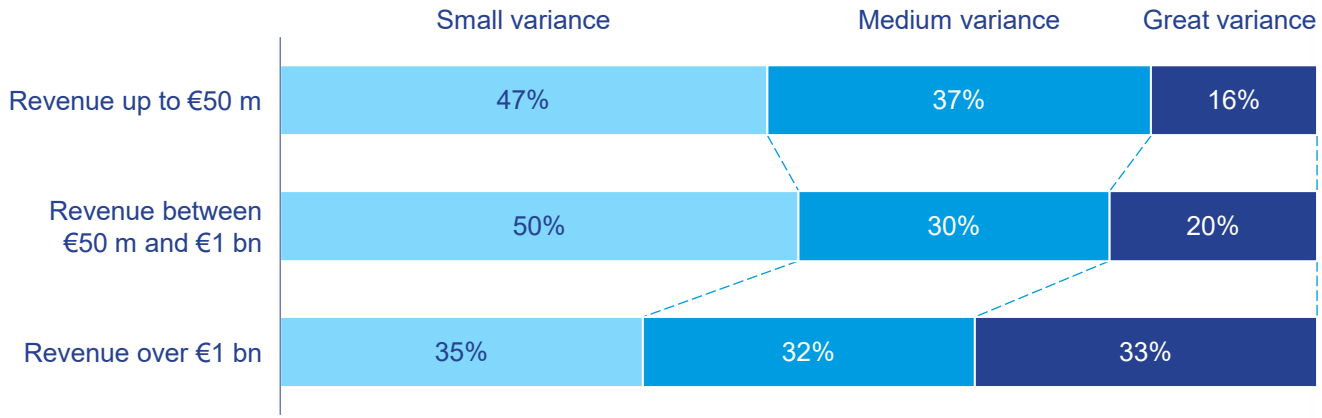
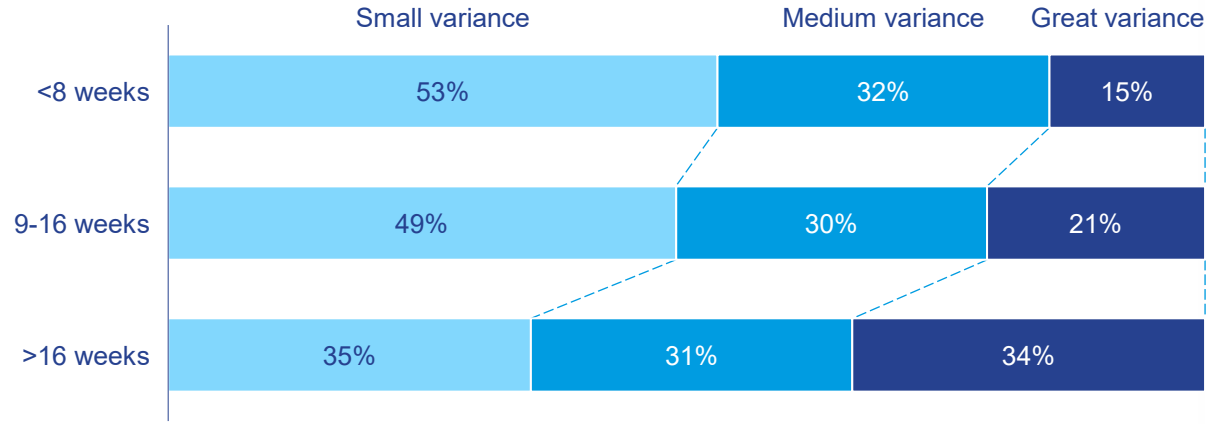
Size of plan-actual variance – by company size



Size of plan-actual variance – by the length of the budgeting process



- There is a strong correlation between the quality of planning and the target difficulty: In the case of easy-to-meet targets, more than half of the respondents (52%) consider the variance between planned and actual figures to be rather small. In the case of ambitious targets, only one third share this assessment.
- While in 58% of the companies operating in a rather certain environment, the variance from plan to actual is rated as rather small, this value drops to 43% in companies operating in a rather uncertain environment.
- In more successful companies, 60% of respondents rate the variance from plan to actual as rather small (32% in less successful companies).
- In contrast, we could not find a significant correlation between management's involvement in the budgeting process and the size of the plan-actual variance.

Target difficulty is high in more than half of the large companies but only in about one third of small and medium-sized ones

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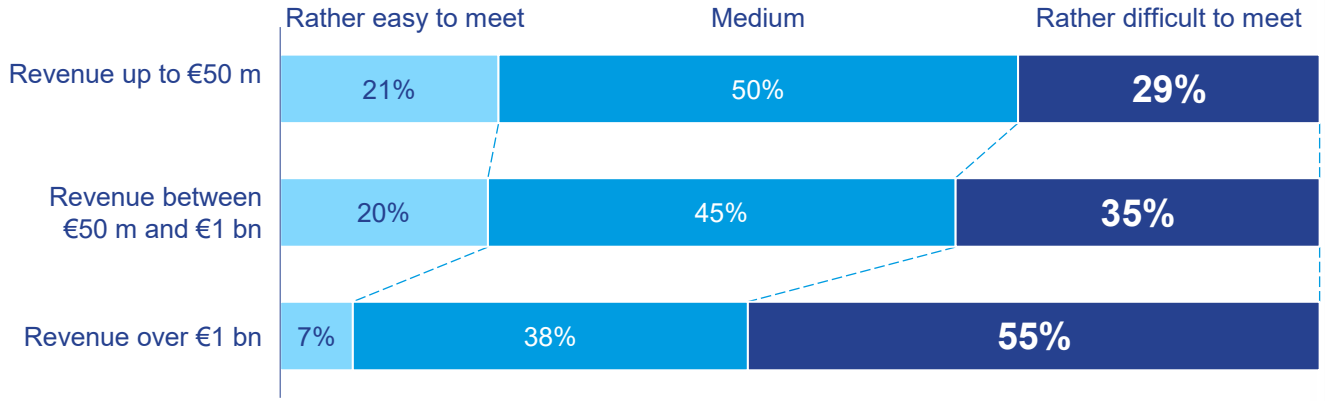
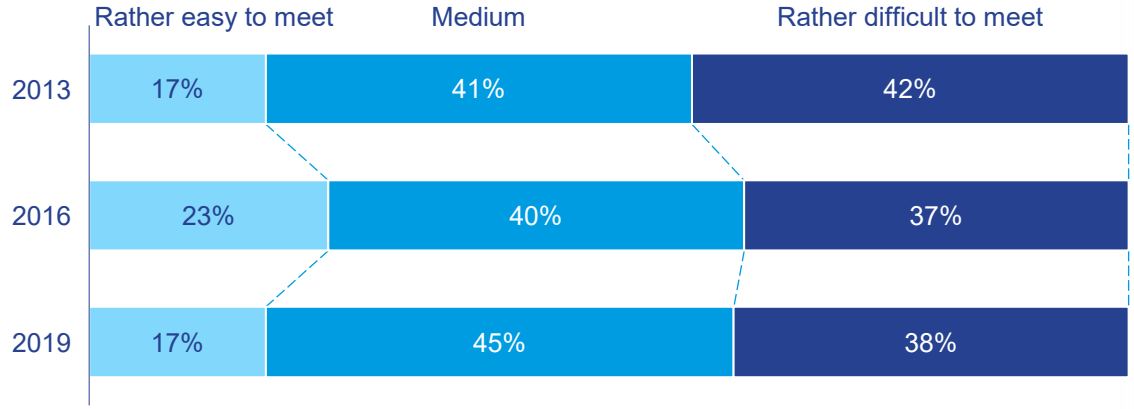
Target difficulty – by company size



Target difficulty – by year



- In companies where target difficulty is less important for the performance evaluation of managers, only 27% of the respondents consider the budget targets to be rather difficult to meet. If target difficulty is important for manager's performance evaluation, 48% of respondents consider the budget targets to be rather difficult to meet.
- In less successful companies, almost half of the respondents consider the budget targets to be rather difficult to meet; in more successful companies, this applies to only one third of the respondents.
- There is also an industry effect: 41% of manufacturing companies tend to formulate ambitious budget targets, but only 36% of service companies.
- However, there is no evidence of a correlation between target difficulty and the business environment or satisfaction with budgeting.

If target difficulty is important for the evaluation of performance, management participates more in the budgeting process

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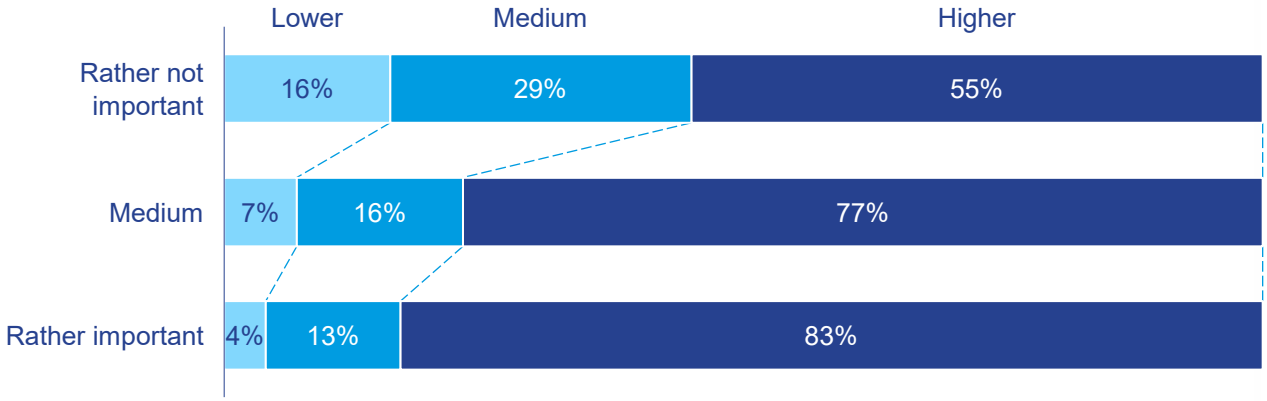
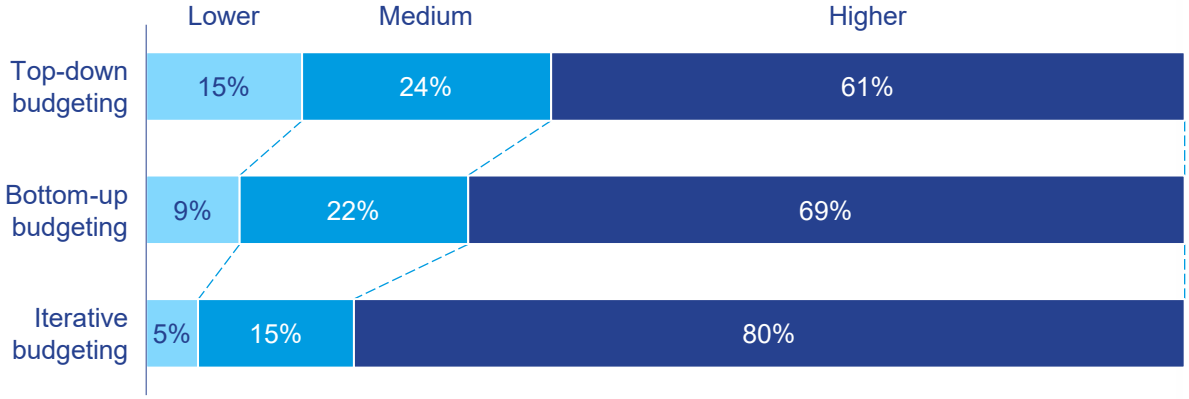
Management participation in budgeting – by importance of target difficulty for performance evaluation



Management participation in budgeting – by type of budget preparation



- The participation of management in the budgeting process is closely related to the contextual factors of company size and success: In large and more successful companies, managers are more involved in the budgeting process than in small or less successful ones (size: 75% vs. 64% / success: 77% vs. 68%).
- If the budgeting process is closely linked to strategy, managers in 84% of companies are also strongly involved in the budgeting process. If the link is only medium or weak, the figures are 63% and 60% respectively.
- If management is only involved to a small extent in the budgeting process, only 37% of respondents say they are satisfied with budgeting overall. Instead, if managers are heavily involved in the budgeting process, the share of satisfied respondents increases to 47%.

In about half of the companies, managers are evaluated predominantly on the basis of meeting budget targets

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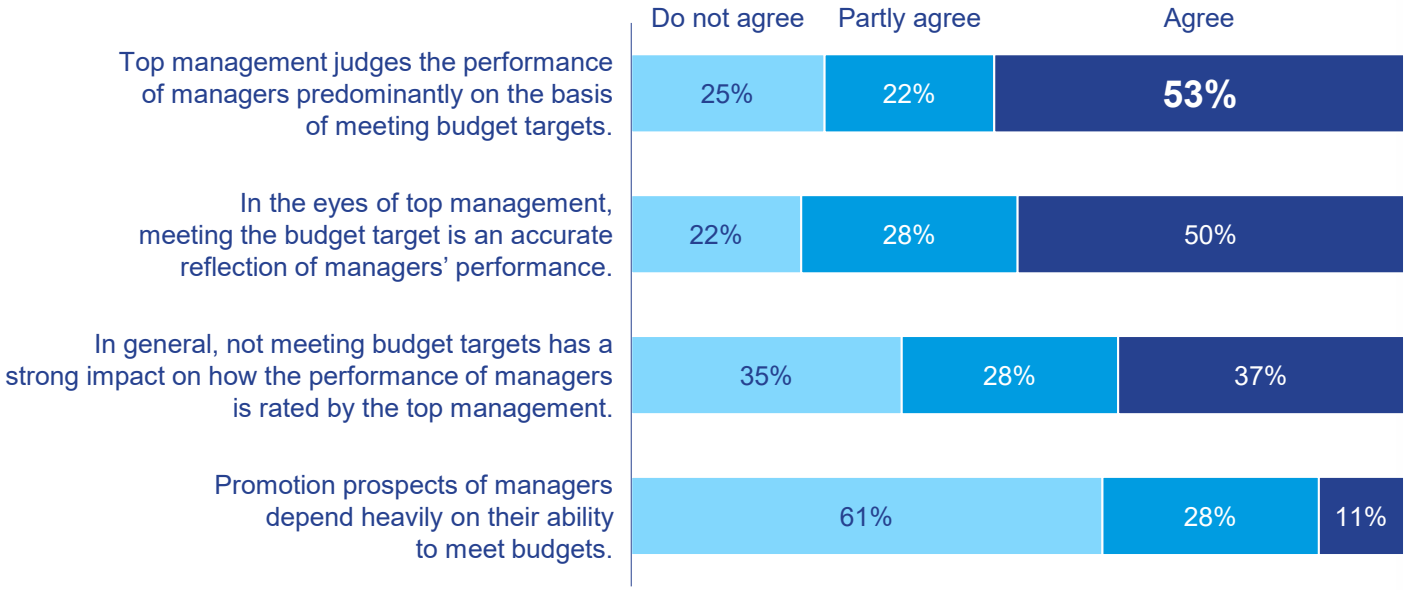
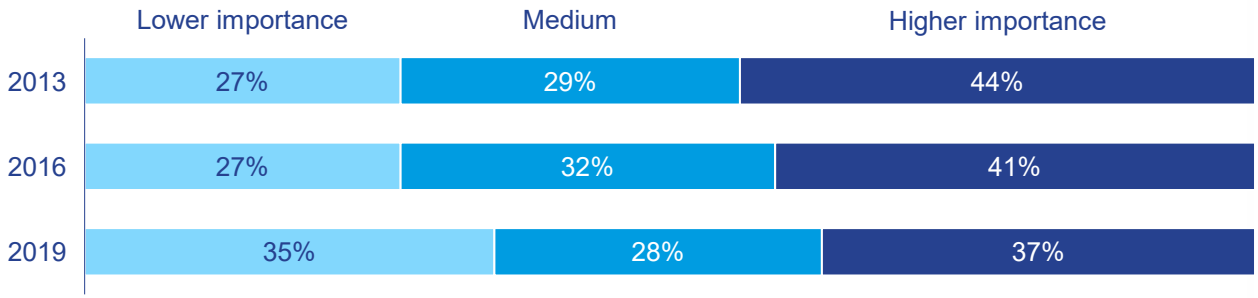
Importance of meeting budget targets for performance evaluation – different aspects



Importance of meeting budget targets for performance evaluation – by year



- Company size is a decisive factor when it comes to how important budget difficulty is for managerial evaluation: This is considered important in only 28% of small companies but in 43% of medium-sized and 40% of large companies.
- In addition to the size of the company, the company environment is also relevant: In a rather certain environment, target difficulty is important for managerial evaluation in 19% of the companies; in an uncertain environment, the value is twice as high at 42%.
- The importance of meeting budget targets is also related to the evaluation of how difficult it is to meet these targets. In 47% of the companies with rather ambitious targets, the budget targets are also important for managerial evaluation. In contrast, this is only the case in 23% of the companies in which the targets are easy to meet.
- In contrast, we find no correlation between the size of plan-actual variance and the importance of target difficulty for the evaluation of managers.

Satisfaction with budgeting is higher in small and medium-sized companies

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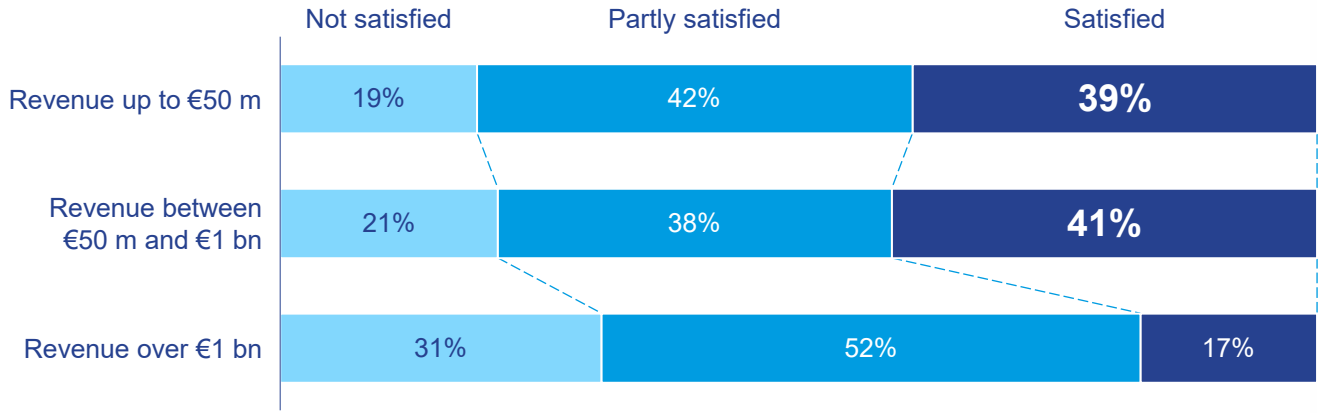
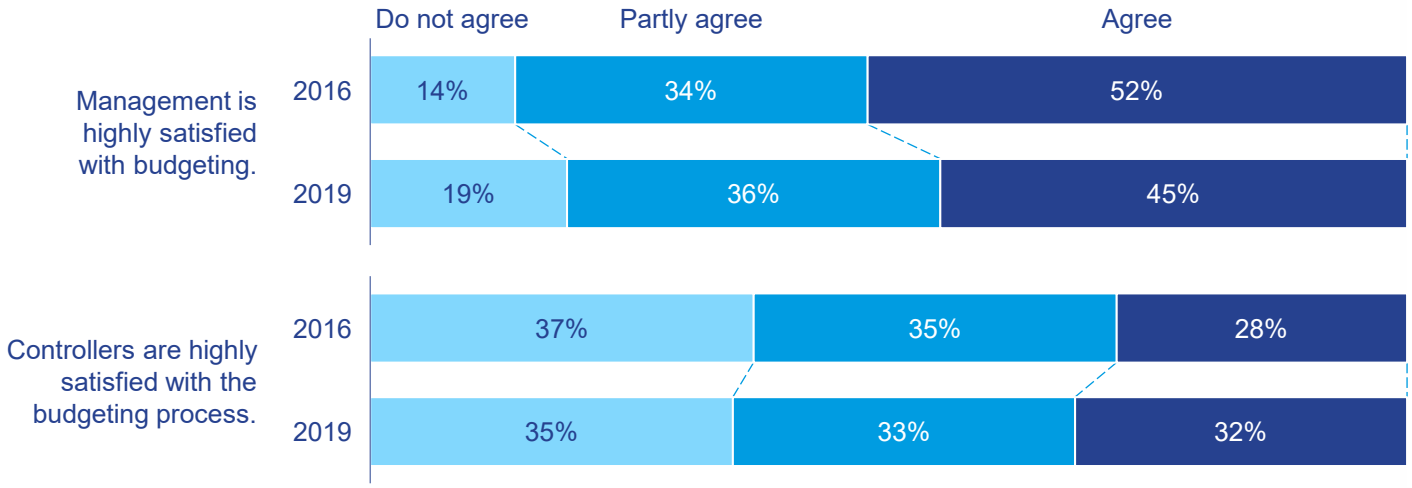
Overall satisfaction with budgeting* – by company size



Satisfaction with budgeting from the perspective of controllers and managers*



- If controllers are mostly satisfied with the planning process, management is also satisfied with budgeting overall in 81% of cases.
- This is also true in reverse, but less pronounced: When management is largely satisfied, 58% of controllers are also largely satisfied with the planning process.
- As expected, overall satisfaction with budgeting is significantly higher in more successful companies (50%) than in less successful ones (21%).
- In companies with a low time requirement for budget preparation (up to 8 weeks), 50% of the respondents are largely satisfied with budgeting overall; in companies with high time requirements (>16 weeks), only 11% of the respondents are satisfied.
- Interestingly, there is no correlation with target difficulty: If targets are perceived as easily achievable, 40% of respondents see budgeting as successful overall. If targets are instead perceived as ambitious, 36% still express a positive opinion.

* as assessed by controllers

Satisfaction with budgeting goes hand in hand with small plan-actual variances and a strong link to strategy

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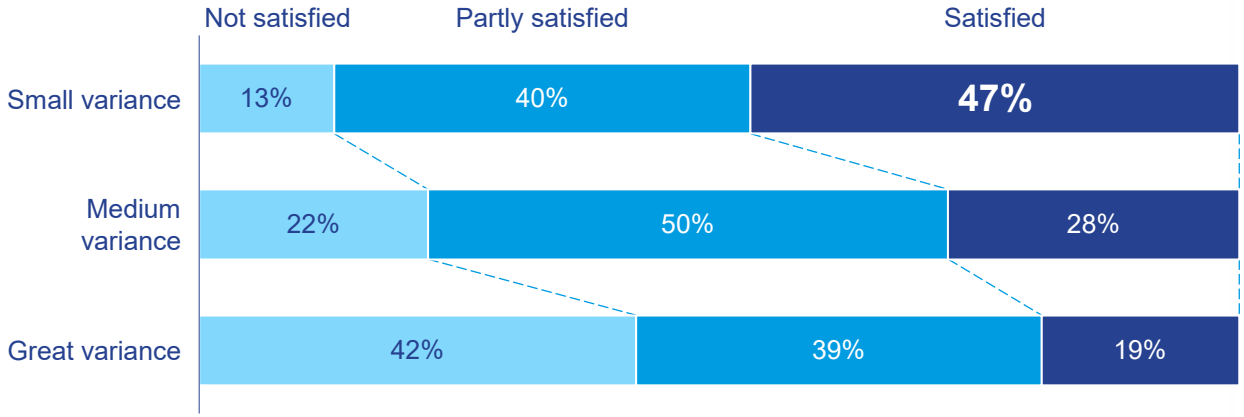
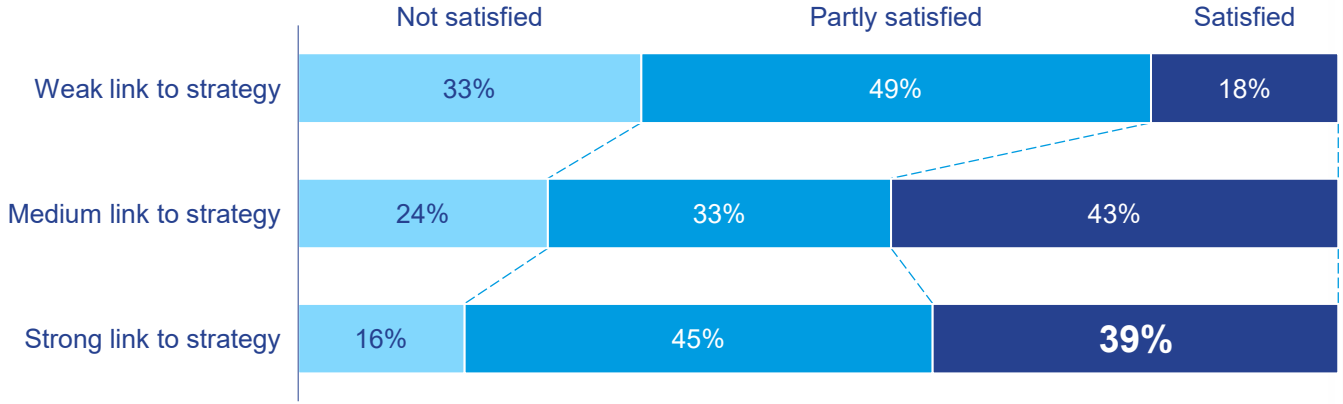
Satisfaction with budgeting* – by size of plan-actual variance



Satisfaction with budgeting* – by link to strategy



- The uncertainty of the business environment and satisfaction with budgeting are also related: In a rather uncertain environment, less than a third of respondents say they are satisfied with budgeting overall. In a less uncertain environment, just under half of respondents are largely satisfied.
- If management regularly initiates discussions about budgets, this also contributes to satisfaction with budgeting: In such a case, 39% express themselves as largely satisfied with budgeting (vs. 30%).
- Fundamental changes in budgeting are currently on the agenda in 36% of companies. These revisions are driven by dissatisfaction: If the respondents are dissatisfied with the planning, 53% are planning a revision. Among those who are largely satisfied, the figure is only 19%.

* as assessed by controllers

A strong link to strategy goes hand in hand with higher management participation in the budgeting process

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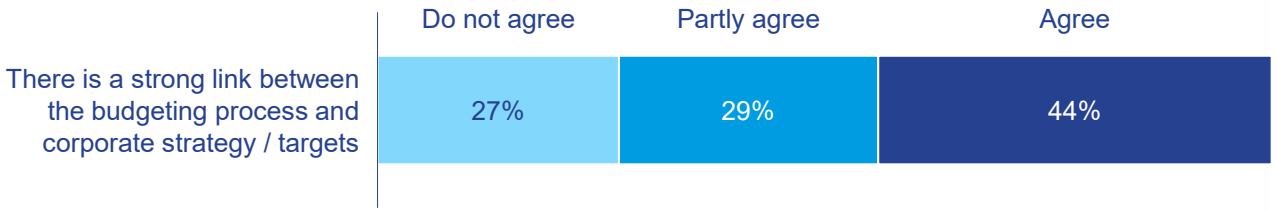
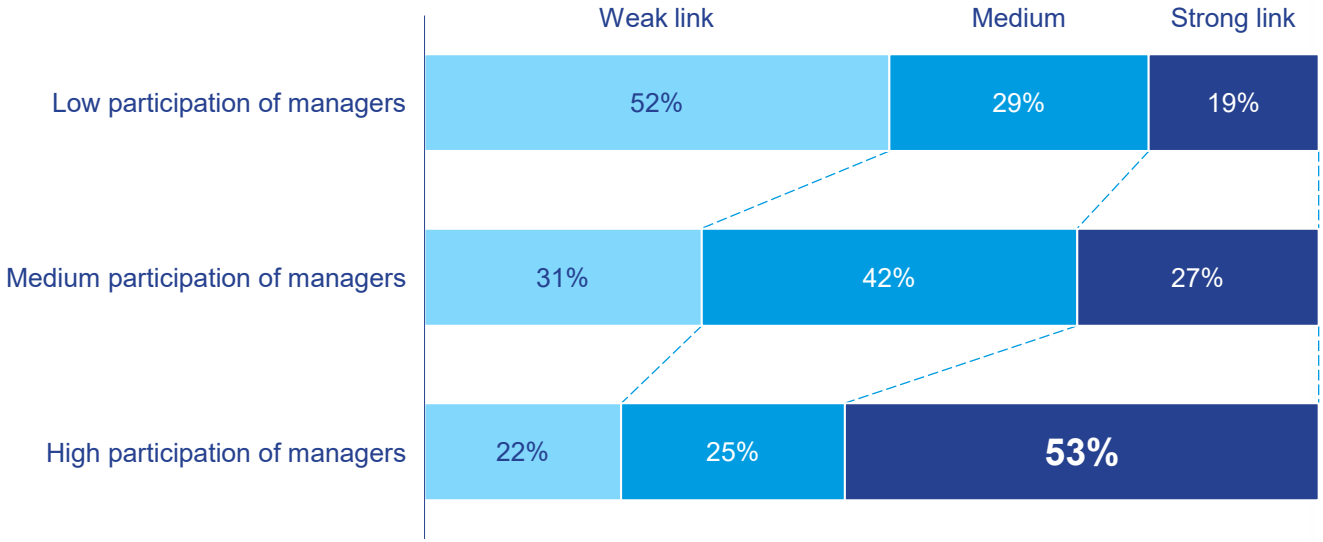
Link between budgeting process and corporate strategy



Link to strategy – by degree of managerial participation



- A strong link between budgeting process and strategy exists more frequently in companies operating in a rather uncertain environment. Here, a strong link to strategy is found in almost every second company (47%), compared to 39% of companies in a rather certain environment.
- However, company size plays no discernible role at this point.
- Whether or not there is a strong link to strategy seems to interact with features of the budgeting process itself only in a few places. For example, there is no correlation with the time for budget preparation.

The importance of the controllers' critical counterpart role in the budgeting process goes hand in hand with a strong link to strategy

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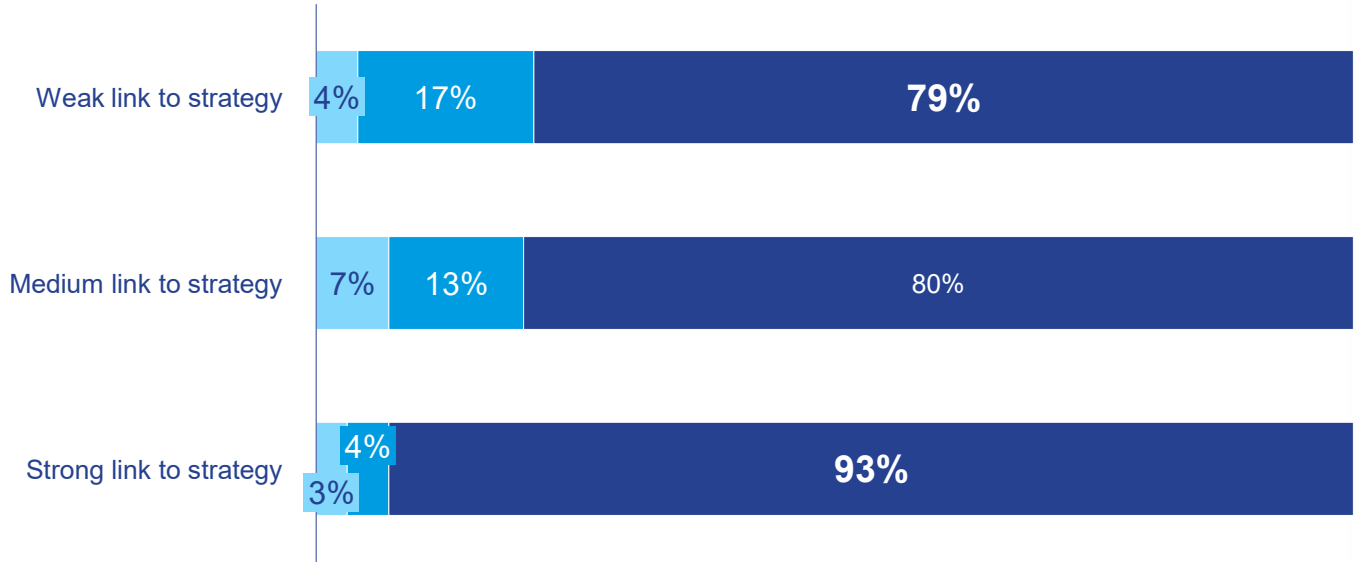
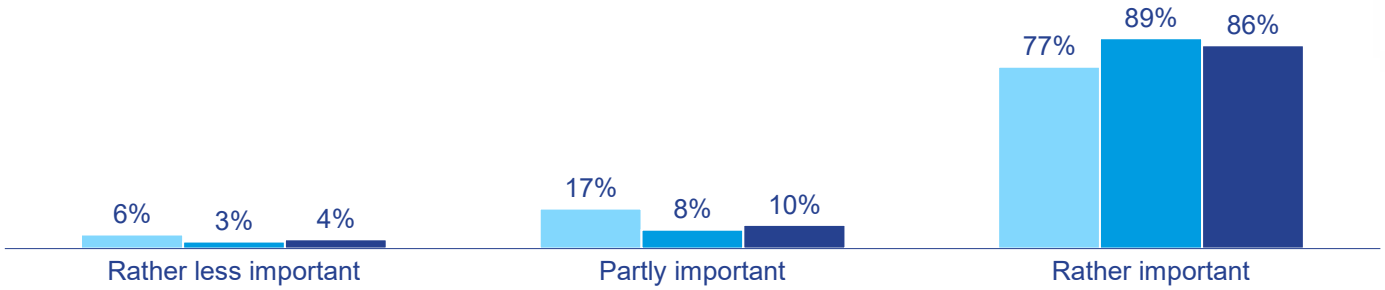
Importance of the critical counterpart role – by link to strategy



Importance of the critical counterpart role – by year



- In almost 90% of medium-sized and large companies, the role of the critical counterpart is considered rather important or very important; in small companies, this is true for about 70%.
- The importance of the role of the critical counterpart goes hand in hand with the participation of managers in the budget preparation process. At low levels of participation, the critical counterpart is considered very important in 41% of companies; at high levels of participation, the figure is 51%.
- In addition, there is a connection with the distribution of tasks between controller and manager in budgeting. If the role of the controller as a critical counterpart is only partially important or not important at all, the controller assumes around 70% of the process management tasks on average. If the critical counterpart is very important, the share rises to around 80%.

Although its benefits are widely touted, less than one-third of companies use a rolling forecast

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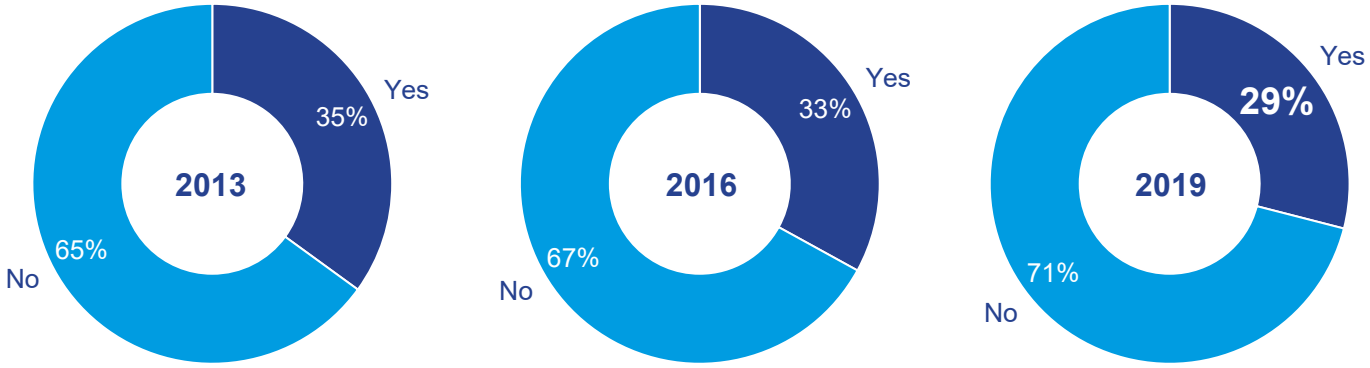
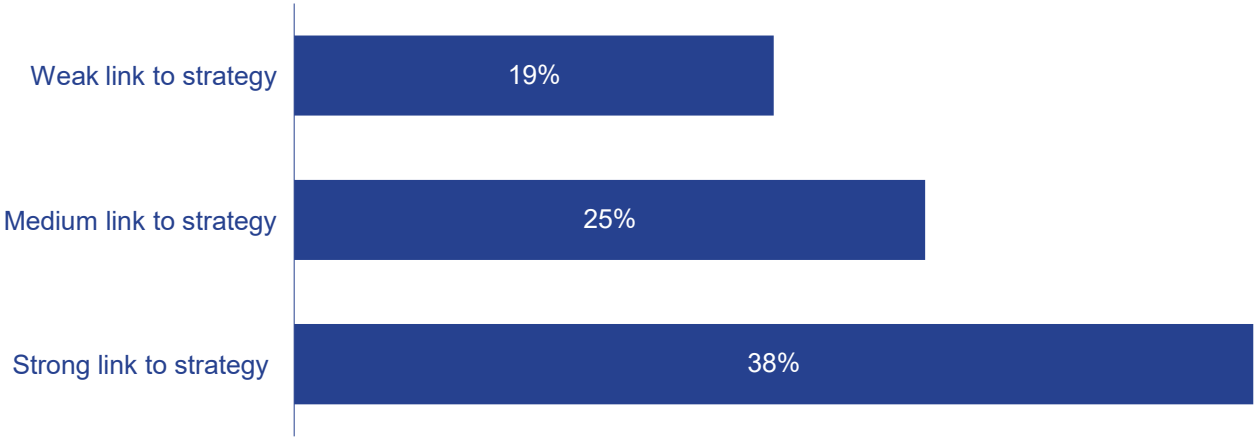
Use of a rolling forecast – by year



Share of companies using rolling forecasts – by link to strategy



- Whether or not a rolling forecast is used is independent of the company's size and industry.
- Where there is a rolling forecast, budgeting serves to an above-average extent to formulate strategy, allocate resources, and secure liquidity. In this case, however, budgeting fulfils its role as a ritual to a much lesser extent.
- If a rolling forecast is used, the controller is tasked on average with almost three-quarters of the planning management. If no rolling forecast is used, the figure is 80%. The same applies to technical tasks. With a rolling forecast, the controller's share of tasks is just under 90%, without 95%.

Investment planning

Small companies invest on average twice as much per one million sales as large companies

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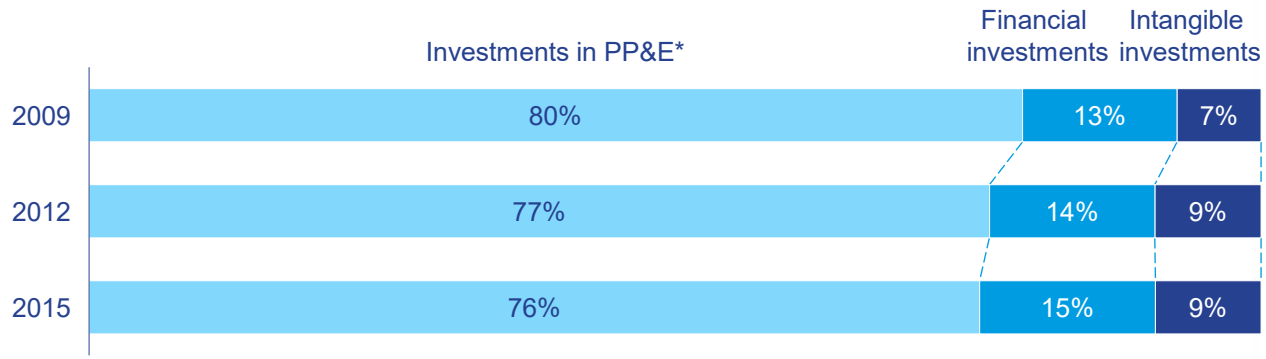
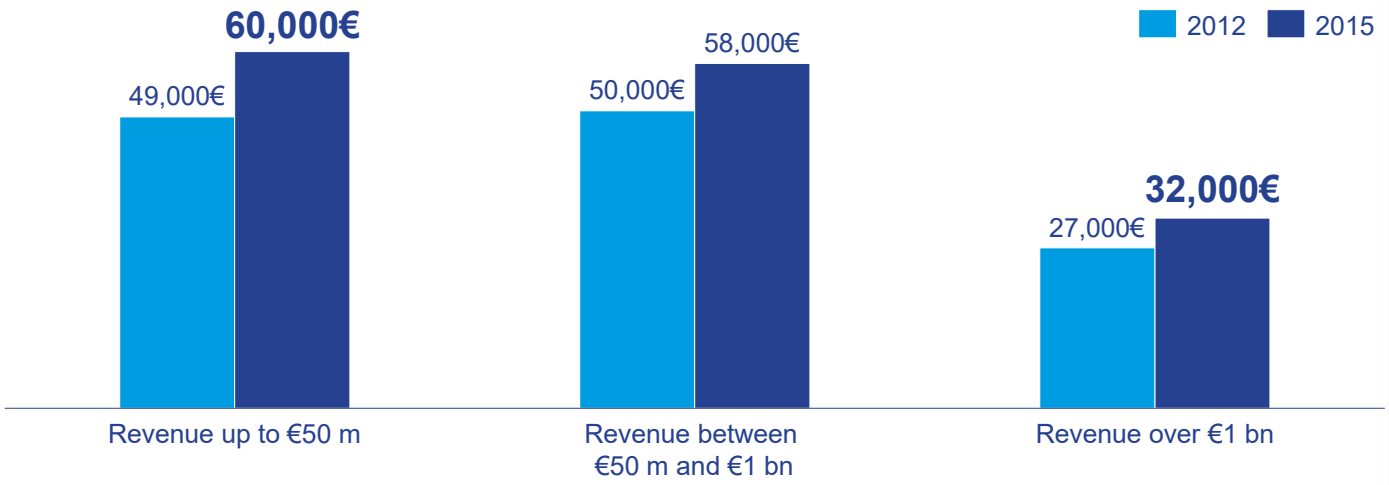
Share of investment volume – by year



Investment volume per million € sales – by company size



- The amount of total investments varies greatly by company size: On average, small companies invest 1.2 million €, while large companies invest 120 million €.
- The volume of investments in property, plant and equipment is significantly higher in listed companies than in private ones: On average, it is 13.5 million € vs. 5 million €. The result is similar for intangible investments (400,000€ vs. 100,000€).
- Investment in property, plant and equipment continues to account for more than three-quarters of the investment volume. One in two companies invests in property, plant and equipment with an annual volume of up to 5 million €. By contrast, investments of over 50 million € appear less frequently (in only one in five companies).
- Large companies make intangible investments more frequently than small companies. In addition, applications for these investments require not only more time to be decided than other types of investment but also require more personnel capacity.

* Property, Plant & Equipment

The approval limit for involving controlling is on average € 10,000 in small companies and € 50,000 in large ones

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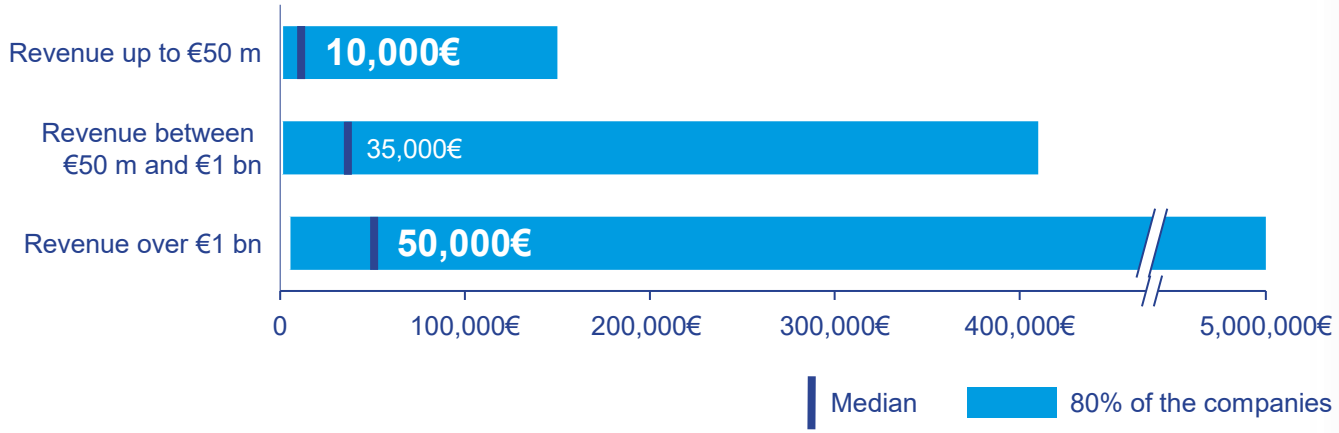
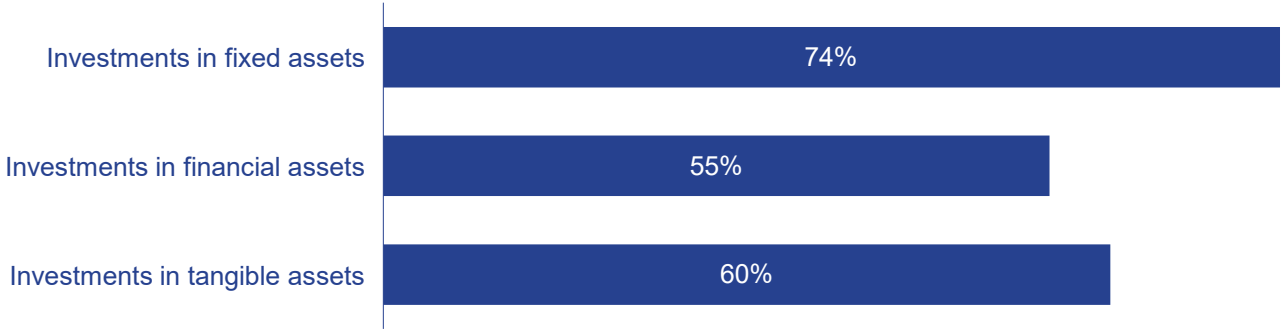
Approval limit for the involvement of controlling – by company size



Involvement of controlling in investment projects



- If the average investment volume increases, the approval limit also increases: For an average investment volume of up to 100,000€, the approval limit is about 10,000€. Whereas for investments between 1 million € and 10 million €, this value is 500,000€.
- The involvement of controlling in investment planning and control depends on the type of investment. On average, the share of investments in which controlling is involved is only 59%. The range of values among the responses is very wide, from 0% to a 100% involvement.
- In the manufacturing industry, controllers are involved in 79% of investment projects, whereas in the retail and service industries they are involved in only 71% and 65% of projects.
- The share of investments managed by controlling is not related to company size. Yet, there is a size effect for the approval limit, i.e., the amount above which controlling must be involved in an investment decision.

The payback method is still the most widespread method

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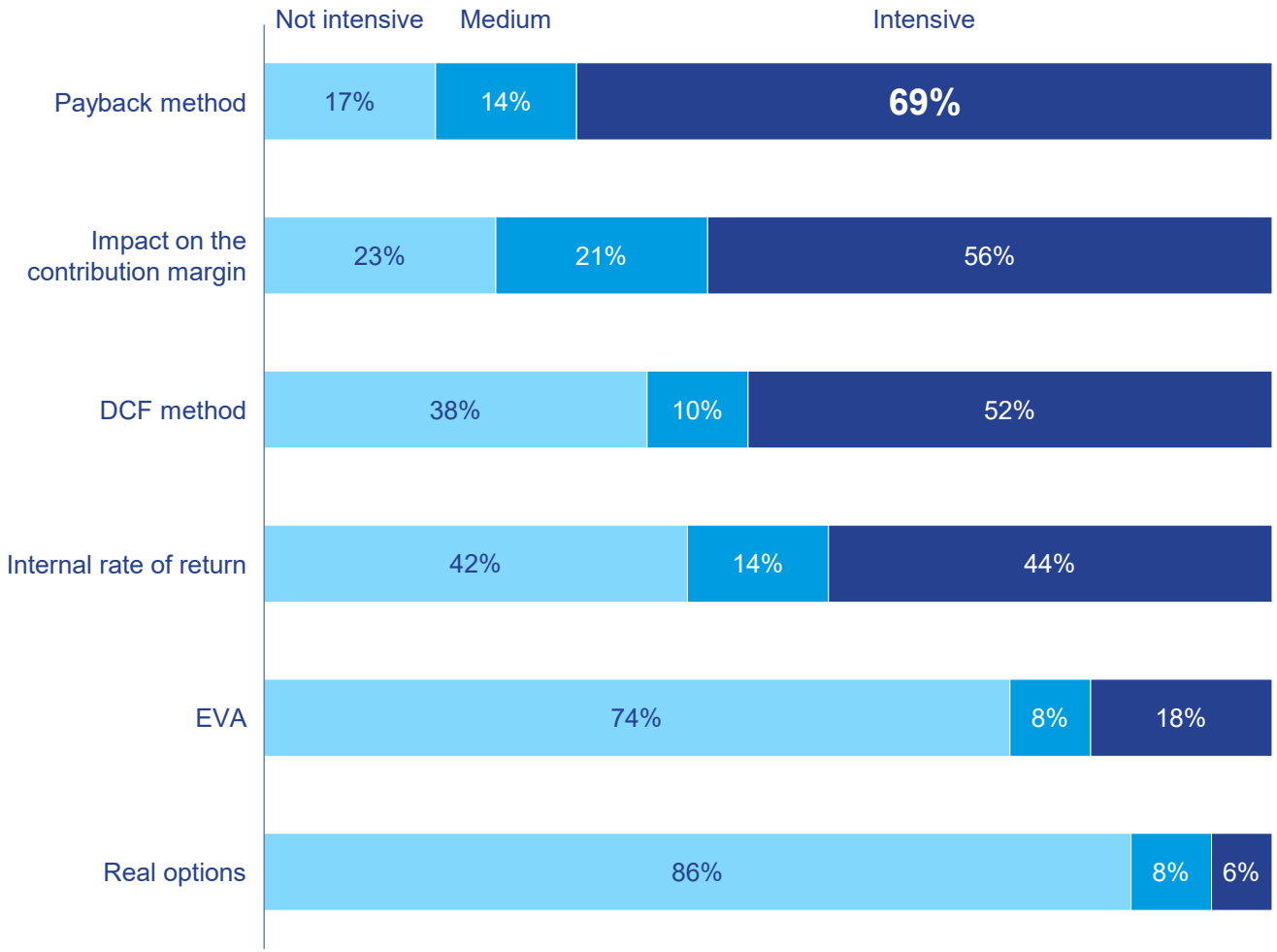
Use of investment calculation methods



- As in 2009 and 2012, payback methods and the practitioner-developed method "impact on contribution margin" are most intensively used for assessing investment projects.
- If the method EVA is used intensively, the approval limit for investment projects is significantly higher on average than where EVA is used less.
- The more intensive use of almost all methods goes hand in hand with the involvement of controlling in the investment process.

Besides payback, large companies tend to value investments using EVA and DCF – small companies use impact on contribution margin

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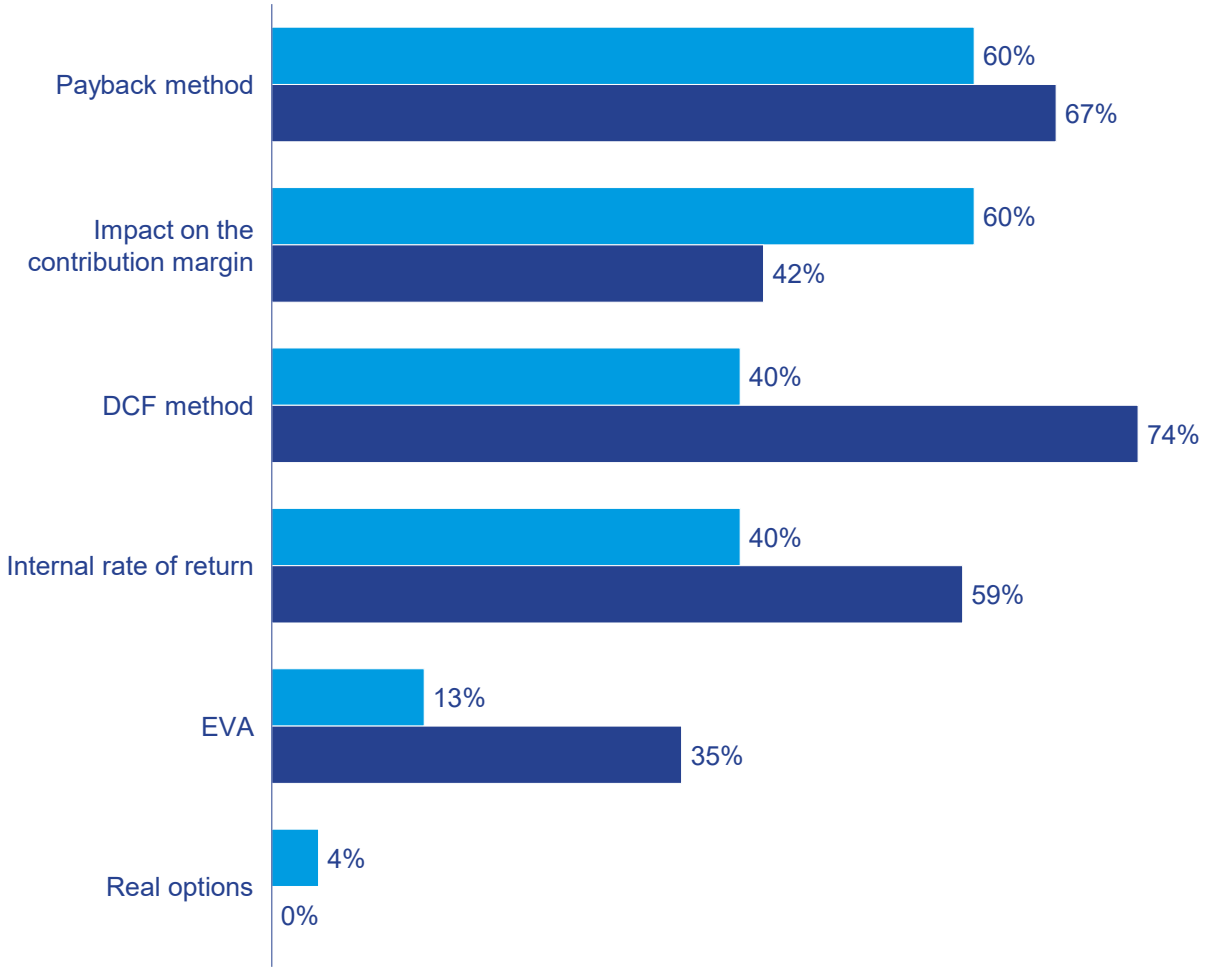
Intensive use of investment calculation methods – by company size



- The traditional payback method is widely used in most companies, regardless of company size. However, it is flanked by additional different methods depending on company size.
- The DCF method and EVA are clearly used more intensively in large companies.
- The use of the internal rate of return is more prevalent in listed companies, which tend to be value-oriented. This method is used intensively in two-thirds of listed companies, but only in just under 40% of unlisted companies.

Small companies: Revenue up to €50 m
Large companies: Revenue over €1 bn

In a rather dynamic business environment, 28% of the controllers report a percentage of bad investments of more than 20%

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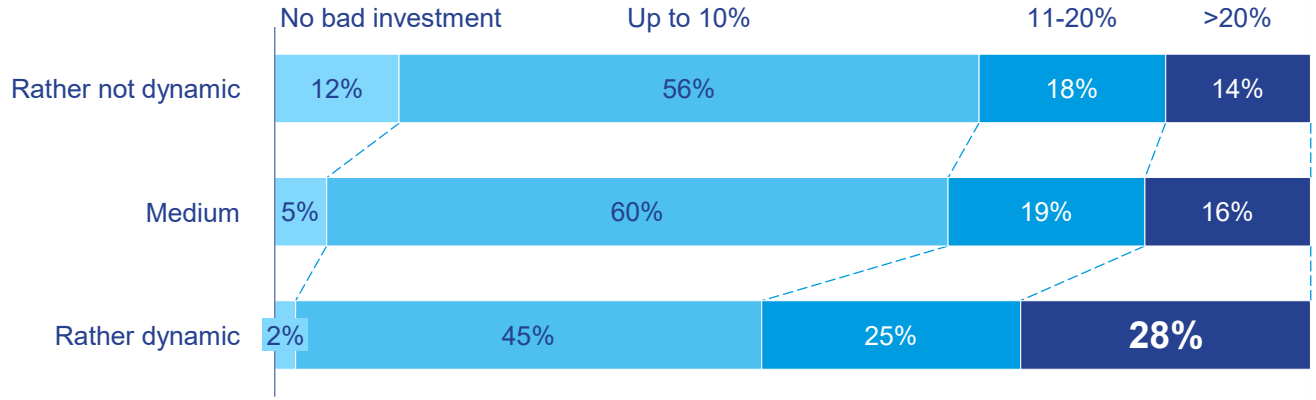
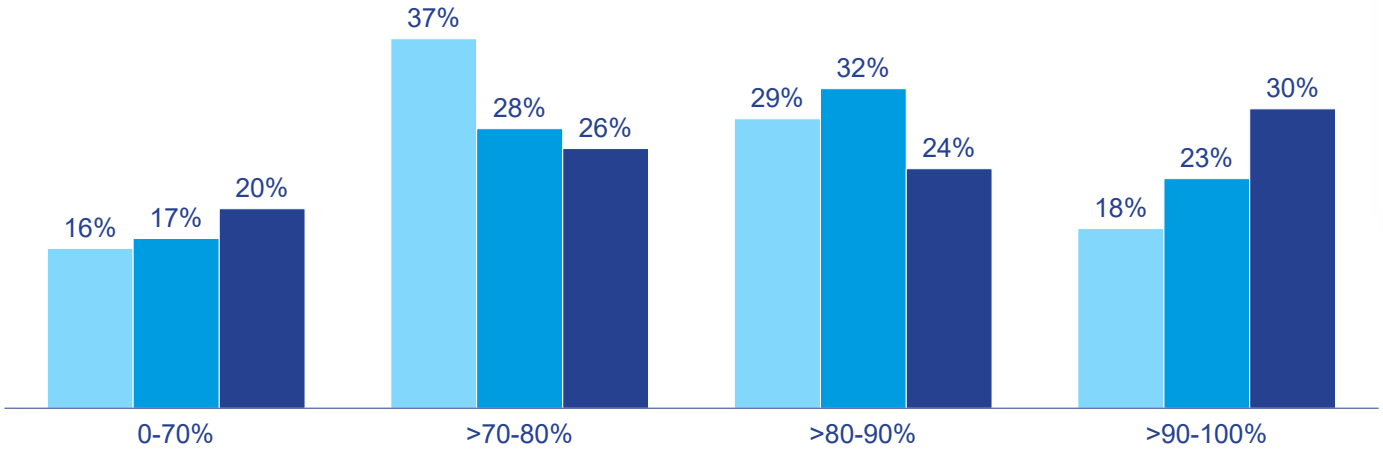
Percentage of bad investments – by the perceived dynamics of the business environment



Approval rate of requested investment project – by year



- In general, the respondents are optimistic about the rate of bad investments: Only one in five states that there is a bad investment rate of more than 20% in their company.
- One explanation could be that not every company systematically reviews the profitability of investments.
- Company size is also a key factor: Large companies are more than twice as likely to record a bad investment rate of over 20% than small companies (35% vs. 14%).
- If controlling accounts for a high proportion of investment in property, plant and equipment, it is more likely that the requested capital expenditure project will be approved.
- The approval rate is also positively related to management's evaluation of investment planning.

In large companies, the investment decision process takes on average 20 days – twice as long as in small companies

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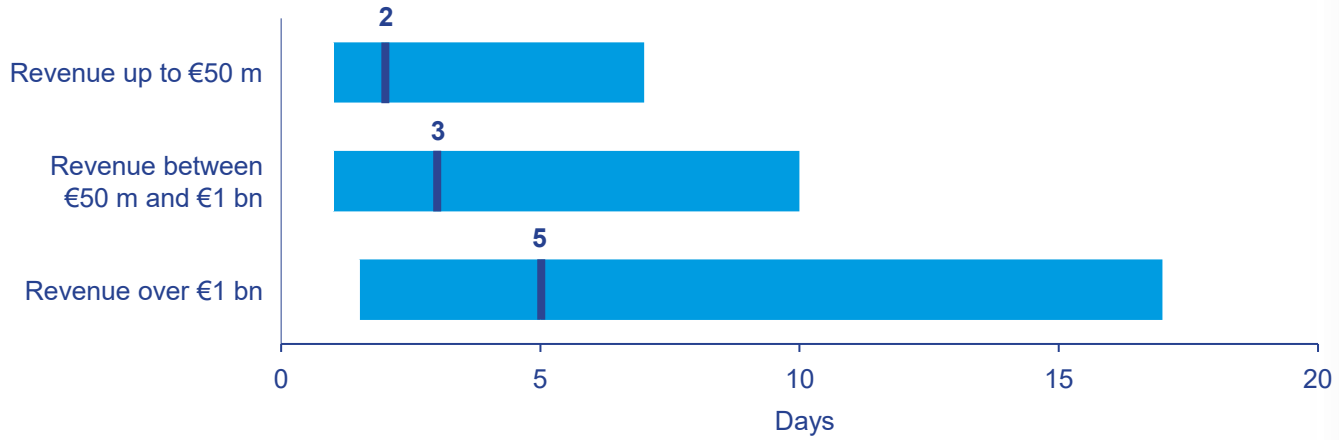
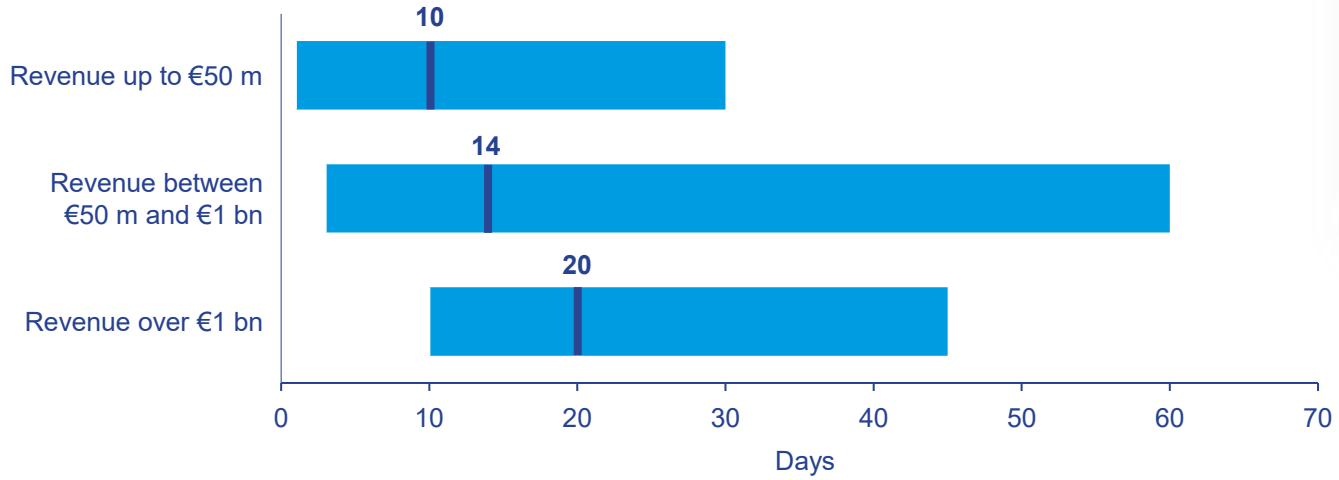
Processing time of an investment proposal in controlling – by company size (in days)



Processing time from involvement of controlling to decision – by company size (in days)



- Compared with previous studies, the time taken to process an investment proposal in controlling has not changed: In 90% of the companies, controllers still need a maximum of ten days.
- As the average volume of investment projects increases, so does the time spent on processing investment applications in controlling: While controllers need just on average two days for an investment volume of up to 100,000 €, this figure is already five days for investments of between 1 million € and 10 million €.
- The time for deciding on an investment proposal is instead not related to the average investment volume. The decision-making time seems to depend more on the organizational context.

Median

80% of the companies

For the processing of investment proposals, large companies need ten times the capacity of small companies

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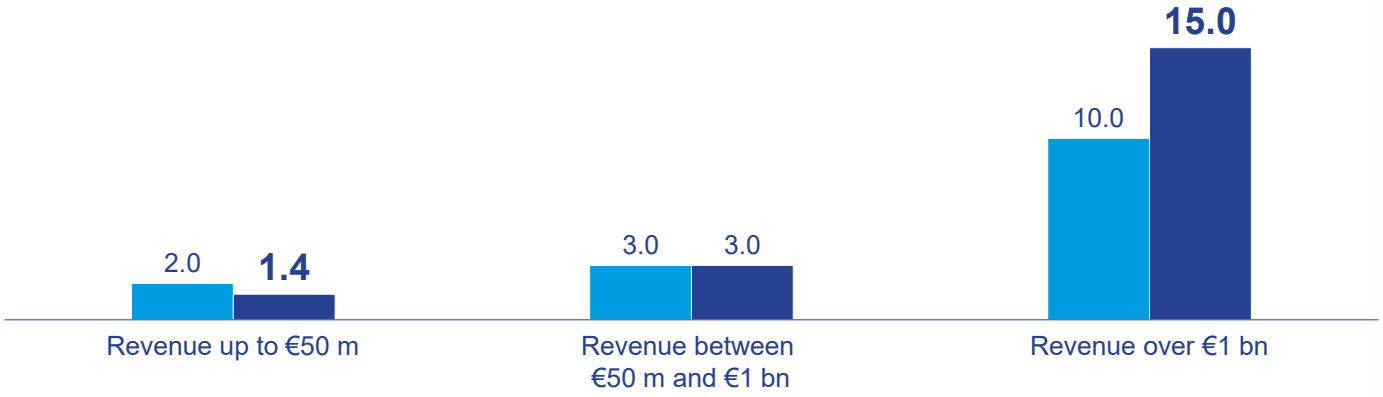
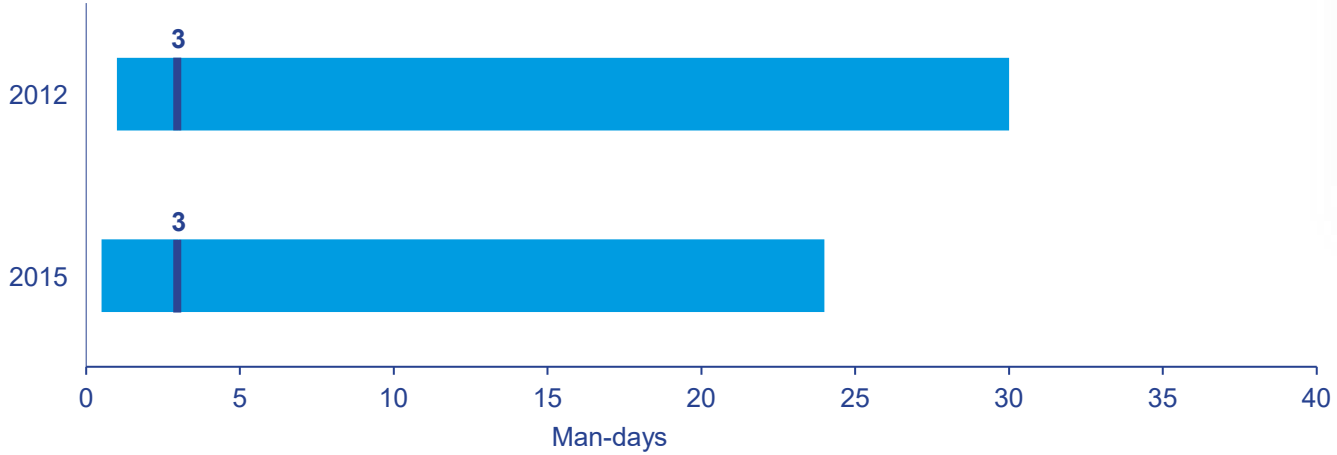
Man-days per month for processing investment proposals (median) – by company size



Man-days per month for processing investment proposals – by year



- Contrary to the assumption that a higher investment volume would result in greater controller capacities being deployed, no corresponding correlation is found here.
- This indicates that both the investment calculation methods and the decision-making processes at various hierarchical levels require a minimum amount of effort, regardless of the size of the project being evaluated.
- In addition to company size, the amount of time and effort required to process investment proposals also depends on the type of company: In a highly dynamic environment, ten percent of companies require 100 man-days or more for processing. In a less dynamic environment, very few companies need more than 25 man-days.

Upper chart
- 2012
- 2015

Lower chart
- Median
- 80% of the companies

Benchmarks in investment planning

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Benchmarks – by industry, company size and company success

	Duration		Rates		Volume (€)		Capacities
	From involvement of controlling to decision	Processing of investment orders in controlling	Approval rate	Rate of bad investments	Average volume of investment project	Approval limit for involvement of controlling	Processing of investment orders (per month)
Industry*							
Manufacturing	14 days	3 days	90%	10%	100,000	25,000	3 man-days
Services	12 days	5 days	85%	10%	200,000	50,000	3 man-days
Company size							
Small	10 days	2 days	90%	5%	50,000	10,000	1.4 man-days
Medium	14 days	3 days	85%	10%	150,000	35,000	3 man-days
Large	20 days	5 days	80%	15%	500,000	50,000	15 man-days
Company success							
Less successful	15 days	4 days	85%	10%	100,000	45,000	5 man-days
Moderately successful	14 days	3 days	85%	15%	150,000	25,000	3 man-days
More successful	10 days	3 days	90%	10%	100,000	30,000	3 man-days

* The data for the trade sector is not included, since it is based on only a few responses and, therefore, is not representative.

Managers' satisfaction with investment planning according to controllers' assessment has fallen slightly between 2012 and 2015

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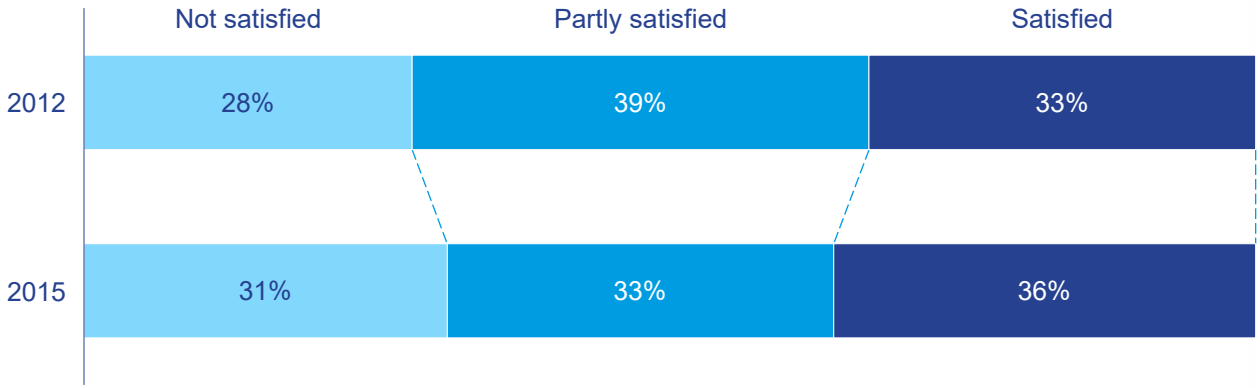
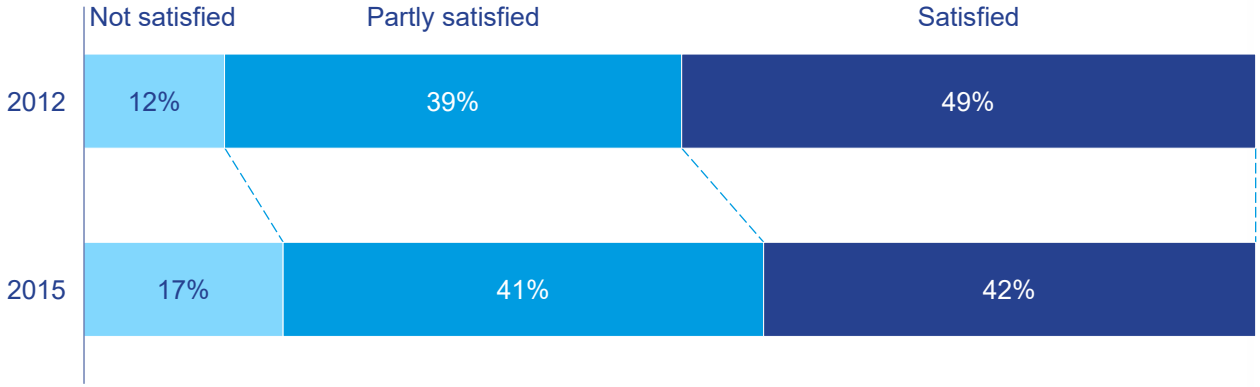
Controller satisfaction with investment planning – by year



Management satisfaction with investment planning* – by year



- In 2015, the controllers describe themselves as similarly satisfied as they were in 2012.
- Where respondents are more likely to report dissatisfaction with investment planning, the revision of investment planning is often considered important.
- The satisfaction of controllers as well as their perceived satisfaction of management is related to company success. The respondents state that 43% of controllers and 51% of management in successful companies are satisfied with investment planning. In less successful companies, these figures are only about one-third.
- The strategic orientation of the company is also related to satisfaction. Only 30% of controllers and 35% of managers from companies pursuing a cost leadership strategy are rather satisfied. In companies with a product differentiation strategy, the figure is 37% of controllers and 43% of managers.

* as assessed by controllers

The more closely controlling is involved in fixed asset investments, the more satisfied controllers and managers are

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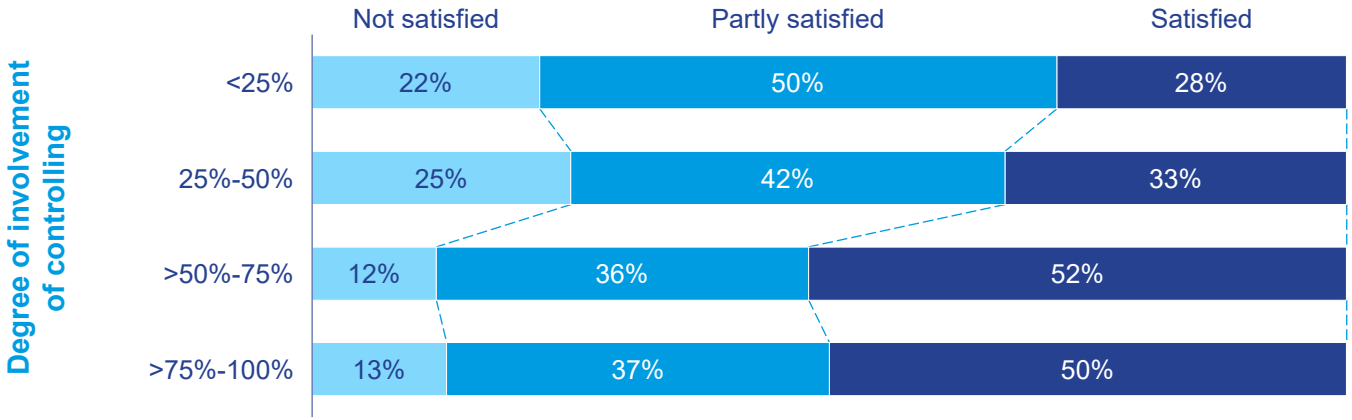
Fixed asset investments: Controller satisfaction – by the degree of involvement of controlling

Fixed asset investments: Management satisfaction* – by the degree of involvement of controlling



- The degree of involvement indicates the share of the investment volume that controlling is in charge of.
- Satisfaction in investment planning is associated with the approval rate of the requested investment volume. If this is more than 90%, half of the respondents state that they are satisfied. Management satisfaction is rated as high by 60% of the controllers. If the approval rate is between 70% and 80%, only 35% of the controllers are satisfied.
- There is a correlation between controller satisfaction and the degree to which various investment calculation methods are used. In companies where the DCF, internal rate of return, influence on contribution margin and EVA method are used intensively, the controllers are clearly more satisfied.
- In the case of management, the connection with the use of individual methods is less strong. Here, the influence on the contribution margin and the DCF method should be mentioned.

* as assessed by controllers

In roughly one in five companies, the improvements in the investment planning process have been considered an important topic

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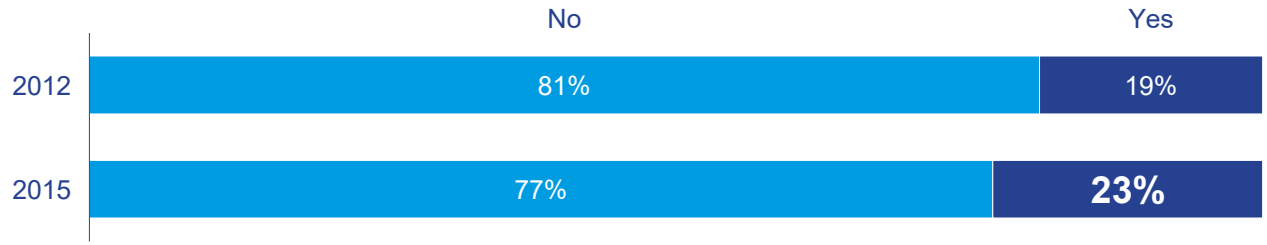
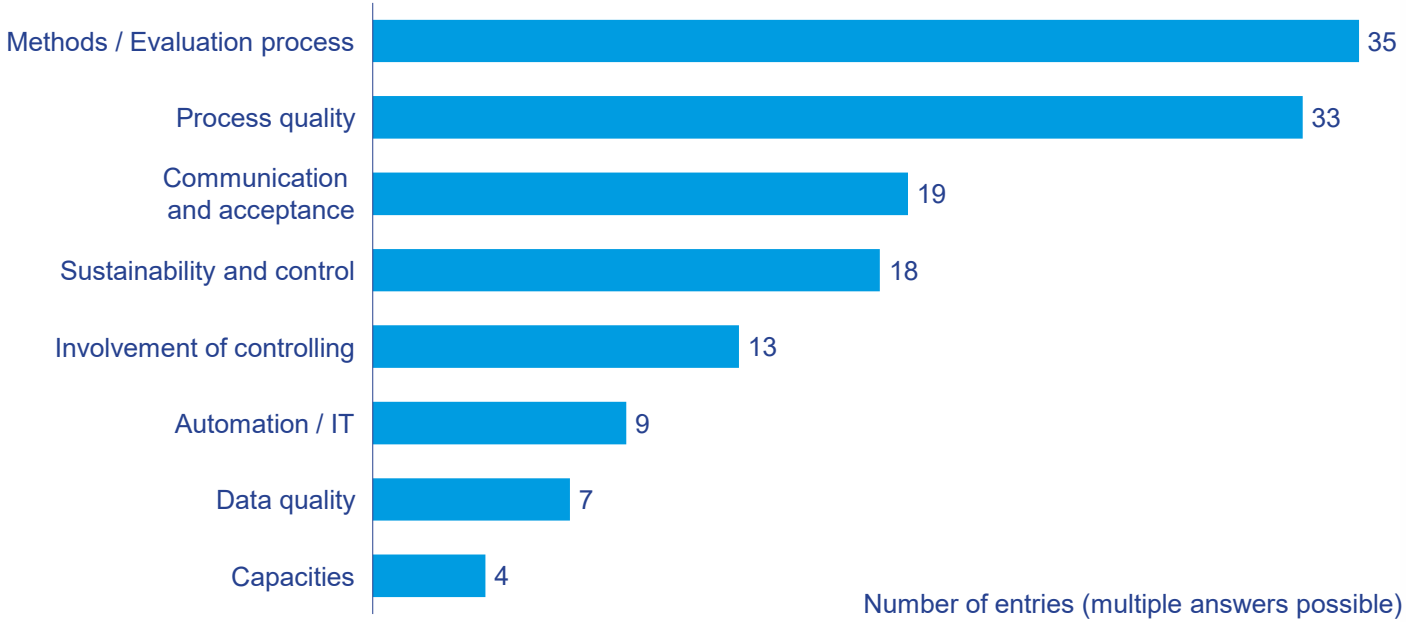
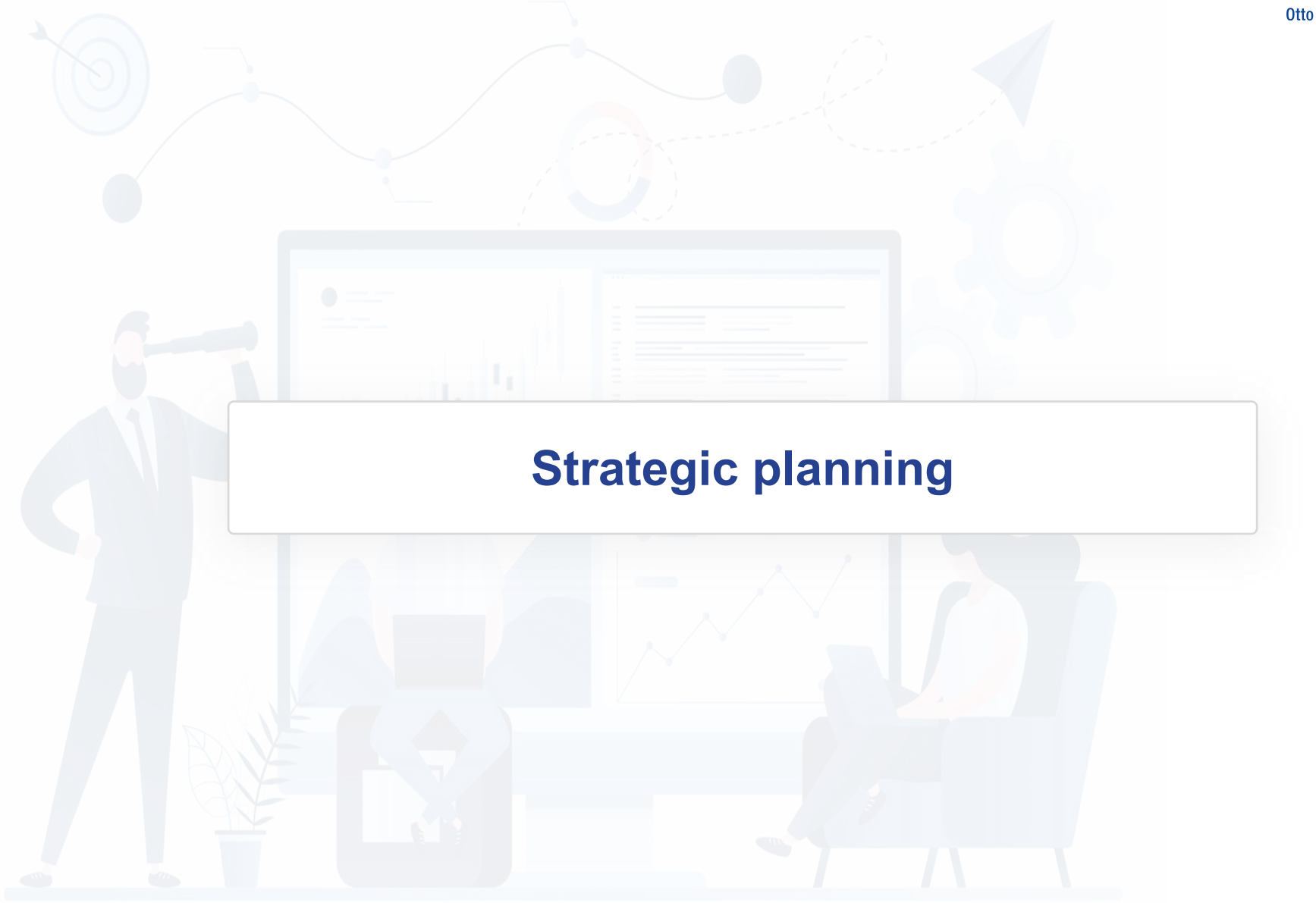
Improvements of the investment planning process as an important topic – by year



Challenges in investment planning



- Revising investment planning is high on the agenda at one-third of large companies. This is the case for less than one-fifth of small companies.
- At the same time, the revision takes place less frequently at the business unit level (18% vs. 26% at the overall corporate level).
- An increased willingness to revise investment controlling is apparent where controllers and management tend to be dissatisfied. One in three rather dissatisfied controllers sees the revision as an important topic. If management is perceived as rather dissatisfied, two out of five respondents consider revision as important.
- At the same time, the need for revision is more likely to be identified in companies that report a lower approval rate of the requested investment volume and a relatively high bad investment rate.
- In terms of challenges in investment controlling, the topics addressed in 2015 are essentially the same as in 2012, with the exception of topics related to controlling resources (IT and capacities).



Strategic planning

Approximately three quarters of the large and half of the smaller companies have a formal strategic planning process

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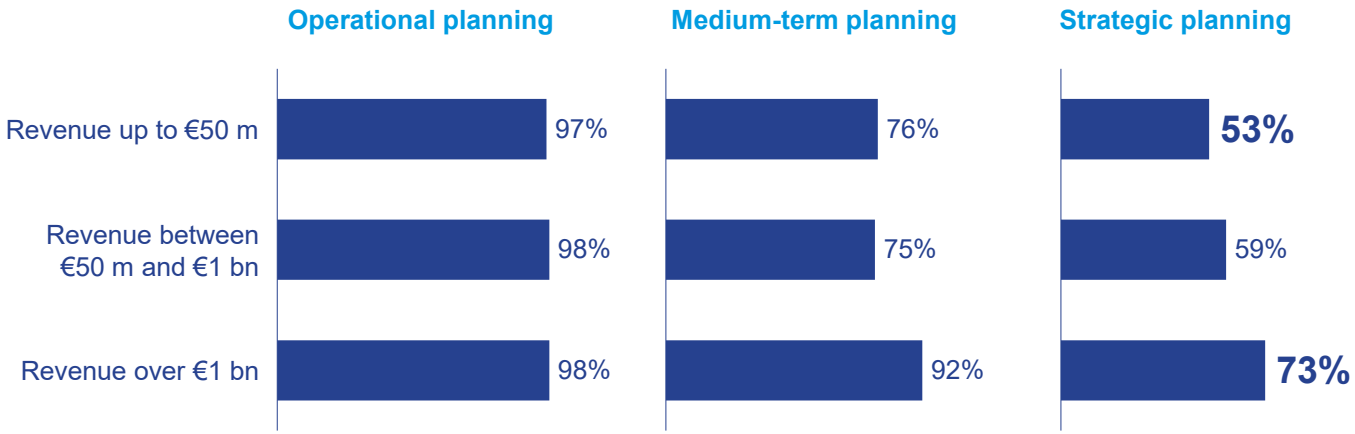
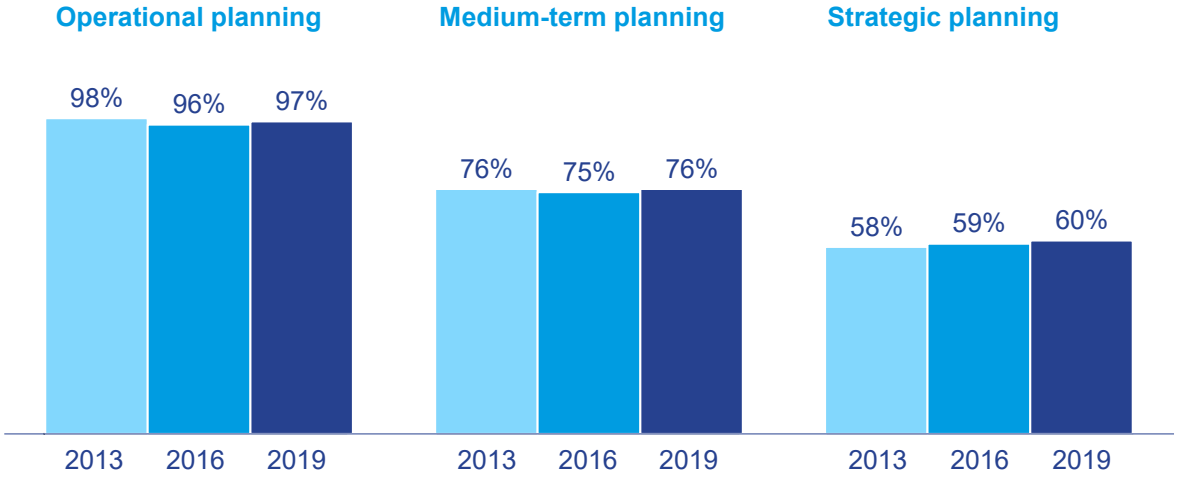
Existence of different planning levels – by company size



Existence of different planning levels – by year



- The planning horizons remained stable: On average, one year for operational planning, three years for medium-term planning and five years for strategic planning.
- Strategic planning is present in 63% of companies operating in a rather uncertain environment, but only in 53% of companies operating in less uncertain environments.
- For operational and medium-term planning, no correlation with the business environment is discernible.
- If budgeting is explicitly linked to corporate strategy, 71% of companies regularly prepare strategic plans. Without a link to strategy, the figure is significantly lower at 46%. A similar correlation can also be seen for medium-term planning.
- In companies with strategic planning, budgeting fulfills above average the functions of strategy formation, operational planning, internal target communication and resource allocation.

In less than half of the companies, controlling is intensively involved in the strategy process

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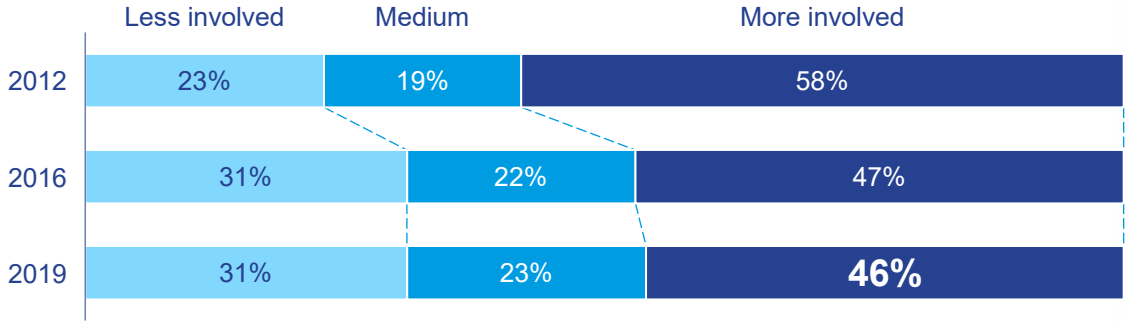
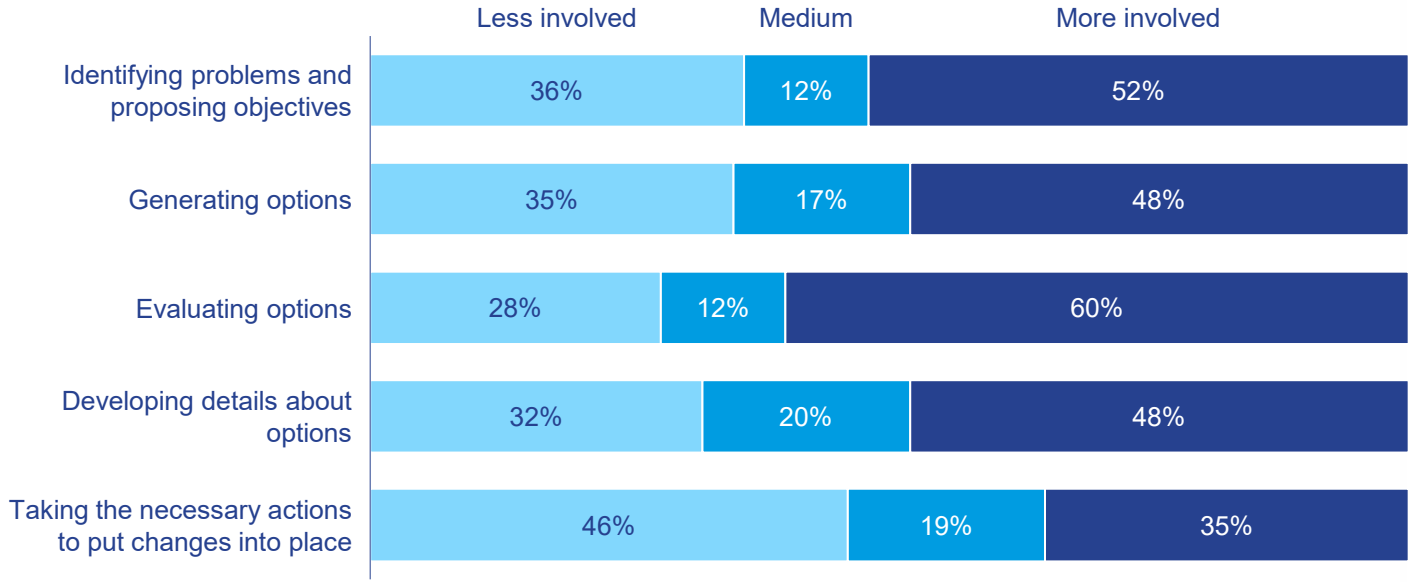
Involvement of controlling in the strategy process – by year



Involvement of controlling in the strategy process – different dimensions



- While controlling is relatively intensively involved in the evaluation of options in the strategy process, its involvement in the other areas declined sharply from 2012 to 2019.
- In companies whose planning is closely linked to corporate strategy, 56% of respondents rate their involvement in the strategy process as rather high; if the link to strategy is rather low, it drops to 31%.
- If the role of the critical counterpart is valued rather highly, 48% of the respondents indicate extensive involvement in the strategy process; if the role is valued less important, the figure is only 25%.
- In companies with a high degree of rationality in strategic decision-making, 60% say they are heavily involved in the strategy process; if this is not the case, the figure drops to 20%.

The more informal the strategy process, the less controlling is involved

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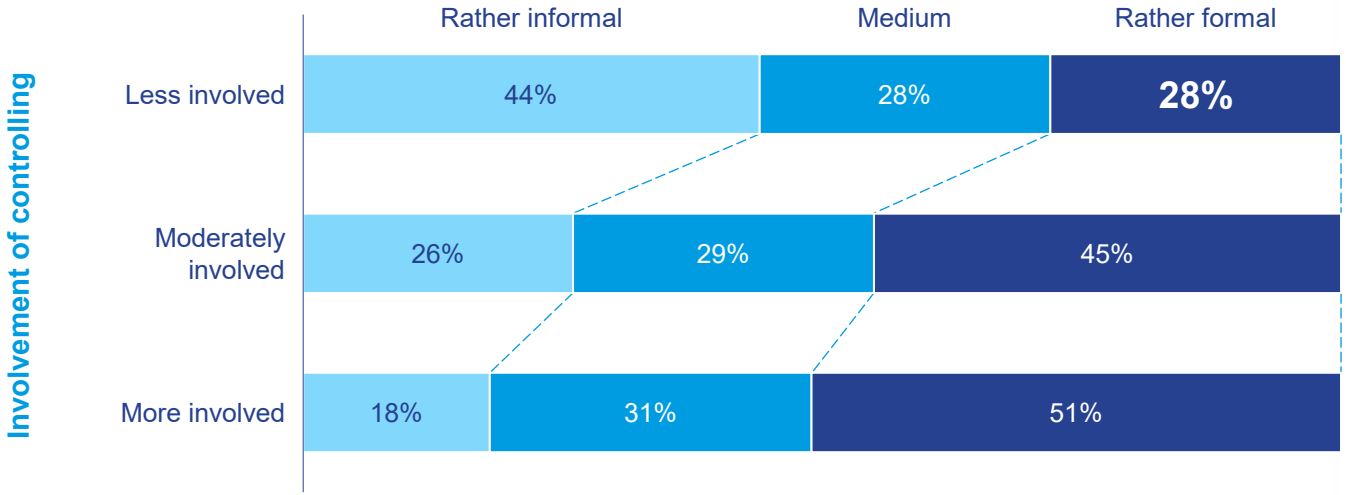
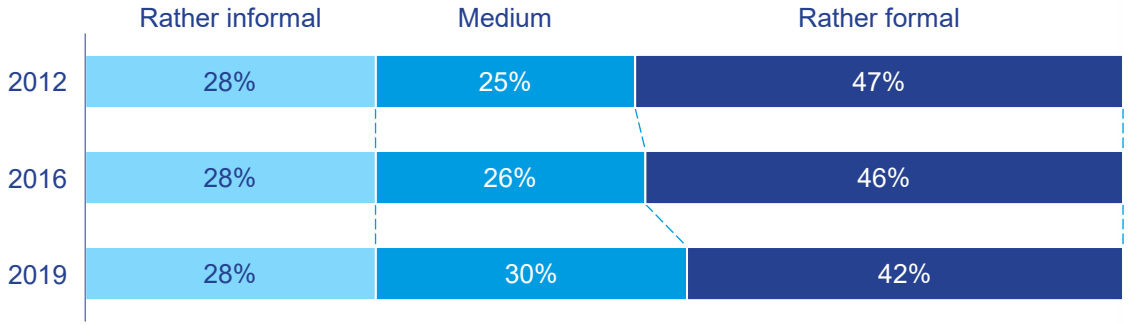
Degree of formalization of the strategy process – by the involvement of controlling



Degree of formalization of the strategy process – by year



- In small companies, the picture is balanced: 28% of respondents see a high degree of formalization in the strategy process, while 35% consider it rather informal. In large companies, the emphasis shifts toward formalization: 50% of respondents rate the strategy process as rather formalized, while only 23% perceive it as rather informal.
- A strong correlation is also found with the link to strategy: In companies where budgeting is closely linked to corporate strategy, 58% of respondents perceive the strategy process as formalized. In companies with a weak link to strategy, only 22% share this view.
- If strategic decisions are based more on intuition than on data, 52% of respondents state that the strategy process is rather informal. Only 26% speak of a more formalized strategy process. If, instead, strategic decisions rely on data, the picture is reversed: Only 15% perceive the strategy process as rather informal, while 57% rate it as rather formalized.

Rationality of strategic decision-making seems to have declined between 2012 and 2019

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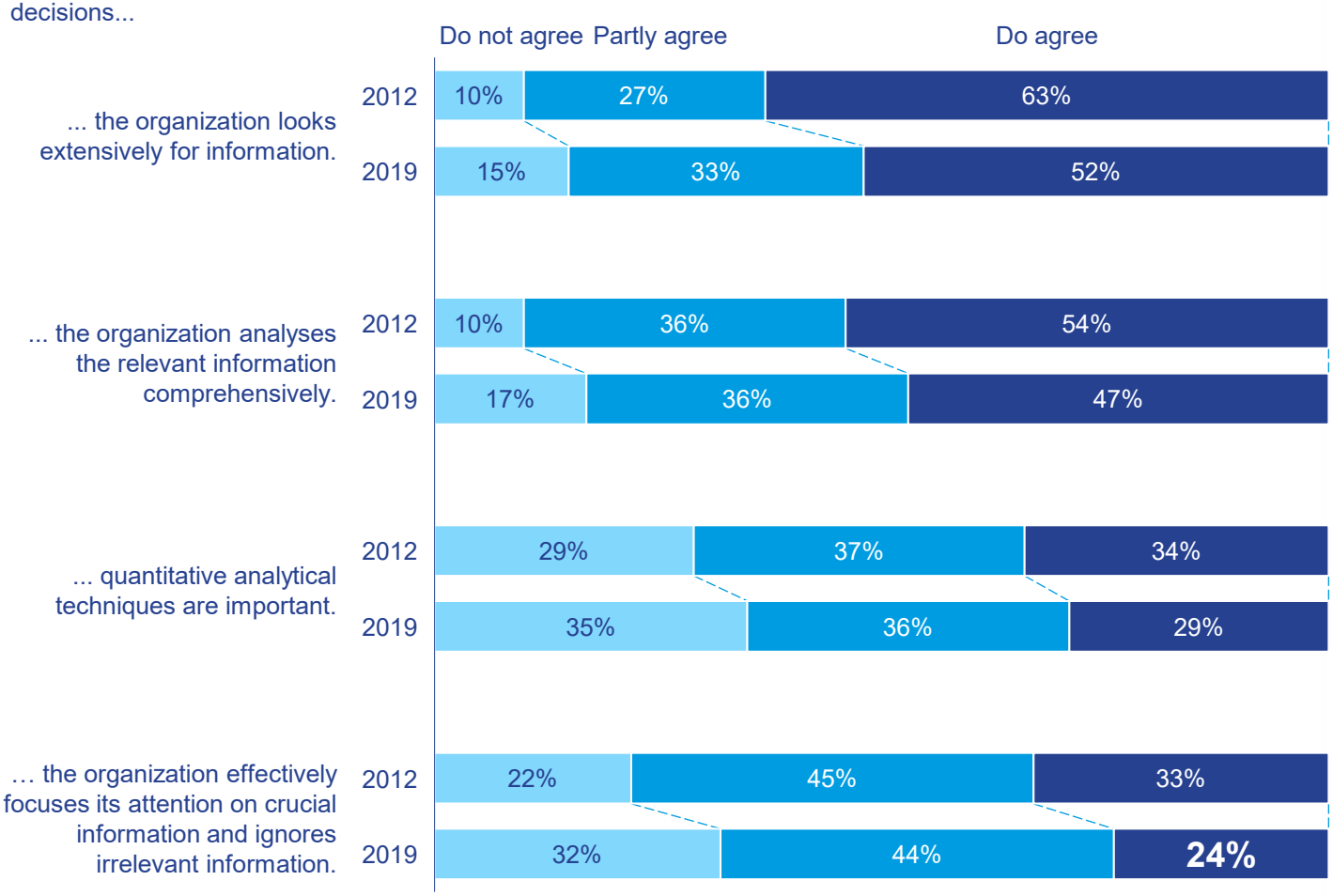
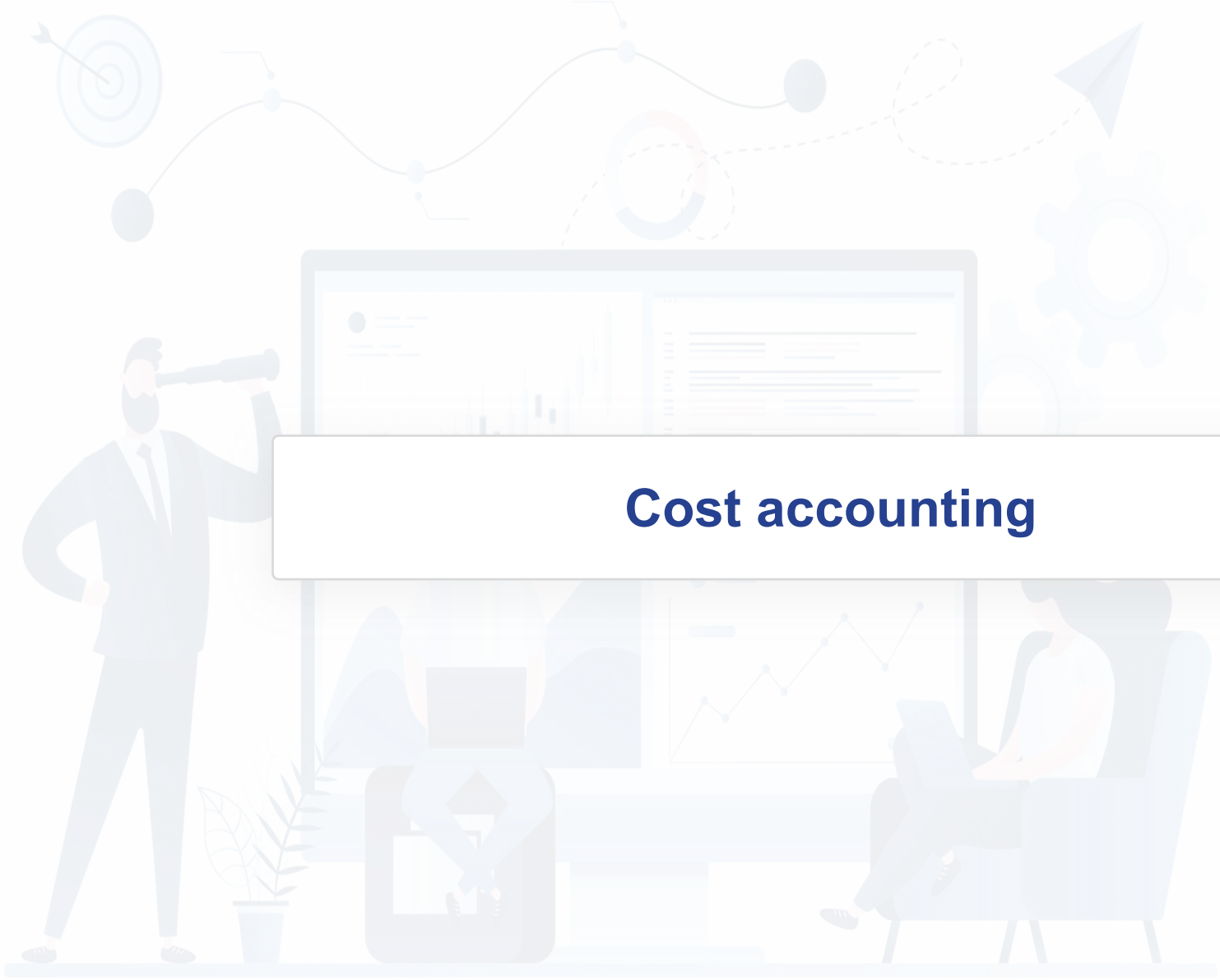
Aspects of the strategic decision-making process – by year



- There is no correlation between the rationality of strategic decisions and company size.
- 55% of respondents from more successful companies consider the strategic decision-making process as clearly rational, while 16% perceive the process as rather intuitive. In less successful companies, only 31% perceive a rational decision-making process, while 37% consider the process as rather intuitive.
- How rational the strategic decision-making process is perceived also depends on the formalization of the strategy process: If it is highly formalized, 57% of the respondents perceive strategic decision-making as rational. If the strategy process is more informal, only 23% of respondents share this view.
- In a rather uncertain business environment, 44% of respondents state that strategic decisions are made on a rather rational basis. In a rather certain environment, this figure is only 31%. Here, 36% of respondents state that strategic decisions tend to be made intuitively. In an uncertain environment, the share drops to 26%.



Cost accounting

In 91% of the companies, the controlling department is responsible for cost accounting

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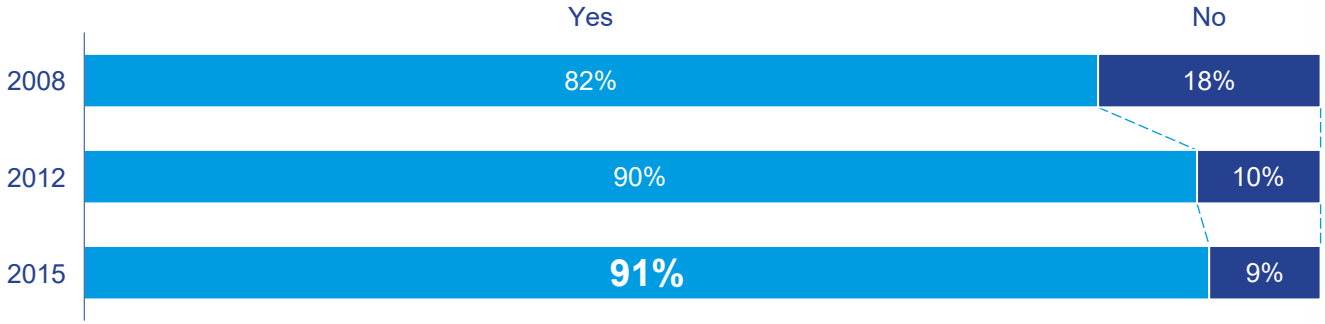
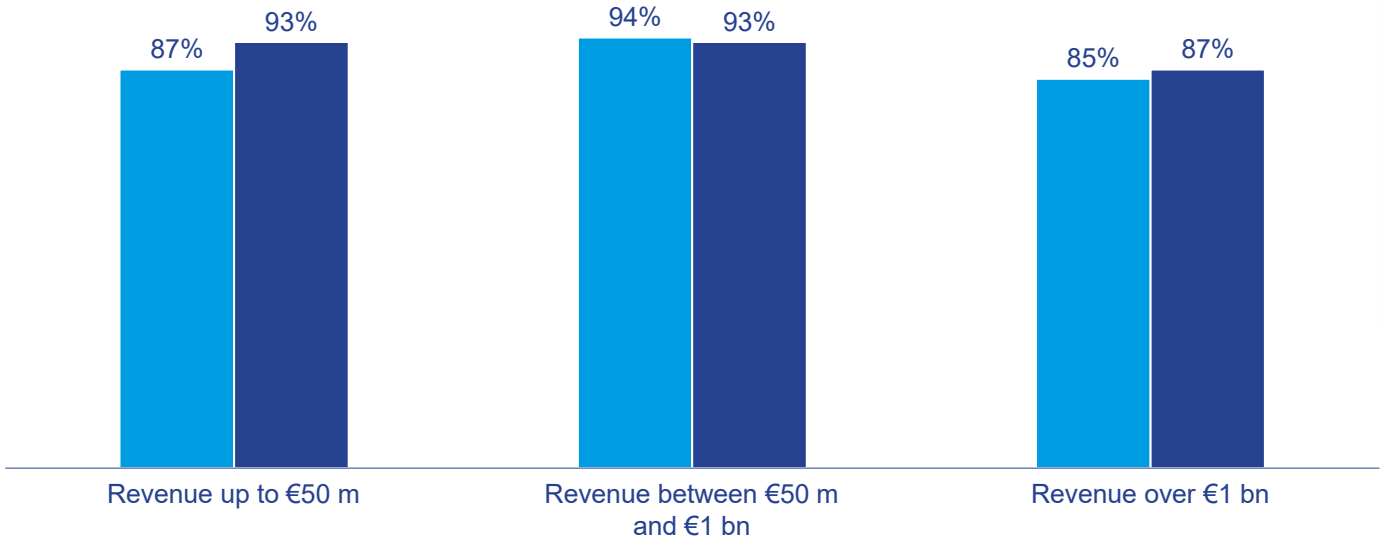
Assignment of cost accounting to controlling department – by year



Assignment of cost accounting to controlling department – by company size



- From 2008 to 2015, the share of companies with an independent or outsourced cost accounting department has decreased by approximately half.
- A cost accounting function that is not assigned to the controlling department is more likely to be found in a company with a product differentiation strategy than in one that pursues a cost leadership strategy.

The number of cost types is on average between 100 and 150 and varies greatly with company size

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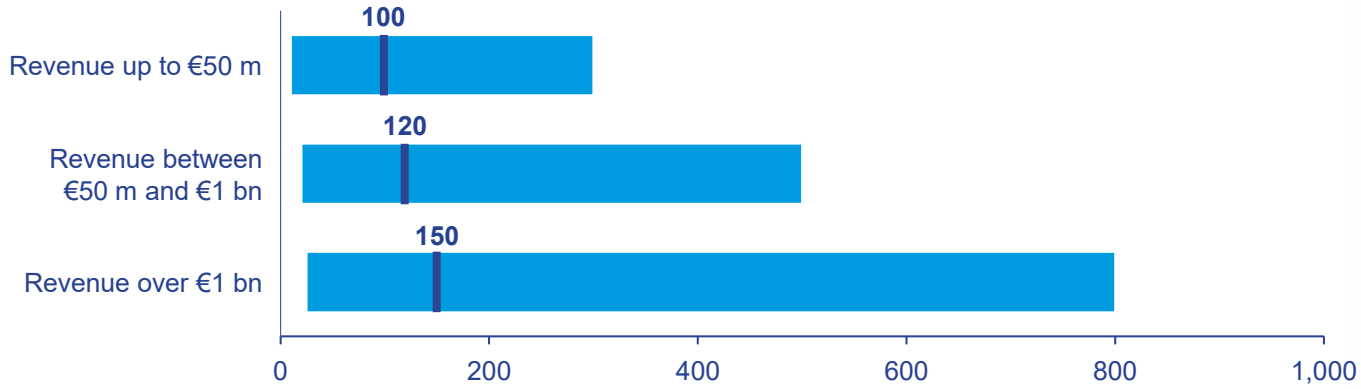
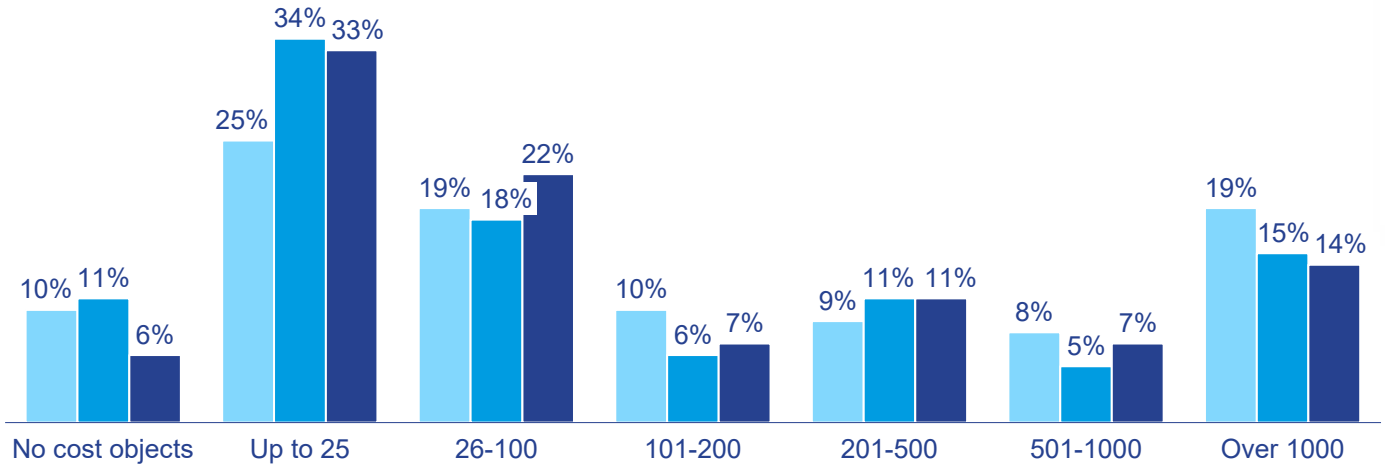
Number of cost types – by company size



- In companies with a large number of cost types, we also find an above-average number of cost centers, cost drivers, and contribution margin stages.
- An additional indicator of varying degrees of complexity in cost accounting can be found in the case of cost objects. Six percent of companies use no cost objects, whereas some companies use as many as 90,000.
- There is no obvious relationship between the number of cost objects and company size.

Number of cost objects (% of companies) – by year



The number of cost centers varies greatly, especially in large companies

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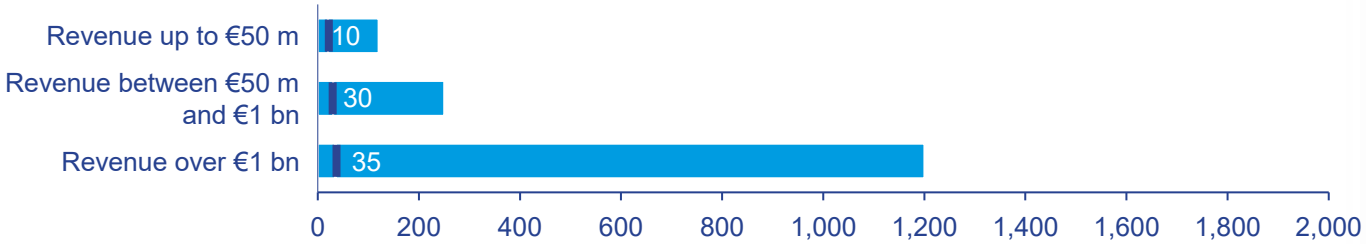
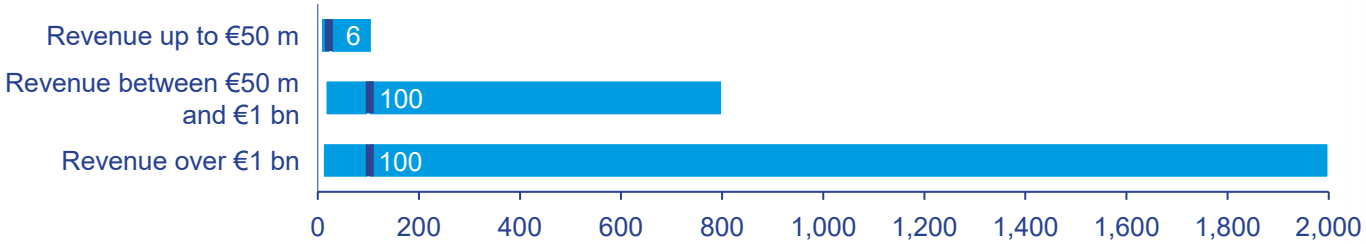
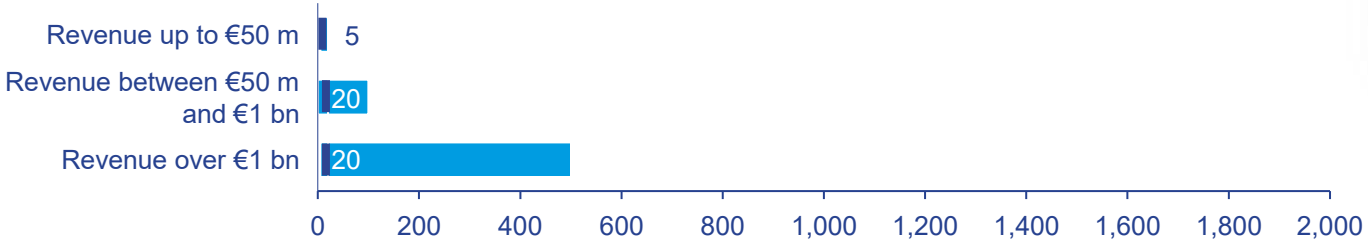
Number of service cost centers – by company size



Number of primary cost centers – by company size



Number of clearing cost centers – by company size



- In 2015, the companies operate with a similar number of service cost centers as those in 2012 but with several additional primary cost centers.
- However, the number of clearing cost centers has decreased approximately by 20%. Here, there is no uniform trend. Approximately 40% of the companies have reduced the number of clearing cost centers. Yet, the same share of companies have actually increased the number of clearing cost centers.
- The number of primary cost centers is related to the frequency of the cost center report. If the report is produced on a monthly basis, companies operate with an average of 65 cost centers. If the report is quarterly, the average is only 30.

Median

80% of the companies

Benchmarks in cost accounting indicate differences by company size, industry, and stock exchange listing

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Benchmarks for the number of cost types, cost centers, and cost objects

	Cost types			Service cost centers			Primary cost centers			Clearing cost centers			Cost objects		
	25%	50%	75%	25%	50%	75%	25%	50%	75%	25%	50%	75%	25%	50%	75%
Company size															
Small	30	100	200	10	20	33	10	25	59	3	5	10	10	25	109
Medium	47	120	300	10	30	100	40	100	200	7	20	30	15	100	520
Large	80	150	400	10	35	100	30	100	500	8	20	100	18	60	1200
Stock exchange listing															
No	40	100	290	10	25	80	30	80	200	5	15	30	18	58	500
Yes	40	150	250	12	35	120	18	40	100	4	10	40	5	13	150
Industry															
Manufacturing	50	130	300	8	26	100	30	79	200	5	15	32	10	75	500
Trade*	30	100	200	0	20	40	20	90	600	0	20	32	13	27	450
Services	33	100	225	10	28	80	19	50	190	5	10	20	15	50	150

* The data for this group is based on only a few responses and is therefore not representative

Only one in two companies and one in three stock listed companies use imputed costs

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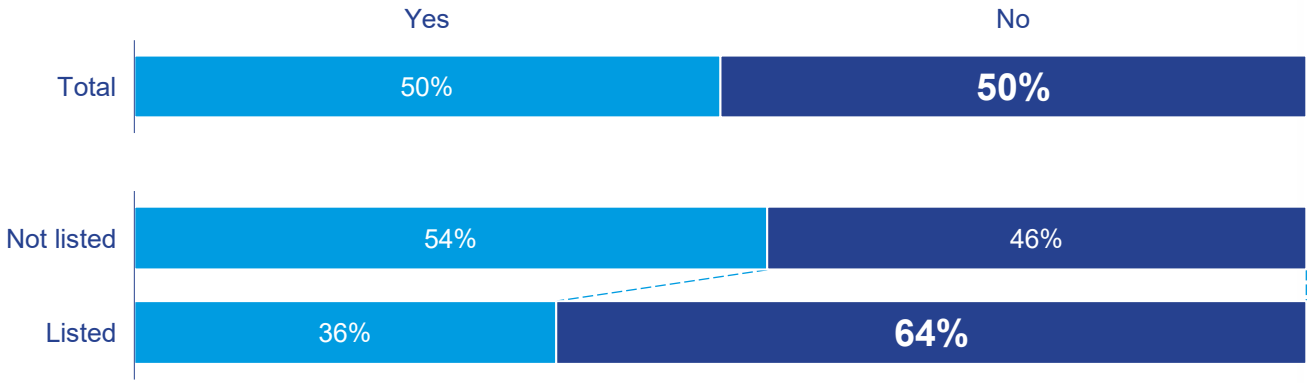
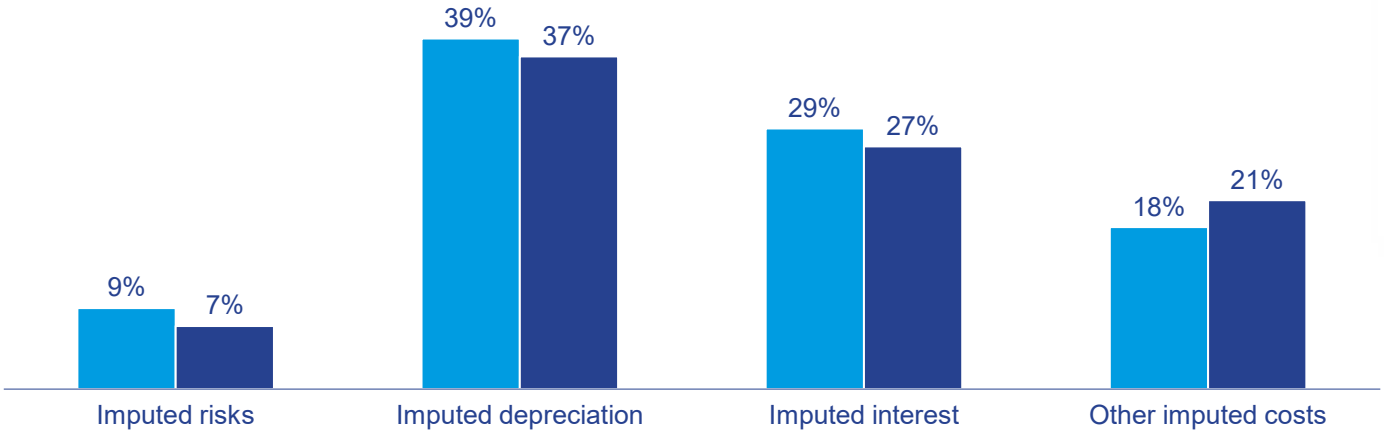
Use of imputed costs



Use of imputed costs in detail (multiple answers possible)



- Almost across the board, imputed costs are used by fewer companies in the current study than three years ago. In this context, there appears to be a continuing trend towards harmonizing internal and external accounting.
- The use of imputed costs has decreased in companies listed on the stock exchange, in particular. In 2012, 41% still used imputed costs, whereas in 2015 only 36% do so.
- Companies that operate with imputed costs require, on average, at least three steps to calculate the contribution margin. This is much more detailed than the average. They also use cost accounting for the purposes of price calculation and production process comparisons more intensively than companies that do not use imputed costs.

From 2012 to 2015, the average imputed interest rate fell only half a percentage point to 5.5%

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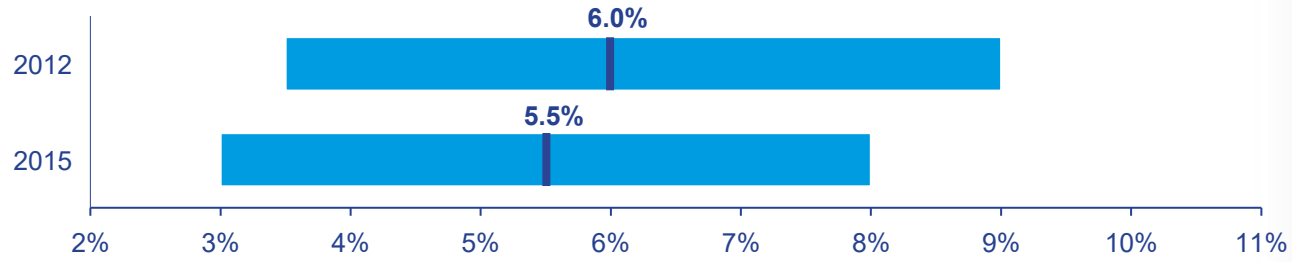
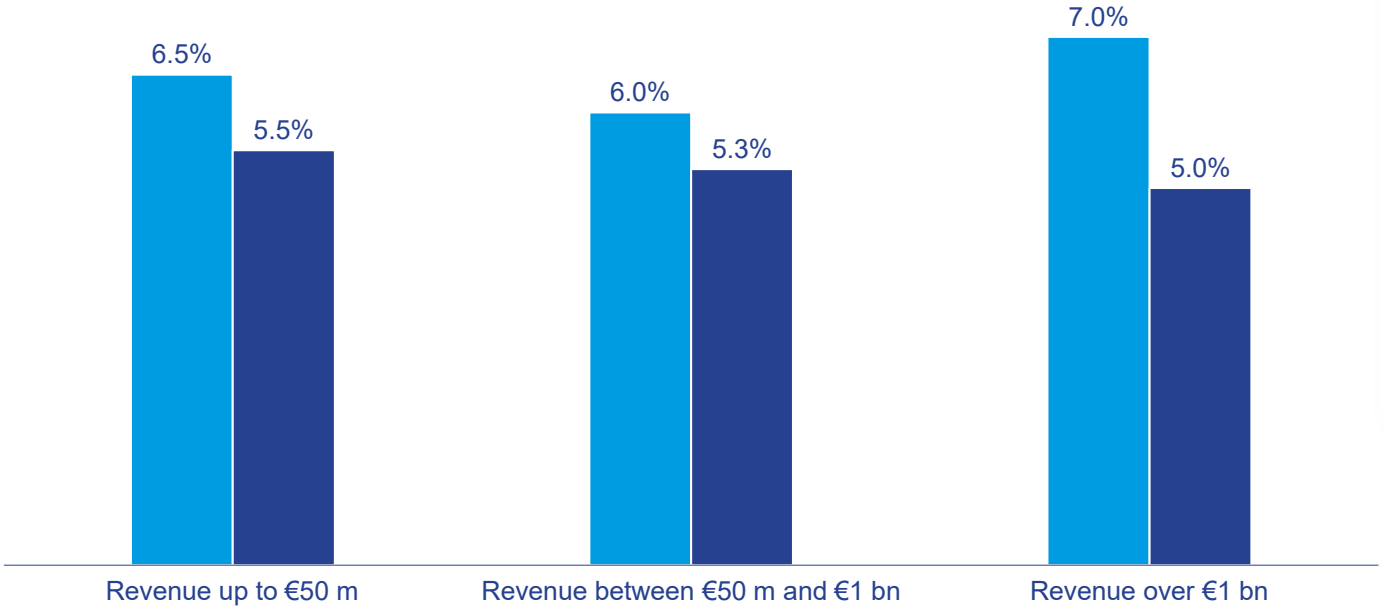
Imputed interest rate – by year



Imputed interest rate – by company size



- In line with the general market situation, companies are now using a lower percentage for the imputed interest rate. Still, the range of interest rates used is quite large – from 1.25% to 12%.
- The largest decrease in interest rate is seen in large companies – the median interest rate dropped 2 percentage points to 5% in 2015.
- The magnitude of the interest rate is also related to company success. More successful companies, on average, use a lower interest rate (5%) than less successful companies (6%).
- In addition, there are some industry-specific differences. The interest rate in production companies, e.g., car manufacturing and electrical engineering, is higher (7%) than in the service sector (5%).

Upper chart
Median
80% of the companies

Lower chart
2012
2015

Four out of five companies produce the cost center report on a monthly basis

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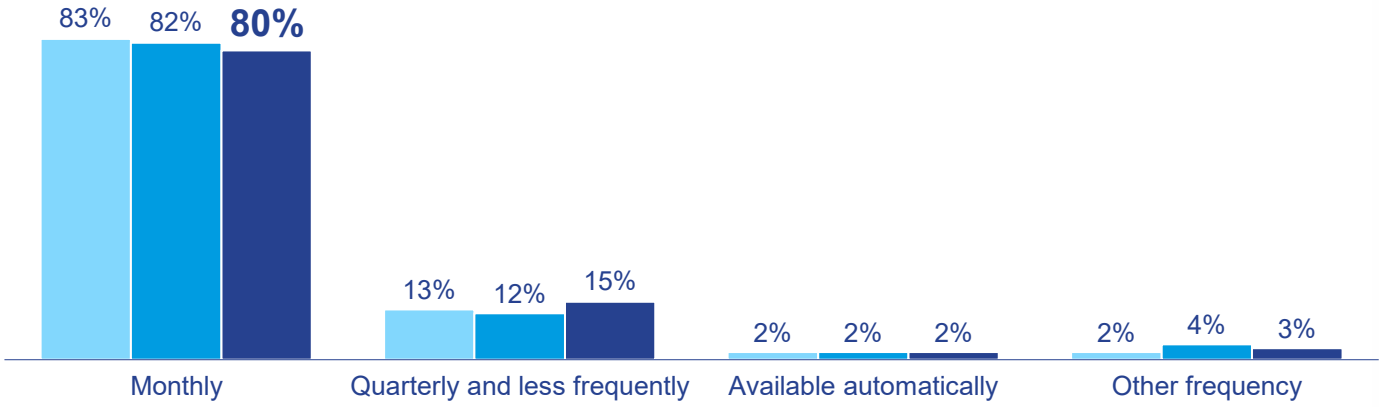
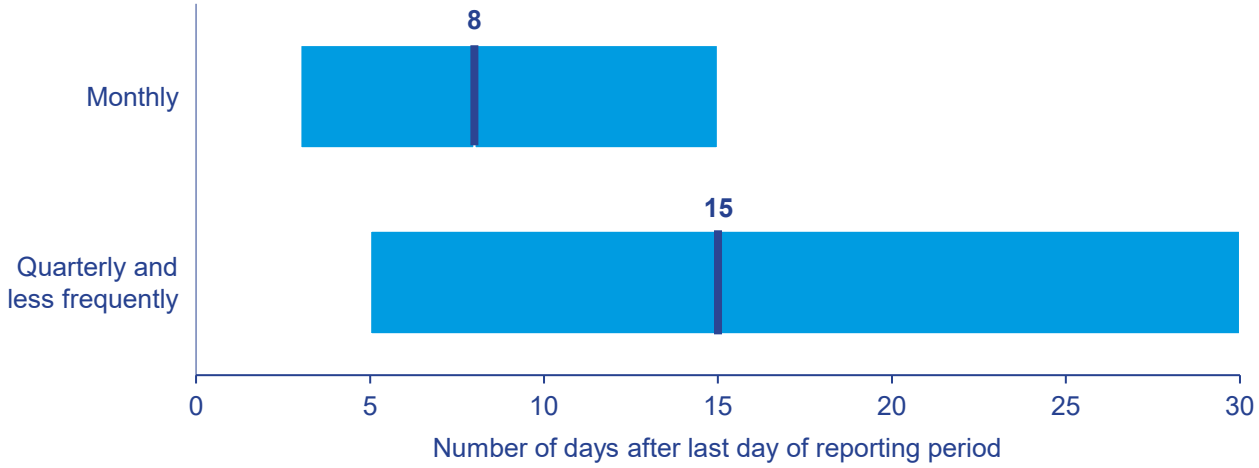
Frequency of cost center report – by year



Timing of cost center report – by frequency of report



- In 2015, automatically generated cost center reports are still the exception. Only approximately one in 50 respondents reports that they have this possibility.
- On average, the report is available approximately ten days after the last day of the reporting period. In over one third of companies, it is available in as few as six days.
- The report is available more quickly the more frequently it is produced in a year.
- In companies listed on the stock exchange, the report is available, on average, twice as quickly as in non-listed companies (median five days vs. ten days).
- If the report is quarterly or less frequently, the respondents are more often less satisfied with the process and / or the efficiency of the cost accounting process.

Upper chart
- 2007
- 2012
- 2015

Lower chart
- Median
- 80% of the companies

Small companies need significantly more man-years per billion revenues for their cost accounting than medium-sized and small ones

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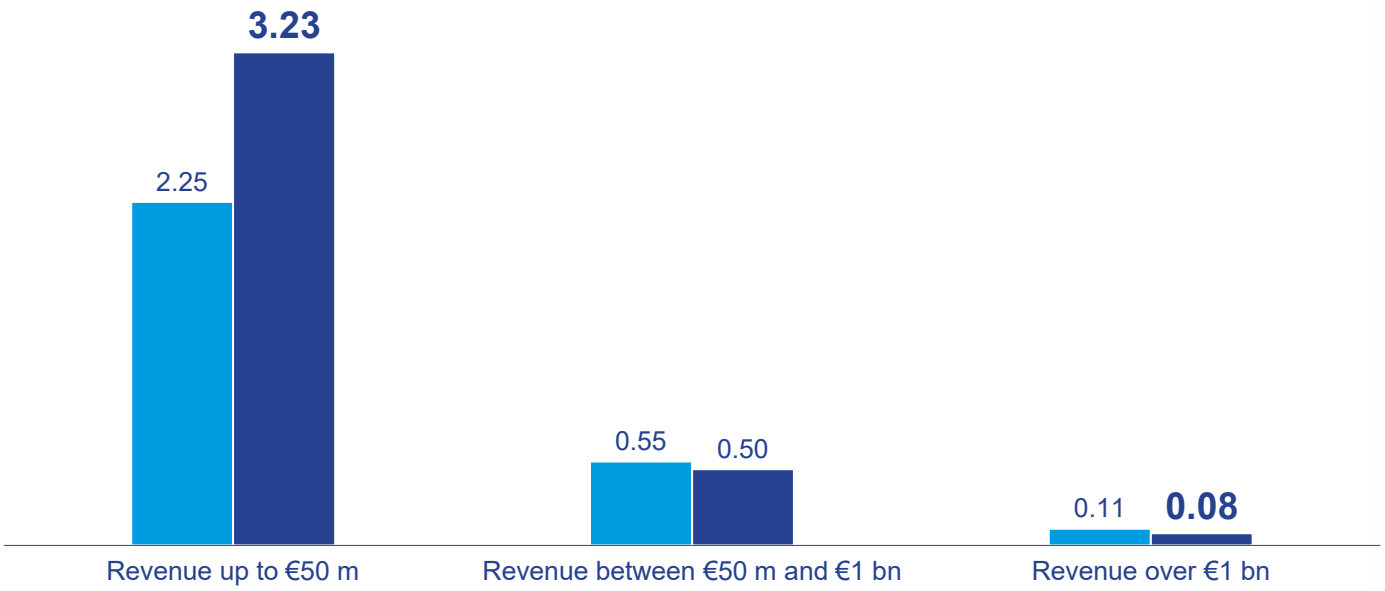
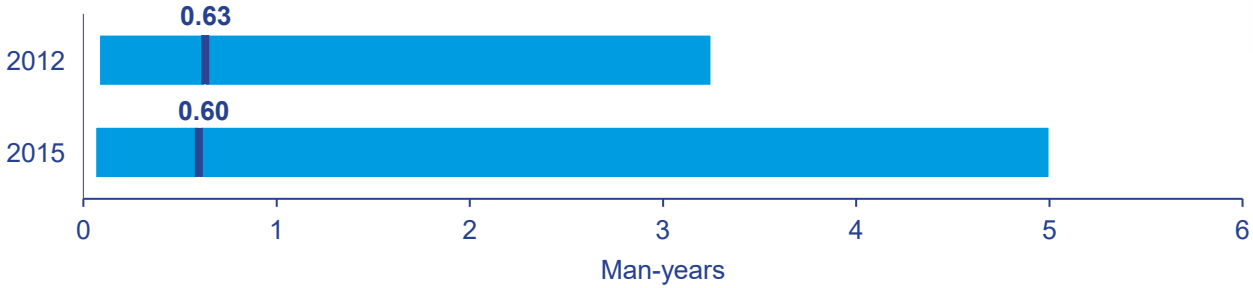
Man-years required for cost accounting per billion € revenue (median) – by company size



Man-years required for cost accounting per billion € revenue – by year



- The respondents provided widely varying information regarding the time required for cost accounting operations. 80% of companies spend between 0.06 and 5 man-years per billion € revenue.
- In terms of the time required in relation to revenue, large companies have a much more efficient cost accounting process (0.08 man-years per billion € revenue) than small companies. This divide has grown wider from 2012 to 2015.
- There is a correlation between the time required for cost accounting operations and respondent satisfaction. Both respondents' satisfaction and the perceived satisfaction of management with the efficiency of the cost accounting is higher if less time per revenue is spent on cost accounting.

Upper chart
2012
2015

Lower chart
Median
80% of the companies

With a 50% use rate, product costing with activity units is twice as widespread as labor-based job-order calculation

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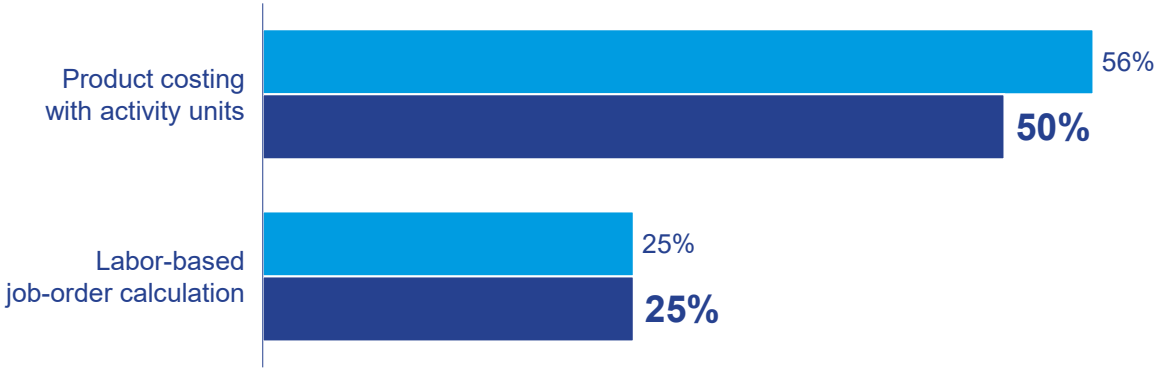
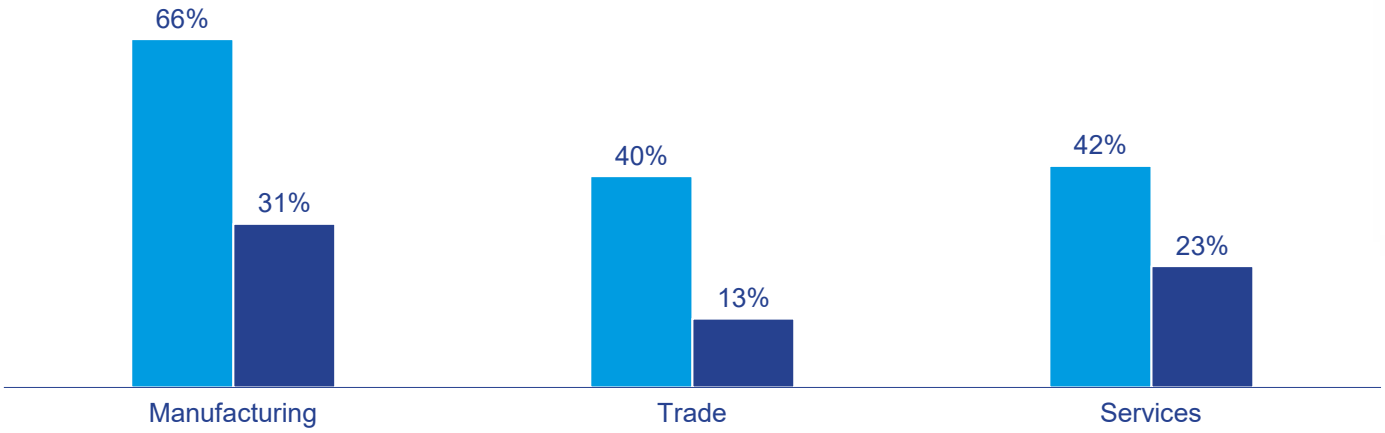
Use of calculation methods – by year



Use of calculation methods – by industry



- Not surprisingly, both methods are used primarily in companies in which cost accounting is also used more intensively for the purpose of price calculation.
- In addition, the product costing method is more widespread in companies in which cost accounting is used more intensively for the purpose of comparing production processes and monitoring economic efficiency.
- The labor-based job-order calculation method, in contrast, is found more often in companies in which cost accounting is used for the purpose of operational planning.

Upper chart
- 2012
- 2015

Lower chart
- Product costing with activity units
- Labor-based job-order calculation

As in 2012, most companies use multi-step contribution accounting which includes three levels

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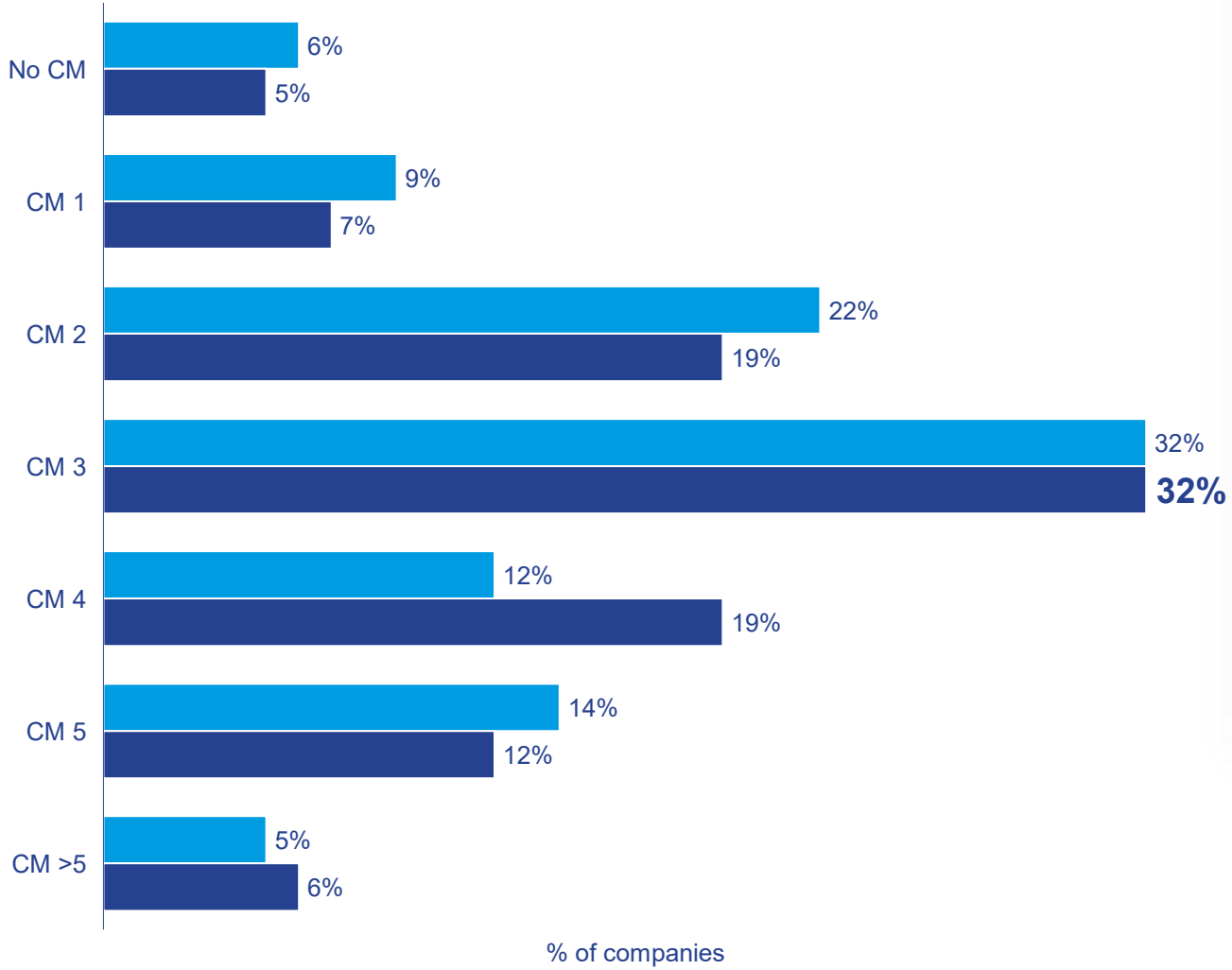
Number of steps in multi-step contribution accounting – by year



- The contribution accounting can be carried out in up to ten steps. The average number of steps is three.
- Companies use a greater number of steps if cost accounting is used intensively for the purpose of operational planning or as the basis for specific decisions.
- In addition, there is a connection with different cost accounting and controlling practices. Companies that use process costing, product and customer life cycle costing, EVA, benchmarking, value chain analysis, and quality improvement programs more intensively also use a greater number of steps in calculating the contribution margin, on average, than companies that use the practices less intensively.

Direct costing and absorption costing are used most intensively

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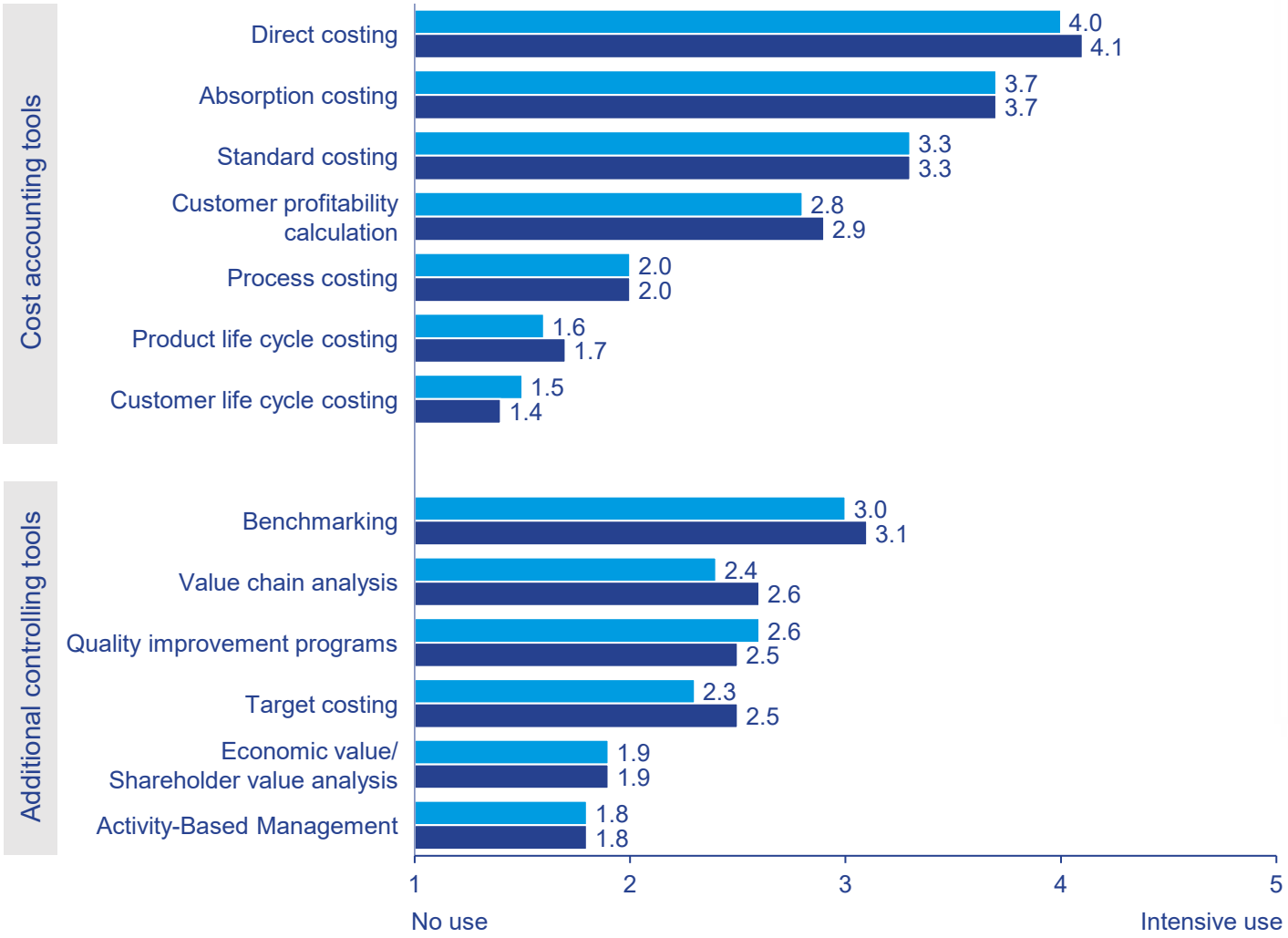
Use of controlling tools – by year



Cost accounting tools

- Company size and industry have almost no relationship to tool use. We found sector-specific differences only in the case of process costing (especially between trade and services) and product life cycle costing (especially between manufacturing and services).

Additional controlling tools

- Successful companies use benchmarking, value chain analysis, quality improvement programs, and activity-based management more intensively.
- In a more dynamic business environment, all additional controlling tools – except for benchmarking – are used more intensively.
- In general, a more intensive use of all tools is closely related to satisfaction with the cost accounting process.

Monitoring economic efficiency and operational planning are considered the main purposes of cost accounting

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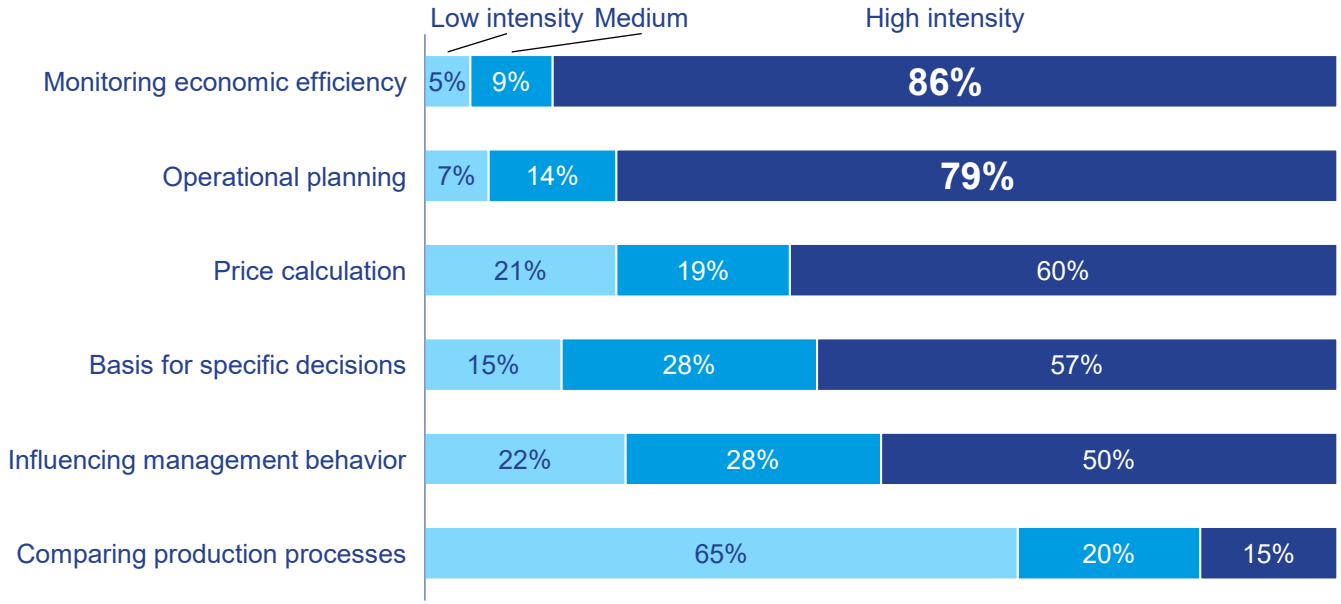
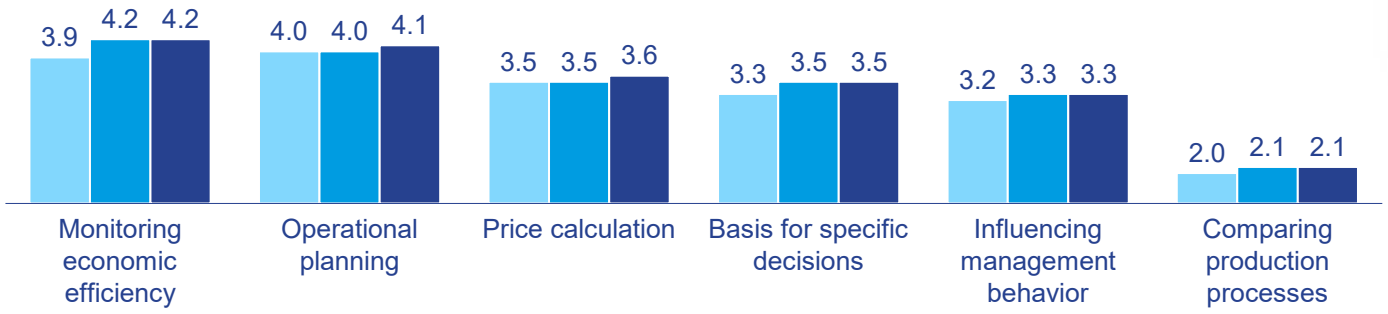
Purpose of cost accounting



- Cost accounting aims to provide staff with data. Some data, for example, the results of price calculations, can also be intended for external addressees.
- While cost accounting is used across all industries and company sizes for the purpose of operational planning, there are clear differences when it comes to other purposes.
- For example, in all companies that pursue a cost leadership strategy, cost accounting is used primarily for the purpose of monitoring economic efficiency (100% use it intensively or very intensively), whereas in companies using a product differentiation strategy, the most intensive use is for the purpose of price calculation (85% use it intensively or very intensively).

Purpose of cost accounting – by year



Lower chart

2008 2012 2015

In 2015, half of respondents were satisfied with their cost accounting

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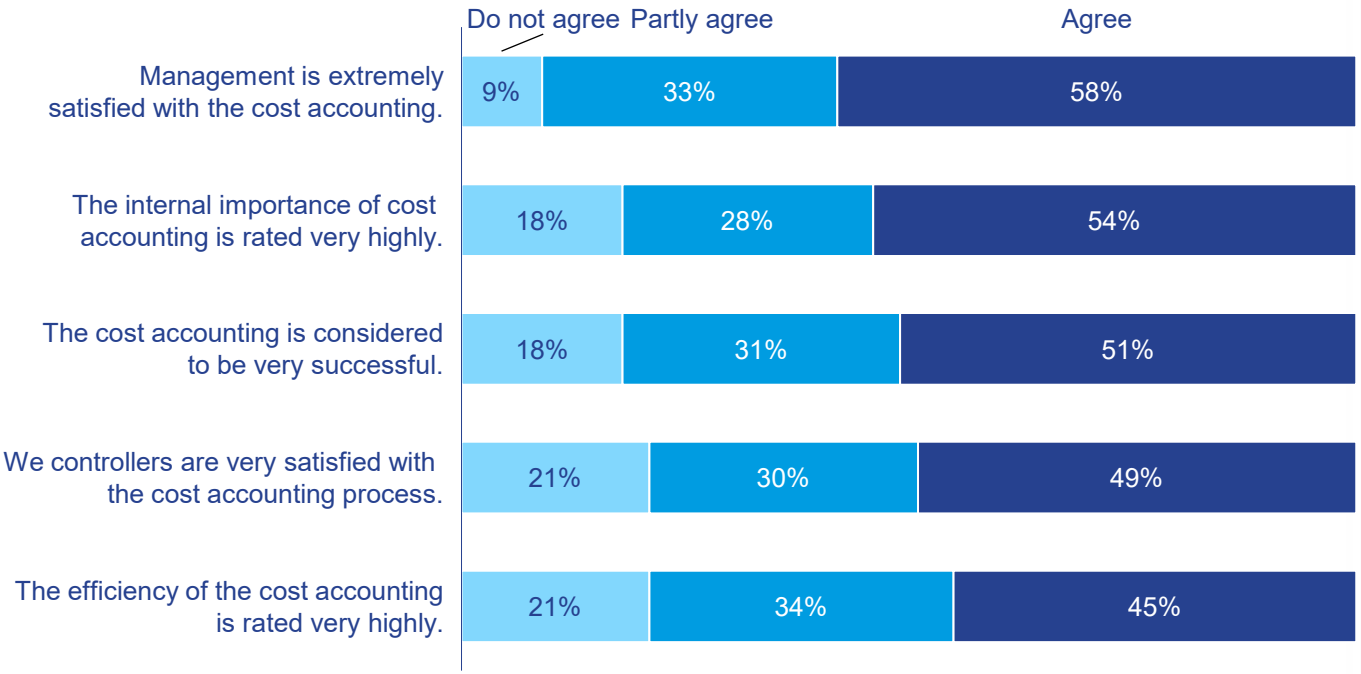
Overall satisfaction with cost accounting* – by year

Satisfaction with cost accounting* – different aspects



- Overall satisfaction with the cost accounting process was analyzed using five individual aspects.
- Half of the respondents are overall satisfied with the cost accounting in their company – across all industries and company sizes.
- In more successful companies, almost two-thirds of respondents (64%) are satisfied. In less successful companies, this is only the case for just over one third (36%).
- Interestingly, there is a fairly consistent picture regarding the individual aspects of satisfaction with the cost accounting process: Satisfaction values for efficiency and process are just under 50%, whereas for other core activities of controllers (e.g., reporting and budgeting), satisfaction values for the individual aspects efficiency and process are often around 30%. This is partly due to the fact that cost accounting is generally a fully developed process with a high degree of automation.

* as assessed by controllers

If cost accounting is the responsibility of the controlling department, controller satisfaction with cost accounting is significantly higher

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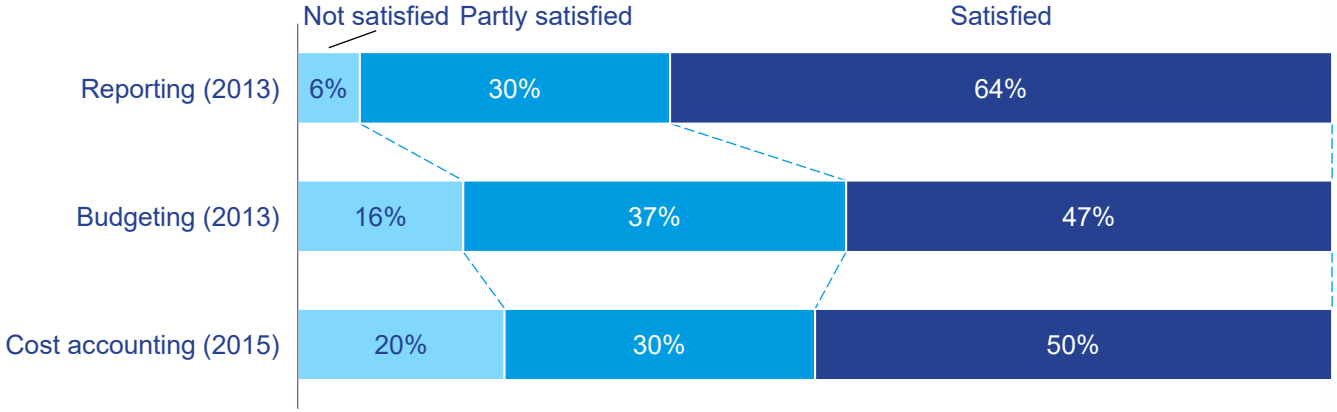
Overall satisfaction with cost accounting* – by responsibility of the controlling department

Overall satisfaction with cost accounting in 2015* – compared to satisfaction with reporting and budgeting in 2013



- If the controlling department is responsible for cost accounting, the level of satisfaction with the cost accounting process is much higher. This could be due to controllers wanting to influence the overall shape and design of the cost accounting process. If they do not have such an influence, they are rather dissatisfied.
- While the satisfaction with the process and efficiency of cost accounting is relatively high compared to reporting and budgeting, the overall satisfaction with cost accounting is only average: It is substantially lower than the satisfaction with reporting and approximately equal to satisfaction with budgeting.
- The more intensively cost accounting is used for various purposes, and the more intensively cost accounting and controlling tools are used, the higher the level of satisfaction is.

* as assessed by controllers

Between 2012 and 2015, optimizing and standardizing processes were key change activities in cost accounting

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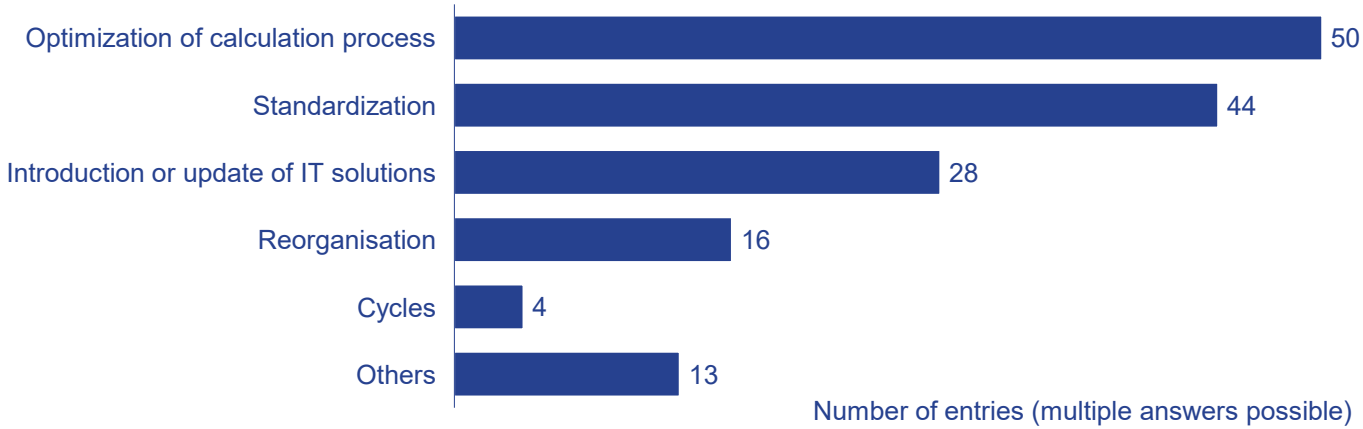
Important changes from 2012 to 2015



Controllers' thoughts on changes in cost accounting (selected quotes)

> Change in cost allocation (only necessary absorption, control aspects, concentration on costs that can be influenced)"

> Harmonization of cost accounting process across several business models"

> Extension of cost accounting process to take strategic planning aspects into consideration"

> Planning tool including workflow process with clearance during the planning process"

- The aspects concerning revision mentioned by the participants in the survey 2015 overlap with those in the 2012 survey.
- In the three years from 2012 to 2015, the most common change were made in the optimization of their calculation processes. This includes smaller adjustments like the addition of imputed costs, the reorganization of cost objects, or the revision of cost types.
- Particularly in large companies there have been attempts to simplify and standardize the cost accounting process.
- Plans to implement or update IT solutions are also frequently mentioned. In this context, there is a trend towards integrated tools helping companies to drive the automation of the cost accounting process.
- A fundamental revision of the cost accounting process is seldom mentioned: Only 16 respondents report that the cost accounting process in their company has been completely reorganized.

The number of companies that revise their cost accounting has declined over time

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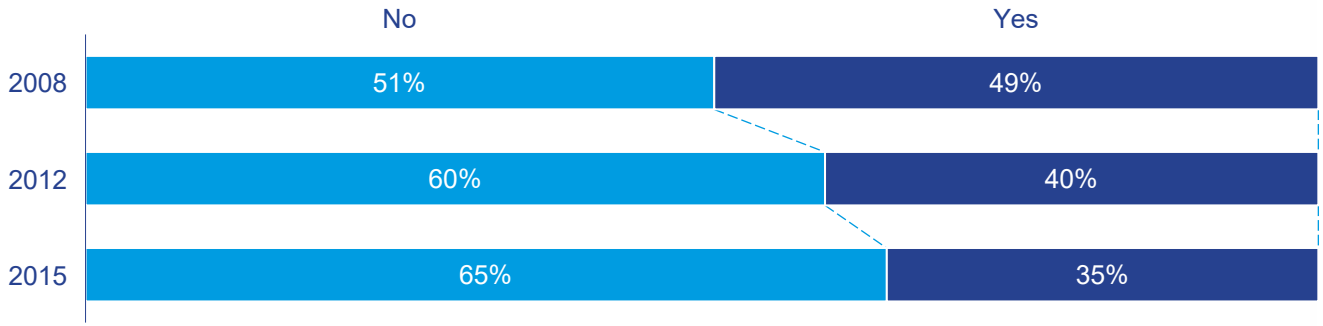
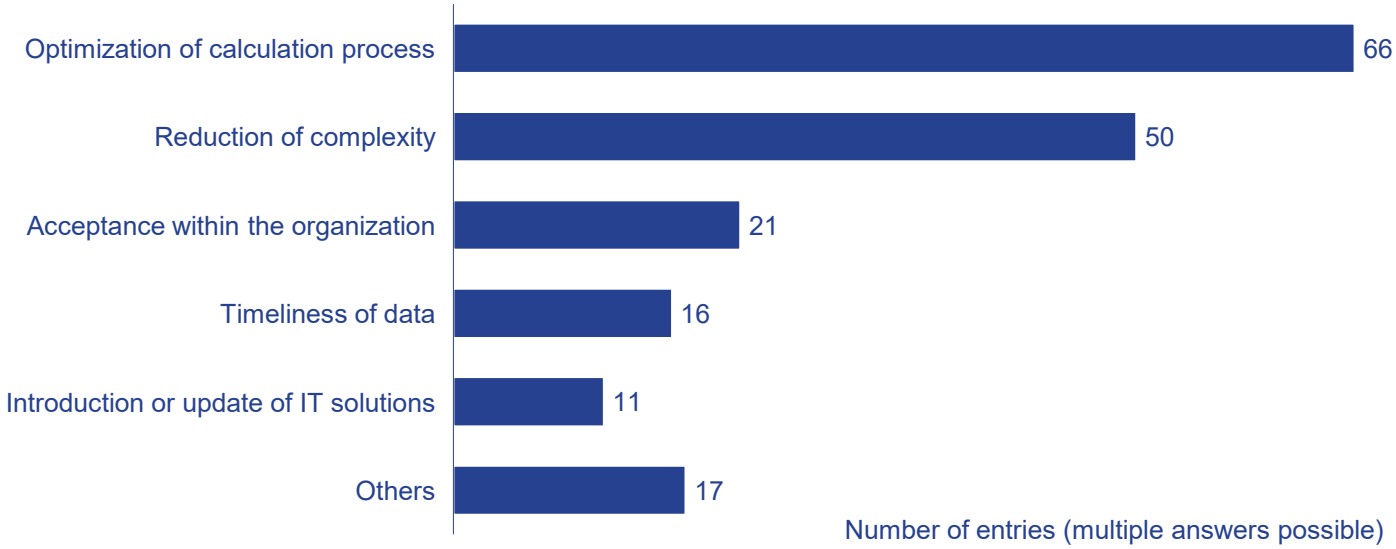
Revision of cost accounting – by year



Planned changes in cost accounting



- The share of respondents in companies in which the revision of the cost accounting process is a major issue has fallen by 14 percentage points between 2008 and 2015.
- In 2015, respondents in companies in which changes are planned for the next years are much more dissatisfied with the efficiency of the cost accounting process.
- One third of respondents who made statements concerning revision perceive a need for change in the optimization of the calculation process.
- From 2012 to 2015, the importance of IT has clearly decreased. This implies that many companies have already initiated or completed the necessary changes.

Risk management & resilience

In approx. half the companies, the controlling department is responsible for risk management

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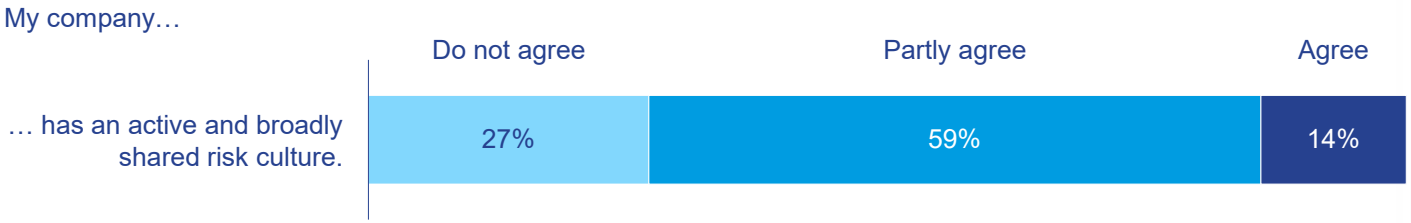
Organizational responsibility for risk management

Internal risk culture



- If risk management is not a top management issue (71%), it is situated within the controlling department with above-average frequency (71%).
- If, on the other hand, executive boards are closely involved in risk management, there are two options: Either a specific and independent risk management unit exists (16%), or it is primarily dealt with by top management (7%).
- An independent risk management unit is more likely to be present in a company with an active and broadly shared risk culture. Risk management is more likely to be part of controlling or legal / compliance, if respondents observe no active and broadly shared risk culture.

Only one quarter of the respondents know the “Three Lines of Defense-Model”

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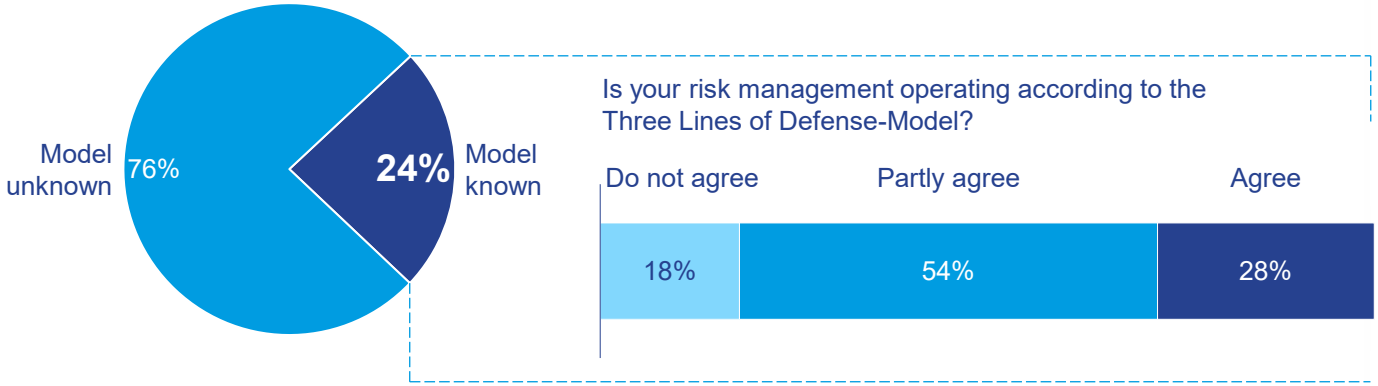
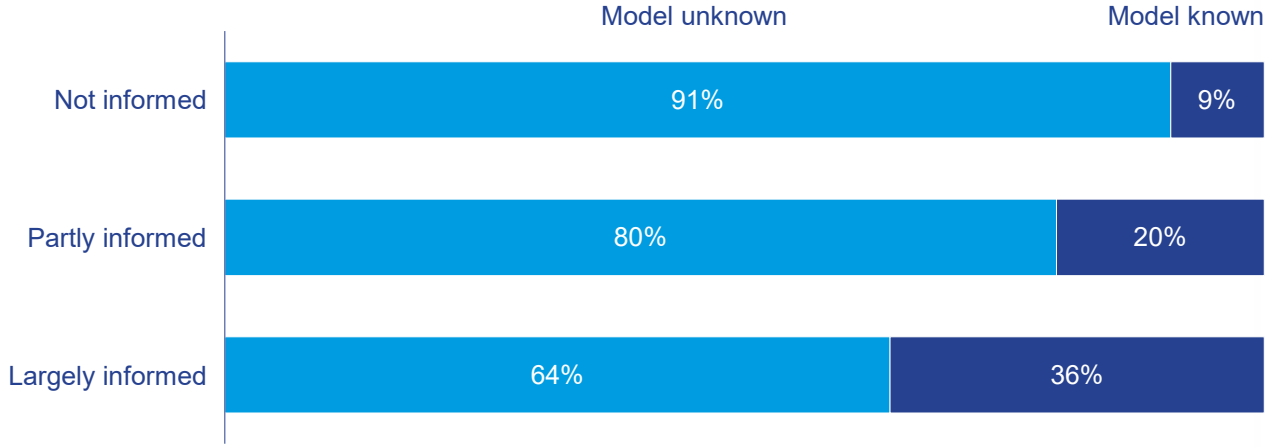
Familiarity with the “Three Lines of Defense-Model”*



Familiarity with the “Three Lines of Defense-Model” – by self-assessed information level with respect to risk management in the respondent's company



- The “Three Lines of Defense-Model” distinguishes between three lines of defense in risk management: Operational management forms the first line of defense, functions such as risk management, compliance and controlling form the second line of defense, and finally internal auditing forms the third line of defense*.
- The “Three Lines of Defense-Model” is known to controllers in 37% of the large companies, but only in 13% of the small companies.
- A total of 36% of respondents consider themselves to be largely informed on the subject of risk management in their company, while 48% consider themselves to be partly informed. The information level increases with the position of the respondents as well as their experience in the company.
- Only 16% describe themselves as not at all informed on the subject. They are excluded from the following evaluations.

* Source:
IIA (2013): IIA Position Paper: The Three Lines of Defense, in: Effective Risk Management and Control.

In about 40% of companies, primarily the executive board deals with risk management

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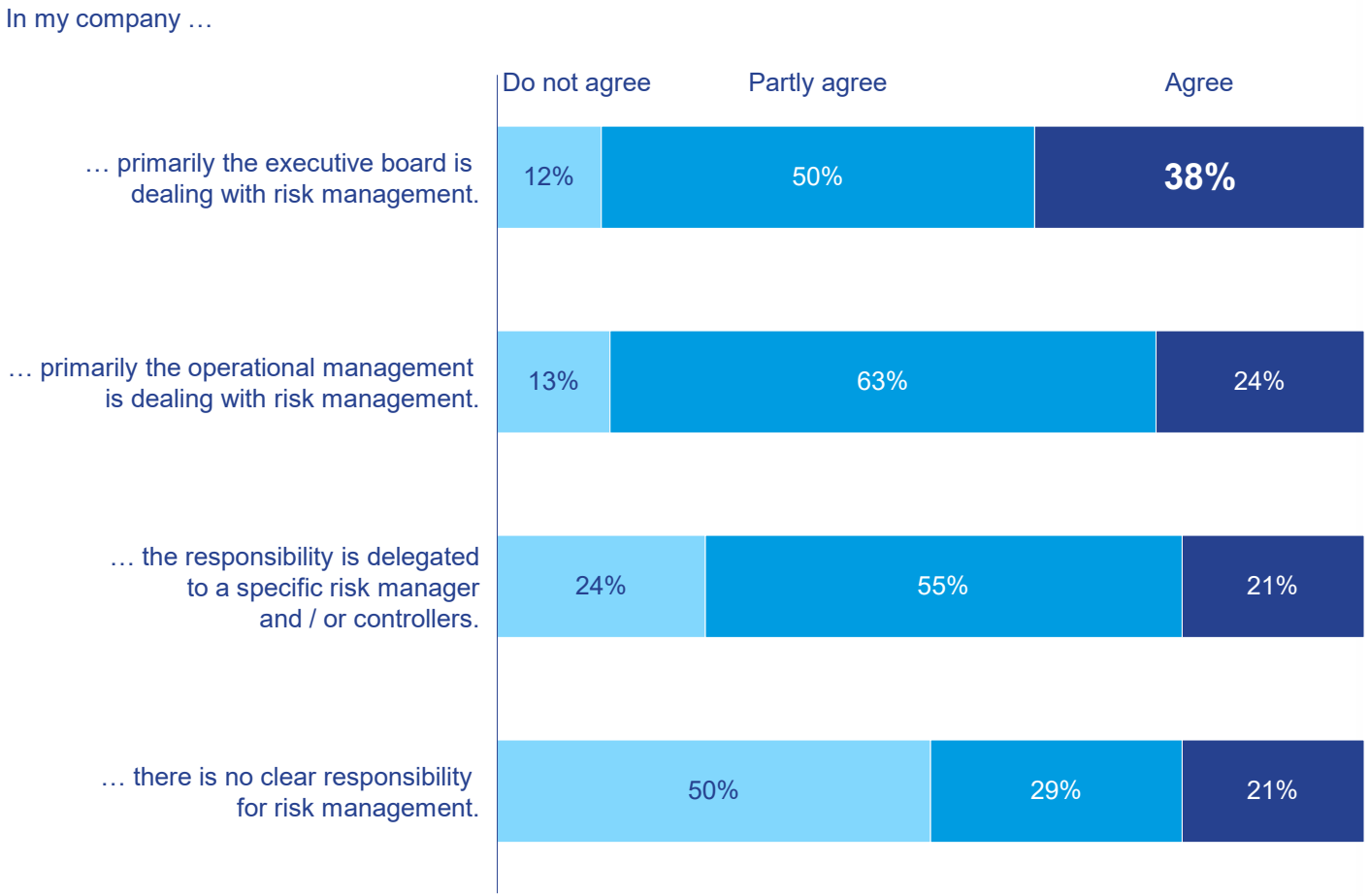
Responsibility for risk management



- The responsibilities for risk management are largely independent of company size.
- In large companies, operational management is more often responsible for risk management (32% vs. 22% in small companies). It can be assumed that in many small companies, operational management can hardly be separated from top management.
- Both the executive board and the operational management are more likely to deal with the issue of risk management if the company is operating in a rather uncertain environment.

Management pays relatively little attention to strategic business risks and external, uncontrollable risks

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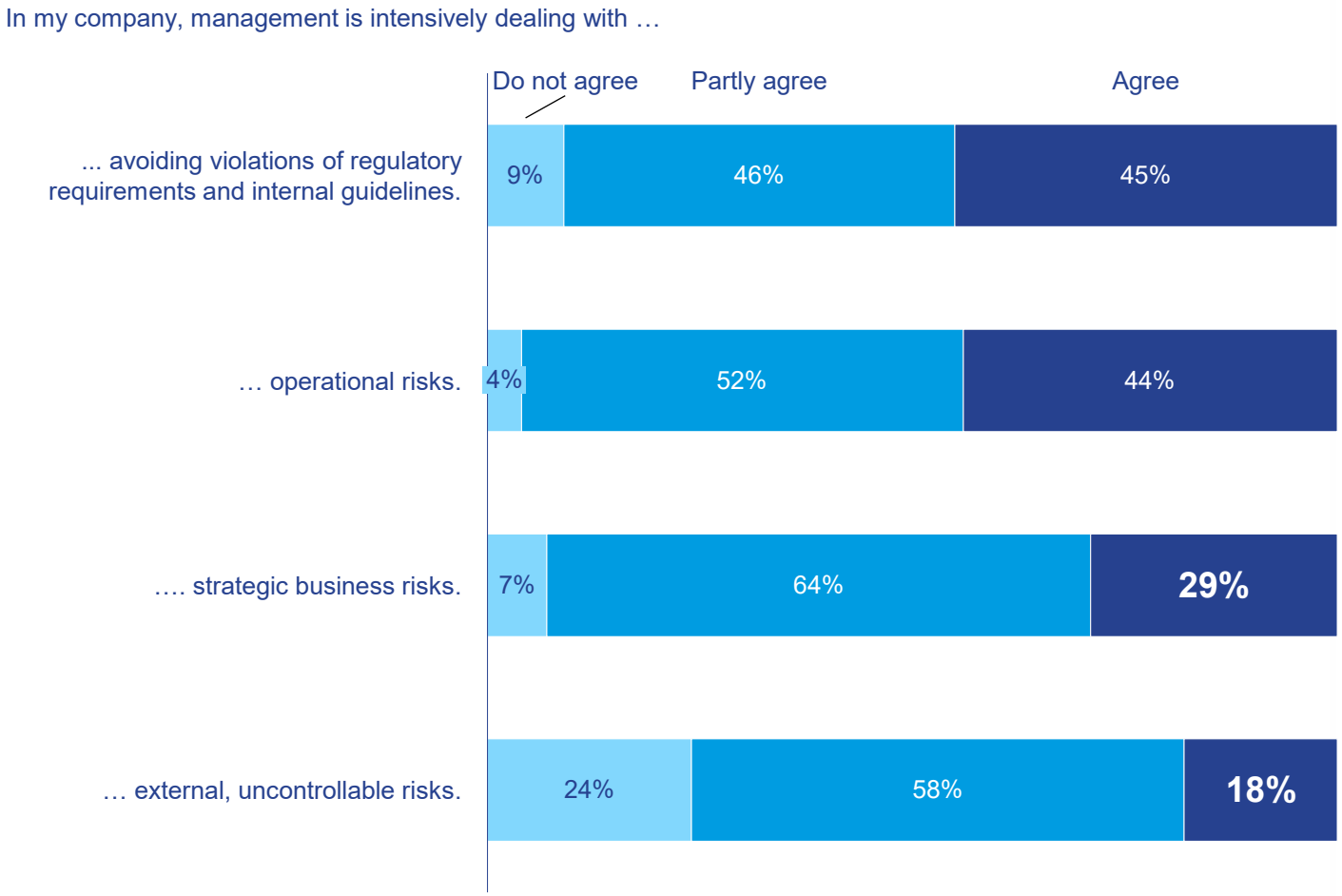
Types of risks focused on by management



- Kaplan/Mikes (2012)* distinguish between (1) preventable risks, (2) strategic risks, and (3) external, uncontrollable risks. In this study, we have divided risks of type (1) into compliance risks and operational risks.
- Company size and the perceived uncertainty in the business environment, among other things, determine to which risk types management gives particular attention.
- Large companies deal more intensively with compliance risks and external, uncontrollable risks than smaller ones.
- Whether management attributes more attention to strategic risks, on the other hand, is independent of the company size.
- In more uncertain business environments, strategic risks and external risks are more in focus than in rather certain business environments.

* Source:
Kaplan, R. S./Mikes, A. (2012): Managing Risks: A New Framework, in: Harvard Business Review, 90 (June), pp. 48-60.

Only one in five companies relies heavily on dialogue and organizational learning to manage risks

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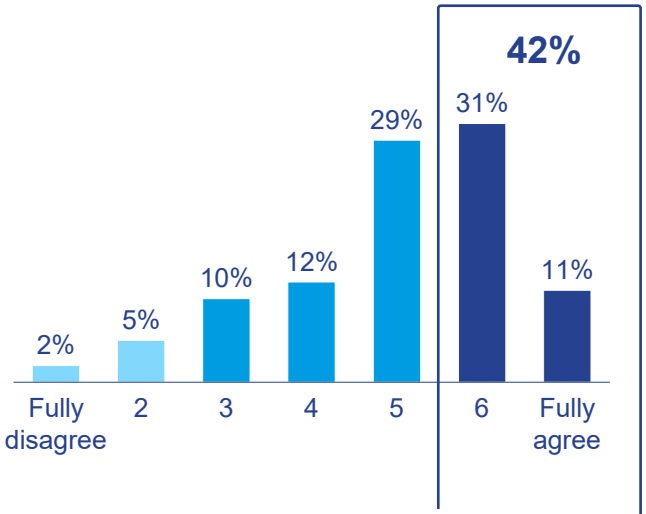
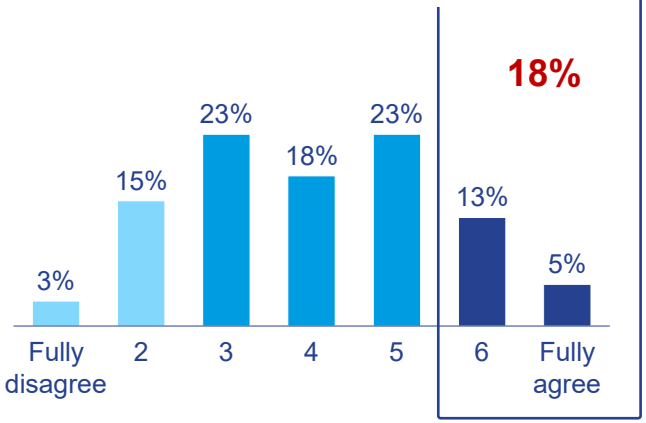
In the management of operational risks we rely heavily on ...

Quantification, reporting and control

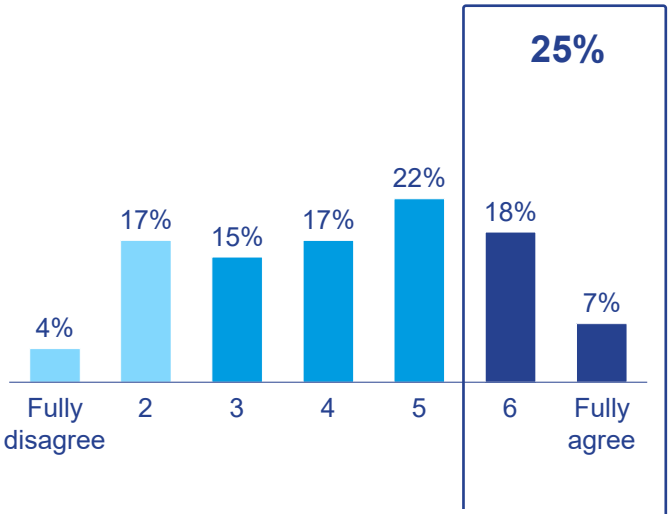


Dialogue and organizational learning

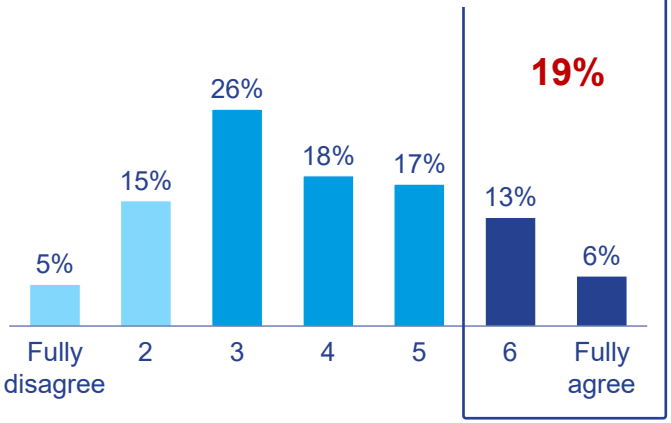


In the management of strategic business risks we rely heavily on ...

Quantification, reporting and control

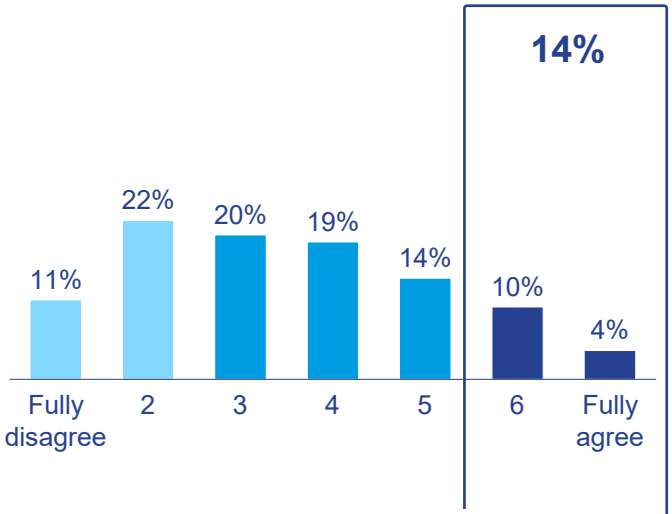


Dialogue and organizational learning

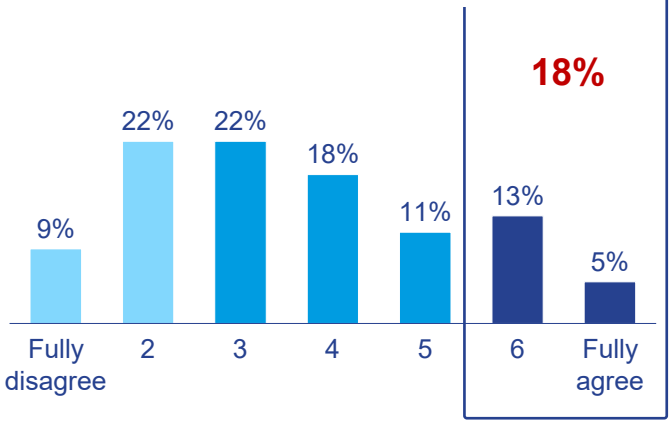


In the management of external, uncontrollable risks we rely heavily on ...

Quantification, reporting and control



Dialogue and organizational learning



In most companies, there is still great potential for improving the management of strategic risks

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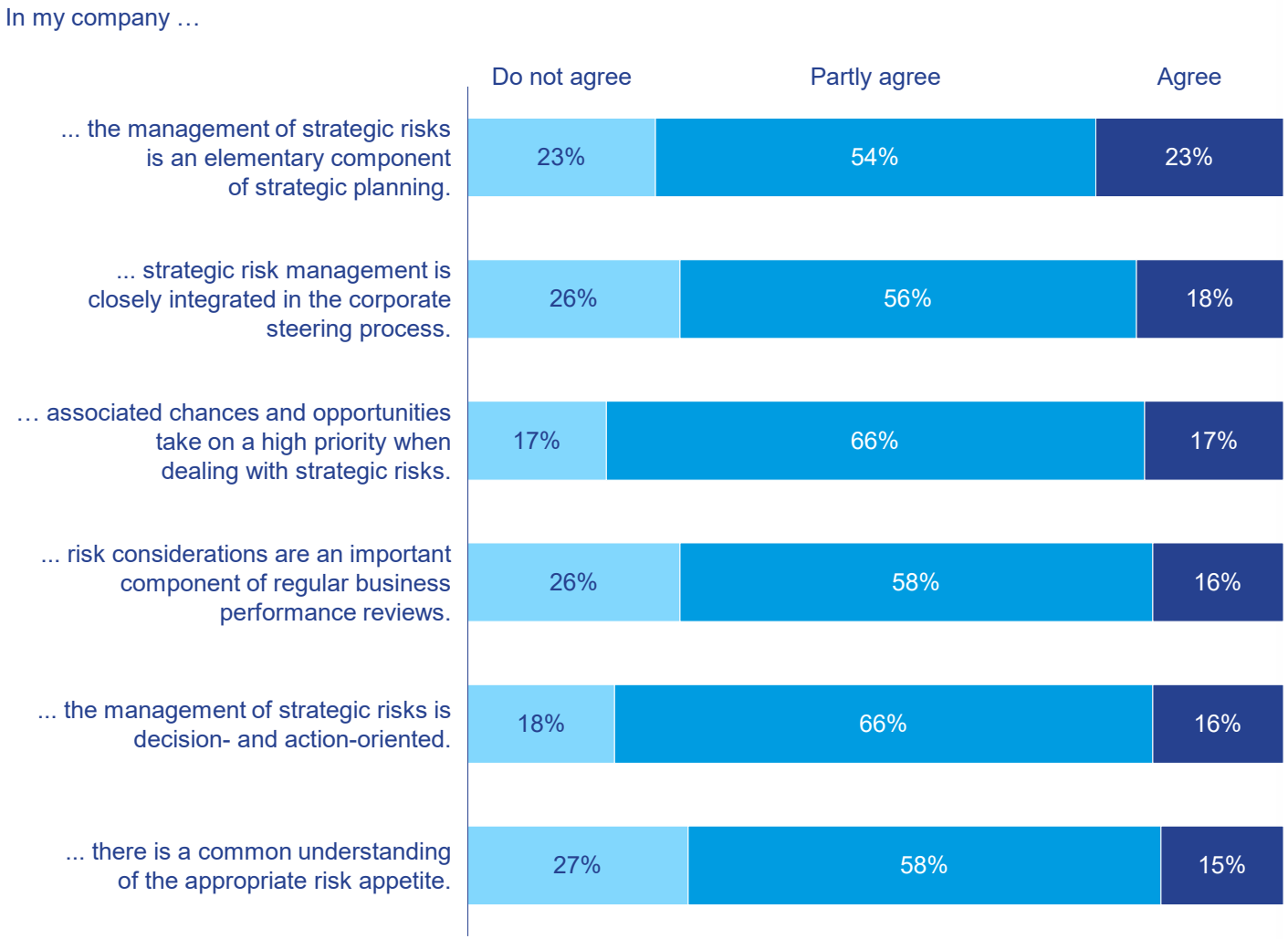
Management of strategic risks



- Following Kaplan/Mikes (2012)*, the management of strategic risks should be closely integrated with the strategic planning process.
- There is a clear pattern across all characteristics: Only about one fifth of the companies have implemented these points to a large extent in the management of strategic risks. This is independent of company size.
- A difference by industry is evident in the question regarding the common understanding of appropriate risk appetite: Here, 19% in the service sector agree, but only 10% in the manufacturing sector.

* Source:
Kaplan, R. S./Mikes, A. (2012): Managing Risks: A New Framework, in: Harvard Business Review, 90 (June), pp. 48-60.

Contrary to the usual rhetoric, Monte Carlo simulations are only used in a few companies

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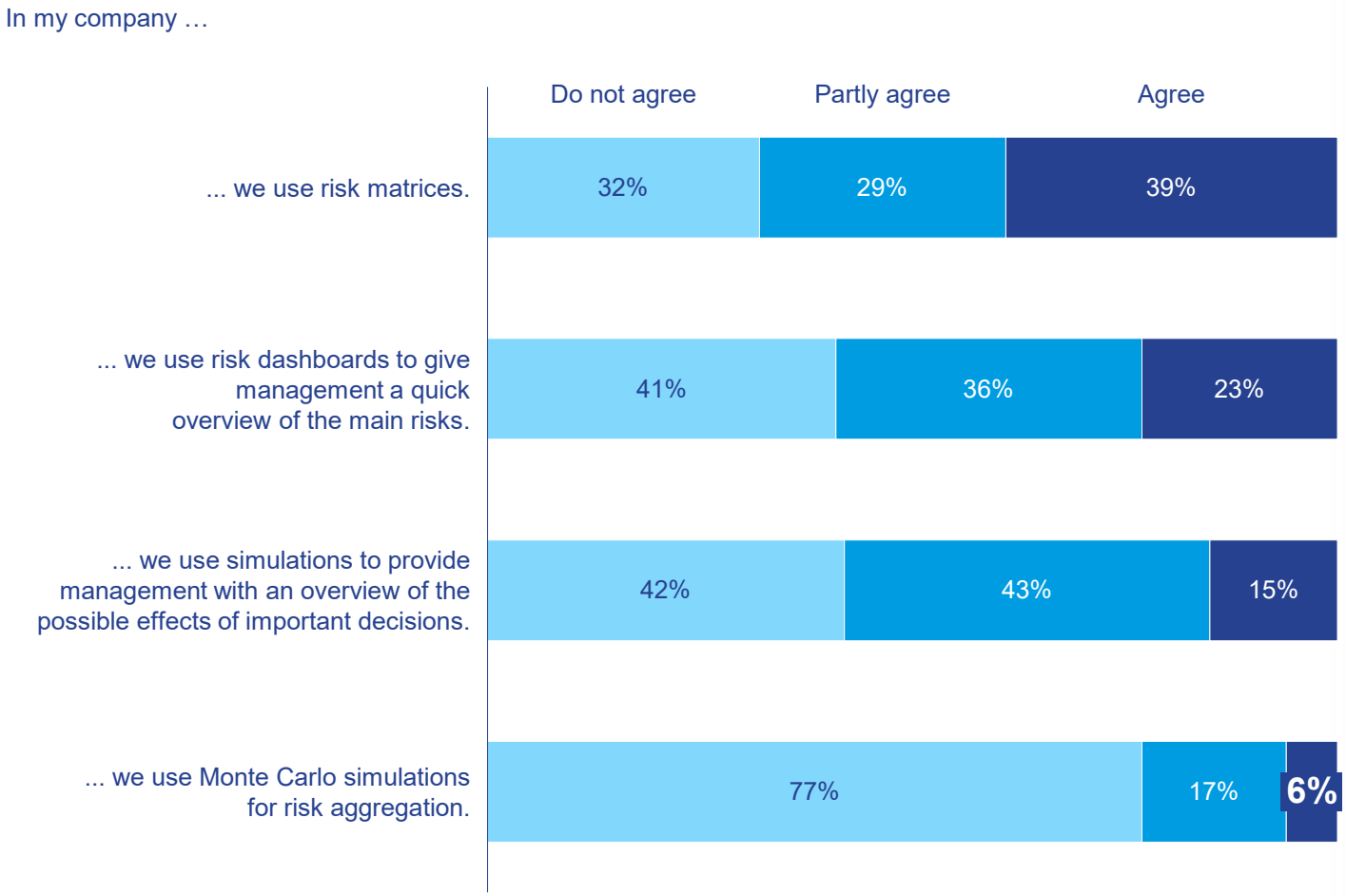
Tools in risk management



- Gleißner (2020)*, for example, names Monte Carlo simulations as “the most important tool that controlling and risk management should use together”.
- Nevertheless, 63% of the respondents state that they do not use Monte Carlo simulations at all. This is particularly the case in small (78%) and medium-sized (67%) companies. In large companies, “only” about half of the respondents do not use Monte Carlo simulation.
- The majority of respondents (58%) state that none of the tools mentioned is used to any great extent in their company. Another 21% use only one of the tools intensively. In most cases, these are a form of risk matrix.
- In about one in five companies, several tools are used in parallel.
- Risk matrices and risk dashboards are used more in listed companies than in unlisted companies.

* Source:
Gleißner, W. (2020): Integratives Risikomanagement – Schnittstelle zu Controlling, Compliance und Interner Revision, in: Controlling, 32 (4), pp. 23-29.

Only one-third of respondents consider their company to be very resilient

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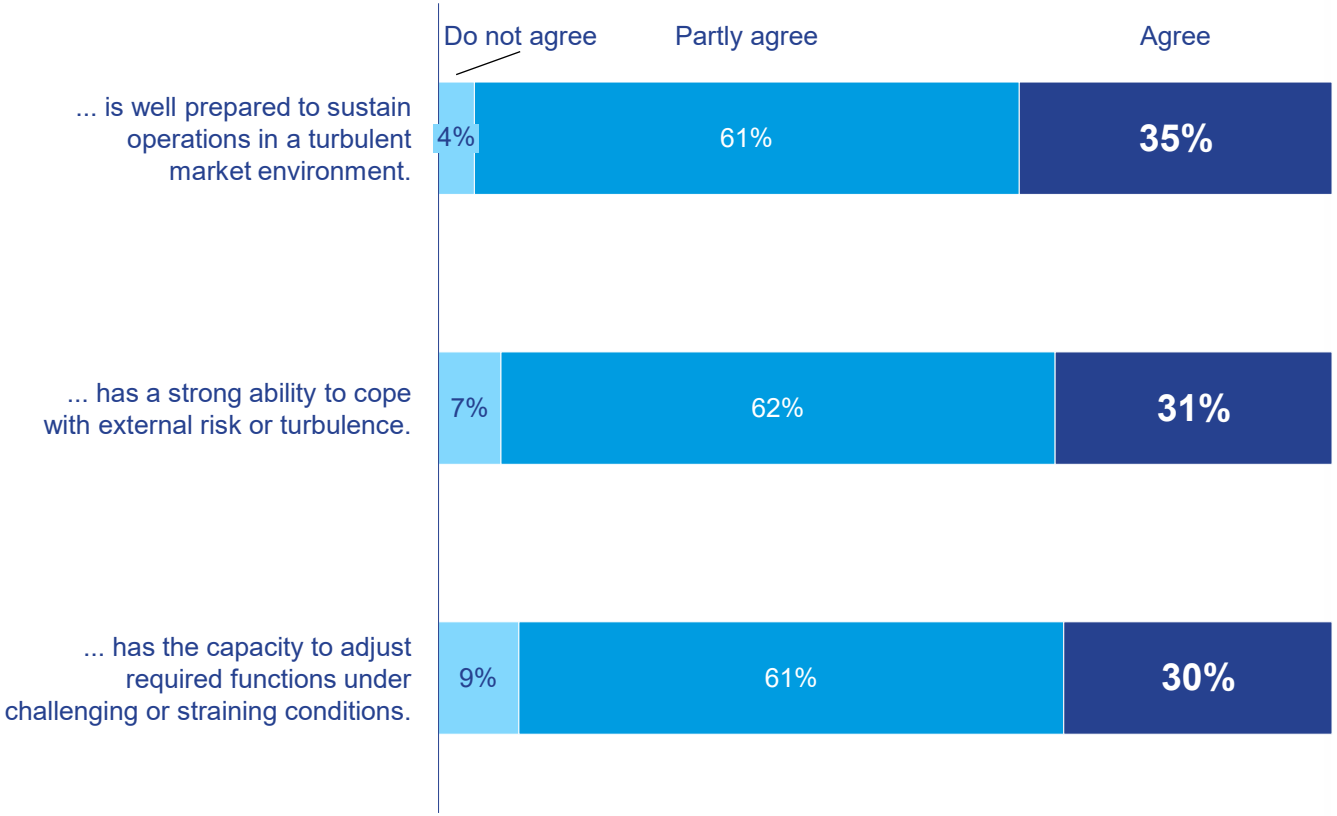
Companies' resilience

My company …



- Only very few respondents rate their company as not resilient to environmental turmoil and difficult conditions.
- The assessment of the company's resilience is related to the assessment of the company's success. About two-thirds of the respondents from more successful companies answered with 6 or 7 on a 7-point Likert scale to the three questions about resilience. In less successful companies, the share decreases to only 13%.
- If the executive board or operational management itself is intensively involved in risk management, the respondents tend to rate the resilience of their company as rather high.
- Conversely, if responsibility for risk management is delegated to a large extent or there are no clear responsibilities, the assessment of resilience is lower.

A look at the drivers of resilience reveals further potential

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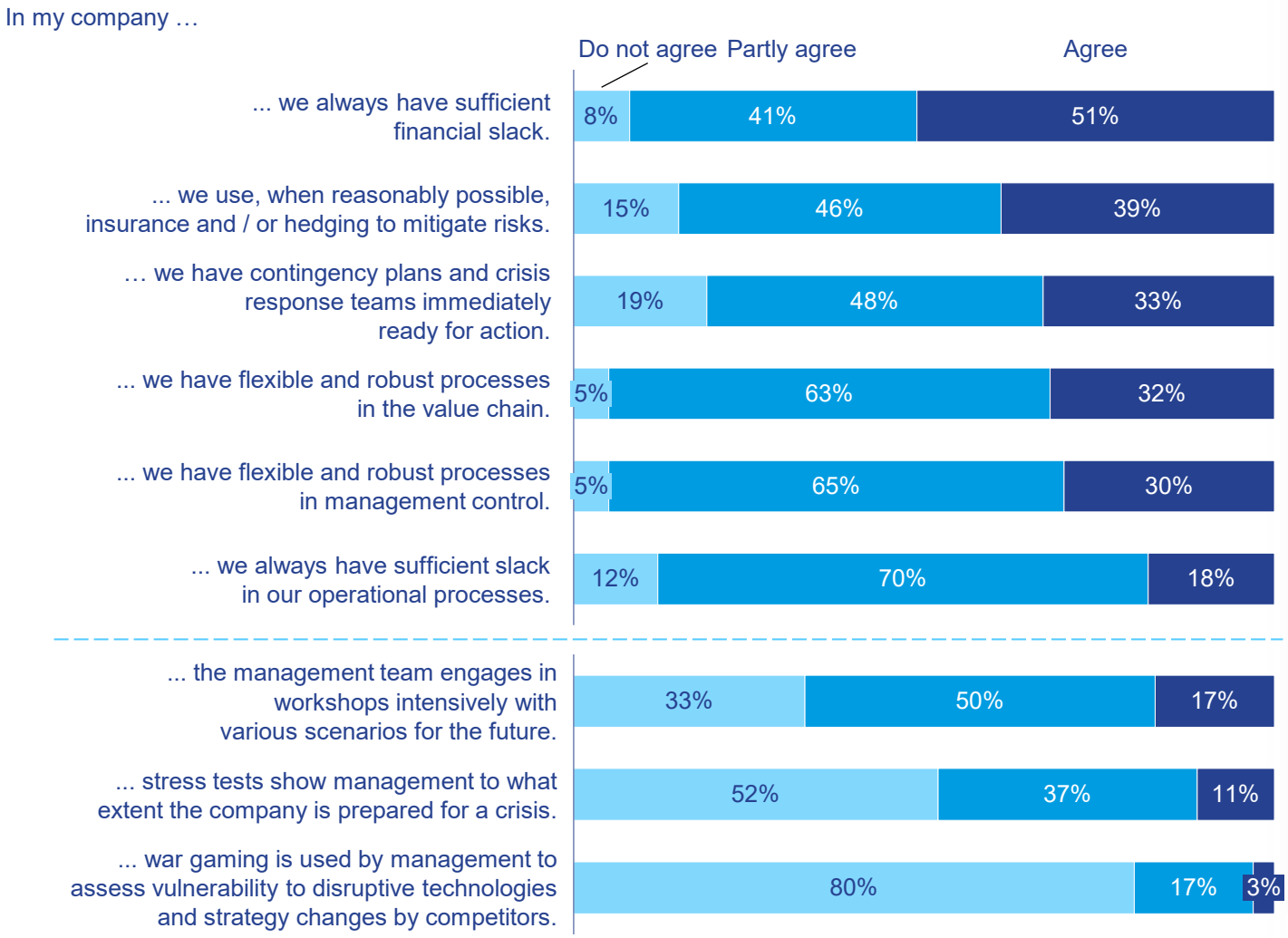
Drivers of resilience



- Schäffer (2020)* presents a framework of levers that can increase the resilience of companies. In addition to strategic risk management, these include adaptive management, robust and flexible processes in the value creation and resource availability. The resilience drivers employed here can be assigned to the four levers of the framework.
- Kaplan/Mikes (2012)* name scenario analyses, stress tests and war gaming as instruments for identifying and better managing external, uncontrollable risks.
- War gaming and workshops on future scenarios tend to take place in companies with an uncertain business environment.
- The employment of insurance and / or hedging to mitigate risks is more likely in manufacturing companies.

* Sources:
- Schäffer, U. (2020): Levers of organizational resilience, in: Controlling & Management Review, 64(6), pp. 8-19.
- Kaplan, R. S./Mikes, A. (2012): Managing Risks: A New Framework, in: Harvard Business Review, 90 (June), pp. 48-60.

Large companies rely more heavily on insurance and hedging, contingency plans, and crisis response teams than small ones

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Drivers of resilience – by company size

	Strong approval in large companies	Strong approval in small companies	Difference in percentage
Insurance and / or hedging to mitigate risks	60%	31%	29
Contingency plans and crisis response teams	50%	22%	28
Stress tests	22%	6%	16
Sufficient financial slack	52%	39%	13
Workshops on future scenarios	26%	14%	12
War gaming	13%	3%	10
Sufficient slack in operational processes	24%	19%	5
Flexible and robust processes in the value chain	27%	28%	-1
Flexible and robust processes in management control	22%	23%	-1

Companies with high resilience primarily rely on flexible and robust processes

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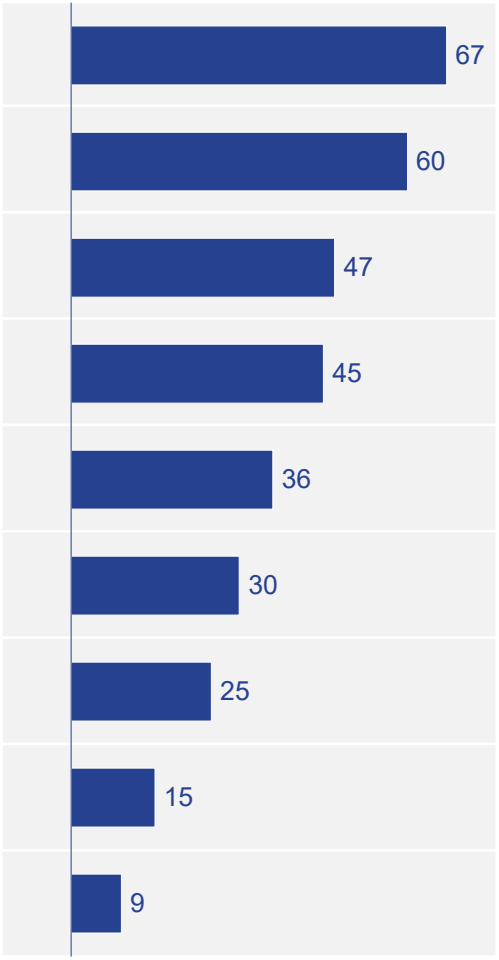
Drivers of resilience – by the resilience perception of the controllers

	High approval in companies with high resilience*	High approval in companies with low resilience*	Difference in percentage
Flexible and robust processes in the value chain	73%	6%	67
Flexible and robust processes in management control	65%	5%	60
Sufficient financial slack	75%	28%	47
Contingency plans and crisis response teams	56%	11%	45
Insurance and / or hedging to mitigate risks	57%	21%	36
Sufficient slack in operational processes	35%	5%	30
Workshops on future scenarios	33%	8%	25
Stress tests	17%	2%	15
War gaming	9%	0%	9



* The mean score of all three resilience questions (see p. 105) ranges from 6 to 7 (high resilience) and 1 to 4 (low resilience).

Even when controlling is responsible for risk management, controllers rarely ensure that concrete decisions and measures are taken

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Tasks of controllers in risk management

In my company …	Risk management part of controlling	Risk management not part of controlling	Difference in percentage
… controllers ensure that the results of the risk processes are documented and reported.	42%	11%	31
… controllers provide methods and processes for managing risks.	36%	12%	24
… controllers quantify and evaluate the identified risks.	40%	17%	23
… controllers monitor the development of strategic risks.	23%	5%	18
… controllers monitor the relevant early warning signals.	32%	15%	17
… controllers monitor the implementation of the agreed risk management measures.	30%	18%	12
… controllers ensure that concrete decisions and measures are taken.	**23%**	11%	12

If risk management is part of controlling, there is a closer cooperation and similar procedures and models are used

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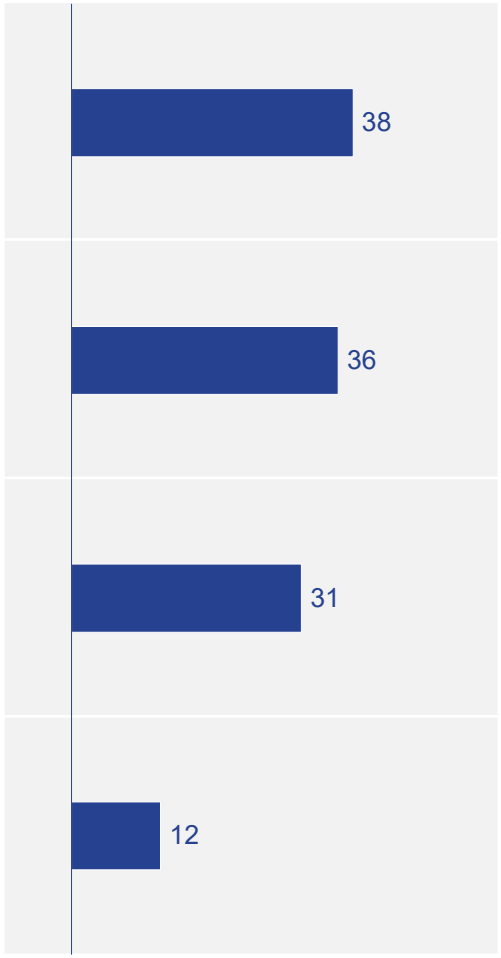
Cooperation between controlling and risk management

In my company …	Risk management part of controlling	Risk management not part of controlling	Difference in percentage
... controlling and risk management work very closely together.	53%	15%	38
… controlling and risk management use the same procedures and models for similar issues.	49%	13%	36
... tasks and areas of responsibility of controlling and risk management overlap significantly.	36%	5%	31
... the IT systems used by controlling and risk management are very well integrated.	23%	11%	12



Efficiency and attention by management are the main criteria cited by respondents for a positive evaluation of risk management

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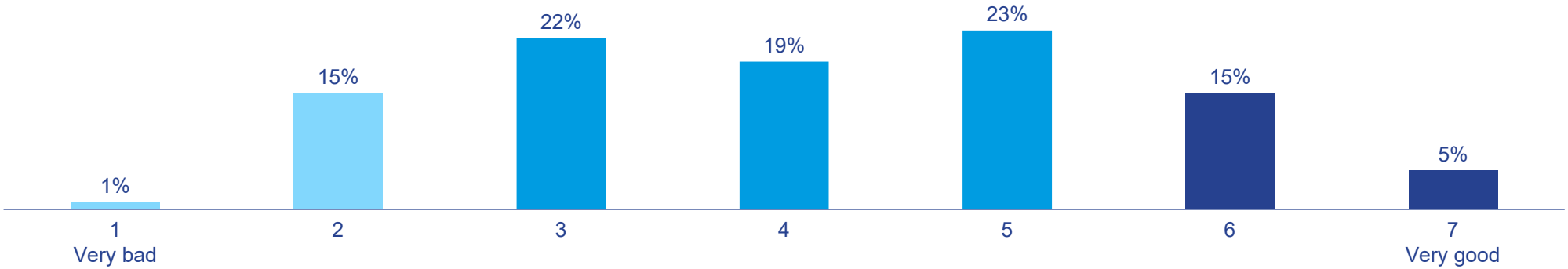
Quality of risk management and reasons for respondent's classification (selected quotes)



> **Standardized risk management** takes place **only in a narrow spectrum of processes**; the **competencies of numerous managers** for company-wide structured and methodically assured risk management are **insufficient**."

> **There is little interest unless stakeholders demand it!**"

> Risk management department is seen only as a necessary evil, no integration at all into standard controlling processes."

> **Risks are indisputably named directly in the management board**. [...] The implementation of risk management with rather simple methods among the small circle of decision-makers is not costly."

> **Existing narrow structures and fast information channels** can be used. **A flexible set of rules** ensures smooth learning processes and serves as orientation for questions. No additional structures need to be created and maintained."

> Risk management as an **independent function**, but an **organizational component of controlling, enables very efficient processes**."

Controllers' thoughts on …

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… quality and cost-benefit ratio of risk management (selected quotes)

"It is apparent from the current situation (pandemic) that the **focus of risk management seems to be predominantly on the risks that can be imagined**. Preventive preparation for any theoretical situation seems to be difficult to reconcile with the economic provision of capacities (qualified employees, for example)."

"**It needs to be done.**"

"The identification of risks is **not yet done holistically**. The handling of non-quantifiable risks is **not yet professional**. External risks are **not systematically monitored**."

"The quality could be higher, the **risk experts are often not close enough to the operational processes**, so their risk evaluations could be better."

"**Often only on paper,** when specific real events occur, **people do react differently than documented.**"

"Formal process and reporting established and efficient. **But early consideration of uncertainties in decisions and especially strategic opportunities / risks could be improved**."

Contents

Controller statistics in Germany

Between 2016 and 2019, the number of controllers in Germany has increased by 10%

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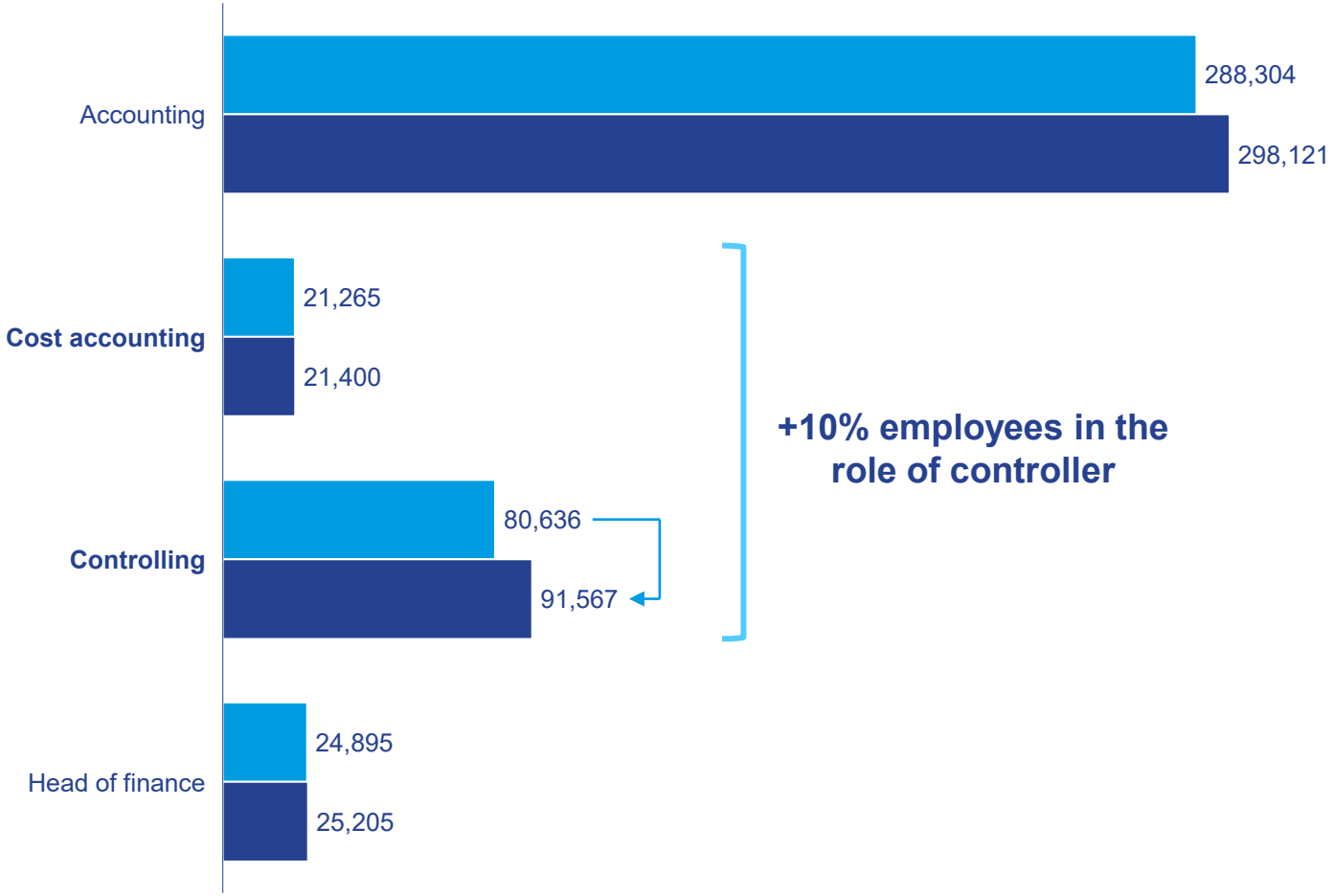
Number of employees subject to national insurance contributions in financial professions



- All data in this chapter stem from "Statistik der Bundesagentur für Arbeit (2017 / 2020)".
- Freelance controllers and those employed in the civil service are not included in the employment office data. The total number of controllers overall in this analysis includes "pure" controllers and cost accountants.
- Growth rates differ across positions. Overall, a considerable increase by 20% in six years (between 2013 and 2019) is noted. This implies an annual growth rate of 3.1%.
- For more information on the number of controllers in companies, see the chapter "Organization of controlling".

A decreasing unemployment rate indicates better job prospects for controllers

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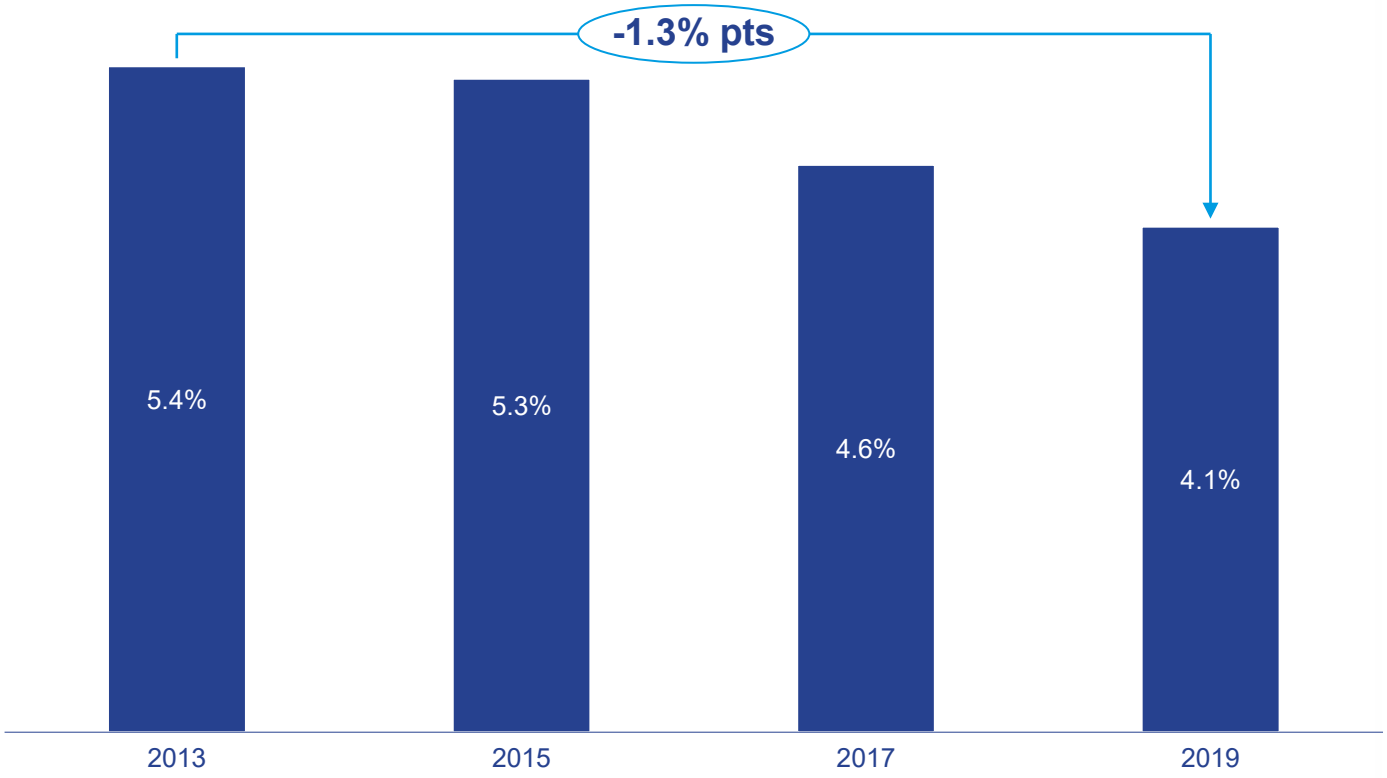
Unemployment rate of controllers between 2013 and 2019 (job seeking / employed controllers)



- Over the past six years (2013 to 2019), the unemployment rate of controllers dropped by 1.3 percentage points. Only the subgroup of accounting employees realized a larger decrease by 1.8 percentage points.
- The unemployment rate among employees in cost accounting decreased only by 0.5 percentage points and among heads of Finance, the rate decreased even less by 0.1 percentage points.
- Overall, the controlling profession is still in ascent. In comparison to other finance professions, the chances of obtaining a job in controlling have increased.

In comparison to other parts of the finance function, the proportion of women and men in controlling is relatively equal

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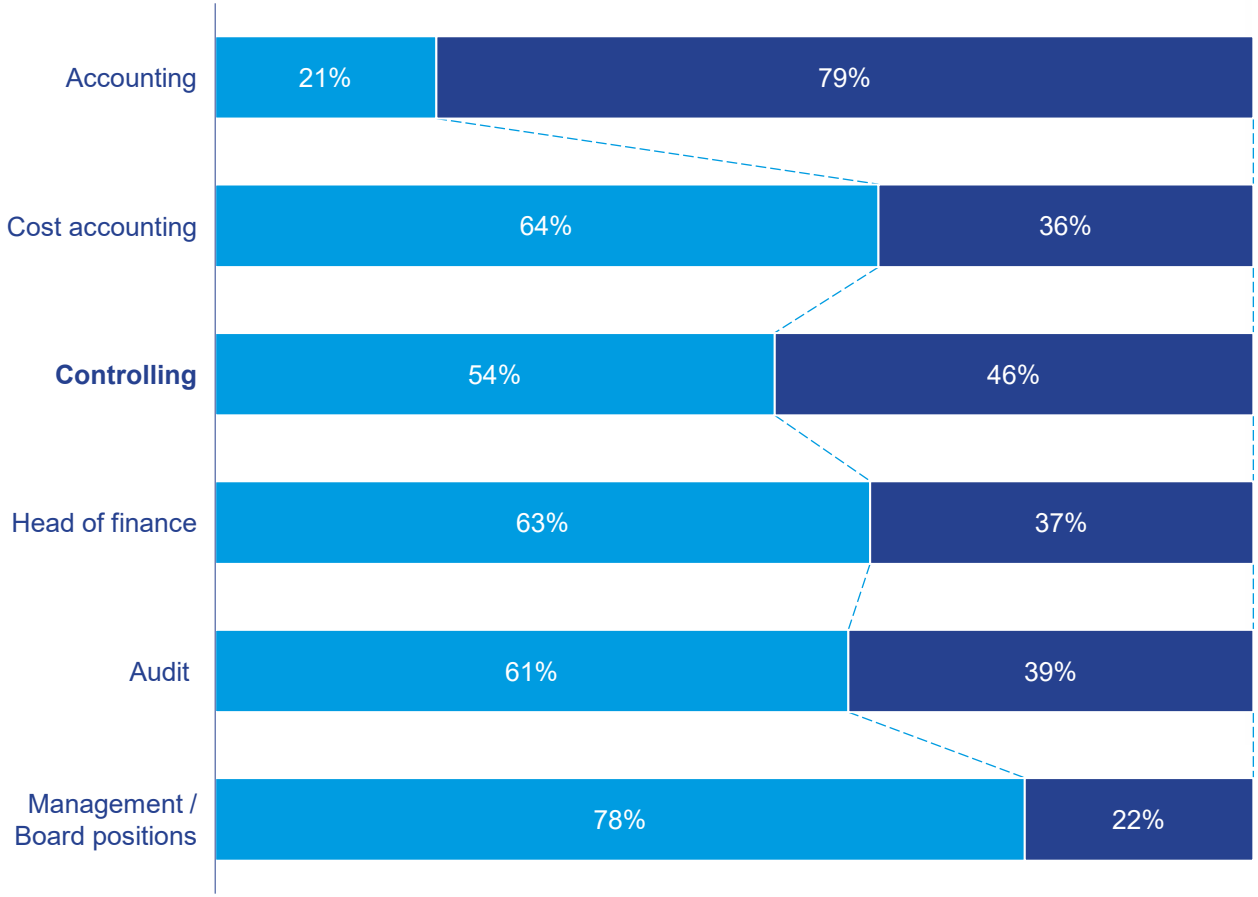
Share of employees making social security contributions – by gender in 2019



- Controlling is not a purely male profession. In comparison to other finance professions, the gender gap is here relatively small.
- While the share of women working in other finance professions has not increased overall between 2013 and 2019, the share of women working in controlling professions has increased by 2.5% over the past six years.

The proportion of part-time positions in controlling is relatively low

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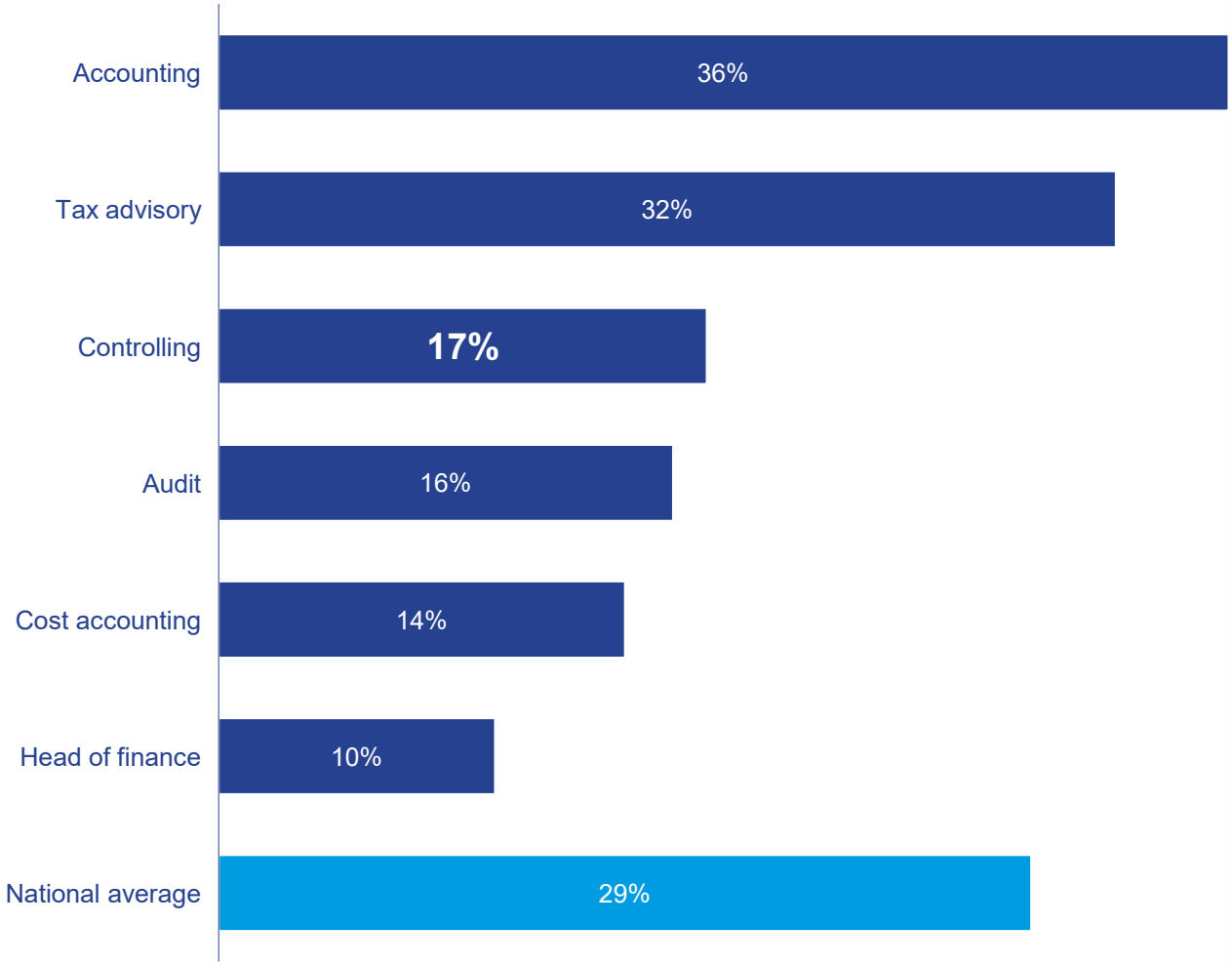
Share of employees making social security contributions in part-time positions



- The proportion of controllers in part-time positions has increased by 4.3% between 2013 and 2019, whereas the national average of employees in part-time positions increased by only 2.3% within the same time period.
- Overall, the share of employees in part-time positions has increased slightly across all financial professions between 2013 and 2019.
- The proportion of part-time employees within accounting increased by 4.2% between 2013 and 2019, whereas the share of part-time employees with the position head of finance only increased by 1.7%.
- Yet, the proportion of part-time employees in controlling remains considerably lower than the national average across professions.

Organization of controlling

On average, there is one controller for every 125 employees

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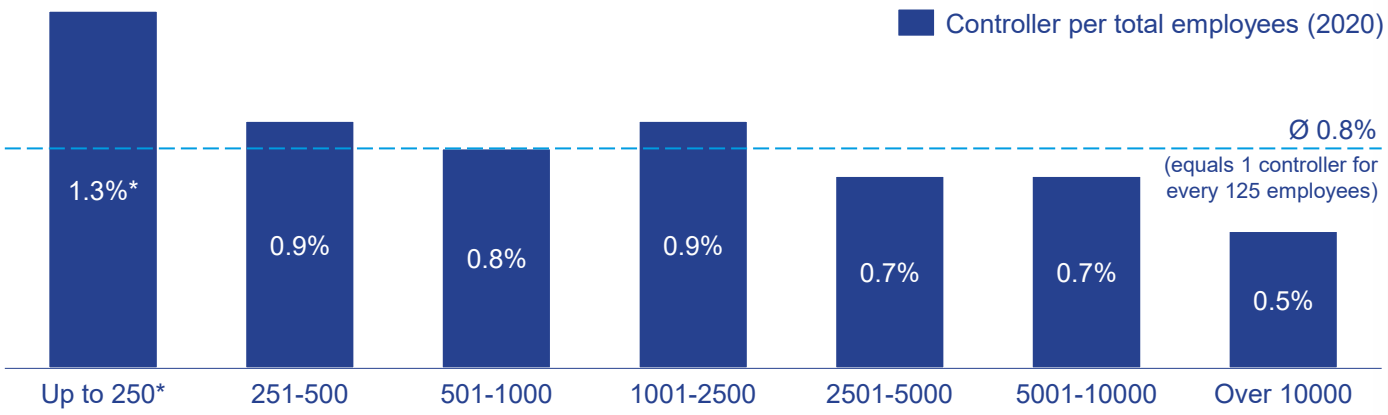
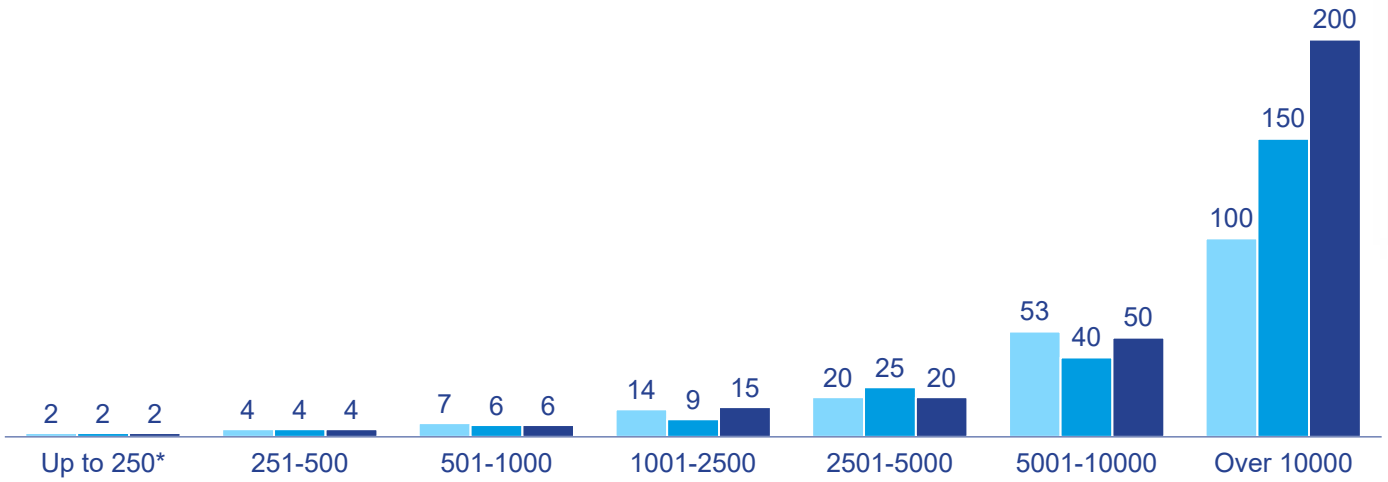
Share of controllers (median) – by total number of employees



Number of controllers (median) – by total number of employees



- The average value of “controllers per total number of employees” has remained stable at 0.8% for years. As a rough rule of thumb, there is one controller per 125 employees.
- For large companies, the share of controllers tends to fall slightly with the number of employees; for very small companies, the value tends to be somewhat too high due to our sample conditions.*
- 91% of companies employ controllers predominantly on a full-time basis.

* The value of the category “up to 250” tends to be too high, as small companies with a high controller share tend to be over-represented in our sample.

Companies employ an average of 3.3 controllers per 100 million € in revenue

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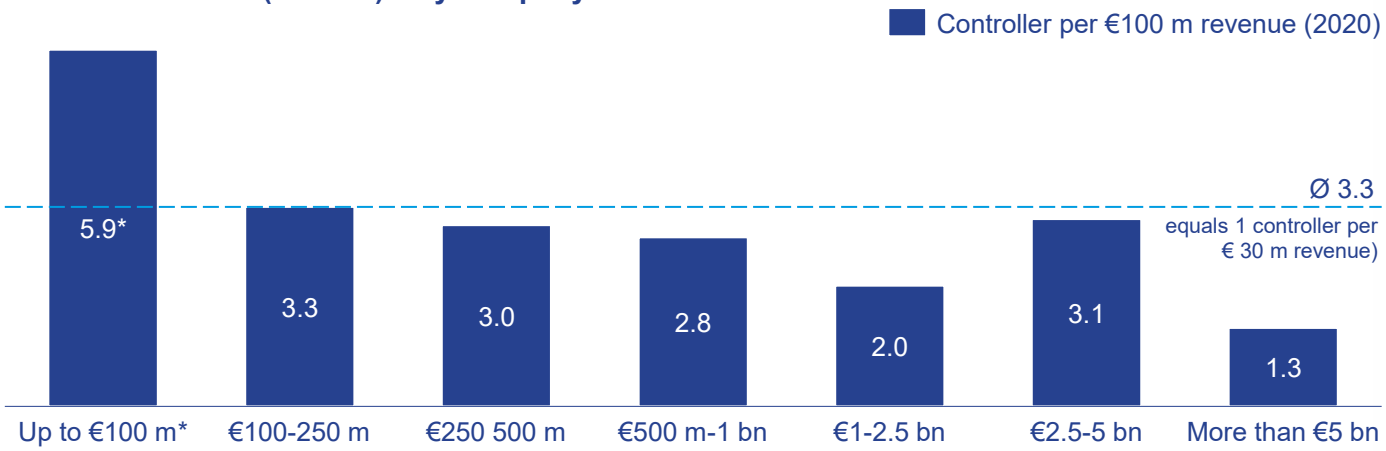
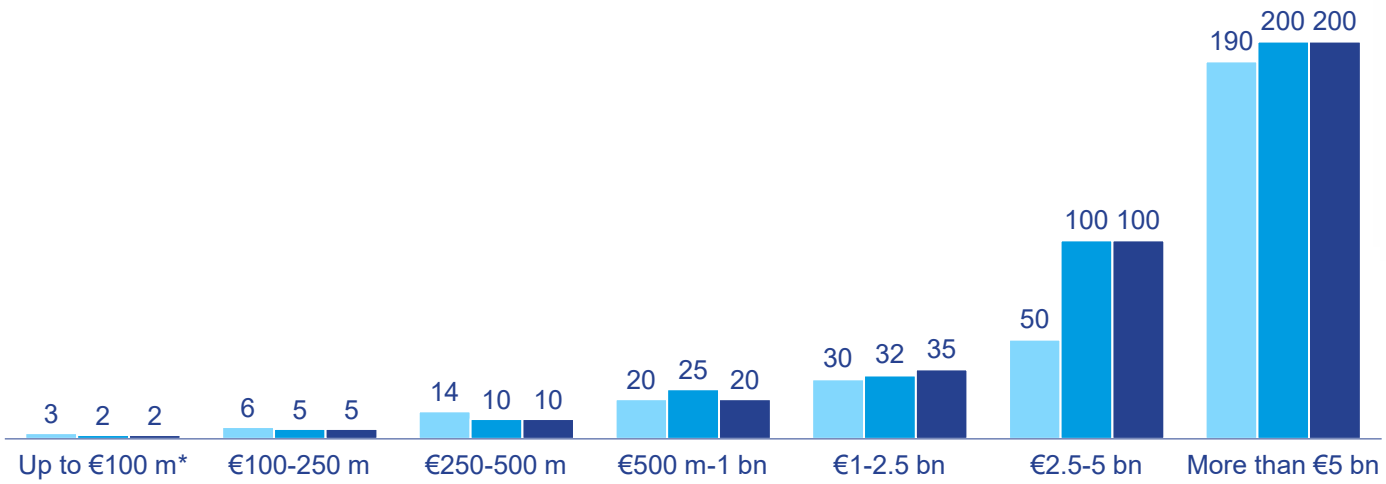
Share of controllers (median) – by company revenue



Number of controllers (median) – by company revenue



- The average value of “controllers per 100 million € in sales” has been 3.3 for years. We can thus roughly refer to one controller per 30 million € in revenue.
- For the share of controllers by company revenue, it shows that the proportion of controllers is relatively stable over a wide range of revenue between 2.0 and 3.3 controllers per 100 million €. It drops significantly for very large companies with a revenue of over 5 billion € (1.3 controllers per 100 million €). For very small companies with revenues of up to 100 million €, the value tends to be somewhat too high due to our sample conditions*.

* The value for the “up to 100 million €” category tends to be too high, as greater heterogeneity in the organization of controlling can be assumed in this category.

2014 2017 2020

Controllers in large companies or in higher positions work more than their colleagues in small companies or in lower positions

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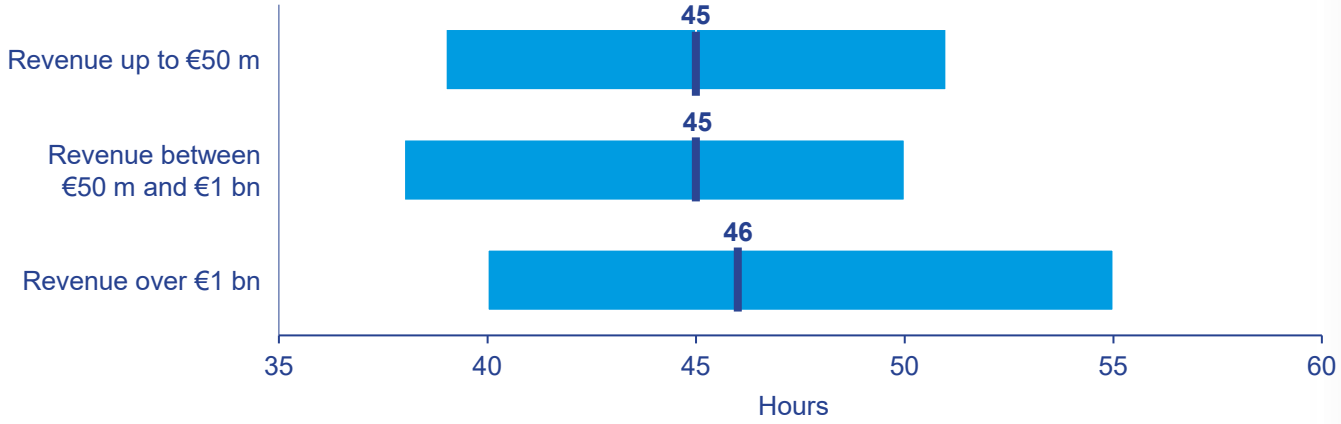
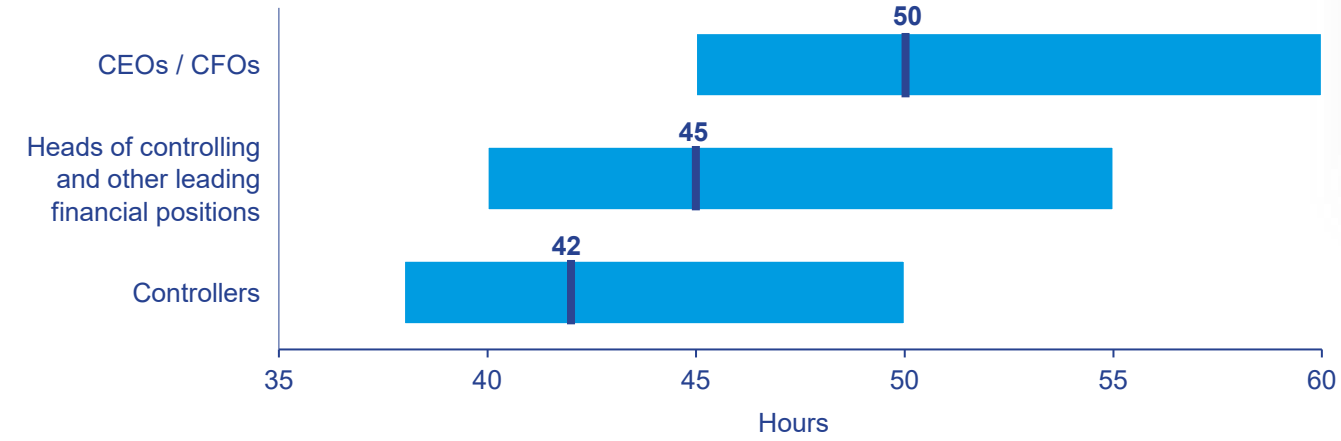
Average weekly working hours – by company size



Average weekly working hours – by position



- From 2017 to 2020, the average working time fell by a half hour from 46.4 to 45.8 hours. This represents a continuation of the trend since 2014, albeit in a weaker form. At that time, the average working week was 47.5 hours.
- In addition to position, working hours are significantly related to salary and bonus levels, as expected.
- For controllers with longer hours, performance evaluations are based more heavily on financial goals.
- Working hours also correlate significantly with the job satisfaction of controllers. Those who are satisfied work an average of 45.8 hours, while those who are less satisfied work just under 43 hours.

Median

80% of the companies

The distribution of working time among the standard controlling tasks has hardly changed between 2011 and 2020

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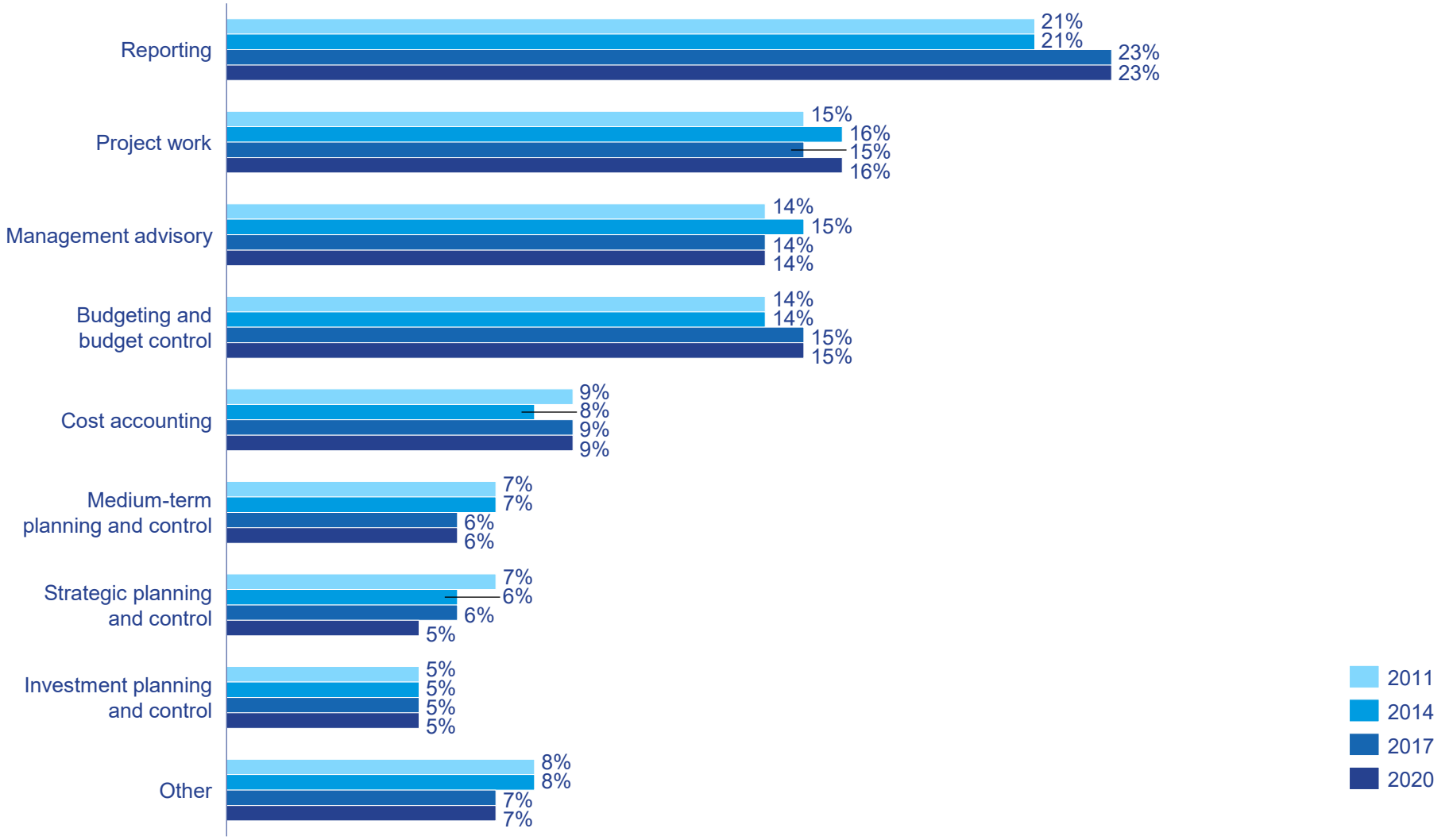
Working time allocated to the standard controlling tasks – by year



In most cases, corporate controlling is organized by function

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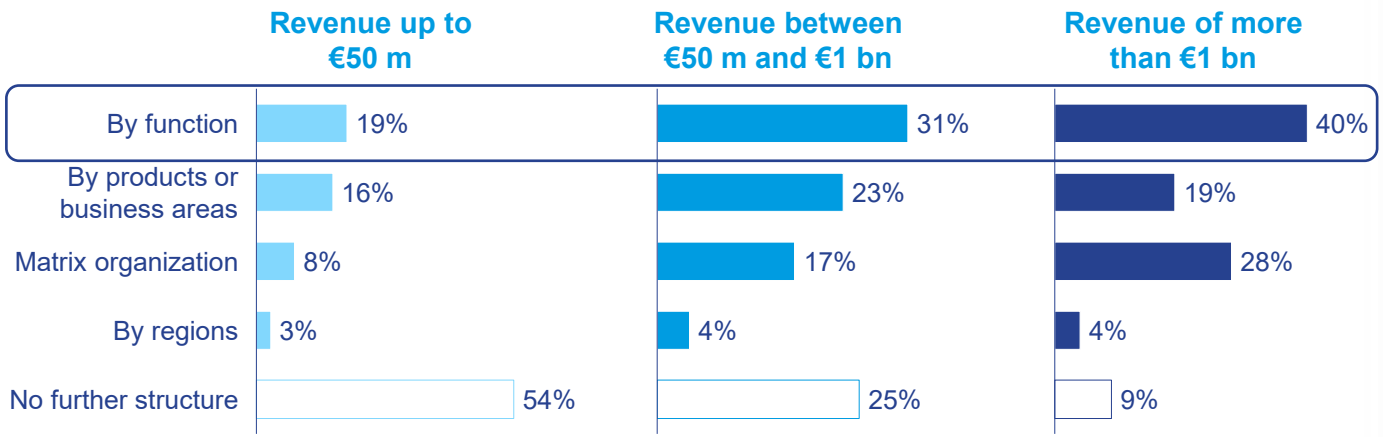
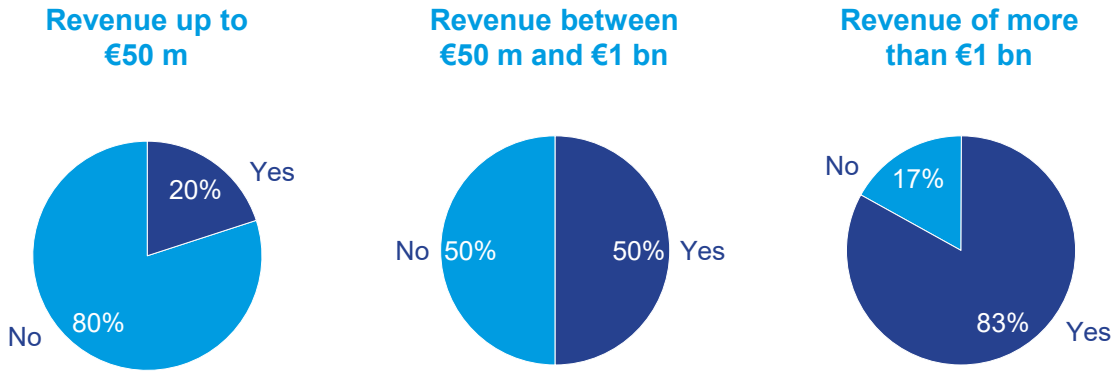
Primary structure of group or central controlling– by company size



Existence of decentralized controlling units – by company size



- In large companies, the share of central controllers is 22% on average; in small and medium-sized companies, it is significantly higher with 39% and 36% respectively.
- Small companies have an average of only 1.6 hierarchical levels in controlling, significantly fewer than large companies, which have an average of 3.2 levels. In just over half of the small companies (54%), there are no further hierarchical levels in controlling.
- Group controlling usually reports directly to the CFO (54%), the commercial division manager (20%) or the CEO (15%).

Almost half of the companies work with data scientists – these are usually part of the IT department, but increasingly form their own departments

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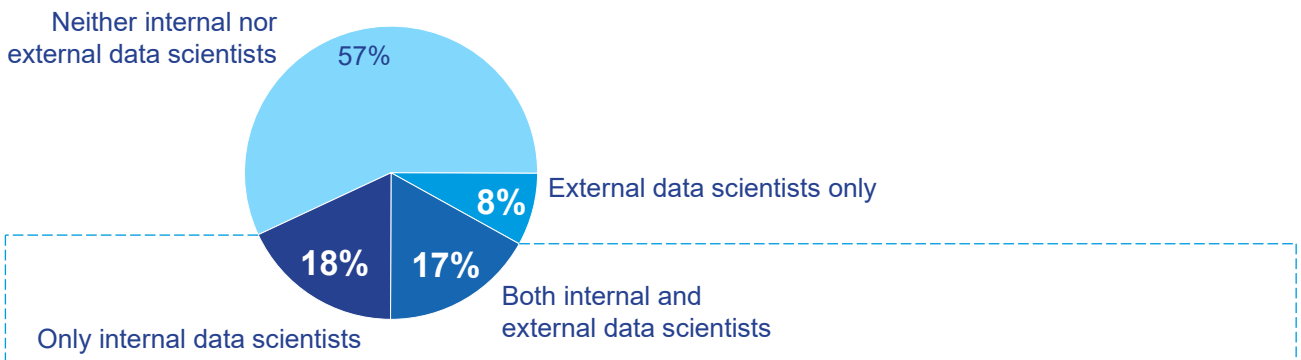
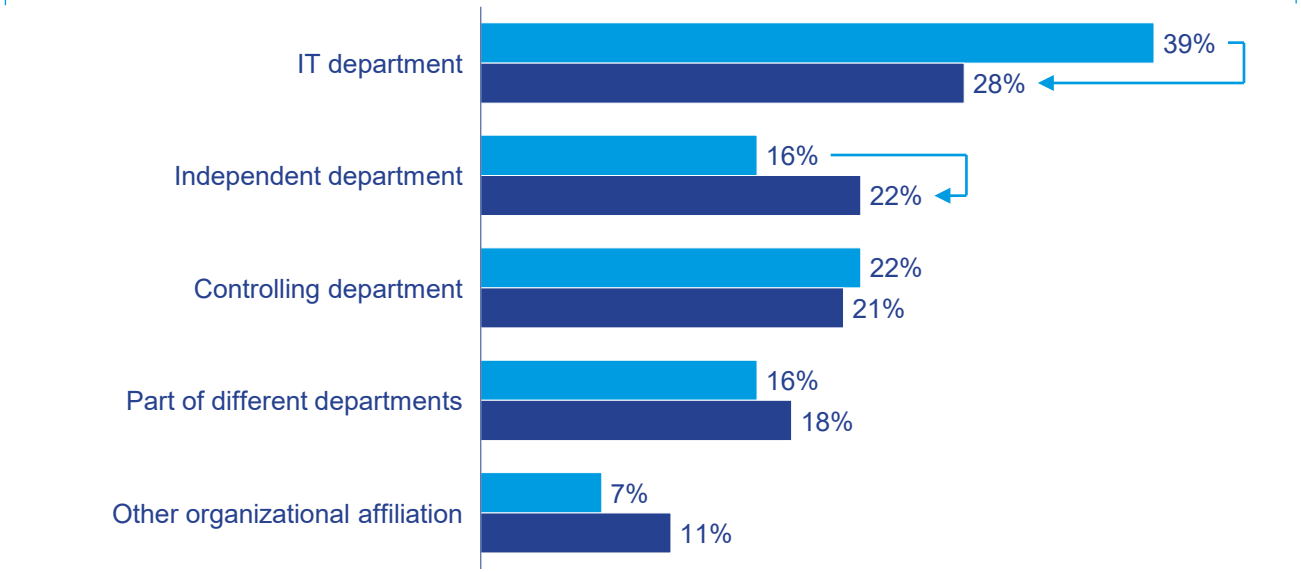
Internal and external Data scientists



Affiliation of internal data scientists



- Compared to 2017, companies use the expertise of data scientists or specialists for advanced analytics significantly more often in 2020 (43% vs. 37%). Simultaneously, exclusive collaboration with external data scientists is declining (8% vs. 12%).
- Currently, 52% of large companies employ data scientists, but only 19% of small companies do.
- Due to the increasing importance of digitalization and the growing number of data scientists, companies increasingly form their own data science or advanced analytics departments, often by outsourcing the roles from the IT department.

In 2020, close collaboration between controllers and data scientists is more prevalent than three years earlier

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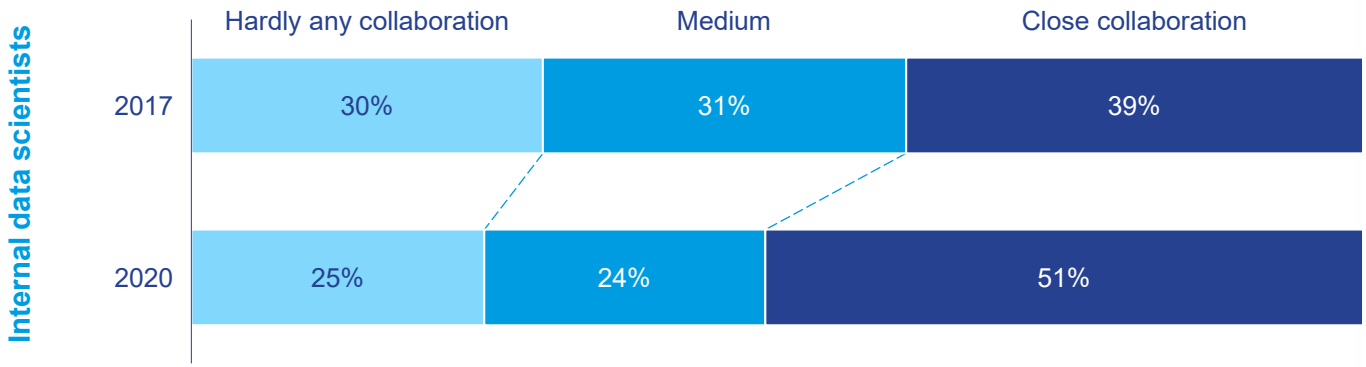
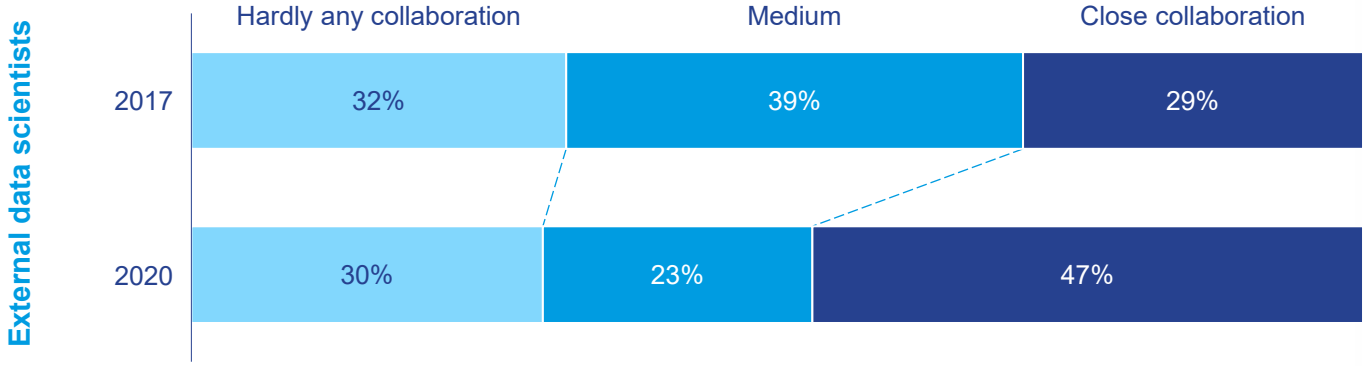
Collaboration between controllers and internal data scientists – by year



Collaboration between controllers and external data scientists – by year



- If the collaboration is indicated as close or very close, we refer to it as a close collaboration between controllers and data scientists / specialists for advanced analytics.
- The location of the data experts appears relevant: Naturally, the collaboration is closest when they are primarily located in the controlling department – 79% perceive close collaboration here. If, on the other hand, they are located in the IT department, the situation changes: Only 36% speak of close collaboration, while 44% see hardly any collaboration at all. Similarly, if the data experts are grouped together in a separate department: 37% of the respondents then speak of close collaboration, 32% see hardly any collaboration with the data scientists / specialists for advanced analytics.

Controllers' thoughts on …

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… the extent to which digitalization will change the organization of controlling in the next three years (selected quotes)

Digitalization will **change the content of tasks or eliminate previous tasks**. This will **open up new availabilities** that can be filled with **more value-creating tasks**. According to current estimates, however, this will **not change anything in terms of the organizational structure**."

Higher IT know-how required from controllers – **development to Data Scientist** together with IT roles."

Further centralization, job cuts."

Little change, first other fundamental organizational problems must be solved before work is then changed via the introduction of tools and digital processes (more relevant in 5-10 years)."

More standardization, automation, self-service, **small controlling organization, but stronger group controlling**."

Performance measurement & compensation

In two-thirds of companies, the performance evaluation for employees in controlling includes a bonus agreement

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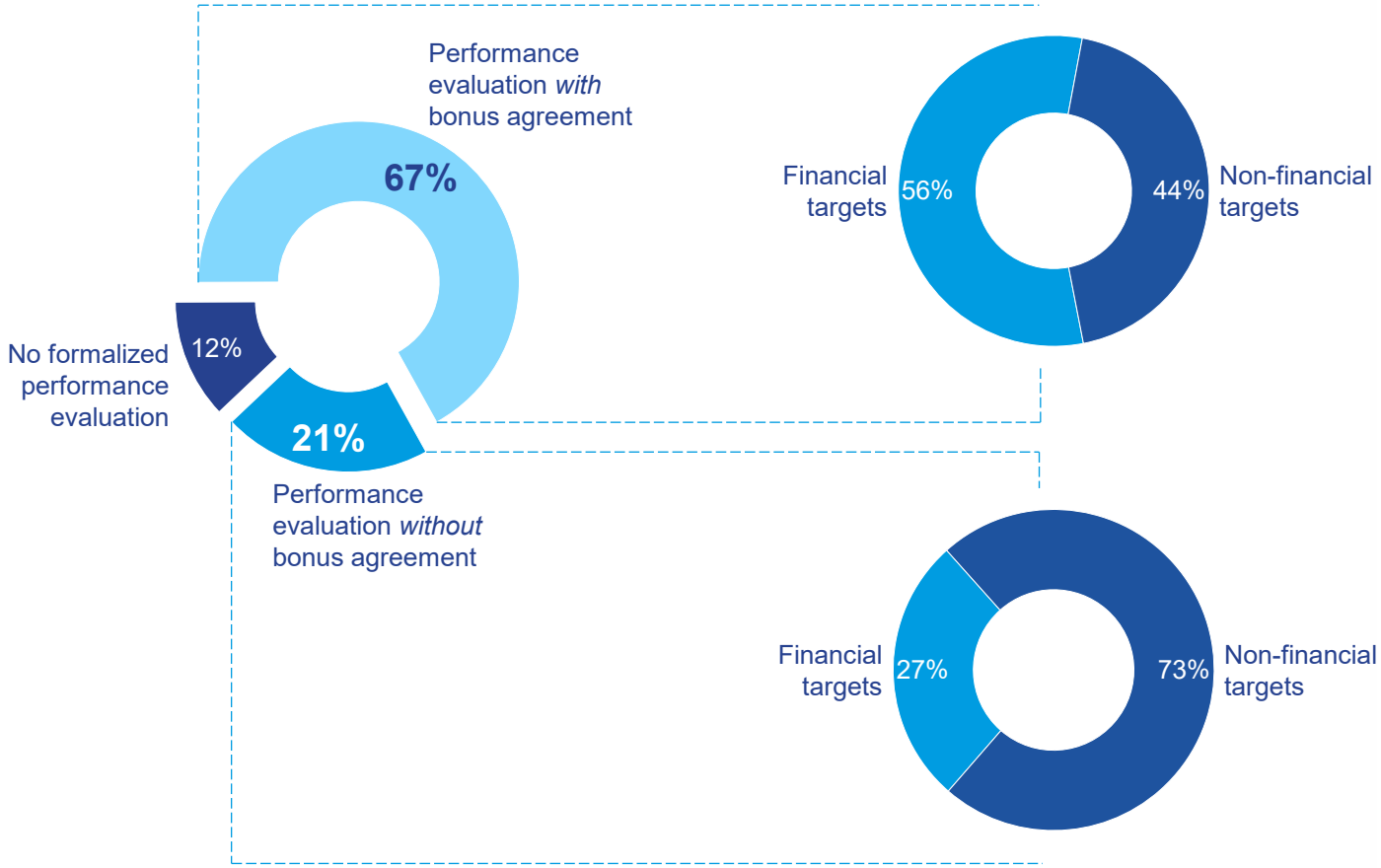
Overview performance evaluation and weighting of financial vs. non-financial targets 2021



- The share of companies offering their employees a bonus has fluctuated minimally around 70% for years.
- The size of the company thereby plays a significant role: The use of bonus systems in …
  - … small companies: 50%
  - … medium-sized companies: 71%
  - … large companies: 78%
- The combination of financial and non-financial targets is largely stable and essentially dependent on whether a bonus is offered.

Bonus payments in controlling increased in 2021

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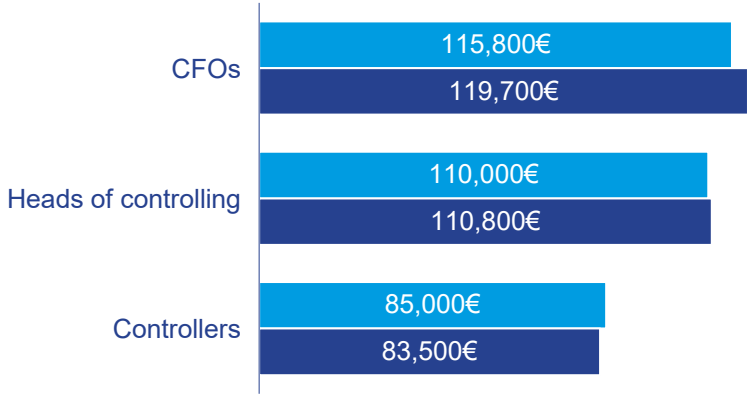
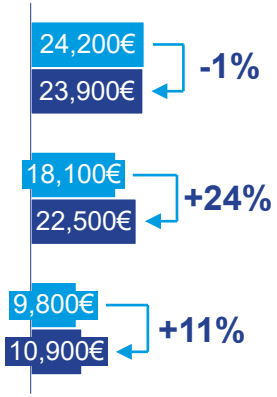
Total compensation 2020 and 2021 – by position*

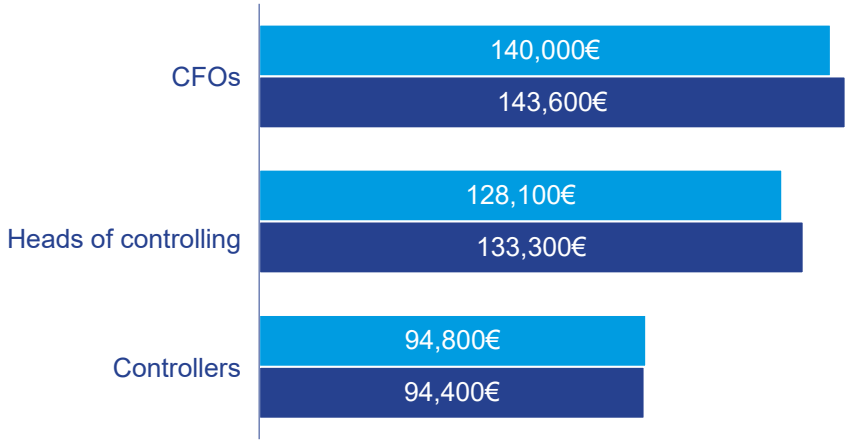
Annual fixed salary



Annual bonus payment



Annual fixed salary + bonus payment



- In an uncertain business environment, on average, companies pay higher base salaries.
- Yet, the certainty of the business environment has no measurable influence on the level of bonus payments.
- Listed companies pay significantly higher bonuses than unlisted companies.

* Only responses from respondents who answered this question in both 2021 and 2022 and have been in their current position for more than one year (n=75).

2020
2021

30% of controllers received the full target bonus agreed upon at the beginning of 2021, and 33% received even more

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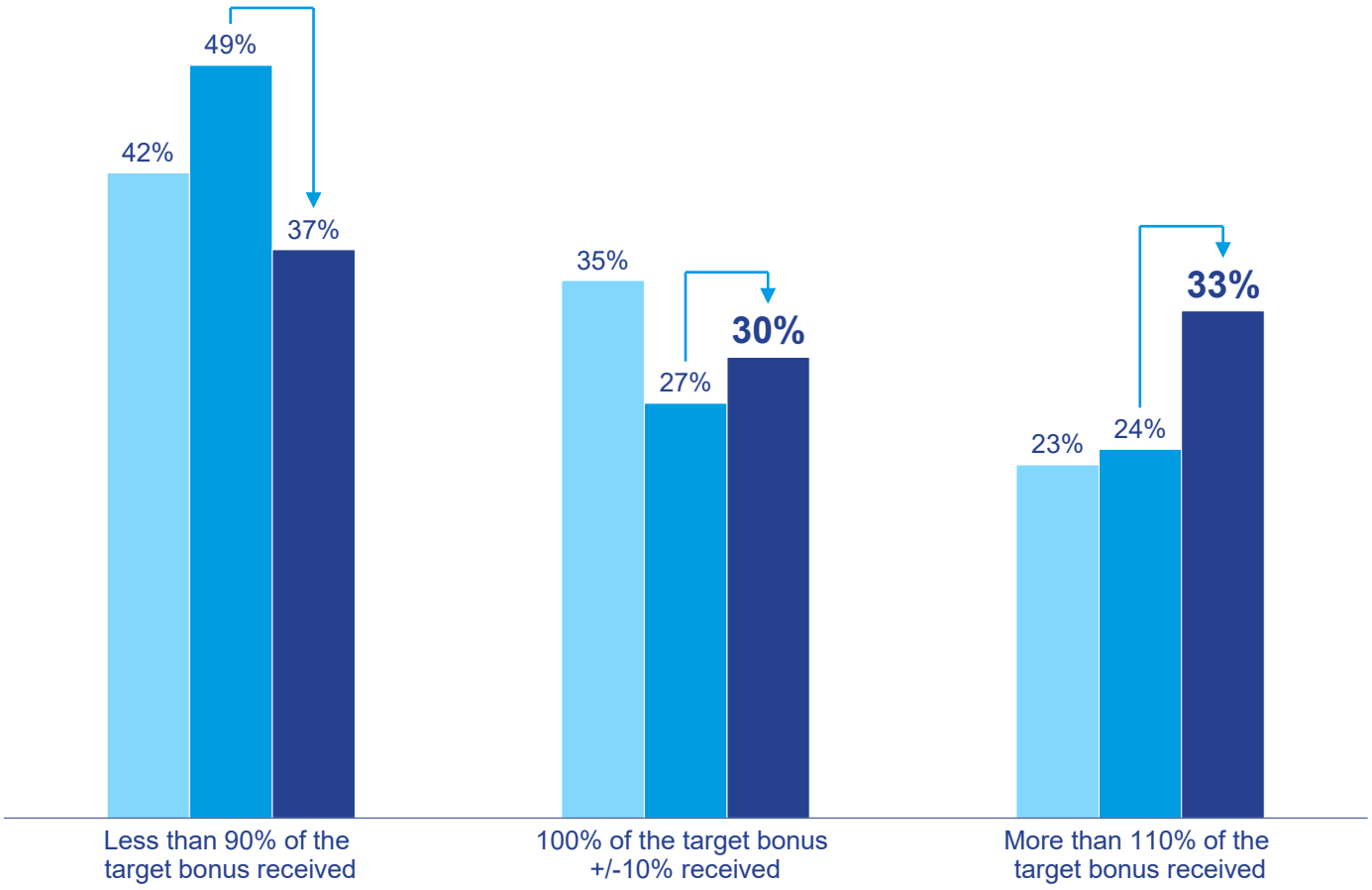
Degree of bonus achievement (ratio of bonus paid to agreed target bonus)



- A bonus achievement rate of 100% indicates that the target bonus, which was agreed as part of the target agreement at the beginning of the past year, was paid out in full at the end of the year.
- For 2020, almost half of the respondents received significantly less than the agreed target bonus, mainly due to the Covid pandemic.
- For 2021, the “Covid effect” seems to have evened out. Only 37% will still receive less than the agreed target bonus. This group is even smaller than before Covid, in 2019.
- All respondents benefit equally from this development, regardless of company size, industry or position.

For 2022, the CFOs surveyed expect an increase in their bonuses – bonus expectations of heads of controlling and controllers remain stable

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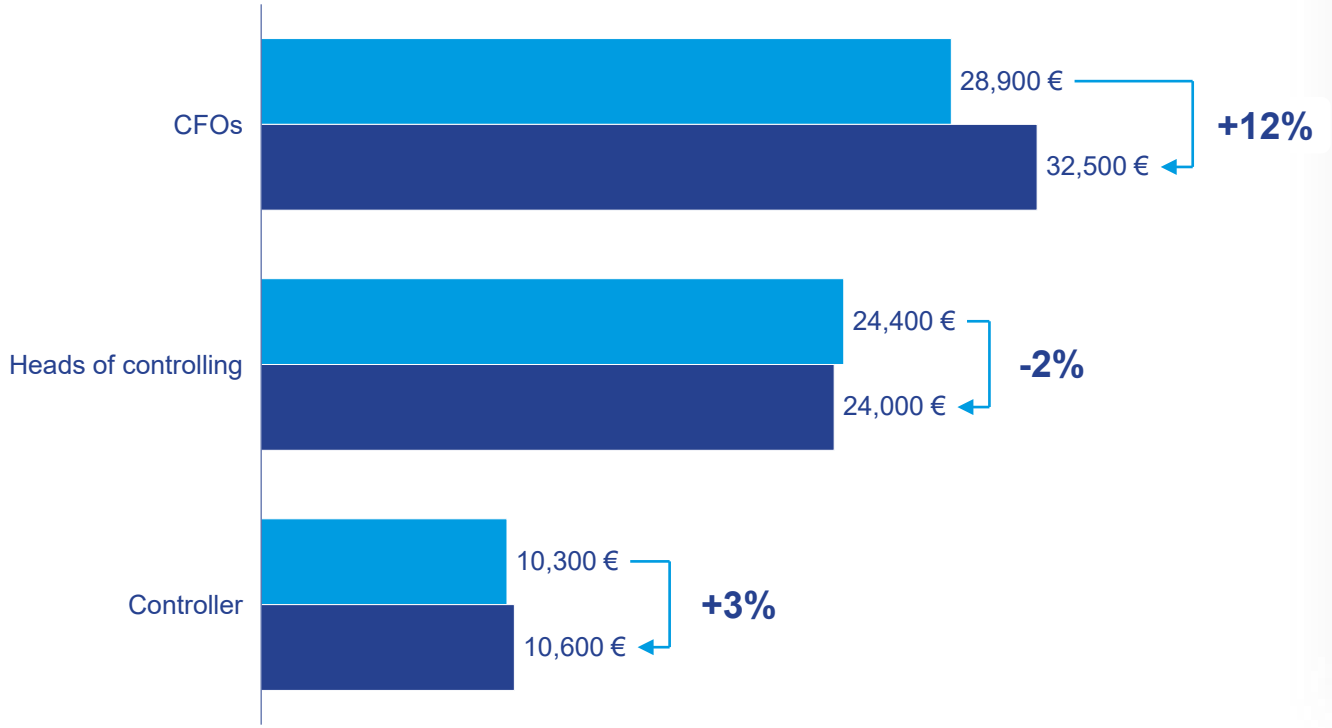
Target bonus (bonus expectation within the scope of the target agreement)*



- Large companies offer the highest bonuses for all positions.
- In medium-sized companies, the increase in target bonuses compared with 2021 is most pronounced.
- Just under half of all respondents expect a higher target bonus than in 2021.
- Just under 20% of the heads of controlling and controllers and 30% of the CFOs expect a lower target bonus than in 2021.

* Only responses from respondents who answered this question in both 2021 and 2022 and have been in their current position for more than one year (n=76).

Benchmarks for base salaries and bonuses – by position and company size in 2021

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Company size	Annual fixed salary (€)			Annual bonus (€)			Bonus as percentage of fixed salary			Percentage of received bonus to expected bonus		
	25%	50%	75%	25%	50%	75%	25%	50%	75%	25%	50%	75%
CFOs												
Up to €50 m	90,000	100,000	130,000	7,500	16,000	20,000	9%	13%	14%	50%	80%	105%
€50 m-€1 bn	110,000	120,000	130,000	13,000	20,000	45,000	11%	14%	27%	57%	72%	83%
More than €1 bn*	100,000	180,000	200,000	30,000	33,000	70,000	23%	26%	29%	78%	86%	150%
Heads of controlling and other leading financial positions												
Up to €50 m*	70,000	77,000	99,000	3,700	7,000	16,000	5%	9%	11%	63%	100%	125%
€50 m-€1 bn	90,000	100,000	120,000	9,000	12,000	24,000	9%	11%	17%	80%	100%	107%
More than €1 bn	100,000	119,500	143,000	15,000	21,400	30,000	13%	16%	20%	80%	100%	116%
Controllers												
Up to €50 m*	41,500	48,500	73,500	2,000	4,000	11,000	3%	6%	10%	57%	95%	133%
€50 m-€1 bn	64,300	75,000	86,100	5,000	7,800	17,500	6%	11%	16%	92%	100%	150%
More than €1 bn	88,000	96,800	100,000	7,000	8,000	15,000	6%	7%	13%	63%	92%	119%

Explanation: First select your position and company size (left column). The three numbers in the columns next to them indicate the percentage of respondents in the respective comparison group earning exactly the same or less than the indicated figure. For example, in 2021, 25% of CFOs at medium-sized companies earn exactly €110,000 or less in fixed salary. Presentation based only on the subgroup that had the principal opportunity to earn a bonus in 2021.

* The data for this group is based on only a few responses and is therefore not representative.

For 72% of controllers, the bonus agreement contains non-financial targets – only 28% are evaluated exclusively based on financial targets

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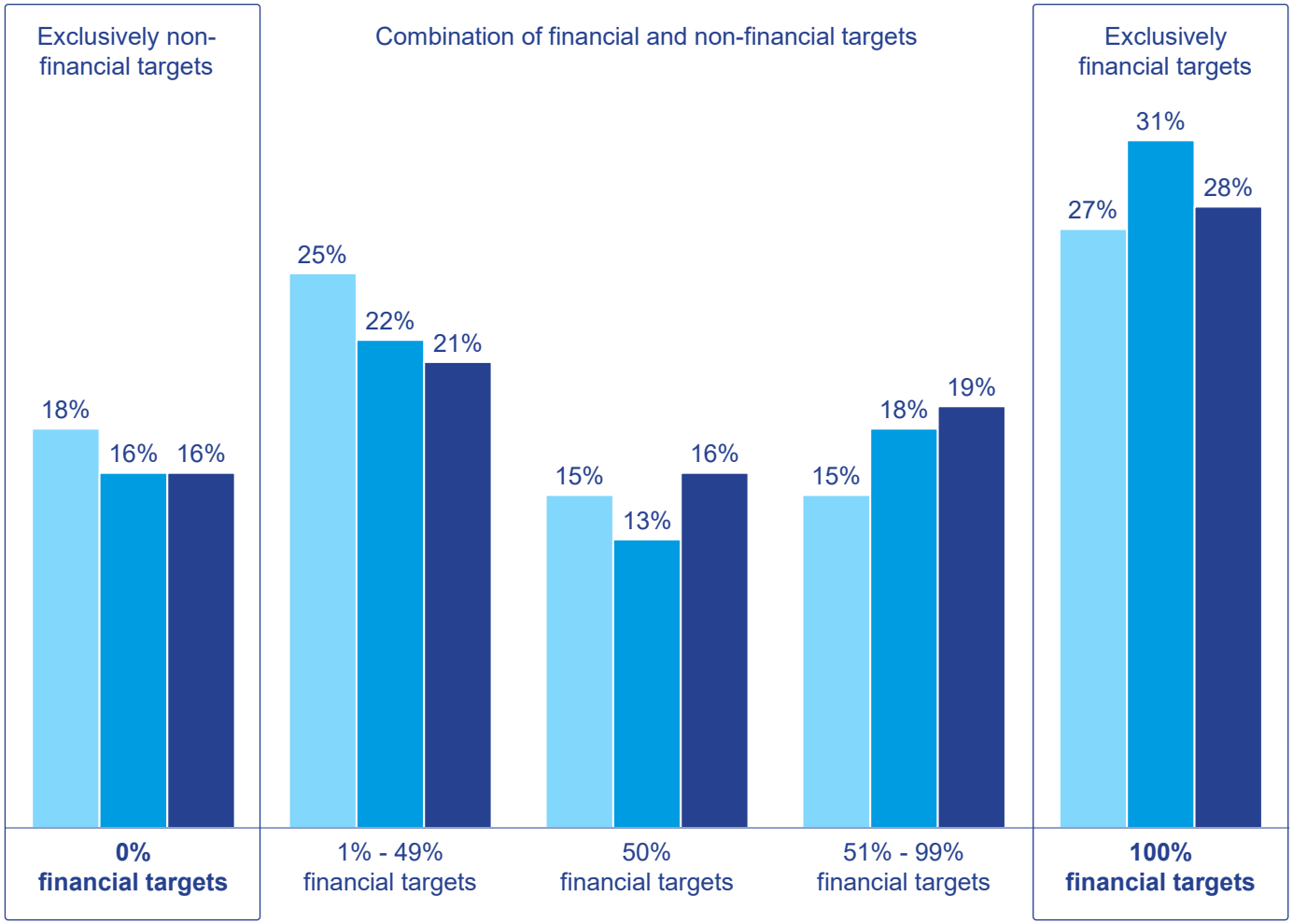
Target weighting of bonus targets – by year



- Academic studies and management gurus emphasize that financial indicators alone are not sufficient for balanced corporate management.
- Companies also take this into account in bonus agreements. For example, the majority of employees in controlling are also evaluated based on non-financial targets:

  … 69 % of controllers

  … 74 % of heads of controlling

Half of the companies use either only individual targets or only group targets as the basis for the bonus agreement

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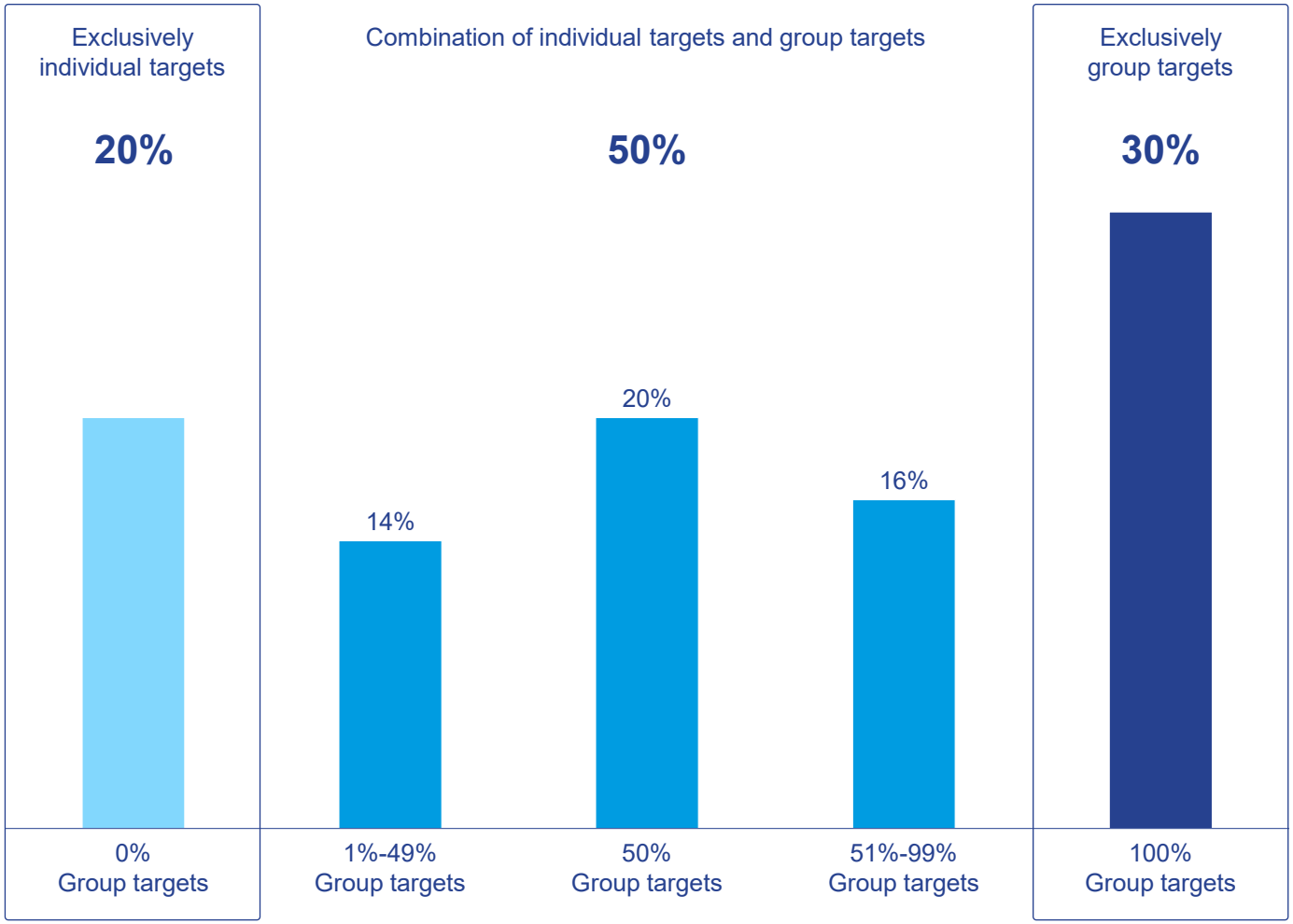
Combination of individual targets and group targets (team and / or company targets)



- In addition to the mix of financial and non-financial targets, we are interested in the proportion of the bonus based on individual and group targets (group targets can include team and / or company targets).
- The strong correlation between individual and group targets and the weighting of financial and non-financial targets is particularly striking (see next page).

Group targets are mostly financial targets – individual targets predominantly include non-financial targets

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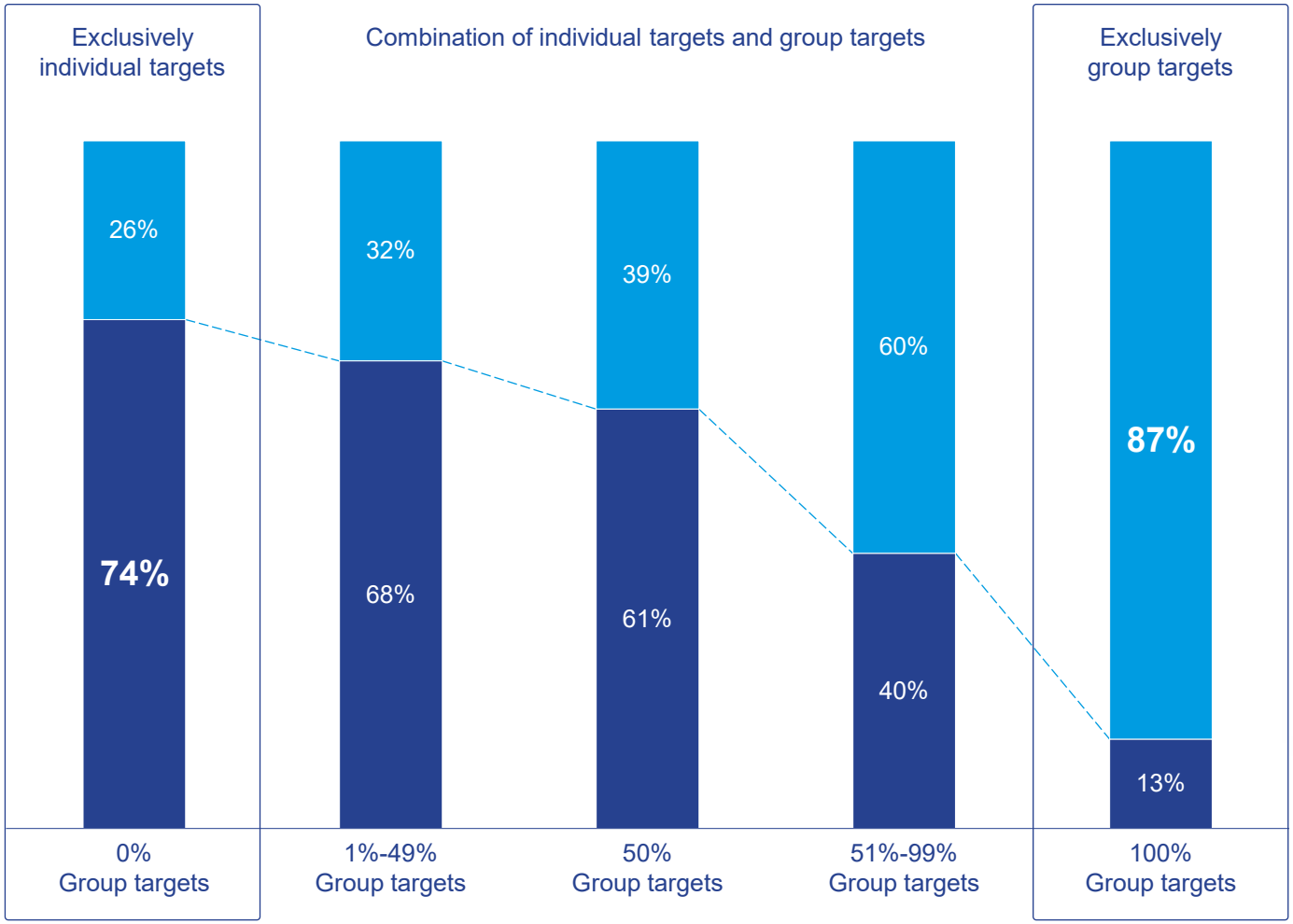
Target weighting depending on the share of group targets



- If group targets are formulated in the target agreement, these are typically financial targets (e.g., sales targets for the company or department).
- Individual targets are based rather on non-financial KPIs.

360-degree feedback and formalized calibration processes become more important in the context of performance evaluation

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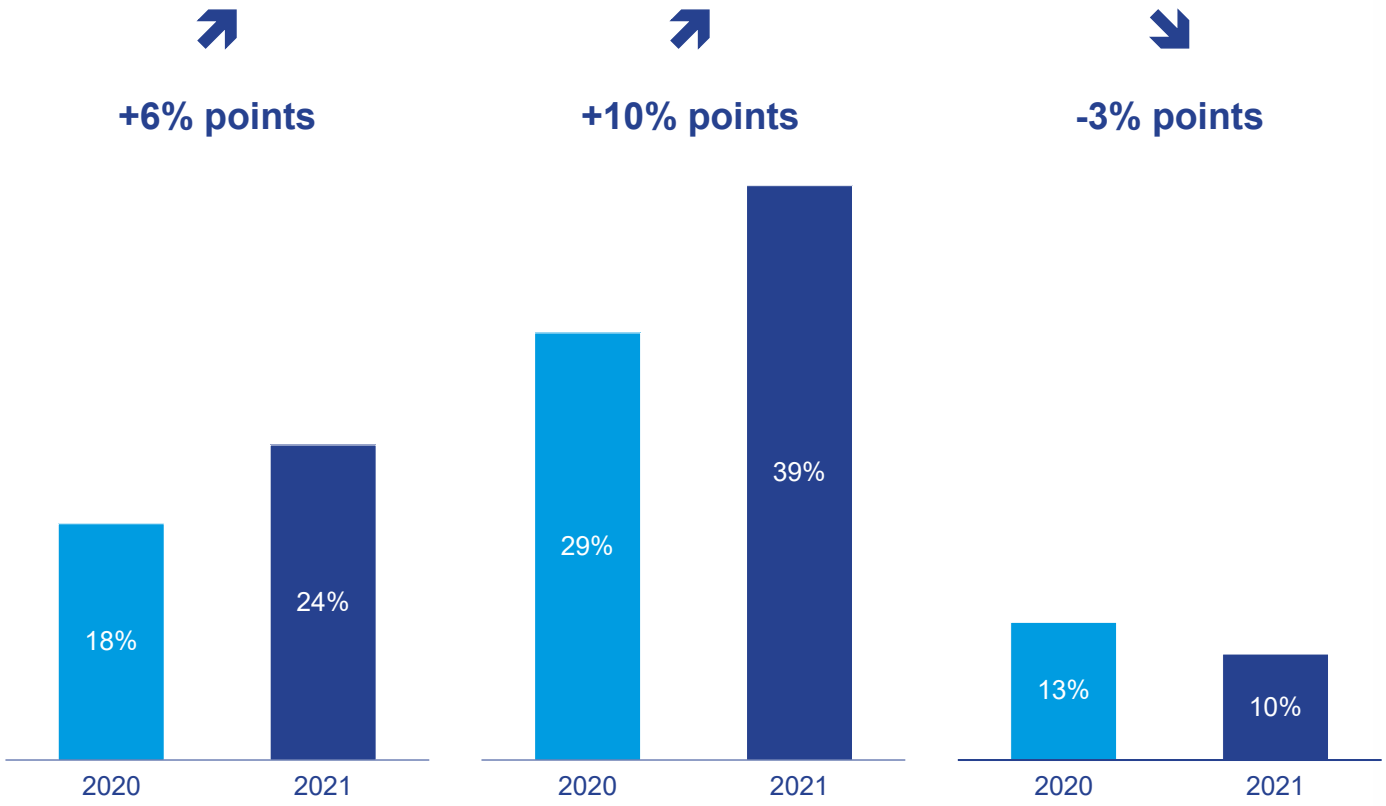
Dissemination of performance measurement systems in the context of performance evaluation



360-degree feedback
(Performance evaluation by colleagues / customers / supervisors / etc.)

Formalized calibration process
(Review and classification of performance evaluation)

Forced ranking
(Classification of employees into groups regarding their performance)

- 360-degree feedback was newly introduced in 2021 mainly by medium-sized and large companies from the manufacturing sector.
- Calibration processes were used for the first time in medium-sized companies in both the manufacturing and service sectors in 2021.
- Forced rankings are no longer part of performance evaluations in 2021, especially in medium-sized companies.
- As a rule, only one of these systems is used in a company, and only rarely a combination of two or all three (10% and 3% respectively).
- Where at least one of the three performance evaluation systems is used, there is greater transparency with regard to the weighting of KPIs, the level of targets and the achievement of targets for colleagues at the same hierarchical level.

360-degree feedback comprises a variety of feedback groups with a clear focus on direct supervisor input

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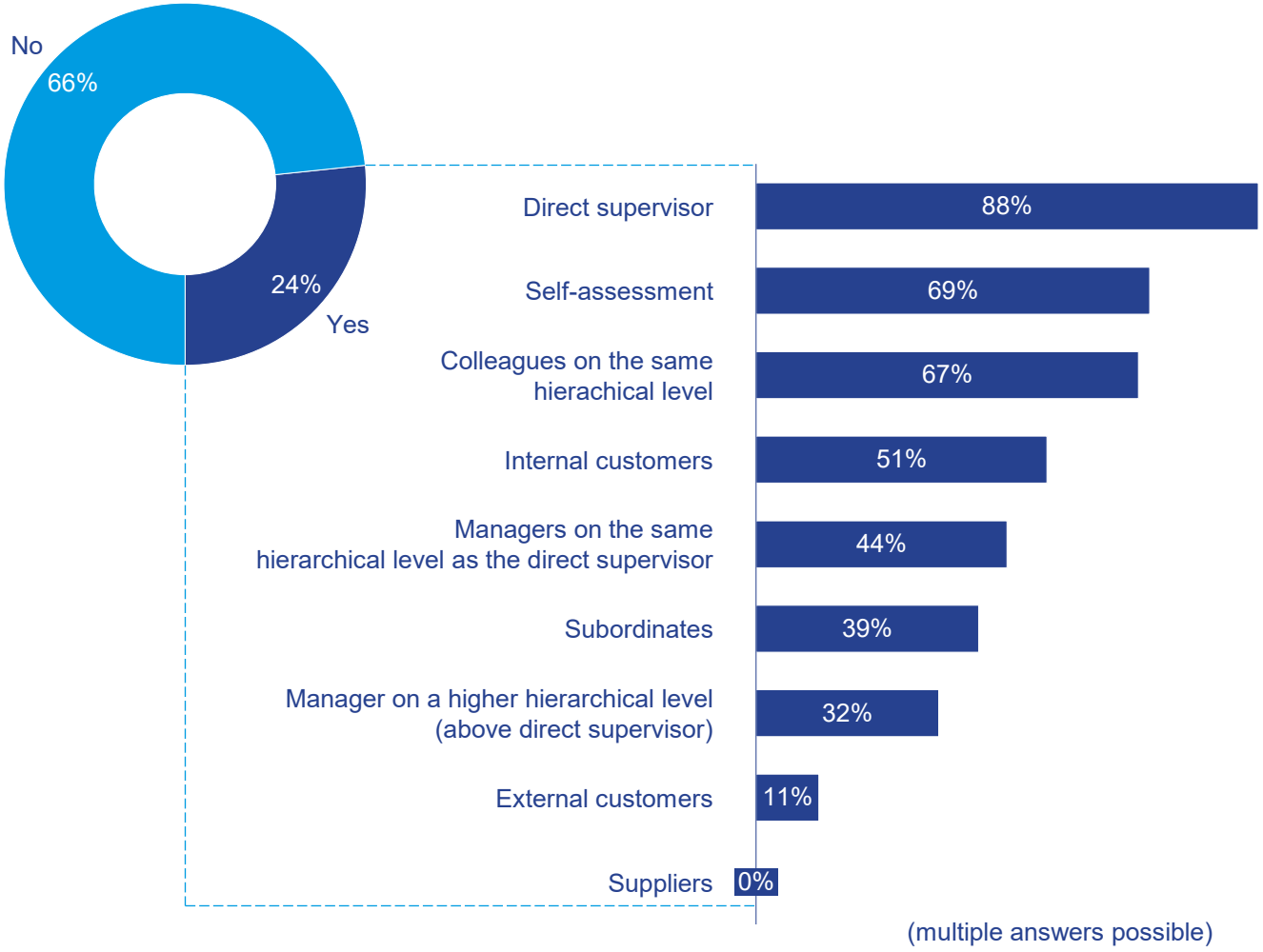
360-degree feedback and feedback groups



- Typically, three to four different groups are asked for feedback in parallel as part of multi-rater systems. This applies to a good half of the companies that use this system in performance evaluation.
- In about 10 percent of companies, five different groups are asked for feedback.

Controllers tend to be satisfied with the performance evaluation system if they perceive it to be pragmatic and fair

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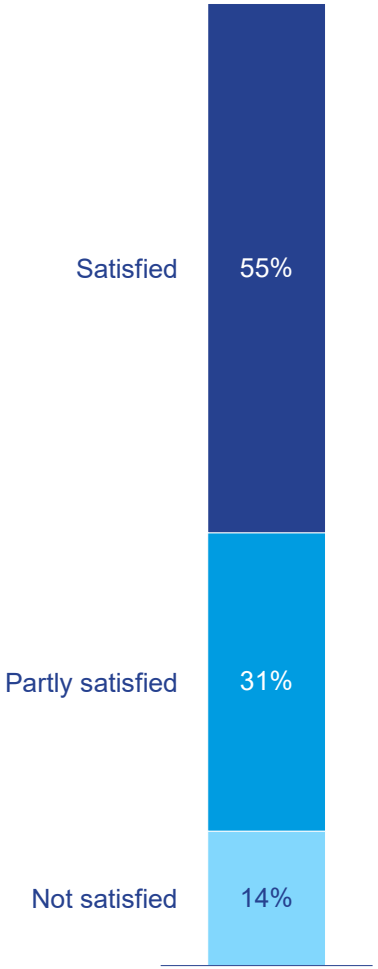
Controllers' satisfaction with the performance measurement systems and selected quotes



"Profit-oriented, **pragmatic**, non-financial targets serve only as guidance but have no influence on the payout."

"**Individual target agreement with smart targets;** targets are recorded in a common target radar."

"Agreement of various targets (projects) with subsequent tracking during the year and a year-end meeting. We agreed on the targets for the group of controllers and not for individuals **(promotes cooperation).**"

"The system is **not transparent** and, in my opinion, completely **random**. It neither serves to increase employee motivation with regard to future performance nor does it evaluate past performance in a reasonable manner."

"**Watering can!**"

"A lot of **organizational effort.**"

360-degree feedback increases transparency, but not necessarily satisfaction with the process of performance evaluation

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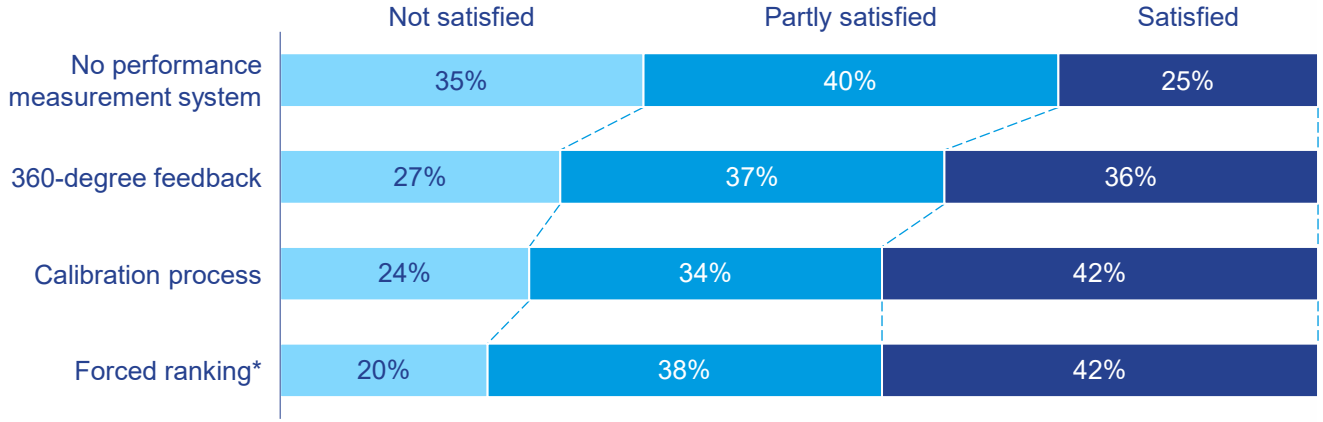
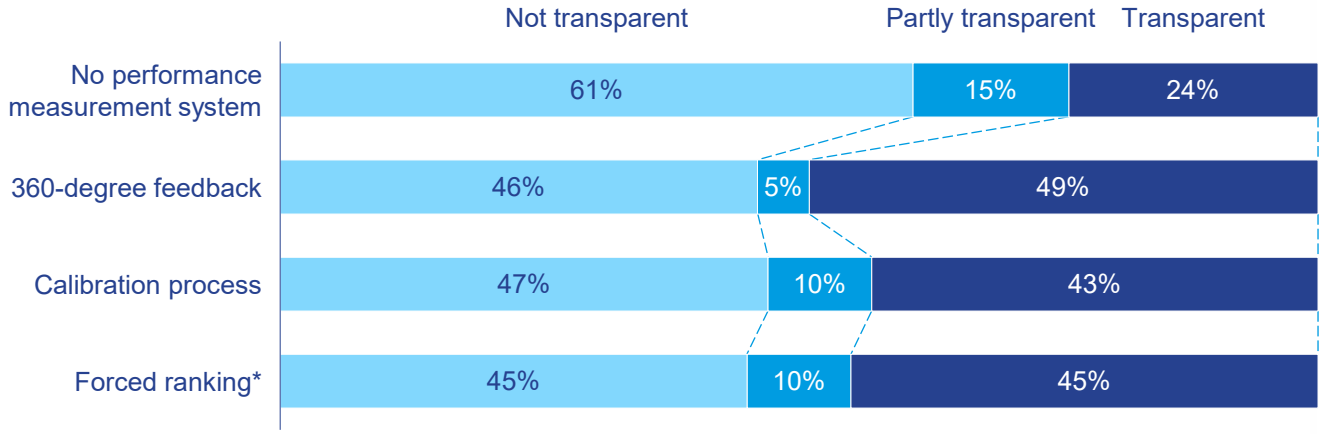
Satisfaction with the process of performance evaluation – by performance measurement systems



Transparency of performance evaluation – by performance measurement systems



- Companies that use a bonus system also use at least one performance measurement system more frequently than companies where the performance evaluation is not linked to a bonus (43% vs. 33%).
- Looking at the data on the transparency of performance evaluation, it is striking:
  - The use of a calibration process ensures greater transparency, particularly with regard to the key figures taken into account in the performance evaluation, as well as their weighting and level.
  - In companies with 360-degree feedback, even the amount of the bonus is more likely to be transparent to colleagues at the same hierarchical level.
- In companies with a calibration process, 82% are satisfied with their job overall. In companies with 360-degree feedback the figure is 84%. If no performance measurement system exists, only 66% are satisfied.

* The use of forced rankings is in most cases combined with calibration processes. The statements on transparency and satisfaction for this group are therefore strongly influenced by those on calibration processes.

In 40% of the companies, target KPIs are transparent among colleagues on a similar hierarchical level

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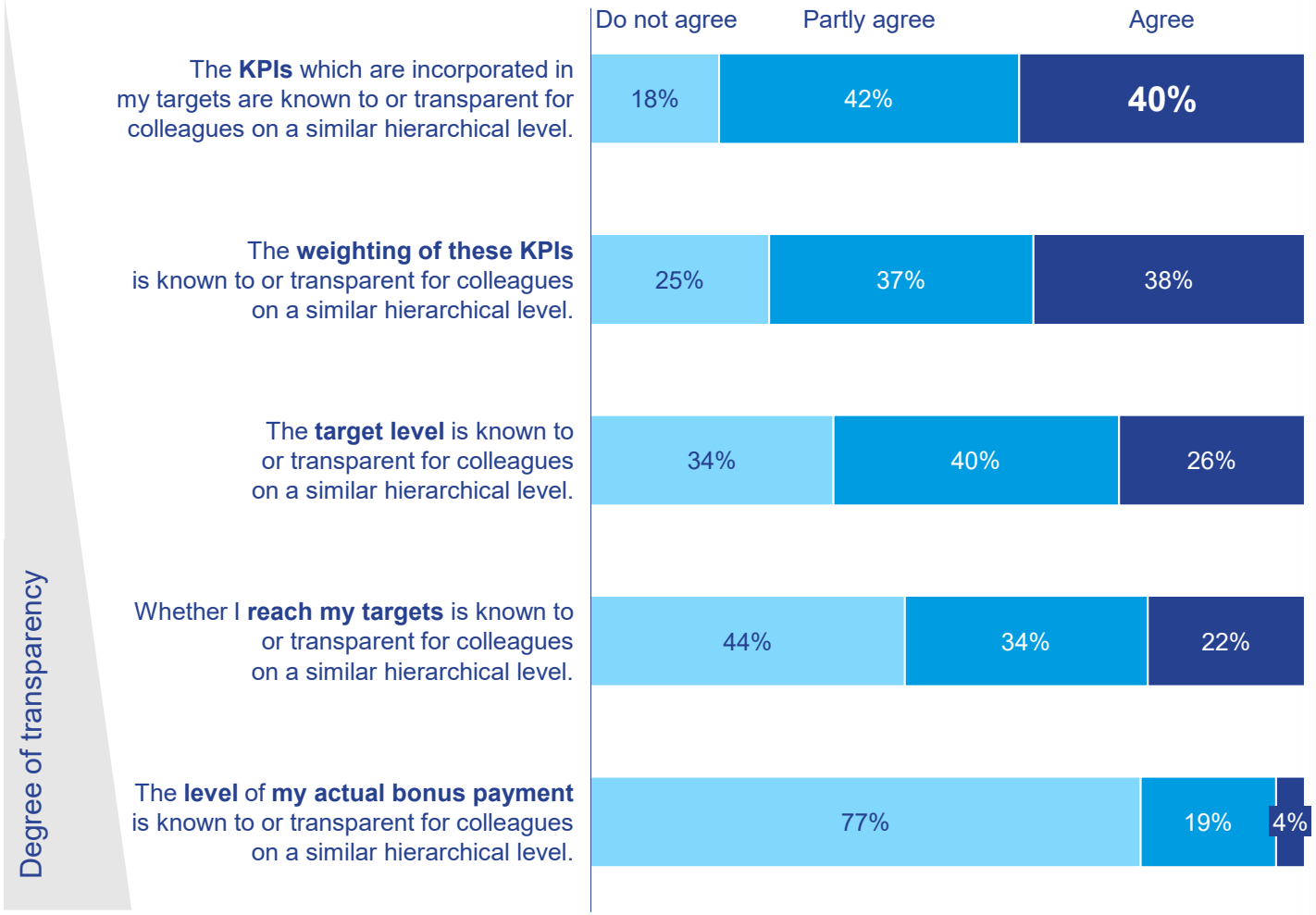
Transparency of target agreement and target evaluation in detail (in companies with bonus agreement)



- Transparency in target agreement and target weighting is very stable: Values fluctuate only minimally from year to year.
- In large companies, evaluation systems are significantly more transparent than in small and medium-sized companies: In 48% of large companies, but only in 27% of medium-sized and 35% of small companies, target agreements and target evaluations are known or can be viewed by colleagues at the same hierarchical level.
- Greater transparency exists where multi-rater systems and calibration processes are used in performance evaluation.
- Transparency is very strongly related to the use of financial targets in the bonus system: With purely financial targets, target agreements and target evaluation are very transparent; with exclusively non-financial targets, the system is largely non-transparent.

About half of the respondents perceive personal performance information as accessible and comprehensible

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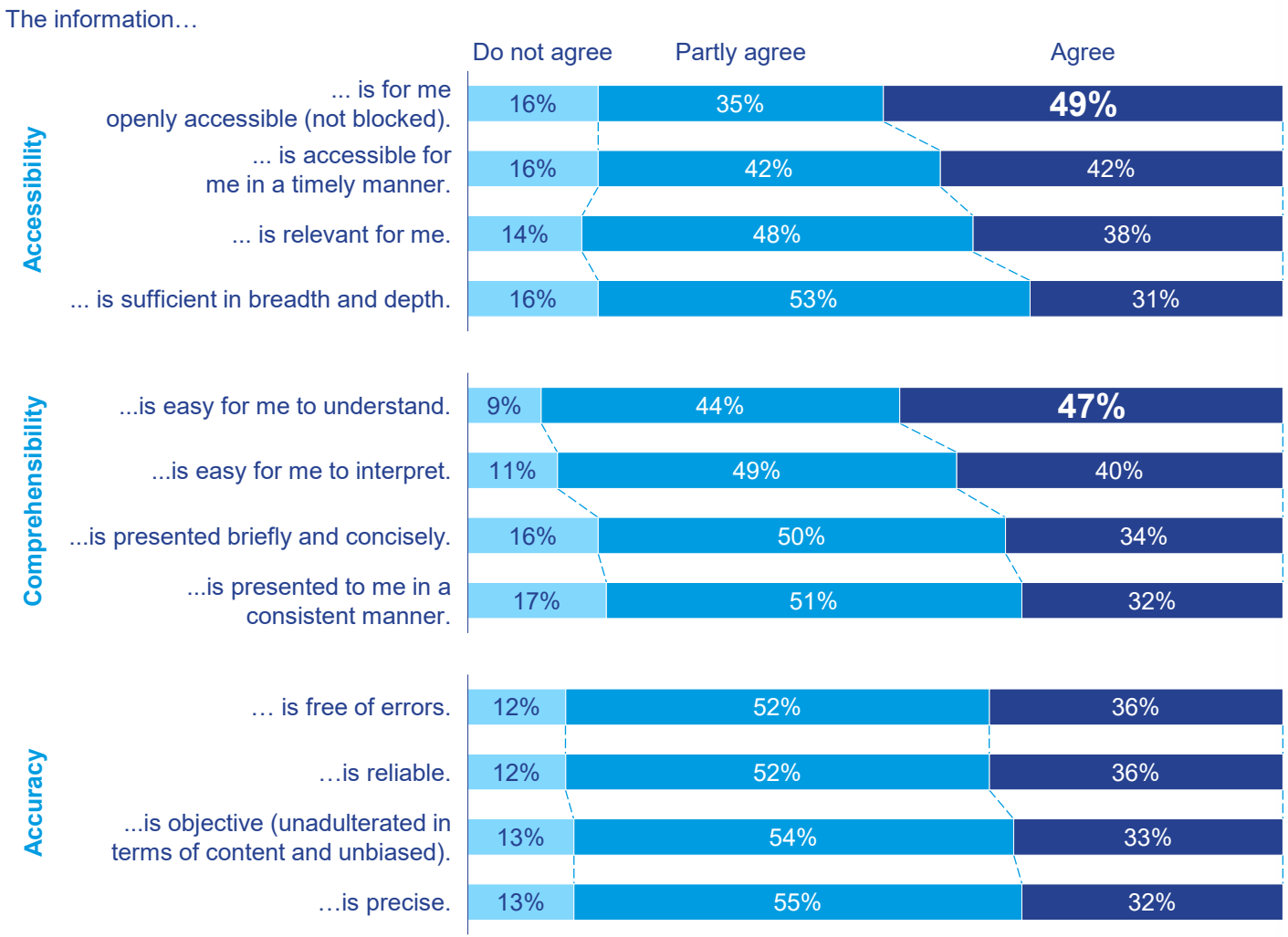
Transparency of personal performance information



- Transparency has become one of the most popular concepts in modern management (Bernstein 2017*).
- Subsequently, we understand transparency as a three-dimensional construct, which comprises: The accessibility of relevant information (1), its comprehensibility (2), and its accuracy (3).
- With regard to the individual performance of each employee, transparency is seen as the key to continuous, successful development of their performance (Hall 2008*). In our study, we therefore focused on the transparency of personal performance information.

* Sources:
- Bernstein (2017): Making Transparency Transparent: The Evolution of Observation in Management Theory, in: Academy of Management Annals, 11 (1), pp. 217-266.
- Hall (2008): The effect of comprehensive performance measurement systems on role clarity, psychological empowerment and managerial performance, in: Accounting, Organizations and Society, 33, pp. 141-163.

The vast majority of the respondents have no concerns about how their personal performance information is handled

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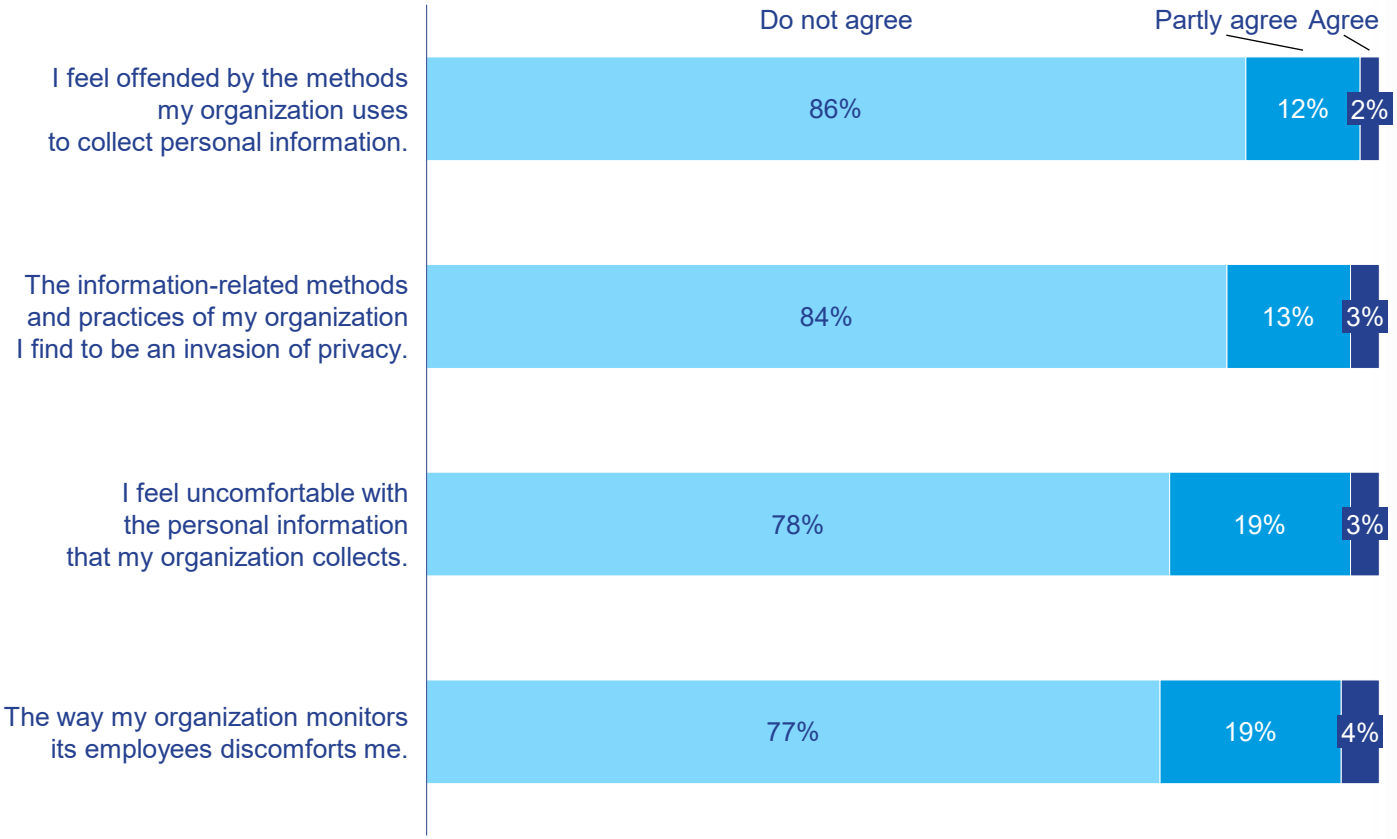
Concerns regarding the handling of personal performance information*



- We measure concerns about the handling of personal performance information with four questions about information acquisition and handling.
- Concerns are lower among controllers at the overall company level than among those working in business units. 86% at the overall company level, but only 79% at the business unit level, report low levels of concern. However, there is no correlation with the size of the company.

* Source:
Alge, B. J., Ballinger, G. A., Tangirala, S., & Oakley, J. L. (2006): Information privacy in organizations: Empowering creative and extrarole performance, in: Journal of Applied Psychology, 91(1), pp. 221-232.

Those who rate their performance only as adequate are more concerned about the handling of personal performance information

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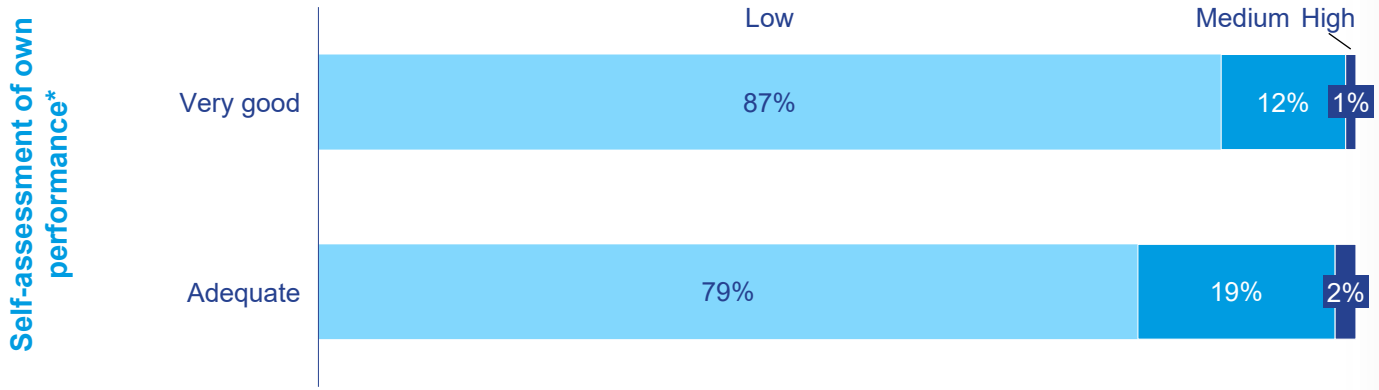
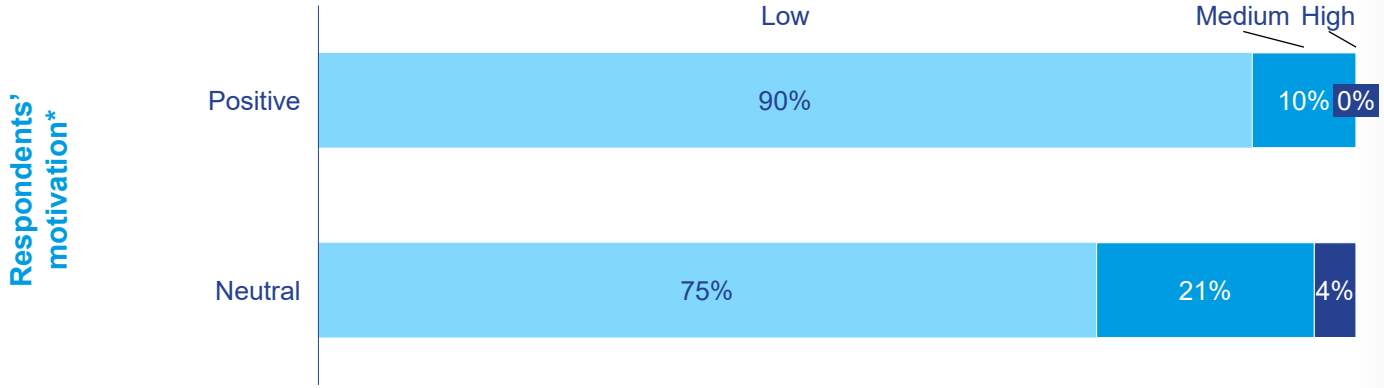
Concerns regarding the handling of personal performance information – by respondents' self-assessment of their performance



Concerns regarding the handling of personal performance information – by respondents' motivation



- Asked to rate their own performance in the past fiscal year, 56% of participants rated it as very good. The remaining 44% rated their performance as adequate.
- Respondents' motivation was measured using a construct derived from psychology consisting of twelve questions about their personal values, competencies, and skills.
- Based on the answers to these questions, three groups can be formed: Respondents with positive, neutral or negative motivation. In this study, the majority of respondents (58%) can be assigned to the group with a positive motivation, while a neutral motivation can be determined for the remaining 42%.

* None of the respondents answered with a 1 or 2 on a 7-point Likert scale in these questions. Accordingly, the category "Less satisfactory performance" or "Negative motivation" cannot be included in the evaluation.

Respondents under the age of 40 are significantly more self-confident than older respondents in assessing their own performance

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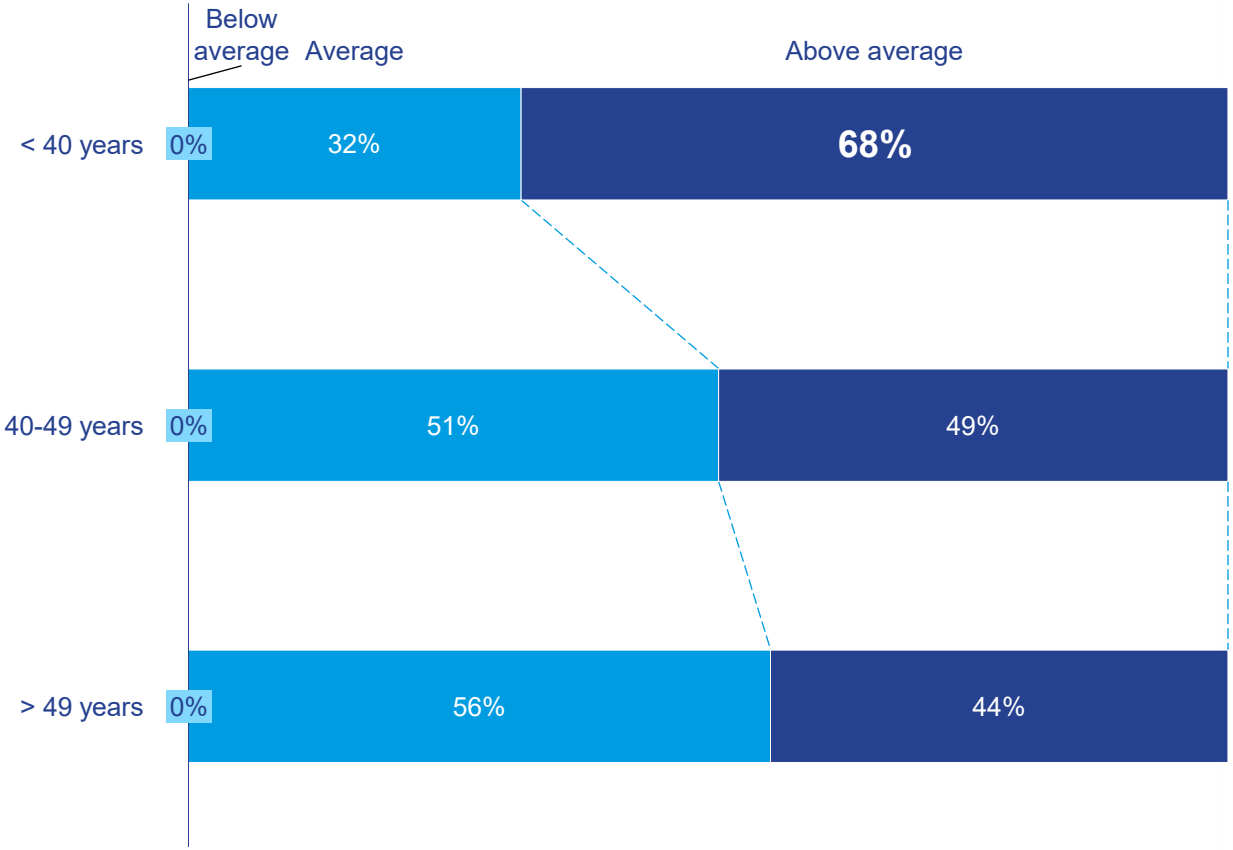
Evaluation of own performance in comparison to others on the same hierarchical level – by age group



- None of the respondents rated their own performance as unsatisfactory. Nor do any of the respondents perceive their own performance in comparison with others at the same hierarchical level as below average.
- There is a strong correlation between the respondent's self-assessment of their own performance and their motivation. Two-thirds of respondents with a positive motivation rate their own performance as very good. Among respondents with a neutral motivation, only just under a third arrive at the same assessment.

86% of respondents rate their own professional competence as high, but only 62% see great opportunities for influence in their work area

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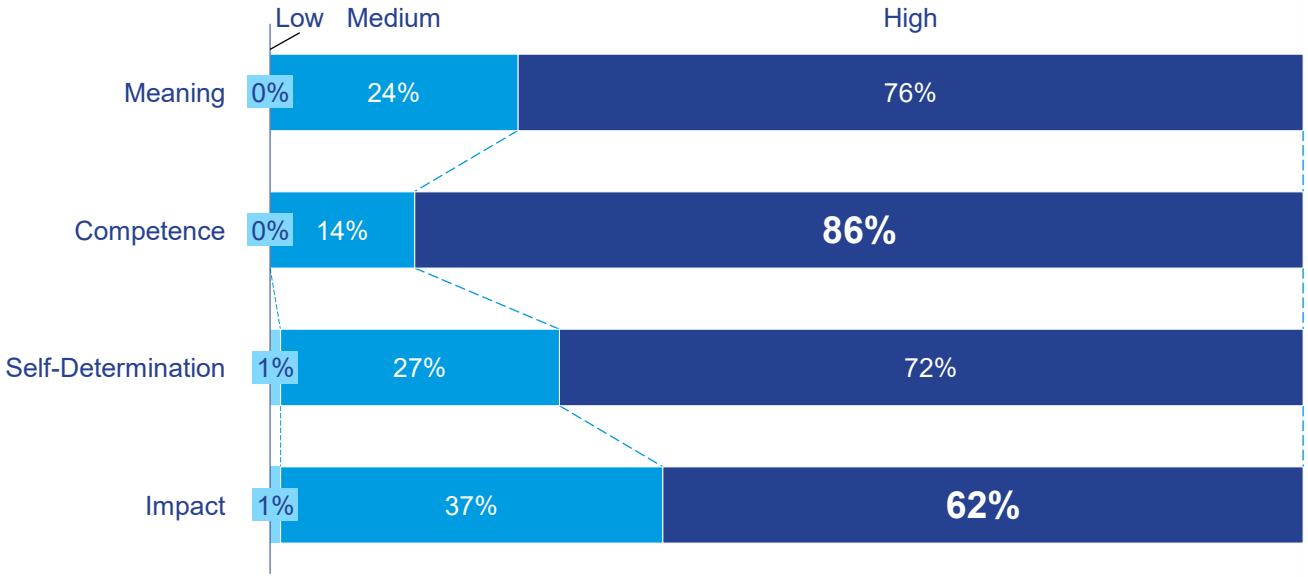
Empowerment (according to Spreitzer, 1995)*:

Meaning	Competence	Self-Determination	Impact
My work is important to me.	I master the skills that are important for my profession.	I can decide for myself how to approach my work.	I exert considerable influence on the processes in my work area.

Dimensions of empowerment



- The concept of empowerment refers to a cognitive state of empowerment and reinforcement in the activity that a person performs. Empowerment can be divided into four dimensions: Meaning (1), competence (2), self-determination (3), and impact (4). Each of these dimensions was measured with three questions.
- 86% of the responding heads of controlling rate their empowerment as high. For controllers at the lower levels of the hierarchy, the figure is only 74%.

* Source:
Spreitzer (1995): Psychological Empowerment in the Workplace: Dimensions, Measurement, and Validation, in: Academy of Management Journal, 38 (5), pp. 1442-1465.

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Roles & competencies of controllers

Controllers are much more than just scorekeepers, guardians and business partners – they take on many other roles

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Controller roles and share of controllers for whom this role is strongly pronounced*

52%
Service Expert
Ensures execution, coordination, and continuous improvement of operational controlling processes.

46%
Functional Expert
Defines and communicates controlling policies and guidelines; provides methods and subject matter expertise.

40%
Change Agent
Drives transformation, the use of new technologies, and the development of new business models.

31%
Scorekeeper
Conducts routine tasks in operational controlling processes.

57%
Guardian
Monitors financial target achievement, risks, and opportunities; ensures compliance with guidelines.

58%
Business Partner
Provides advice to managers, challenges them, and proactively works on business problems and opportunities.

41%
Data Engineer
Ensures data quality and data governance; develops or implements reporting, analytics and planning solutions.

4%
Data Scientist
Conducts analyses of big data; builds and maintains statistical and machine learning models.

11%
Decision Scientist
Ensures that data science addresses relevant questions and that results of big data analyses are translated into initiatives.

- In 2019, the WHU Delphi study "Future Controller Roles & Competencies" examined how the requirements for controllers are changing in the context of digitalization and which roles controllers perform in the future.
- In a multi-stage process, experts from science and practice identified a total of nine controller roles.
- Most commonly, there is a combination of roles – controllers who perform only one role are rare. On average, they perform 3.4 roles in parallel.

* The strength of roles was recorded on a 7-point Likert scale: At 6 or 7, we speak of a strongly pronounced role.

While there is little change for most roles, the role of the change agent in particular has grown in importance over the past years

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Controller roles and share of controllers for whom this role is strongly pronounced* (2019 → 2022)

47% → **52%**

Service Expert

Ensures execution, coordination, and continuous improvement of operational controlling processes.

42% → **46%**

Functional Expert

Defines and communicates controlling policies and guidelines; provides methods and subject matter expertise.

32% → **40%**

Change Agent

Drives transformation, the use of new technologies, and the development of new business models.

30% → **31%**

Scorekeeper

Conducts routine tasks in operational controlling processes.

55% → **57%**

Guardian

Monitors financial target achievement, risks, and opportunities; ensures compliance with guidelines.

56% → **58%**

Business Partner

Provides advice to managers, challenges them, and proactively works on business problems and opportunities.

39% → **41%**

Data Engineer

Ensures data quality and data governance; develops or implements reporting, analytics and planning solutions.

5% → **4%**

Data Scientist

Conducts analyses of big data; builds and maintains statistical and machine learning models.

9% → **11%**

Decision Scientist

Ensures that data science addresses relevant questions and that results of big data analyses are translated into initiatives.

- The role of the change agent is becoming increasingly important – especially in a volatile, often even disruptive business environment.
- In addition to the significant increase in the importance of the change agent role, we also see an increase – albeit only moderate – in the service expert and functional expert roles. Both roles ensure methodological and technical excellence.
- Data scientist and decision scientist are rather outsider roles in controlling. Many companies have their own specialized departments for this purpose. To which extent the two roles and the associated competencies are also required in controlling is the subject of controversial debate.

* The strength of roles was recorded on a 7-point Likert scale: At 6 or 7, we speak of a strongly pronounced role.

More strongly pronounced roles of heads of controlling vary with company size

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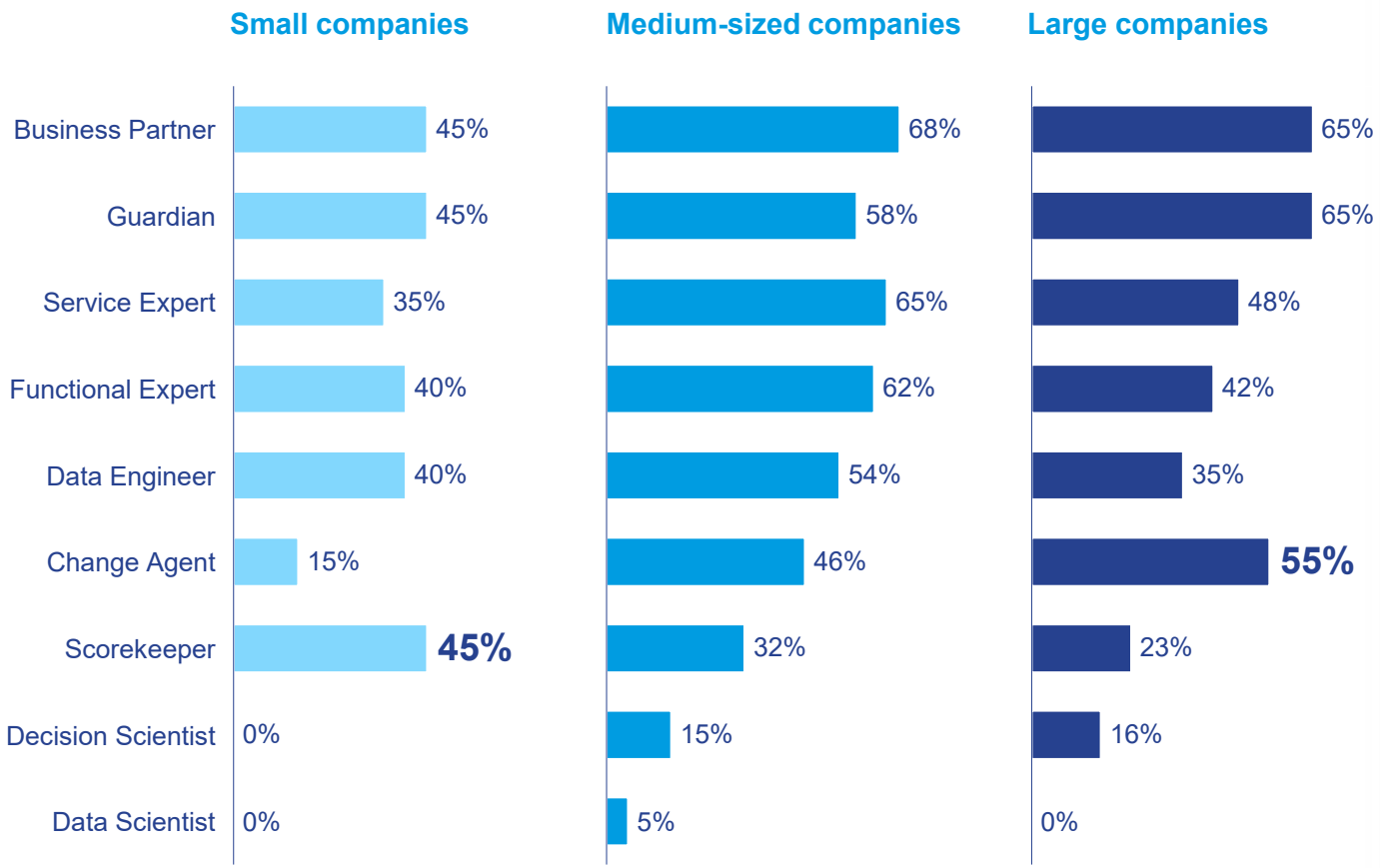
Strongly pronounced roles of heads of controlling (self-assessment)*



- Usually, there is an overlap between several strongly pronounced roles. On average, heads of controlling perform 3.6 strongly pronounced roles at the same time.
- Company size also plays a role: The number of roles performed in parallel by heads of controlling in ...
  - … small companies: 2.7
  - … medium-sized companies: 4.0
  - … large companies: 3.5
- Heads of controlling who only perform one strongly pronounced role are rare (11%).

* The strength of roles was recorded on a 7-point Likert scale: At 6 or 7, we speak of a strongly pronounced role.

More strongly pronounced roles of controllers vary with company size

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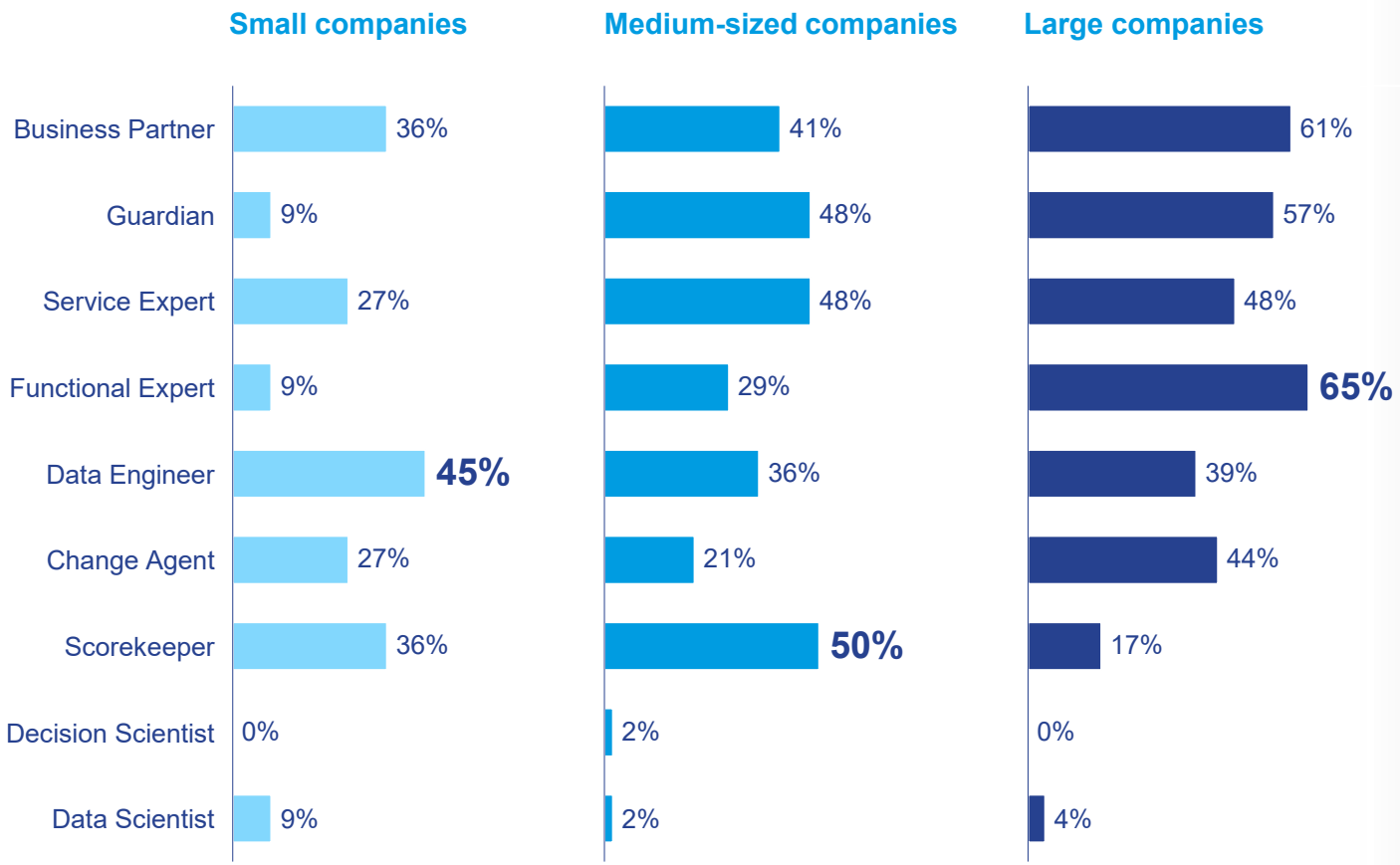
Strongly pronounced roles of controllers (self-assessment)*



- The overlap of strongly pronounced roles is also found among controllers at lower hierarchical levels: On average, they perform 2.9 roles in parallel.
- Number of roles performed by controllers in parallel in …
  - … small companies: 2.0
  - … medium-sized companies: 2.8
  - … large companies: 3.3
- 21% of controllers at lower hierarchical levels state that they only perform one role to a high degree.

* The strength of roles was recorded on a 7-point Likert scale: At 6 or 7, we speak of a strongly pronounced role.

In 2019, the WHU Delphi study identified a wide range of controller competencies in six areas of expertise

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Finance & Controlling

- Company's Finance and Controlling processes
- Finance & Controlling related concepts and frameworks
- Financial KPIs
- Non-financial KPIs
- Financial accounting

Management

- Project management
- Change management
- Agile techniques

Communication & Collaboration

- Presenting and storytelling skills
- Collaboration and discussion
- Negotiation
- Leadership and motivation
- Coaching and mentoring
- Assertiveness

Technology & Analytics

- IT systems and data architecture
- Data sourcing and data preparation
- Data visualization
- BI tools (reporting, analytics and planning tools)
- Statistical model building
- Statistical model interpretation
- Programming
- Knowledge of digital technologies and trends
- Data protection and data security

Business Acumen

- Company's business model, value drivers, and industry
- Success factors of traditional business models
- Success factors of digital business models
- Strategic thinking

Personal Competencies

- Analytical thinking
- Problem-solving orientation
- Critical thinking and reflection
- Personal integrity and backbone
- Ambiguity tolerance and openness
- Execution
- Perseverance and grit

Source: Schäffer et al. (2019): WHU Delphi Study – Future Controller Roles & Competencies: Final Report, Vallendar.

Overall, controllers rate their competencies as high – but to a lesser extent in management and technology & analytics

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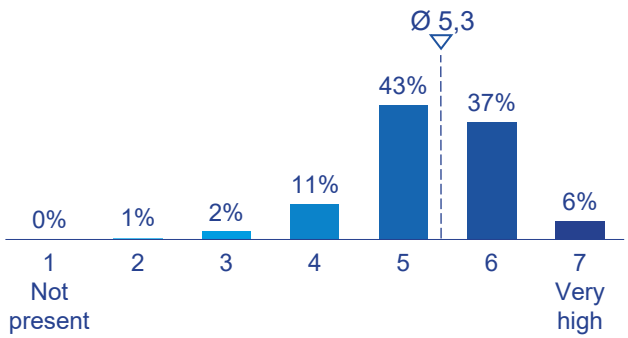
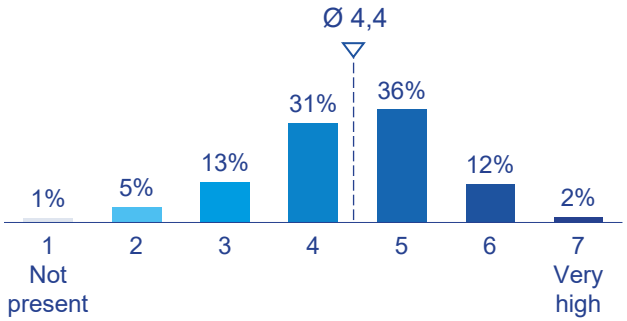
Level of competencies (self-assessment)

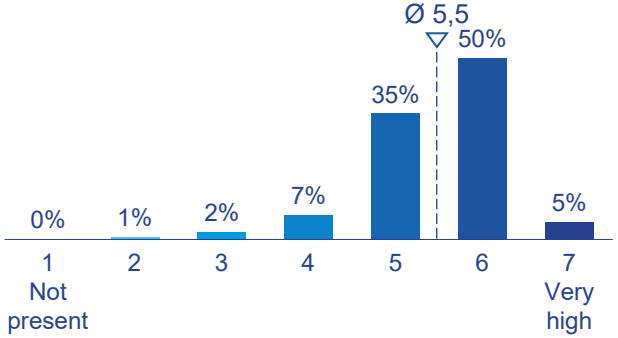
Finance & Controlling



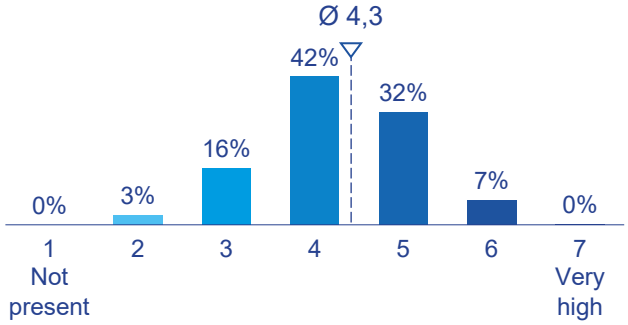
Management



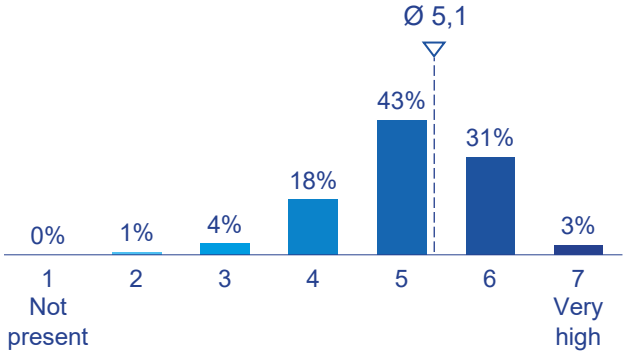
Communication & Cooperation



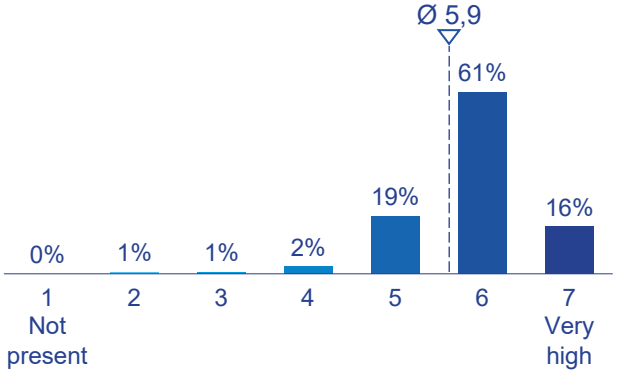
Technology & Analytics



Business Acumen



Personal Competencies



Controllers' self-assessments have changed little since 2019

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Average self-assessment (7-point Likert scales) in 2019 and 2022

Finance & Controlling

5.3 **5.3**

Management

4.5 **4.4**

Communication & Cooperation

5.4 **5.5**

Technology & Analytics

4.3 **4.3**

Business Acumen

5.2 **5.1**

Personal Competencies

5.9 **5.9**

CFOs and heads of controlling rate their competencies higher than controllers at lower hierarchical levels

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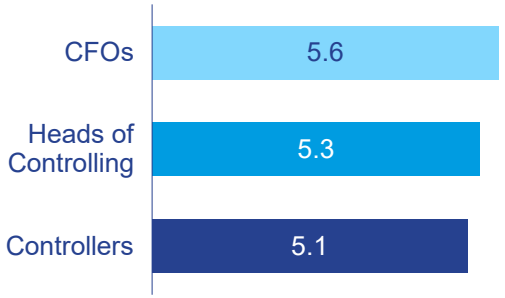
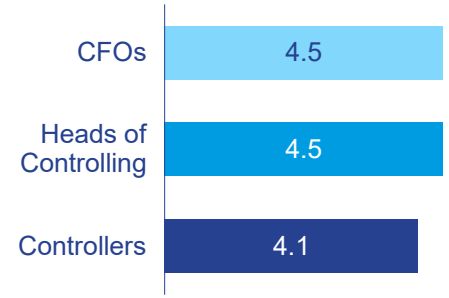
Level of competencies (self-assessment) – by hierarchical position

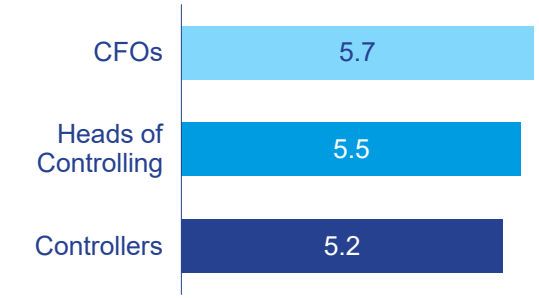
Finance & Controlling



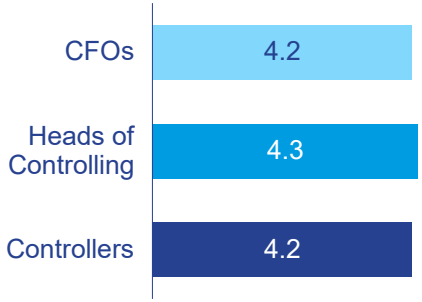
Management



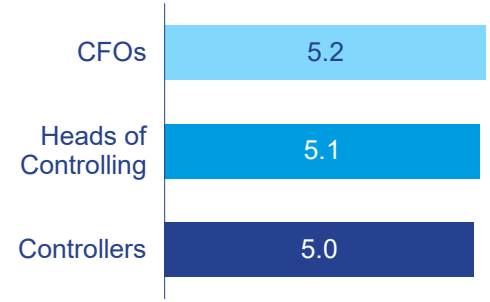
Communication & Cooperation



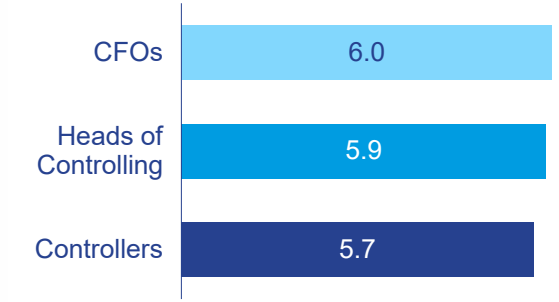
Technology & Analytics



Business Acumen



Personal Competencies



The TOP 10 controller competencies are the same as three years ago

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TOP 10 controller competencies (self-assessment)

Rank 2022	Change to 2019	Competencies	Area of competency	Average
1	--	**Analytical thinking**	Personal Competencies	**6.1**
2	▲+1	**Personal integrity and backbone**	Personal Competencies	**6.0**
3	▲+3	**Collaboration and discussion**	Communication & Cooperation	**6.0**
4	▼-2	**Problem-solving orientation**	Personal Competencies	**5.9**
4	▲+3	**Perseverance and grit**	Personal Competencies	**5.9**
4	▼-1	**Company's Finance and Controlling processes**	Finance & Controlling	**5.9**
7	▼-2	**Critical thinking and reflection**	Personal Competencies	**5.8**
8	▲+2	**Negotiation**	Communication & Cooperation	**5.7**
9	--	**Financial KPIs**	Finance & Controlling	**5.6**
9	▼-3	**Company's business model, value drivers, and industry**	Business Acumen	**5.6**

The TOP 10 lacking competencies are the same as three years ago

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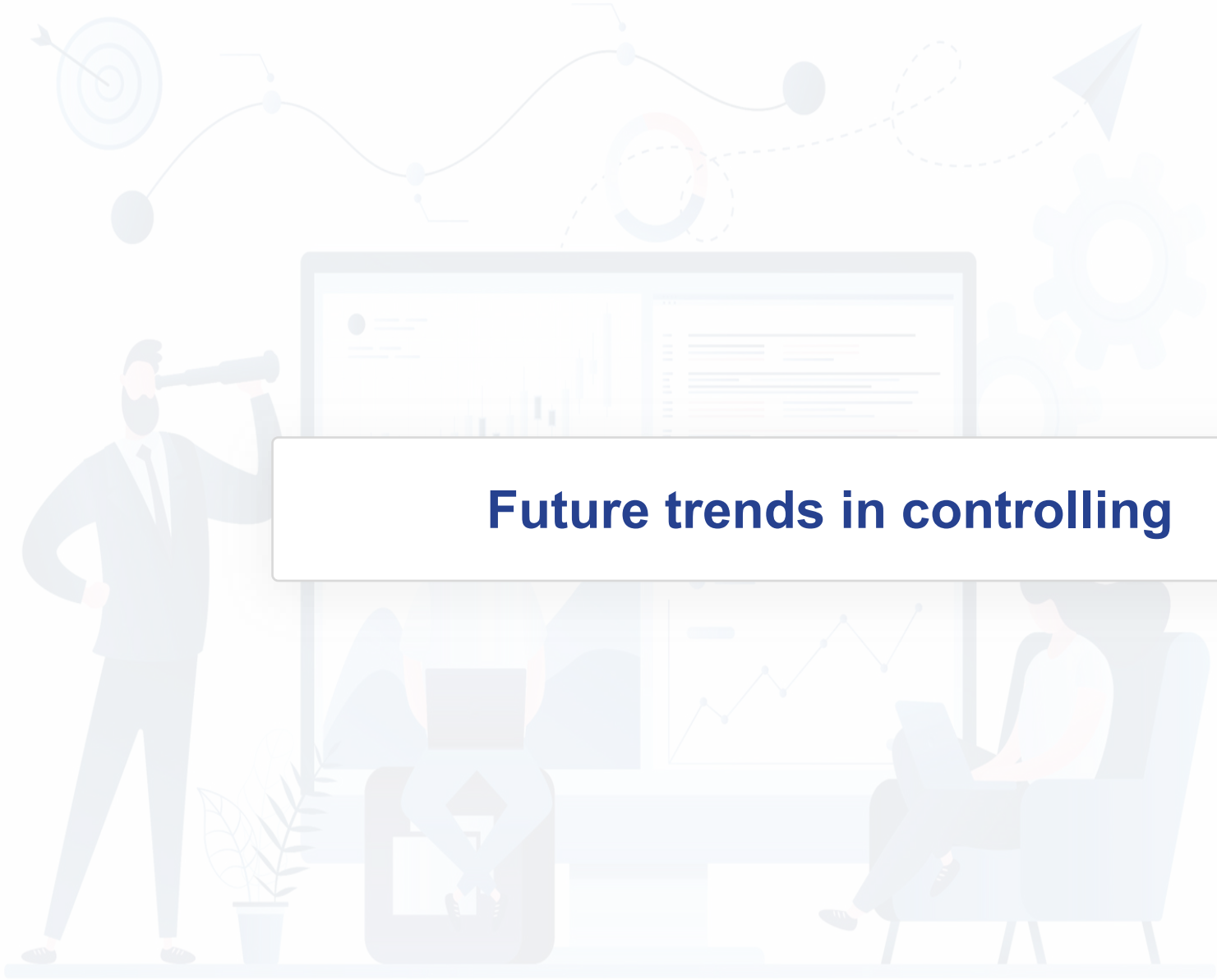
TOP 10 lacking competencies (self-assessment)

Rank 2022	Change to 2019	Competencies	Area of competency	Average
1	--	**Programming**	Technology & Analytics	**2.6**
2	--	**Statistical model building**	Technology & Analytics	**3.4**
3	--	**Agile techniques**	Management	**3.8**
4	▲+1	**Data Sourcing**	Technology & Analytics	**3.9**
4	▼-1	**Statistical model interpretation**	Technology & Analytics	**3.9**
6	▲+1	**Data architecture**	Technology & Analytics	**4.2**
7	▼-1	**Data security**	Technology & Analytics	**4.4**
8	--	**Success factors of digital business models**	Business Acumen	**4.5**
8	▲+1	**Knowledge of digital technologies and trends**	Technology & Analytics	**4.5**
8	▼-1	**Data protection**	Technology & Analytics	**4.5**

Contents



Future trends in controlling

Digitalization-related trends continue to dominate the controlling agenda

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Importance and expected importance of the TOP 10 future trends in controlling – by year

	Future trends	Importance 2011	Importance 2014	Importance 2017	Importance 2020		Importance 2025 (E)
1	Information systems	5.6	5.7	5.3	5.5	+0.9	6.4
2	Data management	-	-	5.2	4.7	+1.6	6.3
2	Digital competencies	-	-	4.2	4.3	+2.0	6.3
4	Efficiency in controlling	5.4	5.1	4.9	4.9	+1.0	5.9
5	Business partner	4.4	4.7	4.6	4.7	+0.8	5.5
5	Business analytics	-	-	3.2	3.8	+1.7	5.5
7	Digital business models	-	-	3.7	3.7	+1.7	5.4
8	Next generation of controllers	4.0	4.2	4.1	4.3	+1.0	5.3
8	Participation in strategic planning	4.7	4.4	4.4	4.4	+0.9	5.3
10	Crisis management	-	-	-	4.9	+0.3	5.2
10	Volatility	4.5	4.3	4.4	4.6	+0.6	5.2
10	Risk management	-	-	-	4.4	+0.8	5.2
13	Lean planning	-	-	-	3.8	+1.3	5.1
13	Self-service reporting for management	-	-	3.7	3.6	+1.5	5.1
15	Cash-orientation	-	4.2	4.1	4.5	+0.5	5.0
15	Agile company steering			3.9	3.7	+1.3	5.0

- With the fourth “future study” in 2020, we continued our studies from 2011, 2014 and 2017. Like its predecessors, the study consists of two components: A qualitative preliminary study with in-depth interviews among six university professors, controllers and advisors, and the quantitative survey as part of the WHU Controller Panel.
- The study identified 13 topics that we included in the survey in addition to those already queried in 2017.
- For each future trend, we asked respondents to assess its current importance and its expected importance in five years' time. The ranking shows the TOP 10 in terms of expected importance in 2025.
- The results: Some trends from the broad field of digitalization have moved further up the rankings compared to 2017: Digital competencies have moved up from 4th to 2nd place, and business analytics from 12th to 5th.
- The trends of agile company steering and participation in internal communication are displaced from the TOP 10 presumably due to the Covid crisis – by risk management and crisis management.

While the top four trends are the same, the overall controlling agenda differs across company sizes

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Expected importance of the future trends in controlling – by company size

Small companies	Importance 2025 (E)	Medium-sized companies	Importance 2025 (E)	Large companies	Importance 2025 (E)
Information systems	6.2	Information systems	6.5	Data management	6.5
Digital competencies	6.2	Data management	6.3	Information systems	6.4
Data management	6.0	Digital competencies	6.3	Digital competencies	6.4
Efficiency in Controlling	5.8	Efficiency in Controlling	6.1	Efficiency in Controlling	6.3
Volatility	5.4	Business partner	5.5	Digital business models	5.8
Resilience	5.4	Business analytics	5.4	Business analytics	5.8
Crisis management	5.3	Next generation of controllers	5.3	Self-service reporting for management	5.5
Business partner	5.3	Crisis management	5.1	Risk management	5.4
Participation in strategic planning	5.3	Cash-orientation	5.1	Next generation of controllers	5.4
Risk management	5.3	Risk management	5.1	Participation in strategic planning	5.4
Business analytics	5.3	Participation in strategic planning	5.1	Volatility	5.3
Revenue management	5.2	Lean planning	5.1	Business partner	5.3
Lean planning	5.1	Digital business models	5.1	Process automation	5.3
Digital business models	5.1	Self-service reporting for management	5.1	Crisis management	5.2
Agile company steering	5.0	Volatility	5.0	Agile company steering	5.1

- The topic of business partners appears relatively important in medium-sized companies on 5th place (mean value 5.5). In small companies, the topic is in 7th place (mean value 5.3), while in large companies, the average of 5.3 only translates into 11th place.
- Another clear difference: In small companies, the topics of next generation of controllers and self-service reporting do not play a significant role. In medium-sized and large companies they are in the TOP 10.
- In small companies, the topics of resilience (5th place) and revenue management (12th place) appear relatively important, while in medium and large companies, they are clearly less important (18th and 19th places).
- Conversely, process automation is given a relatively high ranking in large companies (shared 11th place), while it is ranked as less important for medium-sized and small companies (21st place each).

Only controllers at lower hierarchical levels see revenue management as a major future trend

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Expected importance of the future trends in controlling – by position

CEOs / CFOs	Importance 2025 (E)	Heads of controlling	Importance 2025 (E)	Controllers	Importance 2025 (E)
Information systems	6.4	Information systems	6.3	Information systems	6.5
Digital competencies	6.4	Data management	6.3	Digital competencies	6.3
Data management	6.3	Digital competencies	6.3	Data management	6.2
Efficiency in Controlling	5.8	Efficiency in Controlling	5.9	Revenue management	5.9
Participation in strategic planning	5.7	Business partner	5.5	Efficiency in Controlling	5.8
Business analytics	5.7	Business analytics	5.5	Business analytics	5.5
Business partner	5.6	Next generation of controllers	5.3	Digital business models	5.4
Crisis management	5.5	Digital business models	5.3	Business partner	5.3
Resilience	5.5	Volatility	5.2	Risk management	5.2
Volatility	5.4	Participation in strategic planning	5.2	Participation in strategic planning	5.2
Risk management	5.4	Lean planning	5.2	Next generation of controllers	5.1
Cash-orientation	5.3	Crisis management	5.1	Crisis management	5.0
Next generation of controllers	5.3	Risk management	5.1	Volatility	5.0
Self-service reporting for management	5.3	Agile company steering	5.1	Sustainability	5.0
Digital business models	5.3	Self-service reporting for management	5.1	Lean planning	5.0
Process automation	5.3				

- Crisis management – like resilience – seems more important for the top management. Among CEOs and CFOs, the topic is ranked in 8th place (mean value 5.5), while among heads of controlling and controllers at lower hierarchical levels it is ranked in 12th place (5.1 and 5.0 respectively).
- Involvement in strategic planning is also particularly important for the top management level. CEOs and CFOs rank this topic in 5th place (5.7). Among heads of controlling and controllers at lower hierarchical levels, it ranks 9th (5.2).
- The topic of next generation of controllers is of greater concern particularly to heads of controlling. Here, the topic ranks in 7th place, while CEOs and CFOs rank it in 12th place, as do controllers.
- Sustainability, on the other hand, is higher on the agenda of controllers at the lower levels, ranking 12th. Sustainability only ranks 18th among CEOs and CFOs and 21st among heads of controlling.

Respondents with higher company tenure attribute more importance to digital competencies, the next generation of controllers and volatility

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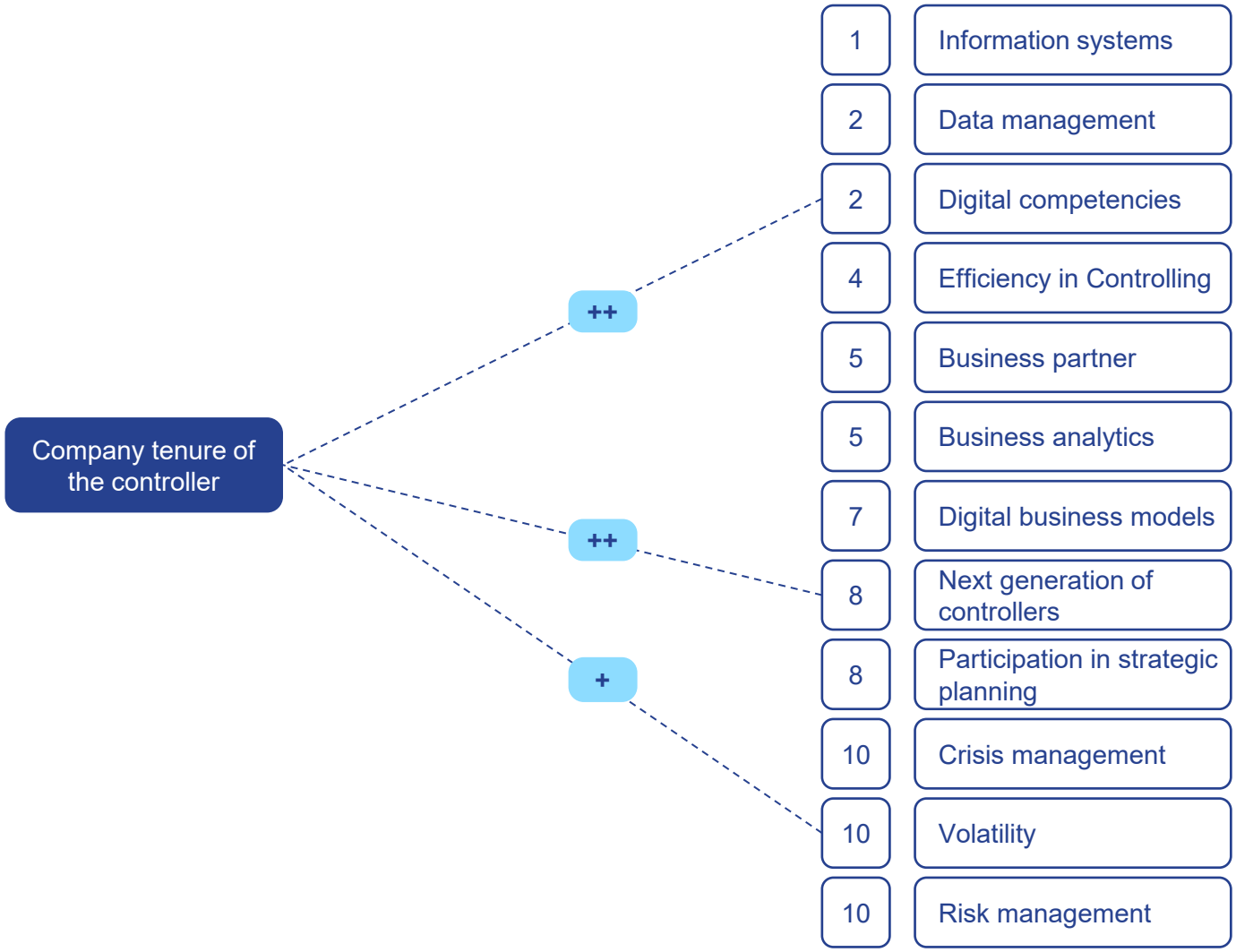
Correlations between assessment of the TOP 10 future trends and controllers' company tenure



- The correlation between the estimated importance of digital competencies, next generation of controllers and volatility is similarly strong, even when the influence of age and position of the respondents is taken into account.
- Beyond the TOP 10 future trends, other trends are estimated to be more important by controllers with longer company tenure:
  - Agile company steering
  - Lean planning
  - Artificial intelligence
  - Resilience
- The tenure in their current position influences respondents' assessment of digital competencies, resilience and internal communication.
- Controllers in higher positions rate the importance of internal communication to be higher.

Strength of the correlation:

+++/---	strong significant correlation
++/--	moderate significant correlation
+/-	weak but significant correlation

In a context of environmental uncertainty, several trends are perceived as more important

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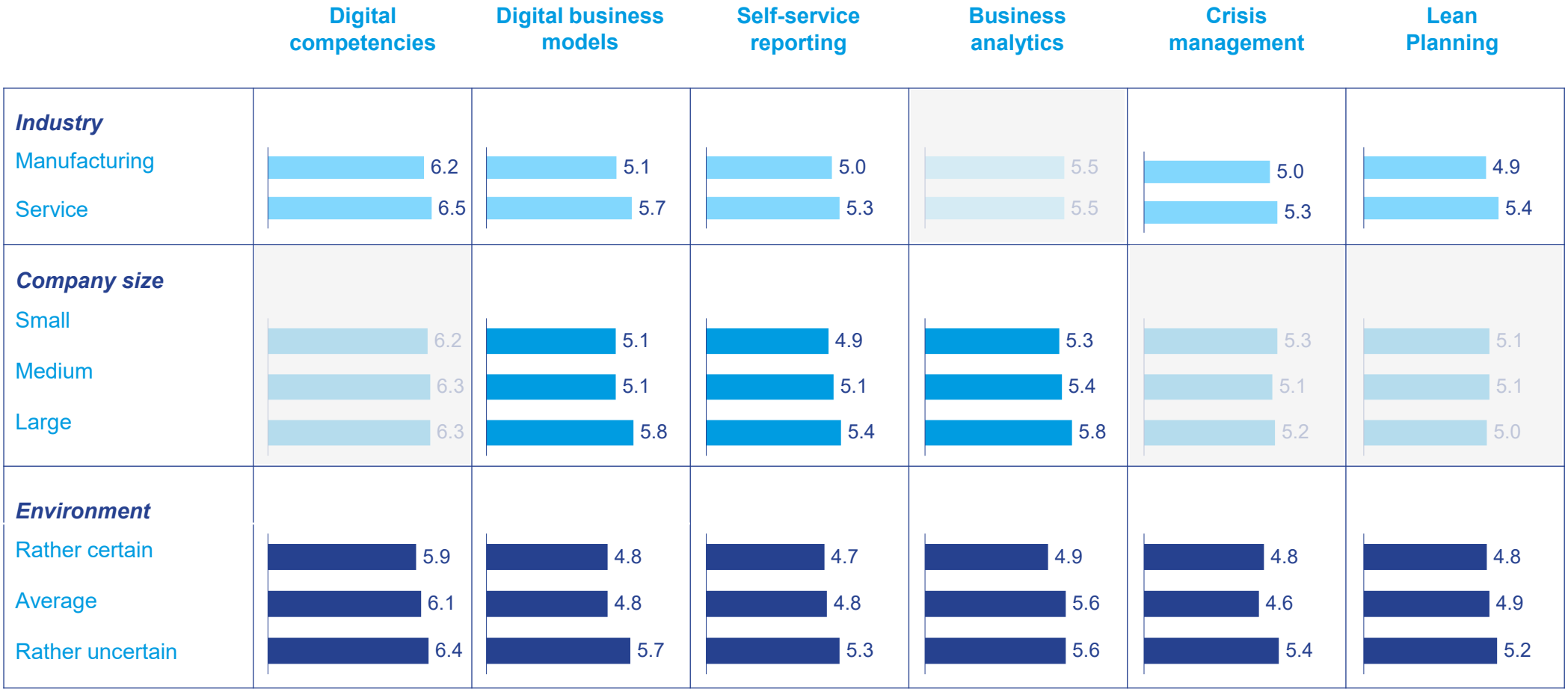
Correlation of selected future trends with industry, company size, and environmental uncertainty



Gray shading: Correlation is not significant

The importance of digitalization increased significantly from 2017 to 2020

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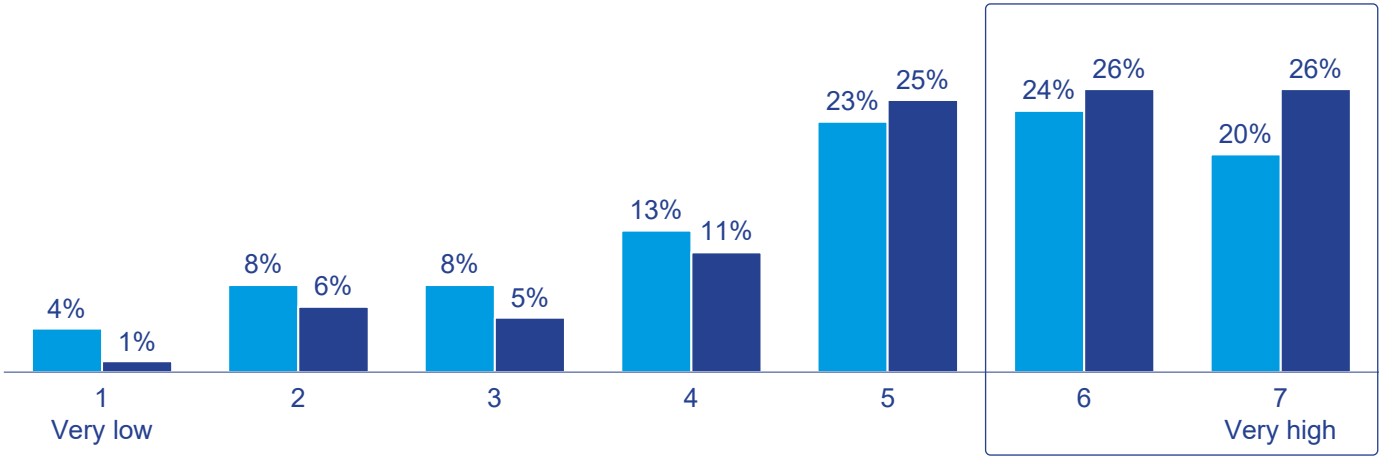
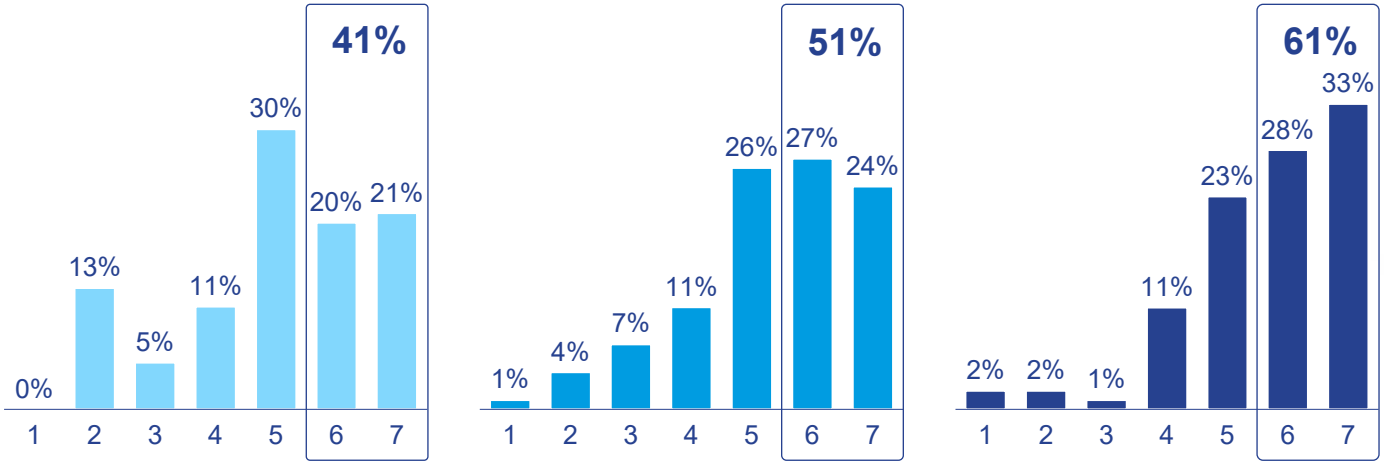
Perceived importance of digitalization in the company – by year



Perceived importance of digitalization in the company – by company size



- The increasing importance of digitalization is driven most strongly by medium-sized companies: Three years ago, only 39% of respondents said that digitalization was an important topic in their company; it now rose to 51%. The increasing importance is also seen in small companies, but less clearly (2017: 36% vs. 2020: 41%). In large companies, the increase is only marginal (2017: 59% vs. 2020: 61%).
- Industry differences can also be observed: While 64% of companies in the service sector attach great importance to digitalization, only 45% of manufacturing companies do.
- 58% of companies in a rather uncertain environment rate the importance of digitalization as high, while in a rather certain business environment the figure is only 45%.

Upper chart

2017 2020

As of 2020, 66% of companies have a (more or less developed) digitalization strategy

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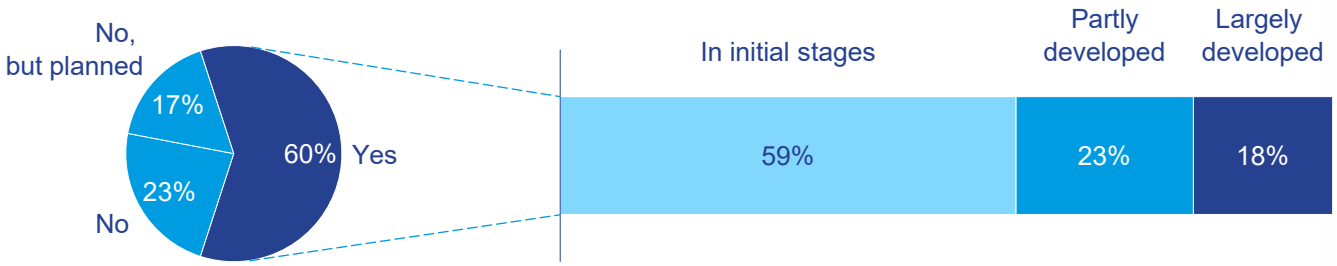
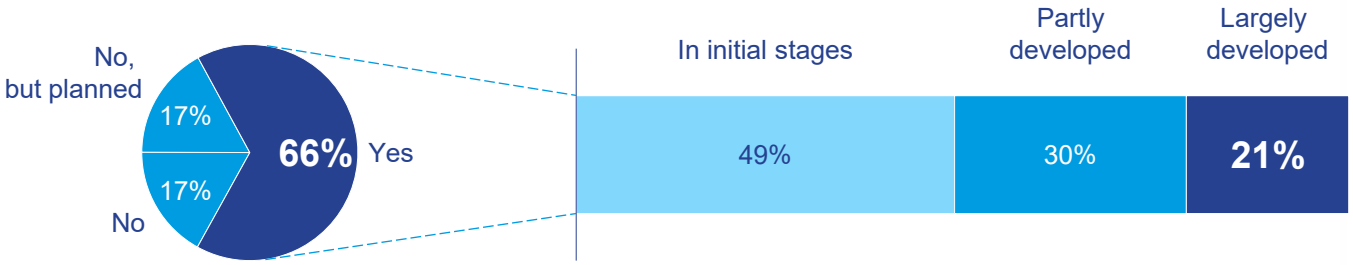
Digitalization strategy in the company – by year

2017



2020



- As the importance of digitalization has increased significantly in recent years, more and more companies have established corresponding strategies both in the company and in controlling.
- We found differences depending on company size: 77% of large companies have developed a digitalization strategy, 66% of medium-sized companies, but only 50% of small companies.
- Industry influences also play a role: Service providers are significantly further in the process (79%) than manufacturing companies (61%).

In 2017, only half of the companies had a digitalization strategy in controlling – in 2020 already 66%

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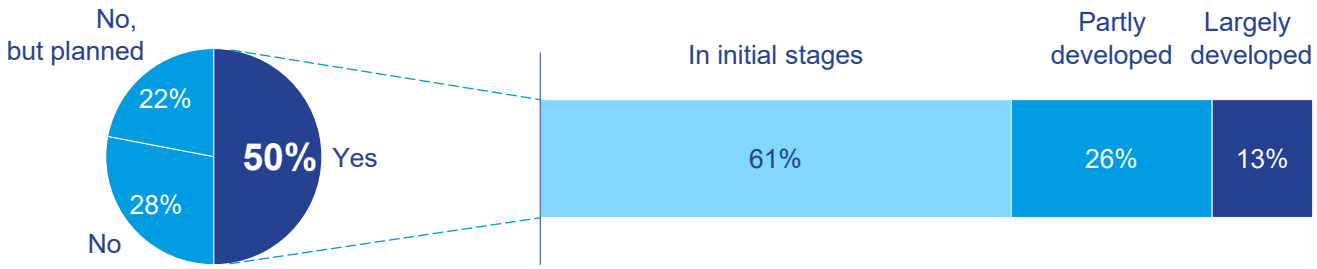
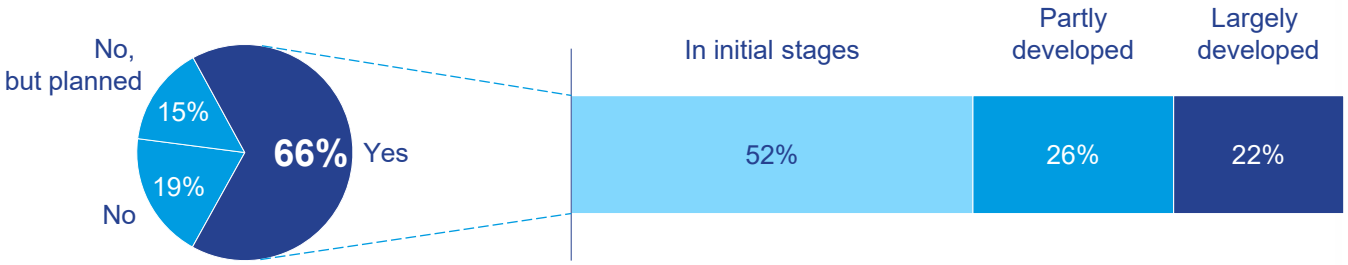
Digitalization strategy in controlling – by year

2017



2020



- In the area of digitalization strategy, controlling has caught up significantly across all company sizes: While in 2017 only 50% of respondents stated that controlling had also developed a digitalization strategy, this figure has risen to 66% in 2020. This means that a digitalization strategy in controlling is now as widespread as a company-wide digitalization strategy.
- Here, too, the industry plays a role: 74% of service providers, but only 60% of manufacturing companies have a specific digitalization strategy in controlling.
- In contrast, we do not find company size to determine the existence of a digitalization strategy in Controlling.

Hardly any change between 2017 and 2020: Investments in digitalization are still not perceived as sufficient

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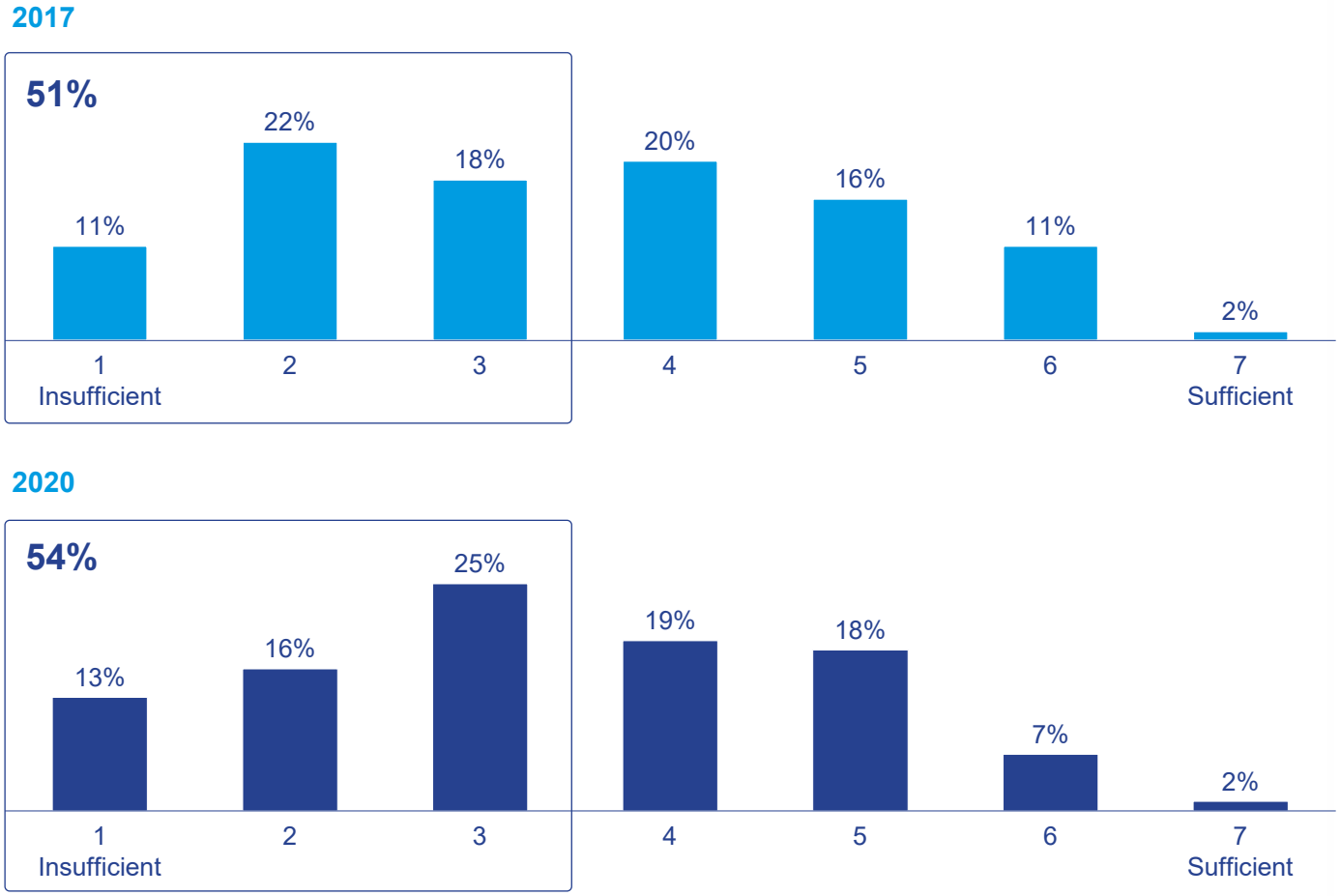
Investment in digitalization of the company – by year



- The respondents' statements on investments in digitalization are interesting: Although investments have not declined from 2017 to 2020*, the majority of respondents still do not consider them to be nearly sufficient – neither company-wide nor in controlling.
- The situation is even worse for controlling: In 2020, 58% of respondents feel that investments in digitalization are insufficient, which constitutes a deterioration compared to 2017 (54%).
- We do not find any correlations with the size of the company or the stability of the business environment.

* From our second flash study on the Corona crisis (May 2020), we even know that 51% of digitalization projects continue to be implemented as planned or, in 17% of cases, are even scaled up or implemented with higher priority (see p. 240).

Self-service for management is lagging behind expectations

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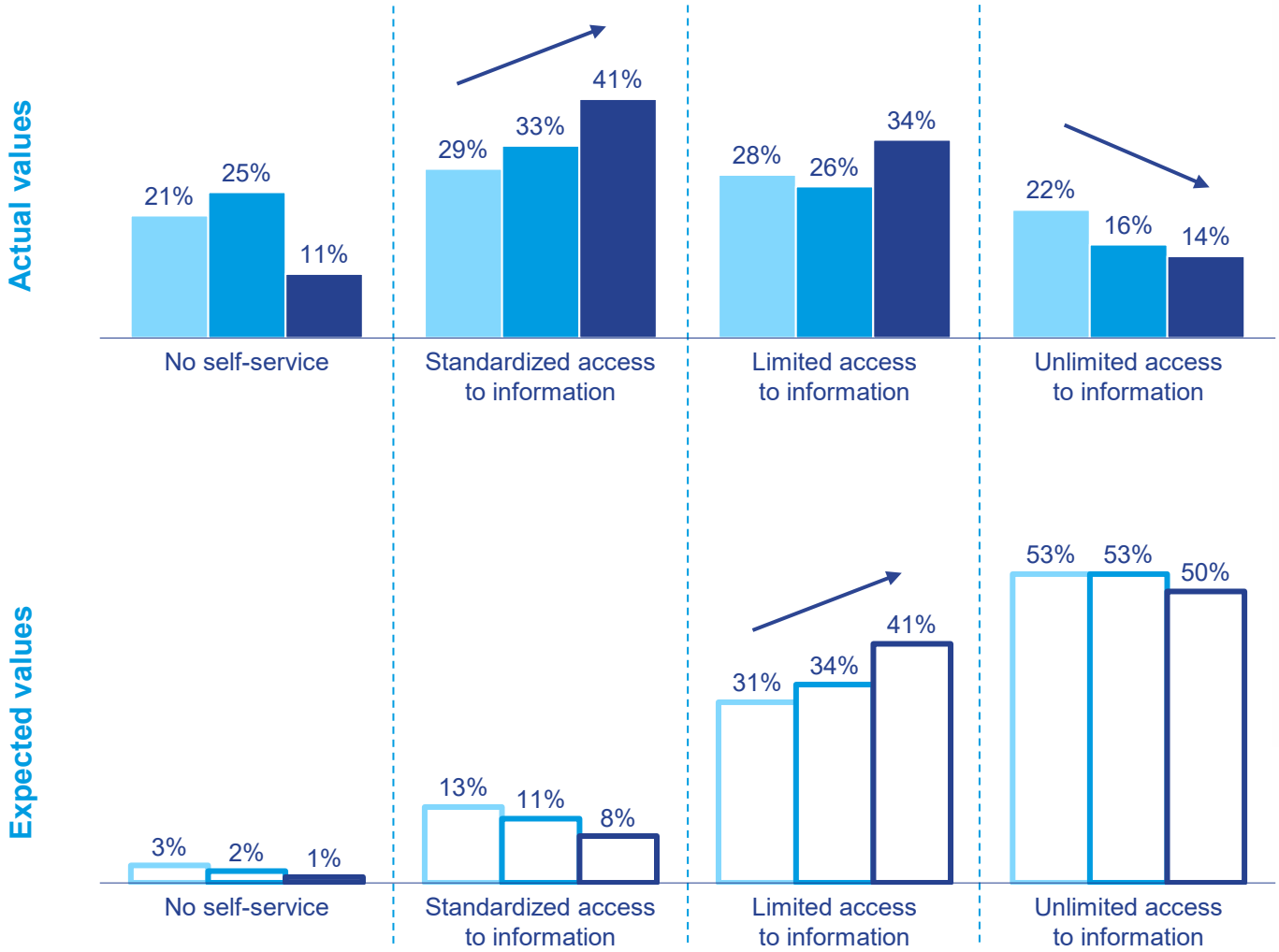
Self-service for management – over time



- In 2020, managers are more likely to have unlimited access to information in companies where the controlling culture is characterized to a high degree by transparency and a culture of constructive criticism.
- The expected degree of selection of information in the area of self-service for 2025, on the other hand, is independent of the characteristics of the controlling culture.
- In general, a self-service solution that provides more than just a standardized access to information is more frequently found in companies that attach great importance to the topic of digitalization and have a comprehensive strategy and sufficient budget.
- Company size, on the other hand, does not seem to play a role, nor does the industry.

Upper chart	Lower chart
2014 (actual)	2019 (expected in 2014)
2017 (actual)	2022 (expected in 2017)
2020 (actual)	2025 (expected in 2020)

Mobil data availability is on the rise, other dimensions are still lagging behind

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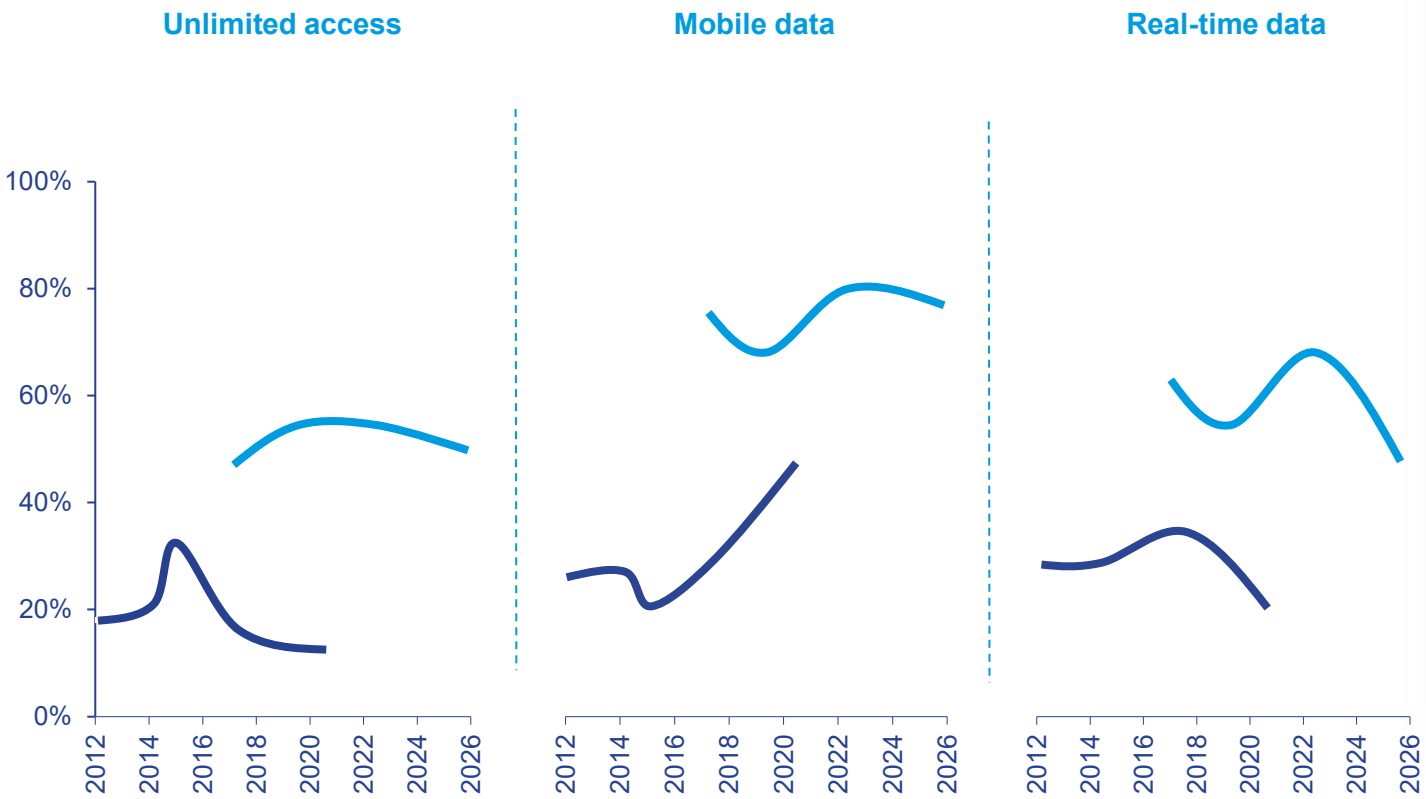
Self-service for management – over time



- What applies to the self-service solutions themselves can also be observed for the availability of mobile- and real-time data: Both are more likely to be found where digitalization is of high importance and a comprehensive strategy for it exists.
- It is interesting to note that 71% of the respondents, who tend to assume an increase in the size of the controller area relative to the number of employees, expect a comprehensive self-service solution for management with unlimited access in 2025. Among those expecting a reduction in the size of the controller area, the figure is only 47%. This seems to indicate that a planned increase in the size of the controller area will probably also be accompanied by a change in controlling itself.

In the eyes of our respondents, most companies have no clear strategy for expanding their digital competencies

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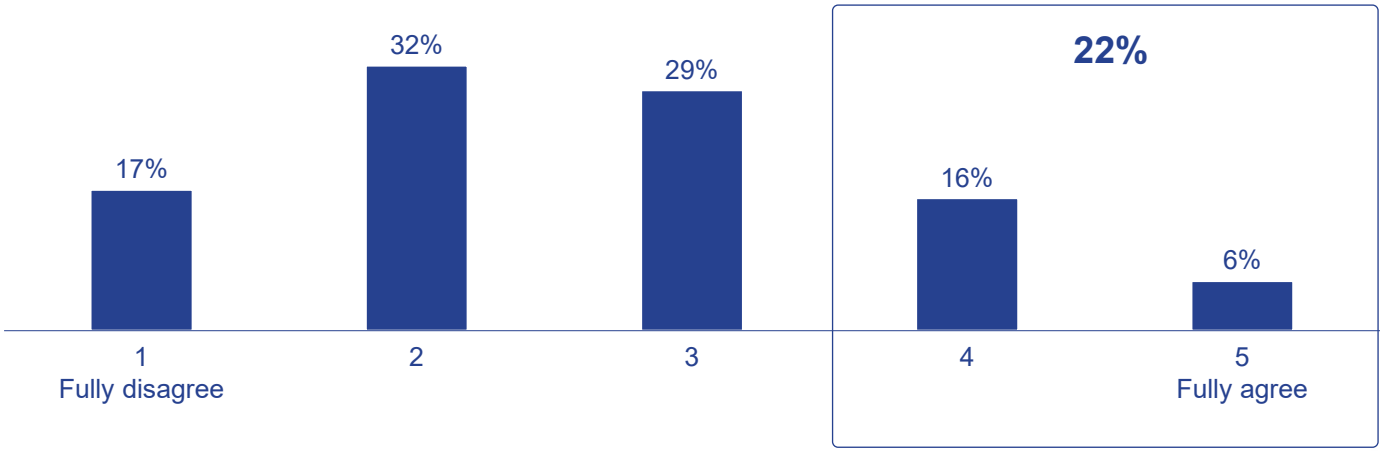
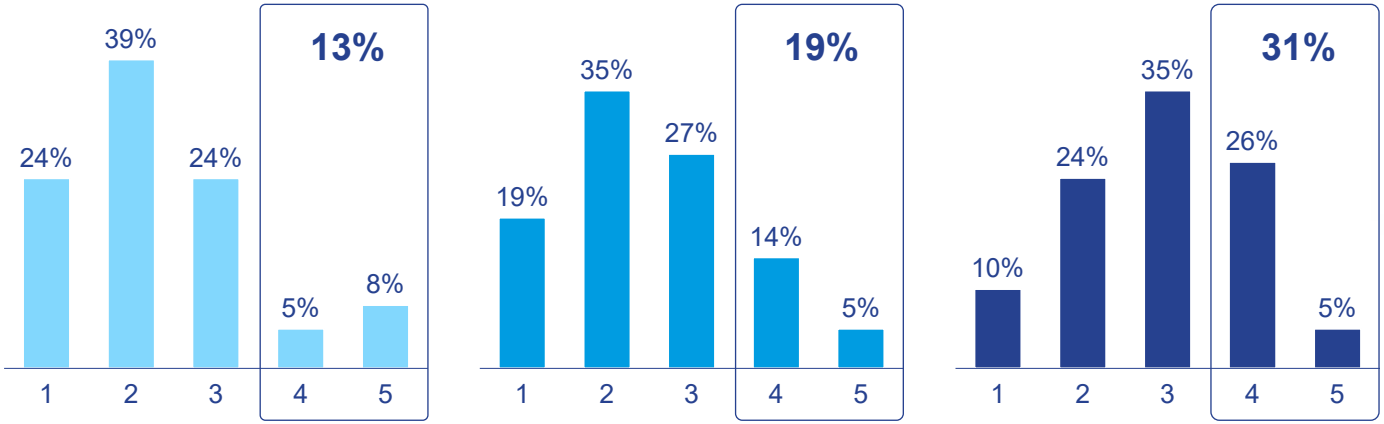
"In our company, there is a clear strategy for expanding our digital competencies."



Strategy for expanding digital competencies – by company size



- There are considerable differences in company size: Although digital competencies rank second in the future trends ranking for small companies, only 13% have a clear strategy for improving their digital skills. In medium-sized companies (digital competencies in third place in the ranking), the situation looks only slightly better with 19%. Only in large companies (digital competencies also in third place in the ranking) is the picture more positive: Here, 31% have a clear strategy for improving their digital competencies.
- 27% of service providers have a clear strategy for expanding their digital competencies and are thus significantly better off than manufacturing companies (19%).

Lower chart

1 Fully disagree
3 Partly agree
5 Fully agree

Will the controlling department shrink in the future?

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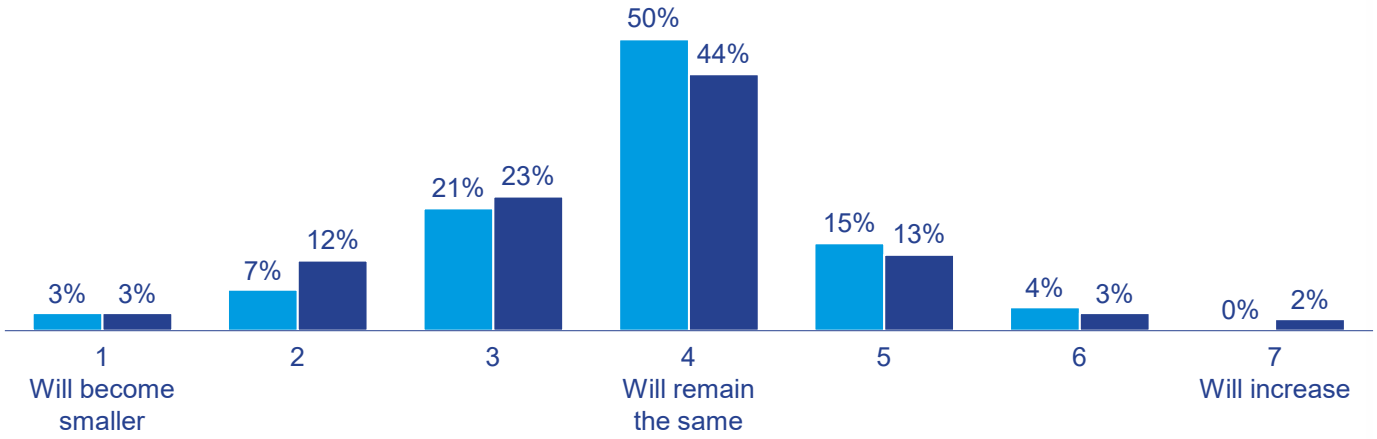
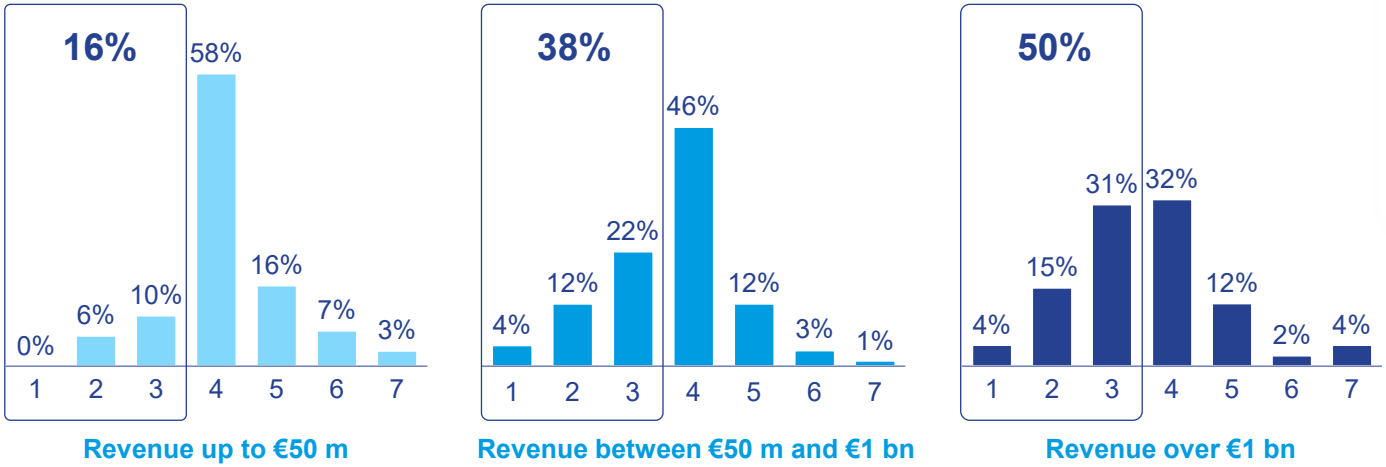
Expected (relative*) change in the size of the controlling department – by year



Expected (relative*) change in the size of the controlling department – by company size



- In the context of increasing digitalization, it is commonly asked which changes are expected for the size of the controlling department.
- In addition to company size, the position of the respondents plays a role here: While an average of 38% of the respondents expect a (relative*) reduction in the size of the controlling department, only 35% of the heads of controlling expect a reduction. Controllers without management functions are more skeptical about the development of the controlling department: 47% of them believe that the department will become smaller.
- The stability of the business environment, on the other hand, seems to have only a minimal influence on the expectations of the respondents, and there are no industry effects at all.

* relative to the total number of employees

Upper chart
2017 2020

Lower chart
1 Will become smaller
4 Will remain the same
7 Will increase

Most companies have a lot of potential with respect to transparency, open information exchange, and decision-making culture

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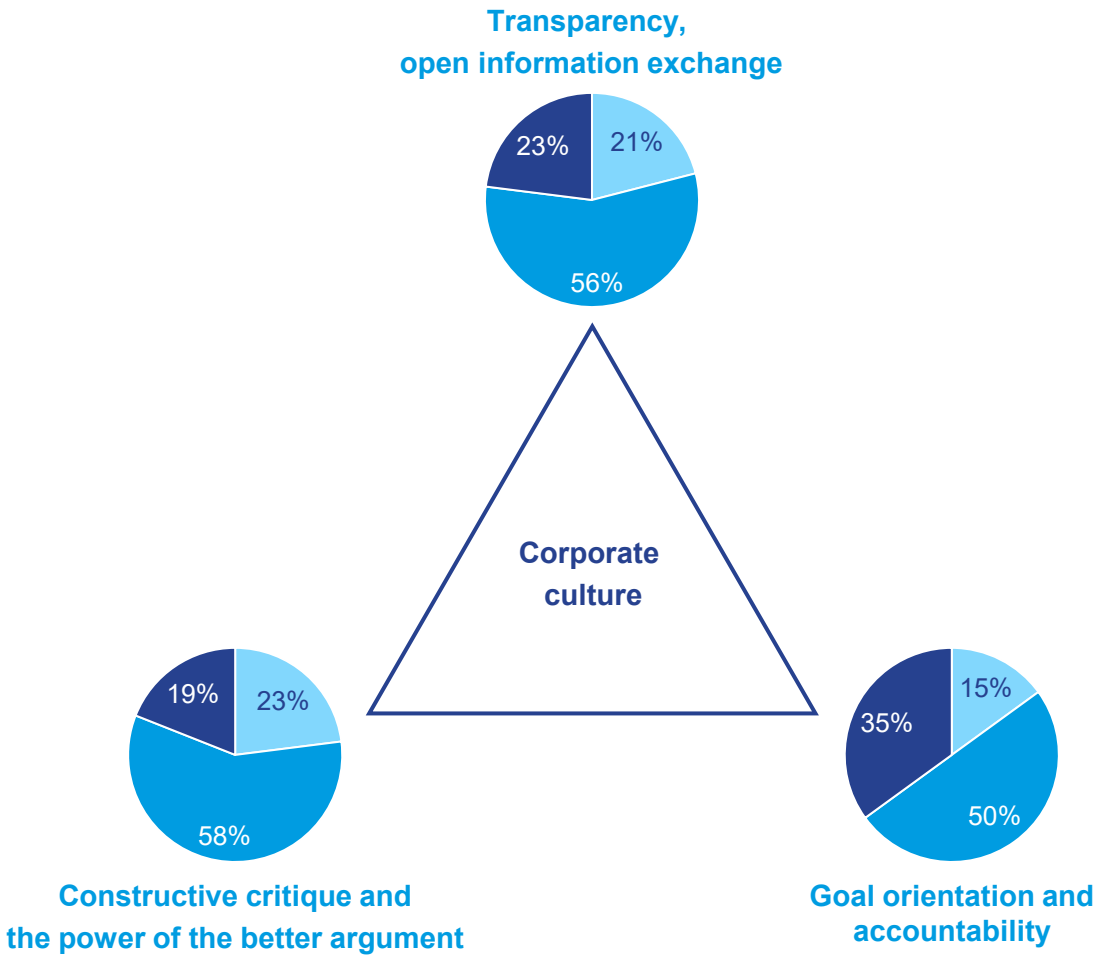
Controlling-related aspects of corporate culture



- Whether digitalization is really "lived" or remains just a buzzword also depends on whether the cultural prerequisites exist or can be created in the company, without which digitalization struggles to succeed.
- In the CMR article "Controlling-Kultur – Schlüssel zum Erfolg"*, Utz Schäffer and Jürgen Weber explain why corporate culture and controlling have so much to do with each other. They distinguish three guiding values for a controlling culture in a company, which should ensure the rationality of management: (1) Strict alignment with corporate goals, (2) a high value placed on transparency and the open exchange of information within the company, and (3) a primacy of analysis and critical discourse.

* Source:
Schäffer, U./Weber, J. (2017): Controlling-Kultur – Schlüssel zum Erfolg, in: Controlling & Management Review, 61 (7), pp. 8-16.

Around 80% of respondents see clear potential for improvement in transparency, constructive critique, and goal orientation

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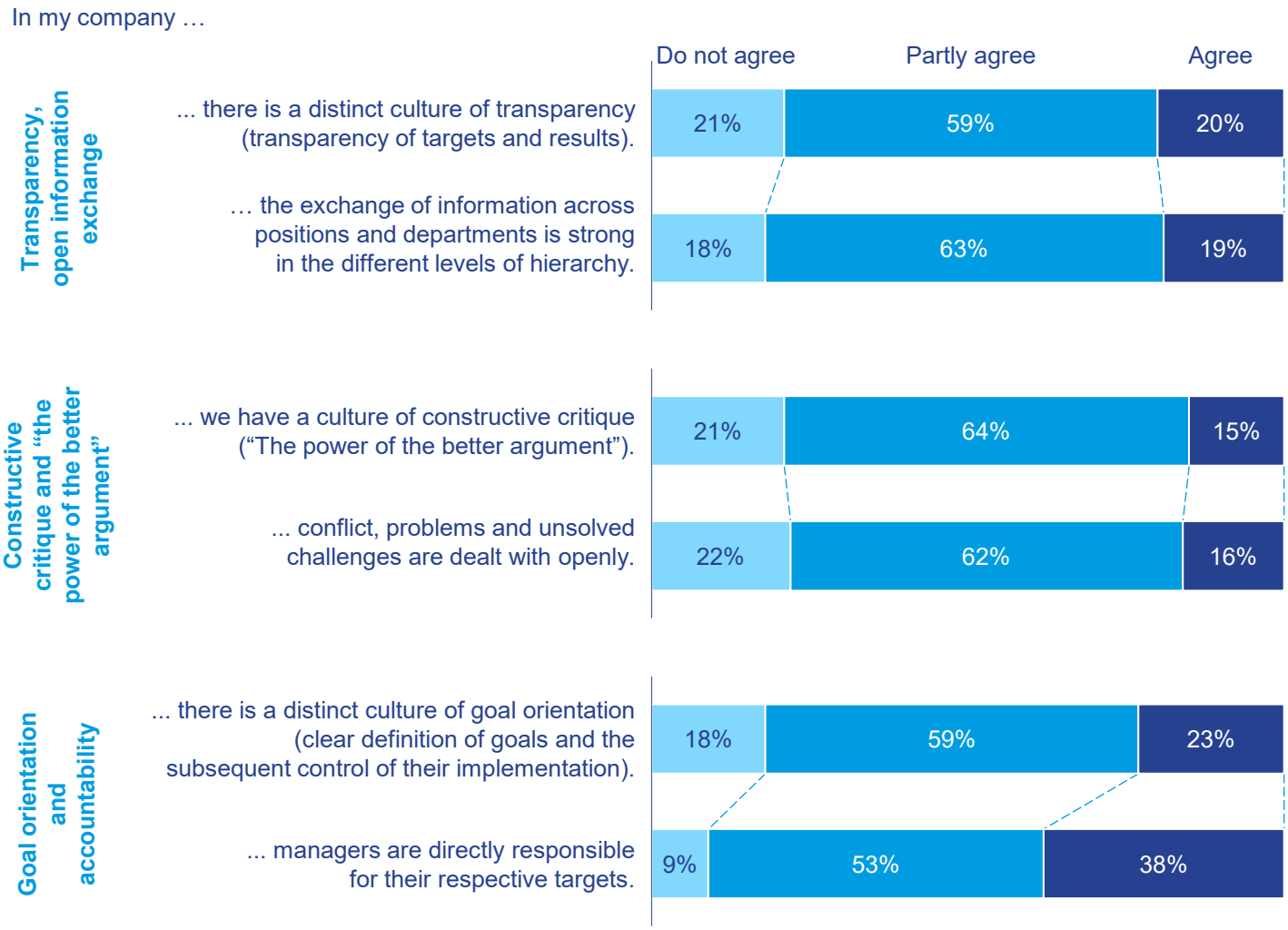
Essential aspects of a controlling culture in detail



- Naturally, culture only changes slowly – thus, it is not surprising that hardly anything has changed in the area of controlling culture from 2017 to 2020.
- While the anchoring of goal orientation is clearly related to company size (49% of large companies, but only 34% of small ones, have a strong anchoring), there is no evidence of this correlation either for transparency and the open information exchange or for constructive critique and the "power of the better argument".
- With regard to digitalization, however, a similar picture emerges for all three aspects of a controlling culture: Companies in which the individual cultural aspects are more firmly anchored rely more on digitalization, have more comprehensive digitalization strategies and are more likely to rate their digitalization investments as sufficient, both in the company and in controlling.
- The business partner concept has also penetrated controlling more strongly in these companies than in companies that are less well positioned in this area.

Business partnering is lagging behind expectations

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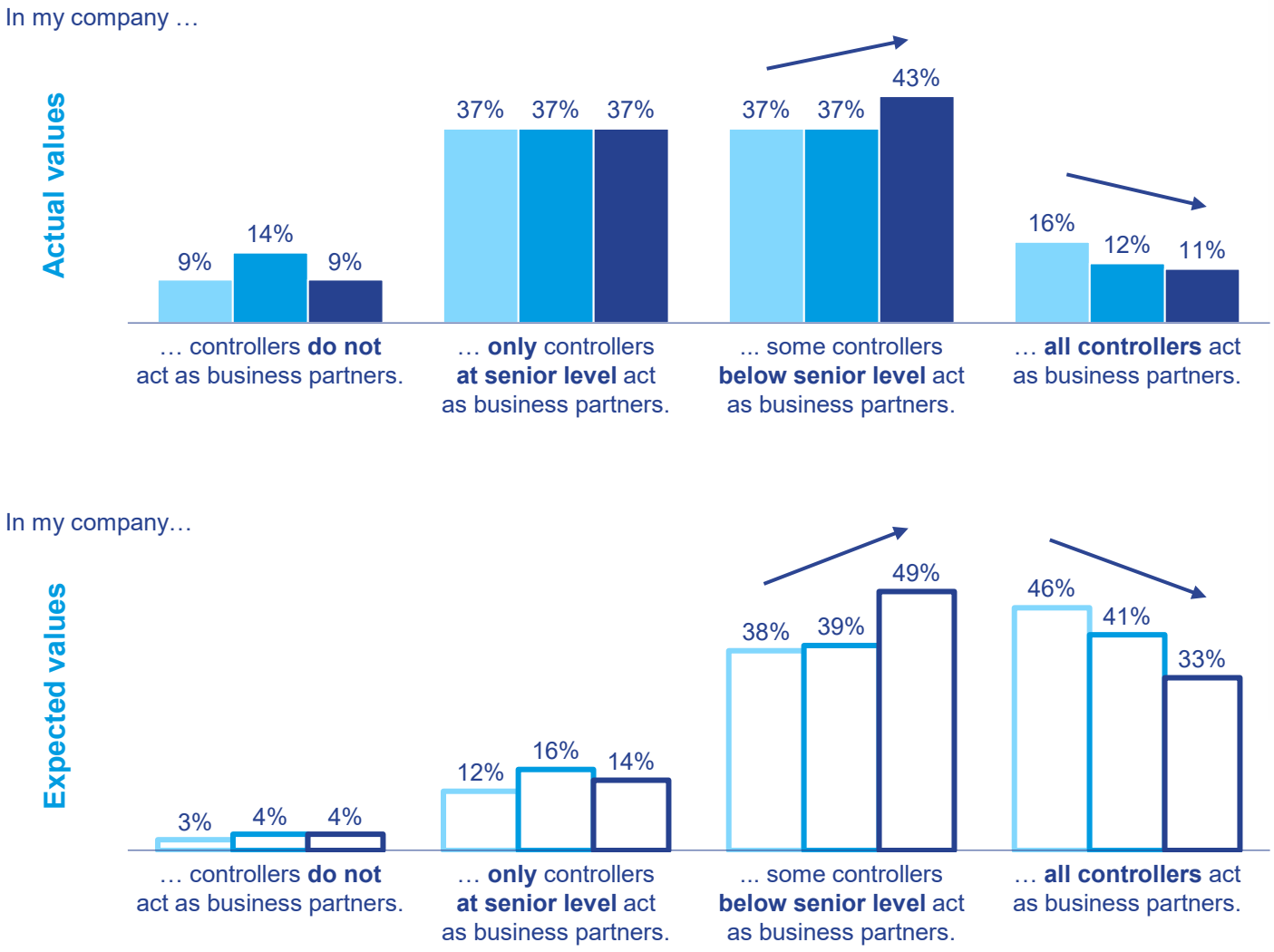
Business partnering – over time



- The business partner no longer seems to serve as a guiding principle for all controllers. Only one-third agrees that all controllers will act as business partners in the future. In 2014, almost half (46%) still assumed that the business partner would be the guiding principle for all controllers in the future.
- The exercise of the business partner role below management level is more frequently found where digitalization is of high importance, a rather comprehensive digitalization strategy and a strategy for the development of digital competencies exists.
- The spread of the business partner role below management level also goes hand in hand with a controlling culture in which transparency and constructive critique are firmly anchored.

Upper chart	Lower chart
2014 (actual)	2019 (expected in 2014)
2017 (actual)	2022 (expected in 2017)
2020 (actual)	2025 (expected in 2020)

Diffusion of business partnering takes its time and the target model has changed

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Business partnering – over time

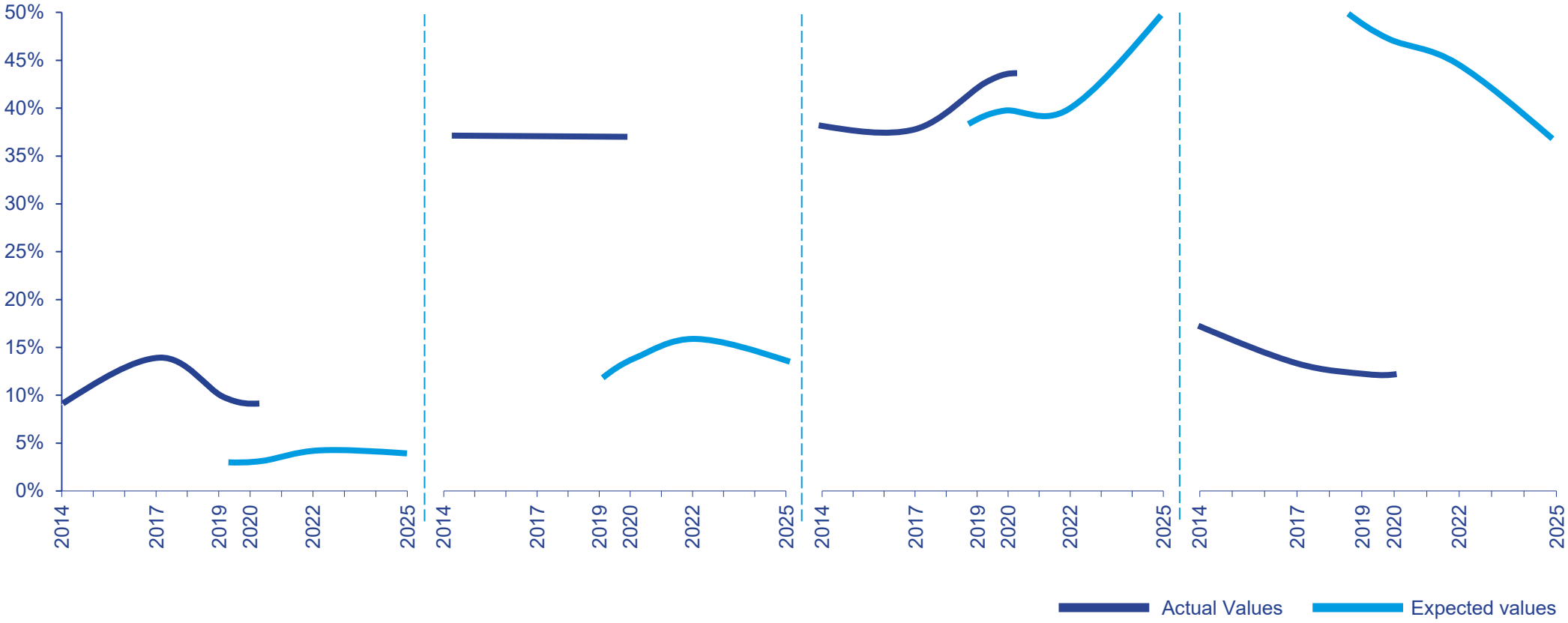
In my company …

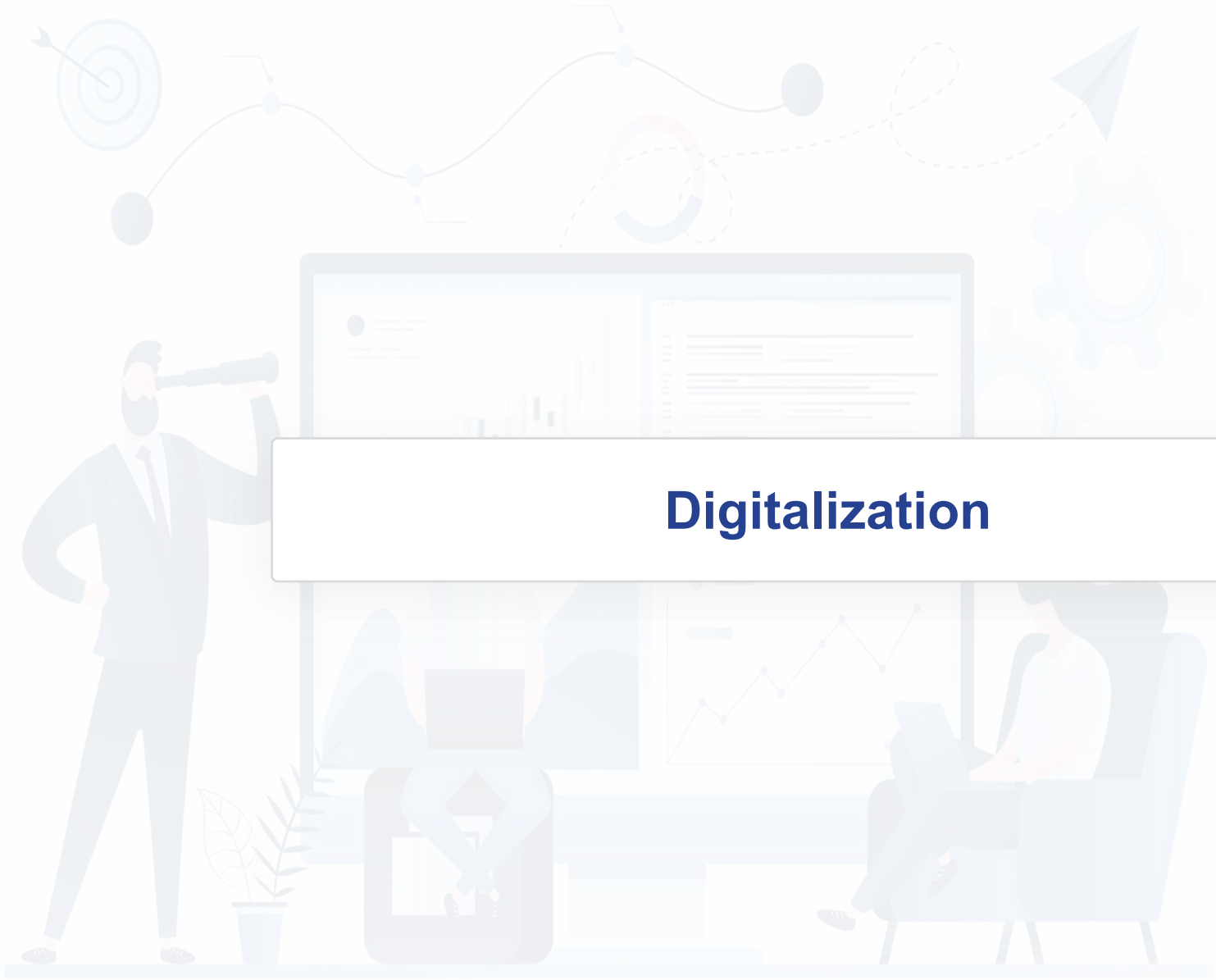
… controllers **do not act** as business partners.

… **only** controllers **at senior level** act as business partners.

… some controllers **below senior level** also act as business partner.

… **all controllers** act as business partners.





Digitalization

Excel still plays a very dominant role

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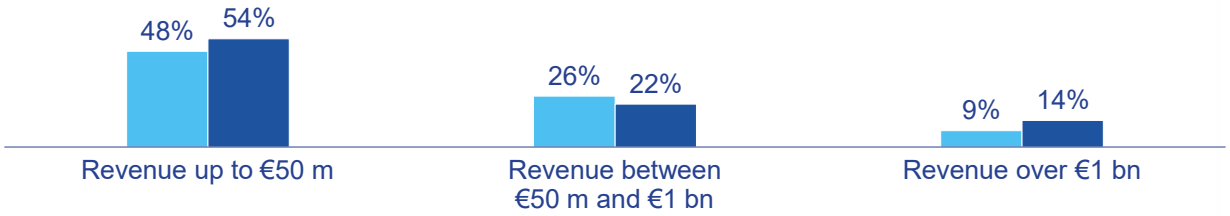
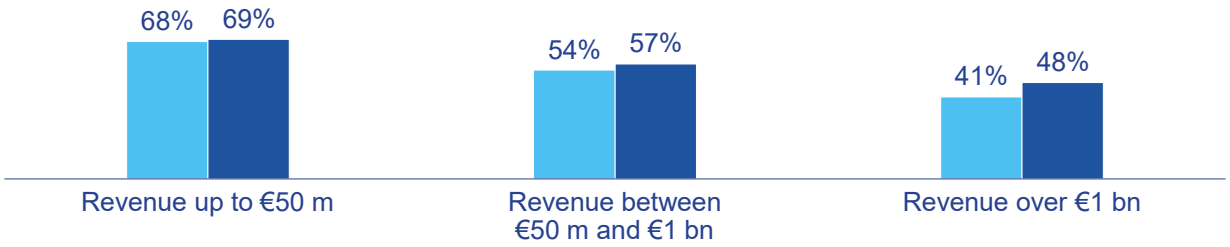
Exclusive use of spreadsheets (no BI tools) in core controlling processes

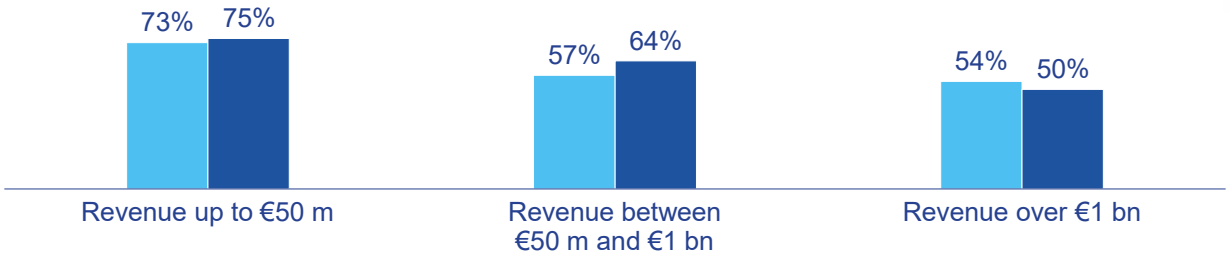
Reporting



Budgeting



Forecasting



- The introduction of new BI tools has not just been stagnating from 2018 to 2021 – we have been seeing this trend since 2015.
- This suggests that it may be a conscious decision against BI tools, not just a delayed adoption.

2018 2021

Microsoft leads the way in BI tools: One-third of the companies use PowerBI for data analysis and visualization

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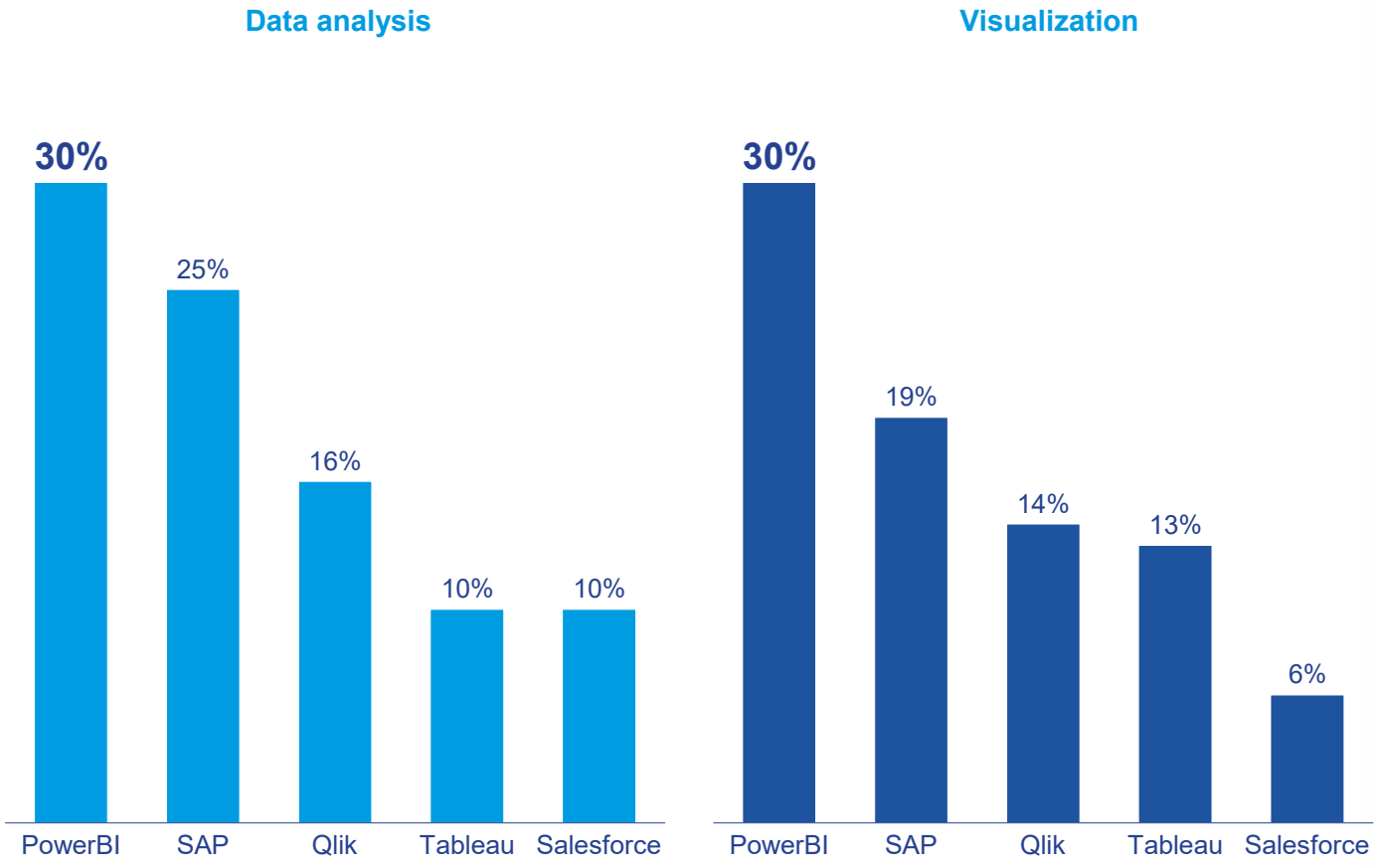
TOP 5 BI tools in data analysis and visualization (multiple answers possible)



- In addition to the five dominant tools, 43% of the companies (also) use other tools in the analysis, and 39% in the visualization.
- Most companies use one to two tools for each of the two tasks.
- The number of analysis tools used correlates positively with:
  ... company size,
  ... company success,
  ... data quality.
- No such correlation is found for visualization tools.

Adjustments to BI tools are rarely made by controllers – external providers or the company's IT department are usually responsible

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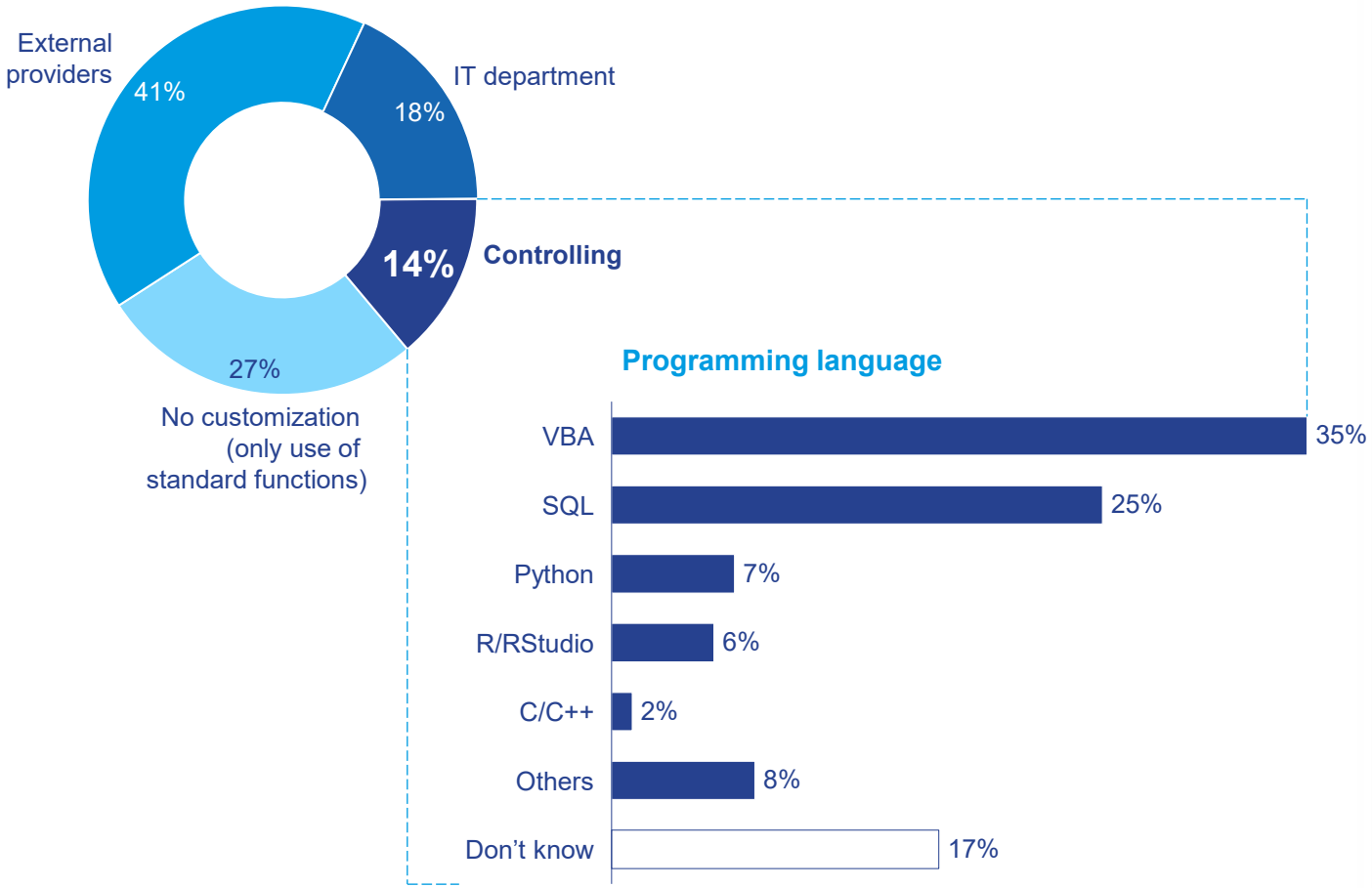
Who customizes the BI tools?



- Small companies are more likely to use standard functions.
- Python and R/RStudio are rarely used regardless of company size.

Controllers' thoughts on …

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… the implementation and use of BI tools (selected quotes)

> There are fragmented silos of local (Excel) data with local data sovereignties. The **biggest hurdle is to break down these monopolies of power**. Without top management commitment, this won't happen."

> The simplest thing is the hardest thing.... **Data needs to be consistent and truly understood** – across different upstream systems."

> When data becomes more extensive and the circle of recipients is large, then you need **professional solutions** that can't be programmed just like that. You then need basic knowledge of the database structure."

The use of in-memory databases and data lakes has increased significantly from 2018 to 2021

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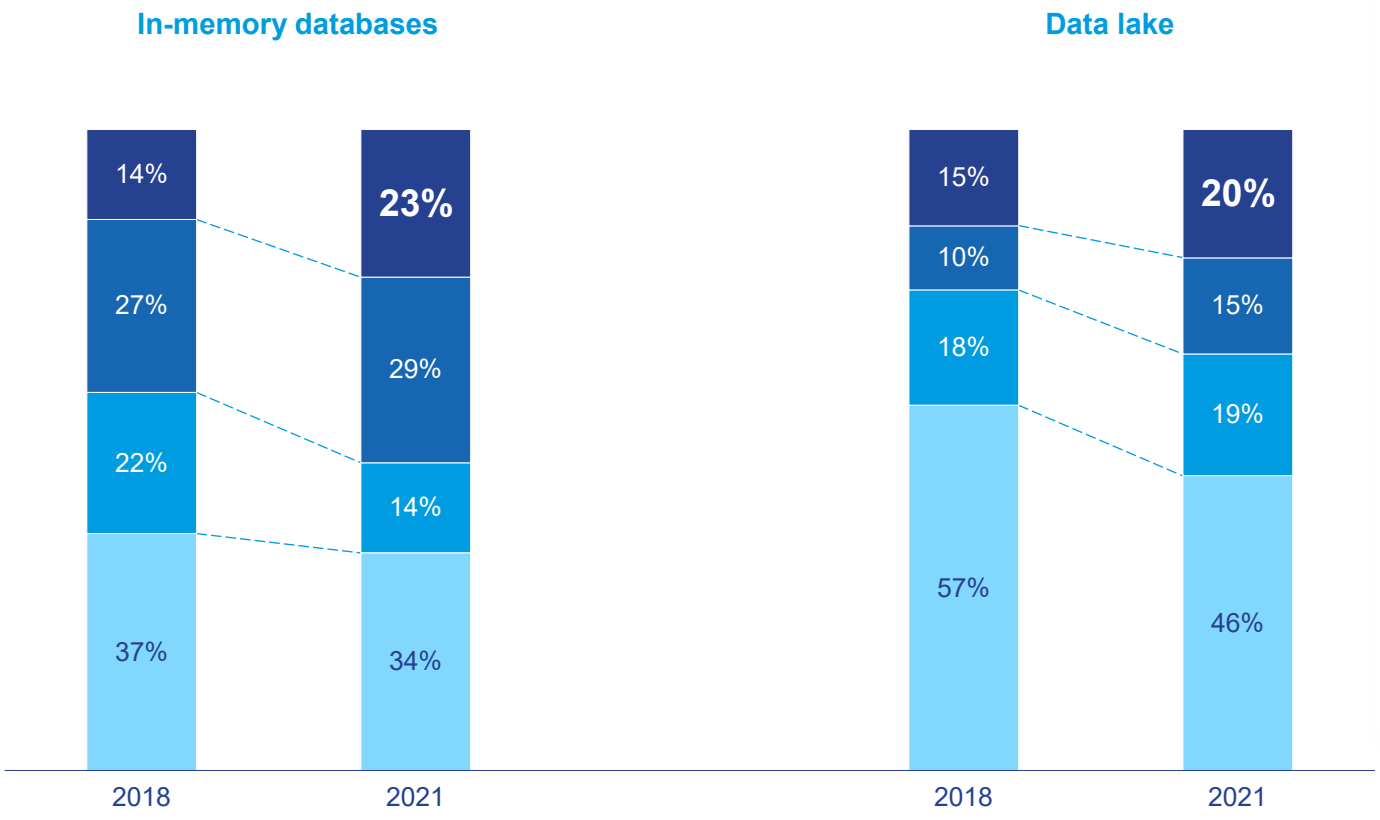
Selected database systems in companies – by year



- ERP systems are now standard in the vast majority of companies, even in small ones.
- In-memory databases and data lakes are also being used more and more – especially in large companies:

In-memory databases:

… in small companies:	24%
… in medium-sized companies:	49%
… in large companies:	72%

Data Lake:

… in small companies:	17%
… in medium-sized companies:	32%
… in large companies:	51%

SAP dominates database systems – one-third of the companies rely on in-house developments

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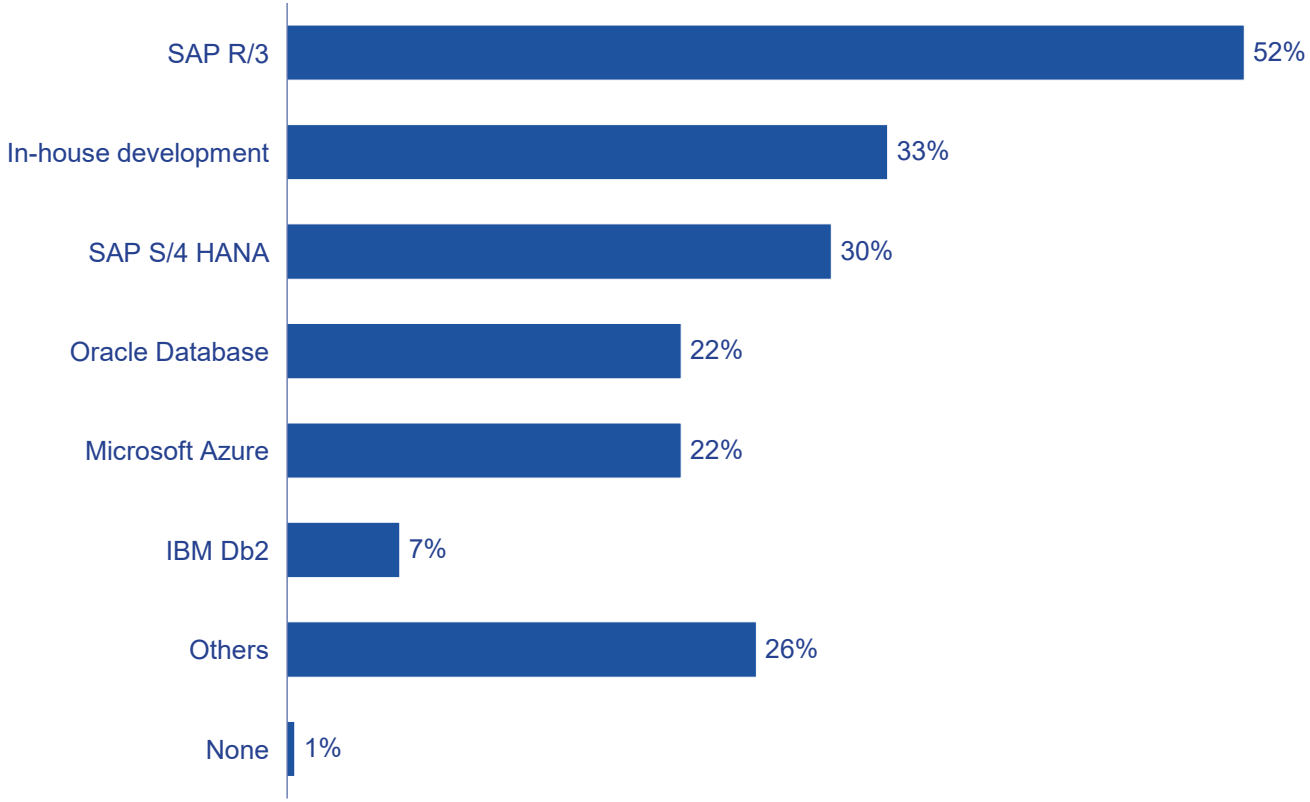
Use of different database systems – by providers (multiple answers possible)



- Only the use of SAP S/4 HANA is positively correlated with data quality.
- Users of SAP S/4 HANA and Oracle Database are on average significantly more satisfied with their work.
- "Others" includes database systems such as Teradata, Snowflake, Amazon Redshift and Google BigQuery. Various specialized database systems for specific industries or business models are also grouped here.

Just under a third of the companies use three or more database systems: Mostly SAP R/3 or S/4 HANA in combination with other systems

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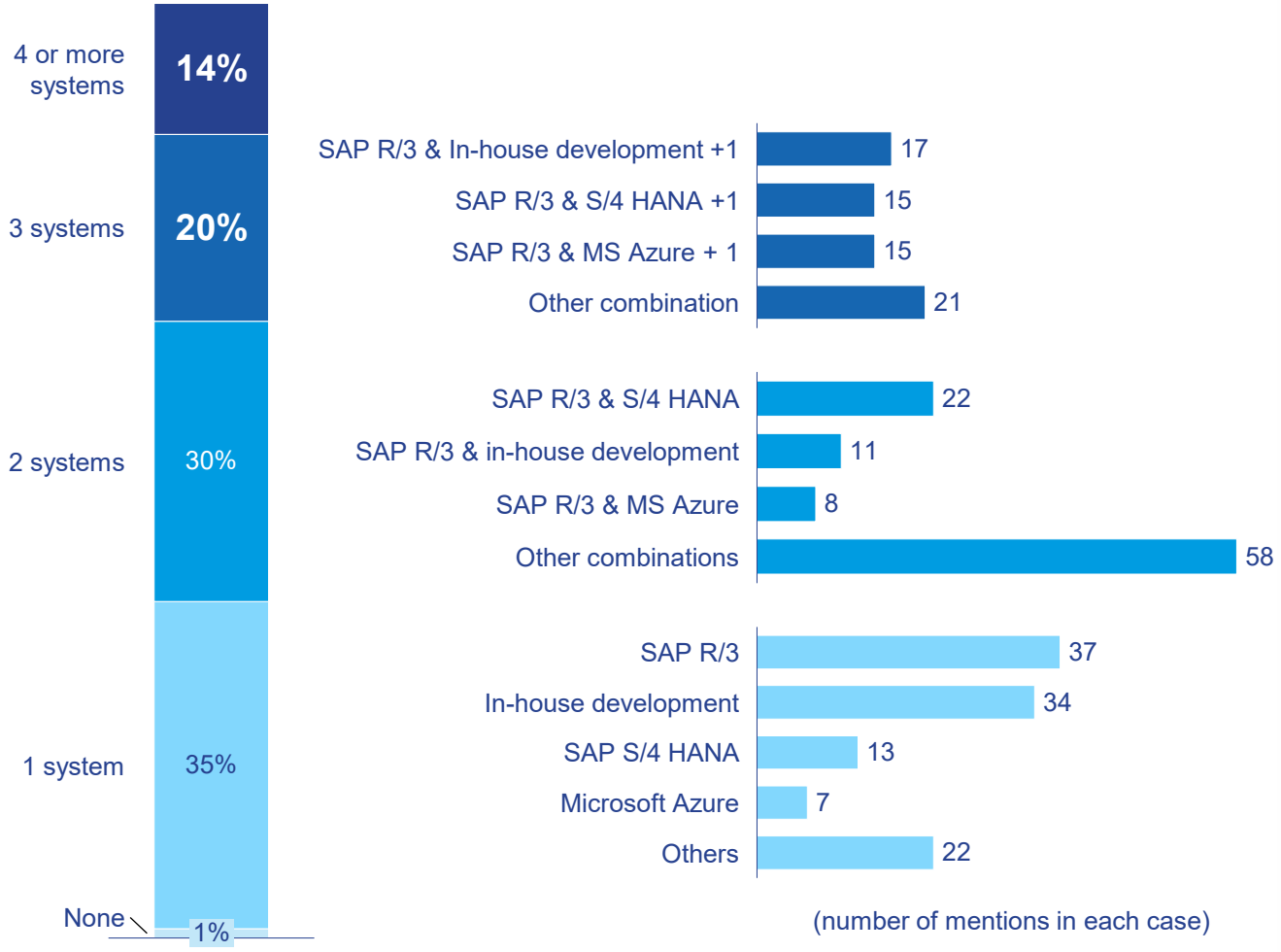
Number and combinations of database systems used in parallel (multiple answers possible)



- Larger companies use more systems, but there is no correlation between the number of systems used and ...
  … company success,
  … controller satisfaction.
- There is a positive correlation between the number of systems and the relevance of the data for decision-making.
- 20% of the companies use both SAP R/3 and S/4 HANA – in one-third of the companies, this is a parallel use in the implementation phase.

For most controllers, data analytics do not (yet) go beyond diagnostic analytics

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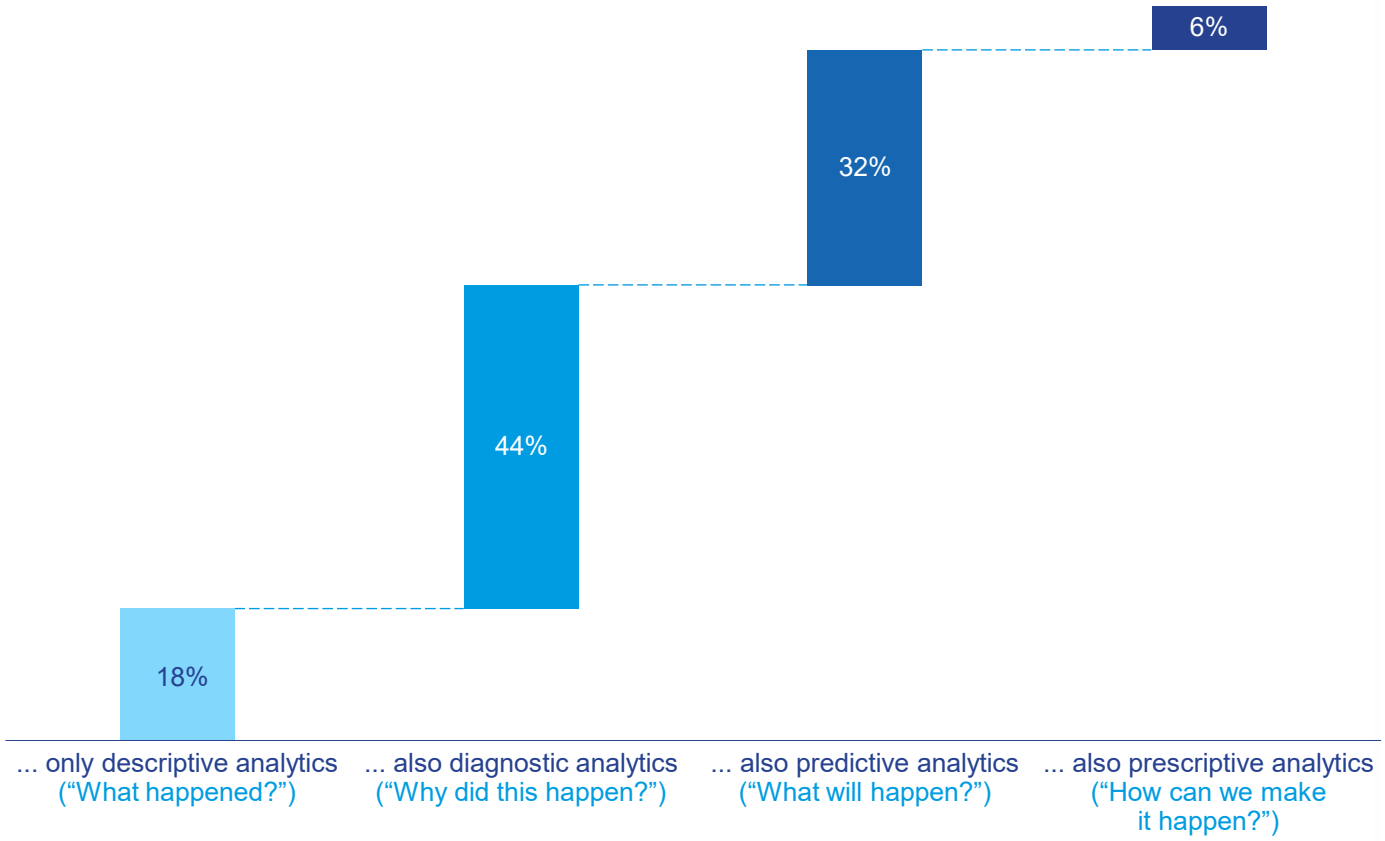
Data analytics in controlling include ... (according to Gartner's Analytics Maturity Model)



- Data analysis goes furthest in large companies: At least 49% use predictive analytics, while 41% of small companies and only 34% of medium-sized ones do.
- A positive correlation is found between maturity and ...
  - ... capacities in controlling,
  - ... controller satisfaction,
  - ... data science skills, and
  - ... all aspects of data quality.

Only just over half of the companies consider themselves to be well-staffed in both, controlling and IT

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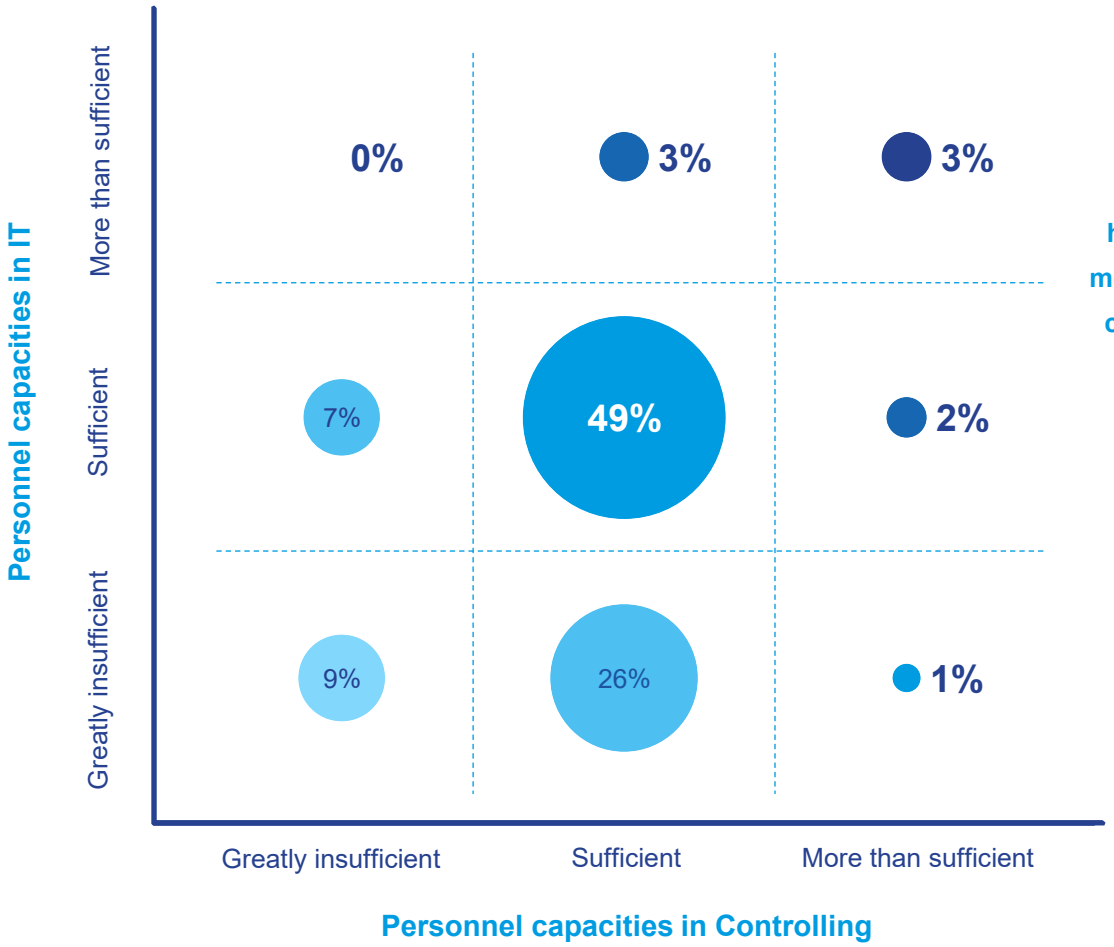
Personnel capacities in controlling and IT



58%

state that they have sufficient or more than sufficient capacities in both controlling and IT

- Good collaboration depends heavily on personnel capacities. Without personnel bottlenecks, 53% of the participants rate the collaboration as successful.
- If employees are absent, this rating drops significantly: Good rating of cooperation if employees …
  - … lacking in controlling: 39%
  - … lacking in IT: 39%
  - … lacking in both areas: 35%

Almost a quarter of small companies report staff shortages in controlling, large and medium-sized companies have less problems in this area

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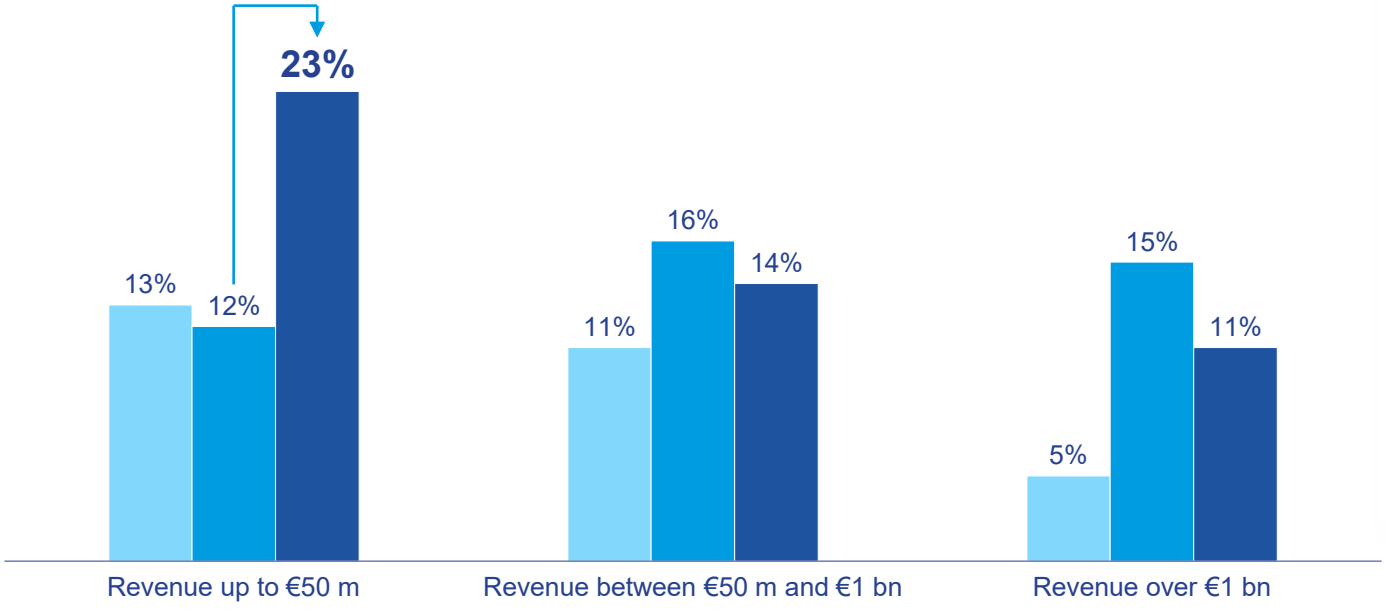
Staff shortages in Controlling – by company size and year



- While all companies were equally affected in 2018, small companies, in particular, are finding it difficult to fulfill their personnel requirements in controlling in 2021.
- If there are no staff shortages, the degree of automation and efficiency of core controlling processes are estimated to be significantly higher.
- The controllers' satisfaction with their own work is then also higher.

Staff shortages in IT are serious: About a third of companies are affected – regardless of company size

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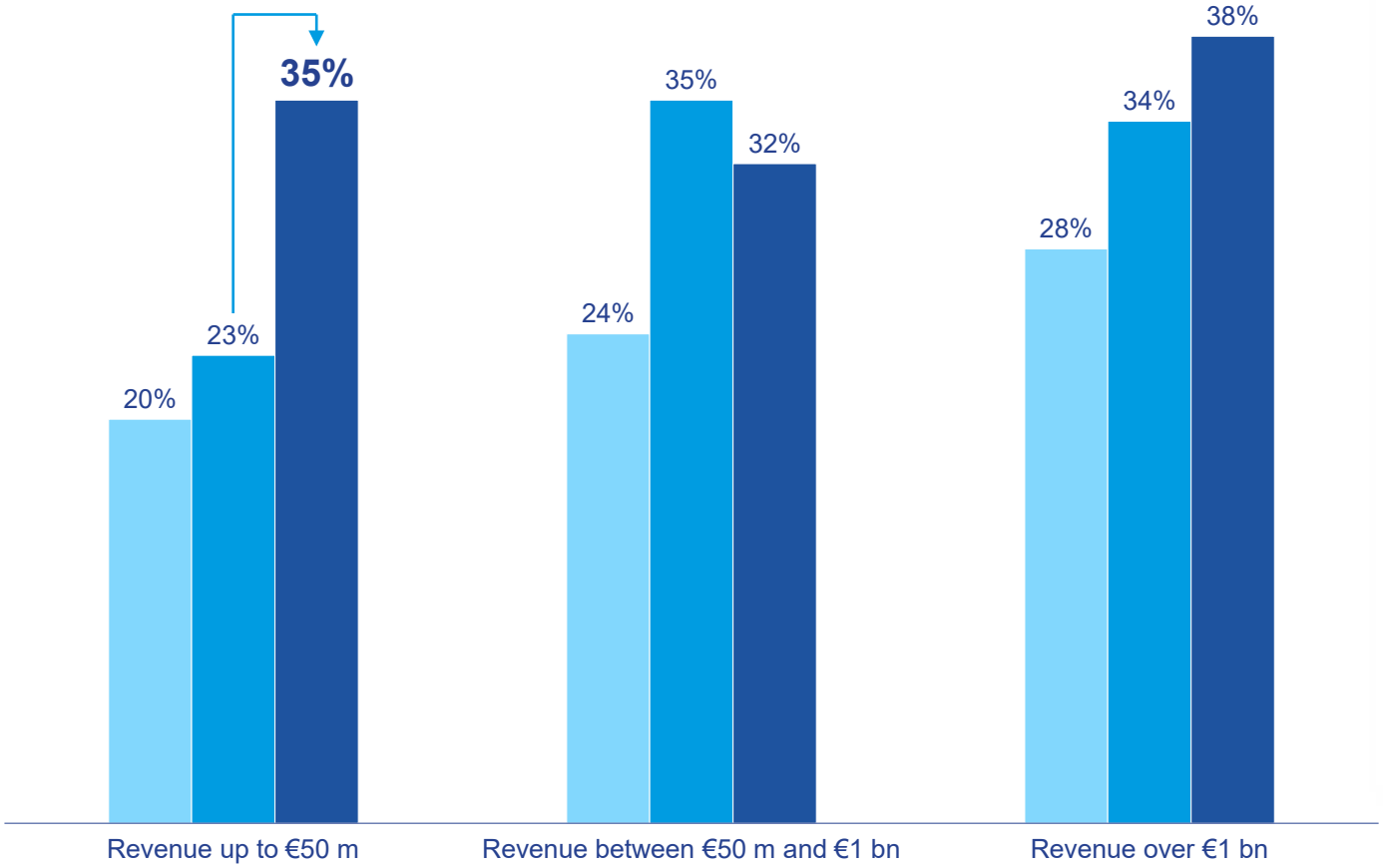
Comparison of IT staff shortages – by company size and year



- In the IT department, the capacity gap is intensifying: Unlike 2018, large, medium-sized and small companies are affected to the same extent in 2021.
- The perceived quality of IT staff is overall also not convincing (regardless of company size). Qualification of IT employees:
  - … rather high or high: 51%
  - … medium: 32%
  - … rather low: 17%

Controlling and IT often have clearly separated tasks and responsibilities, half of the respondents consider collaboration to be successful

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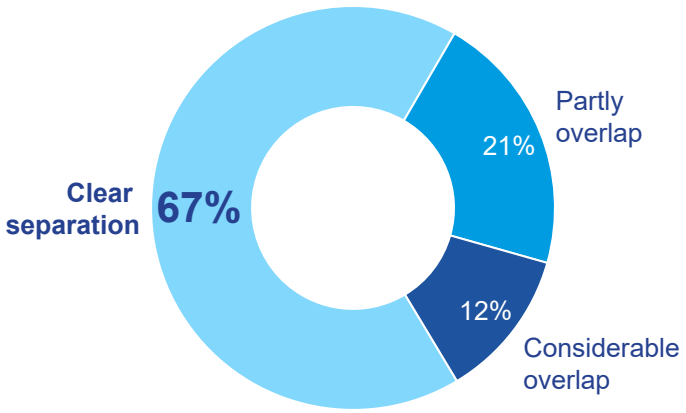
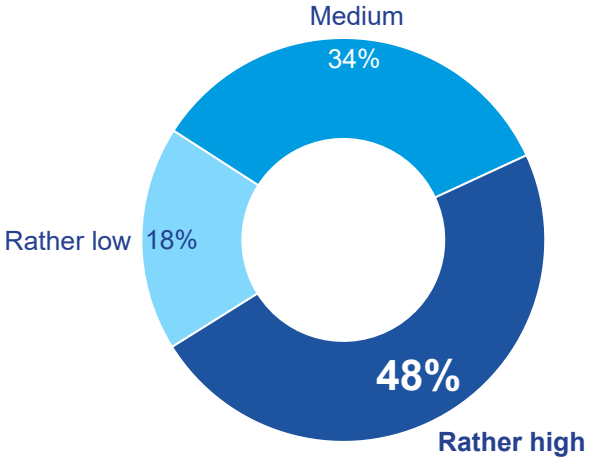
Overlap of tasks and responsibilities and success of the cooperation between controlling and IT

Overlap of tasks and responsibilities



Success of the cooperation between controlling and IT



- In 2021, the success of the collaboration is assessed similarly compared to 2018.
- Successful collaboration depends heavily on high data and system quality, as well as on sufficient personnel capacities in controlling and IT.
- Tasks and responsibilities are largely still clearly separated. However, while three years ago a clear separation had a positive effect on collaboration, this is no longer true today: Collaboration is successful ...
  - … if clearly separated: 46%
  - … if considerably overlapping: 60%
- Company size does not play a role in the success or task overlap.

Cooperation between controlling and IT is based primarily on informal collaboration, shared goals, and good mutual understanding

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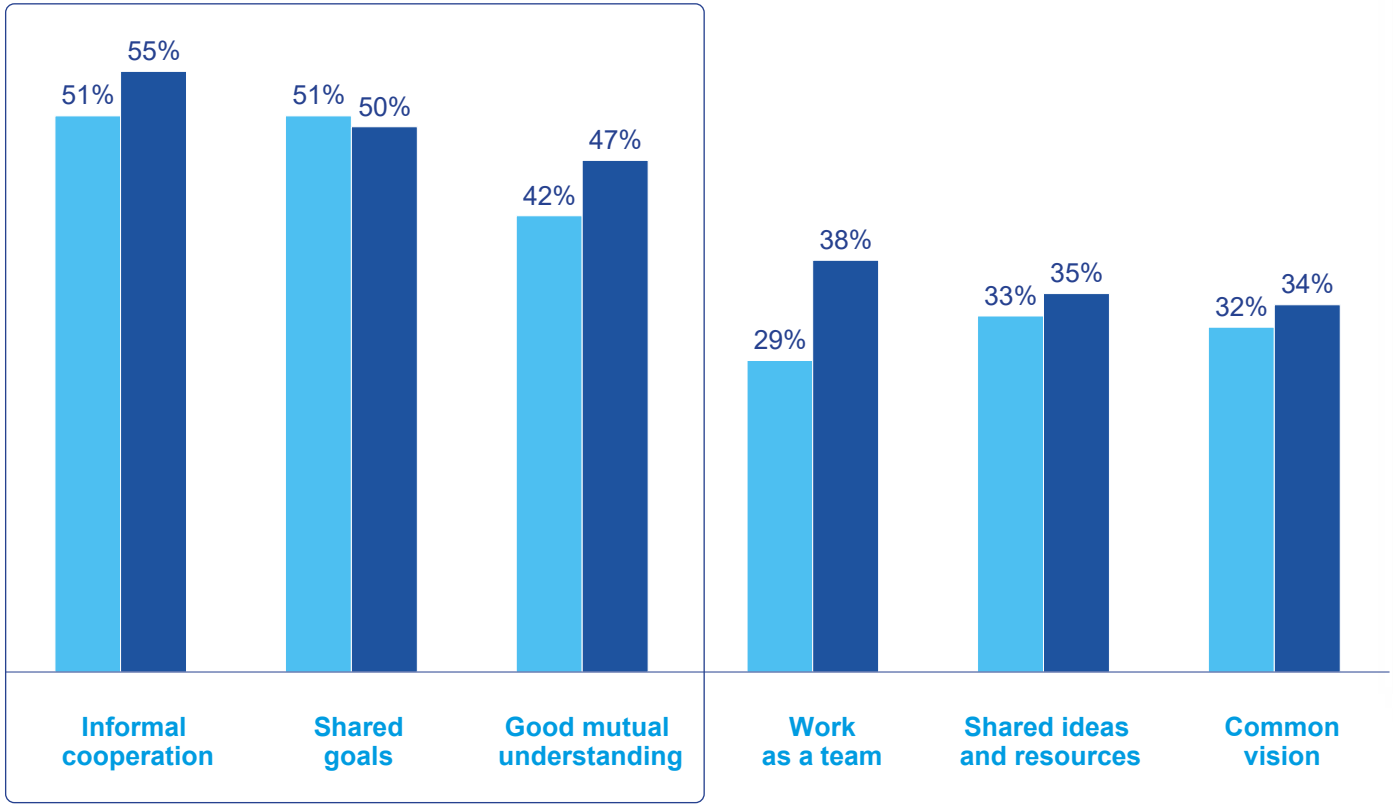
Aspects of cooperation between controlling and IT



- Compared to 2018, we see only minimal changes in 2021: Mutual understanding has increased, and controlling and IT are working together more frequently as a team.
- The qualifications of IT staff also play an important role in successful collaboration: If they are low, collaboration rarely works well (16%); if they are highly qualified, it works much more often (69%).

Controllers' thoughts on …

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… cooperation between controlling and IT (selected quotes)

> Timely information about planned projects or plans. IT must already be involved in the conceptual phase."

> Collaboration must not be thwarted by managers."

> Agile work structures improve collaboration. Delineations of duties must be clearly defined."

> You should speak a similar language, the controller should have an idea of IT and programming, the IT people should have an understanding of commercial processes."

Employing data scientists is an issue of size: Most large companies employ data scientists; in small ones, they are the absolute exception

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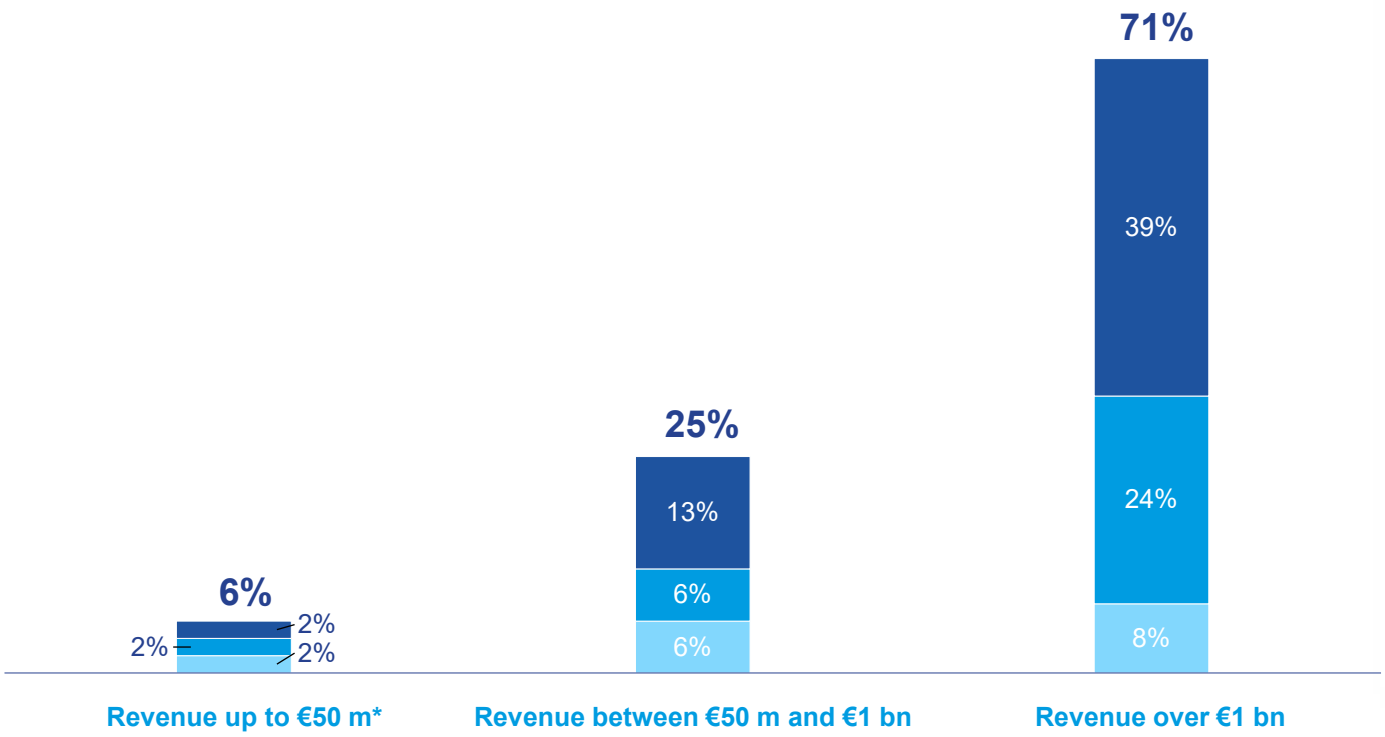
Employment of internal and external data scientists – by company size



- The employment of data scientists has increased significantly from 2018 to 2021, especially in large companies: Share of large companies with internal data scientists ...
  - … in 2018: 35%
  - … in 2021: 63%
- The share of medium-sized companies with data scientists is also increasing:
  - … 2018: 14%
  - … 2021: 19%
- Mostly, data scientists are based in IT or in a dedicated analytics department.

* limited statistical power (n=3)

- Only internal data scientists
- Internal and external data scientists
- Only external data scientists

A large number of respondents have acquired BI or data science skills in the last three years

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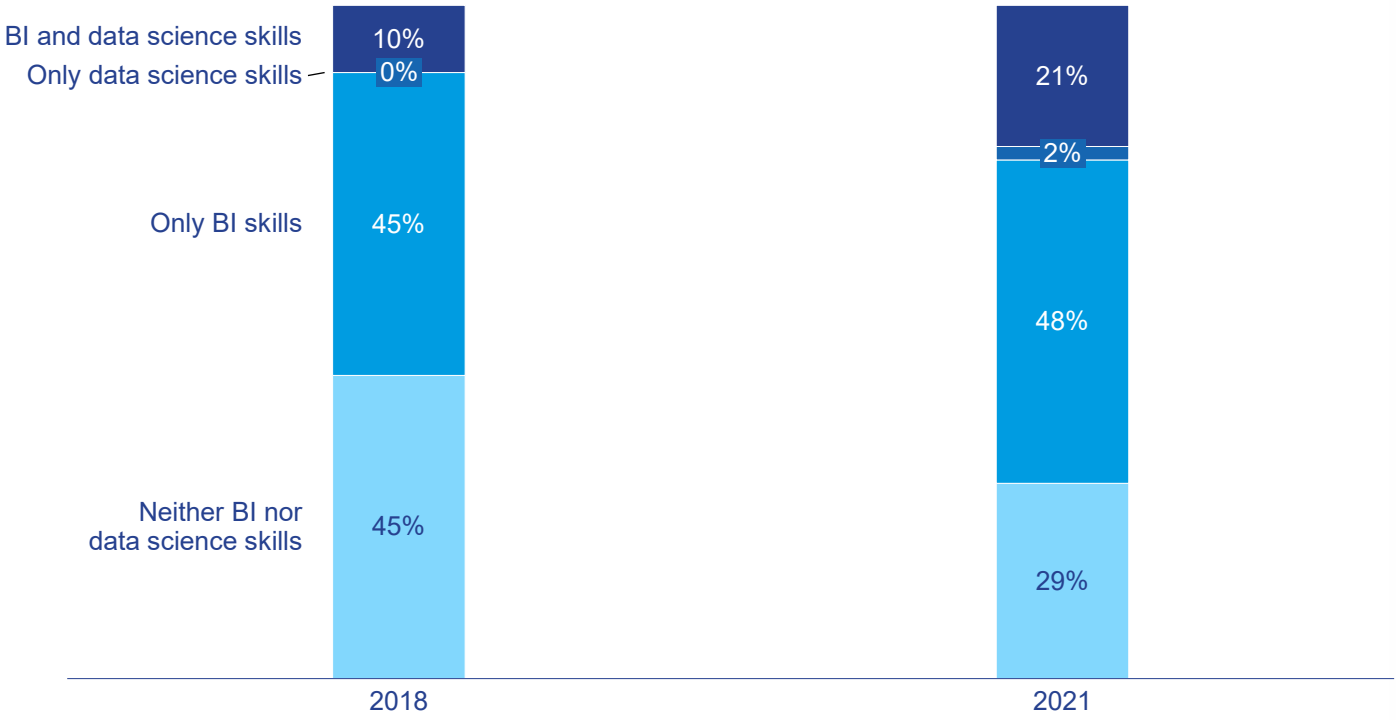
BI and data science skills of respondents



- In 2018, about half of the respondents already had BI skills – a third planned to acquire this knowledge in the near future.
- Quite obviously, these plans have also been put into practice by 2021. Since 2018, ...

  … 16% acquired BI skills,

  … 13% acquired data science skills.

Nearly half of the respondents plan to acquire BI or data science skills in the next one to two years

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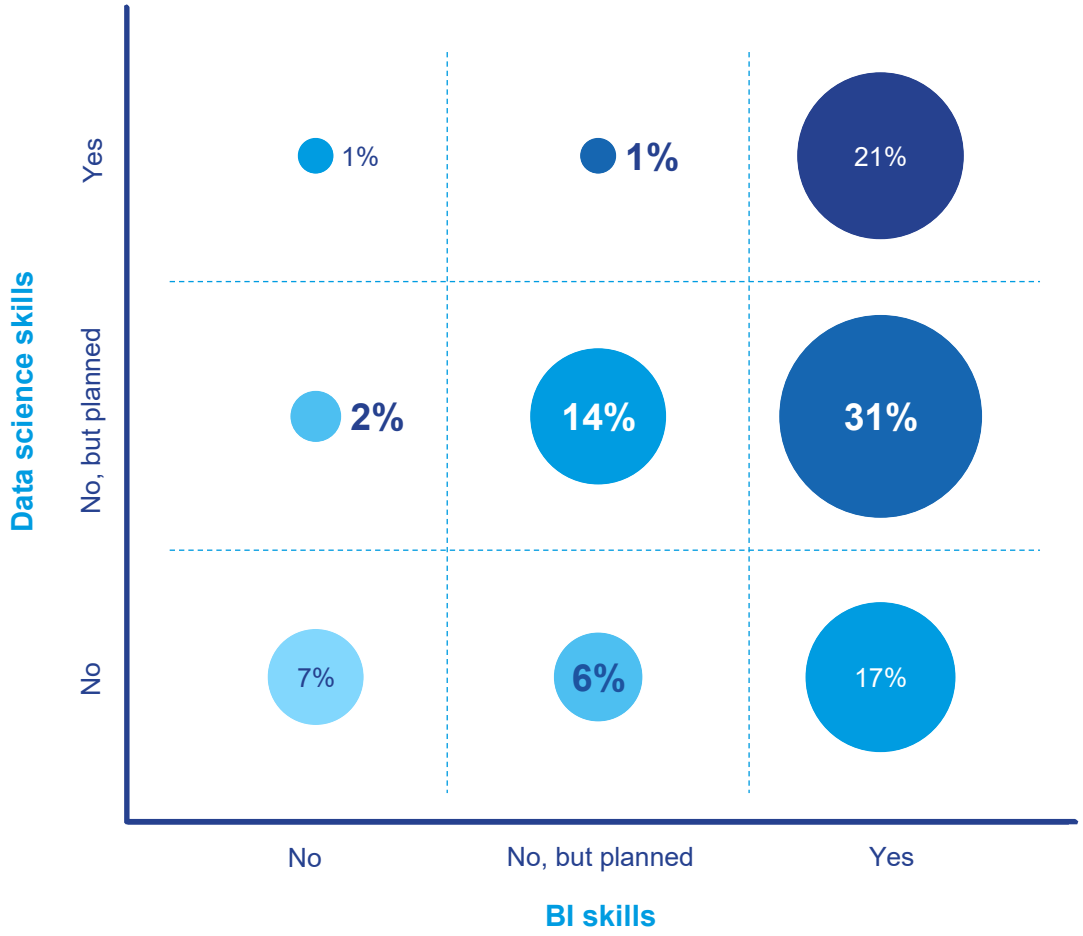
BI and data science skills of respondents



- We cannot confirm the assumption that controllers with data science skills are mainly employed in large companies.
- A correlation by age of the respondents, on the other hand, can be demonstrated:
  Average age of respondents ...
  … with data science skills: 43 years,
  … without data science skills: 48 years.

Less than half of the controllers are familiar with VBA, less than a third with SQL – only 15% are proficient in “real” programming languages

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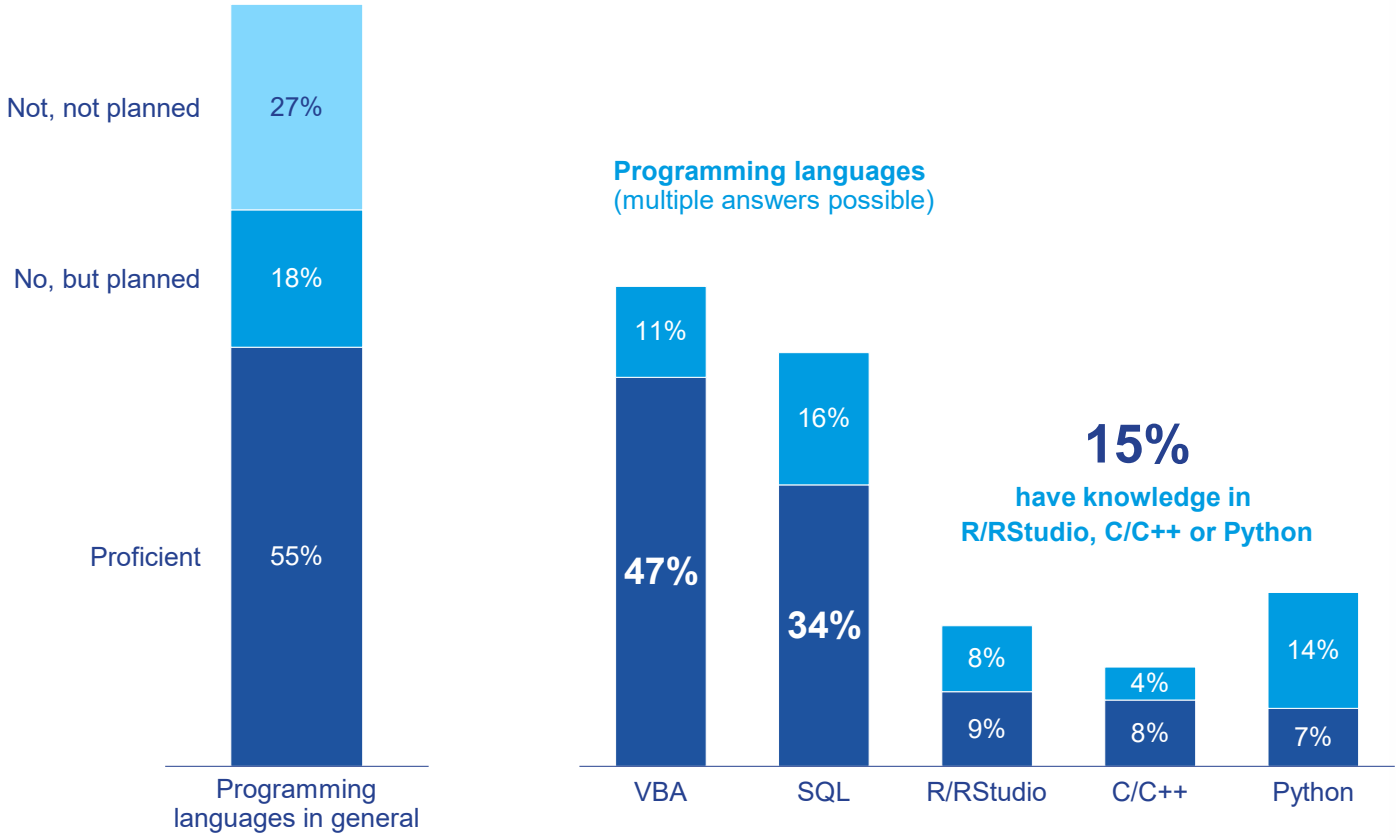
Knowledge of programming languages (multiple answers possible)



- Knowledge of programming languages or willingness to learn are not related to age or position.
- Participants who already know how to program report knowledge of two languages on average.
- 83% of those who can program have BI skills, 36% data science skills.
- However, more than one-third (35%) of those who do not know how to program and have no plans to learn, plan to acquire data science skills in the next two years.

Respondents have more concerns with regard to IT system quality and less with data quality

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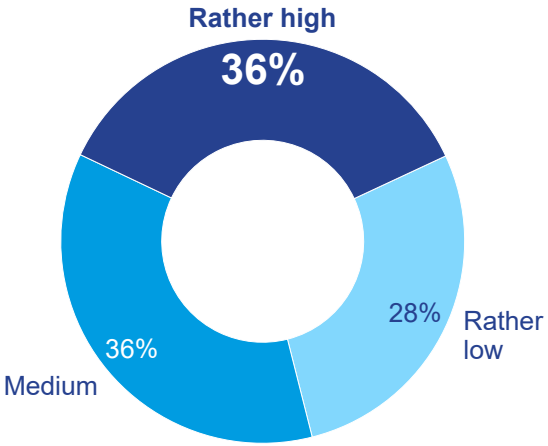
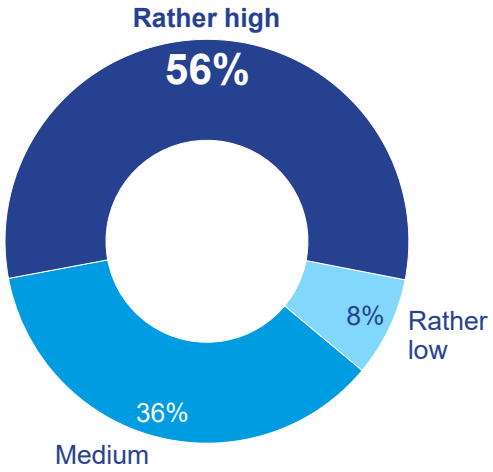
Assessment of the quality of the IT systems and the data coming out of the systems

User assessment of IT system quality



User assessment of data quality



- Company size has no measurable influence on the perception of IT system quality and data quality.
- If the IT system quality is perceived good, the data quality is usually also good.
- High IT system quality is more likely to be found in companies operating in an uncertain environment.
- If only Excel is used in the core controlling processes (no BI tools), the controllers tend to rate the quality of their data as low.

Progress in the area of IT system integration: About a third of controllers now consider the company's IT systems to be largely integrated

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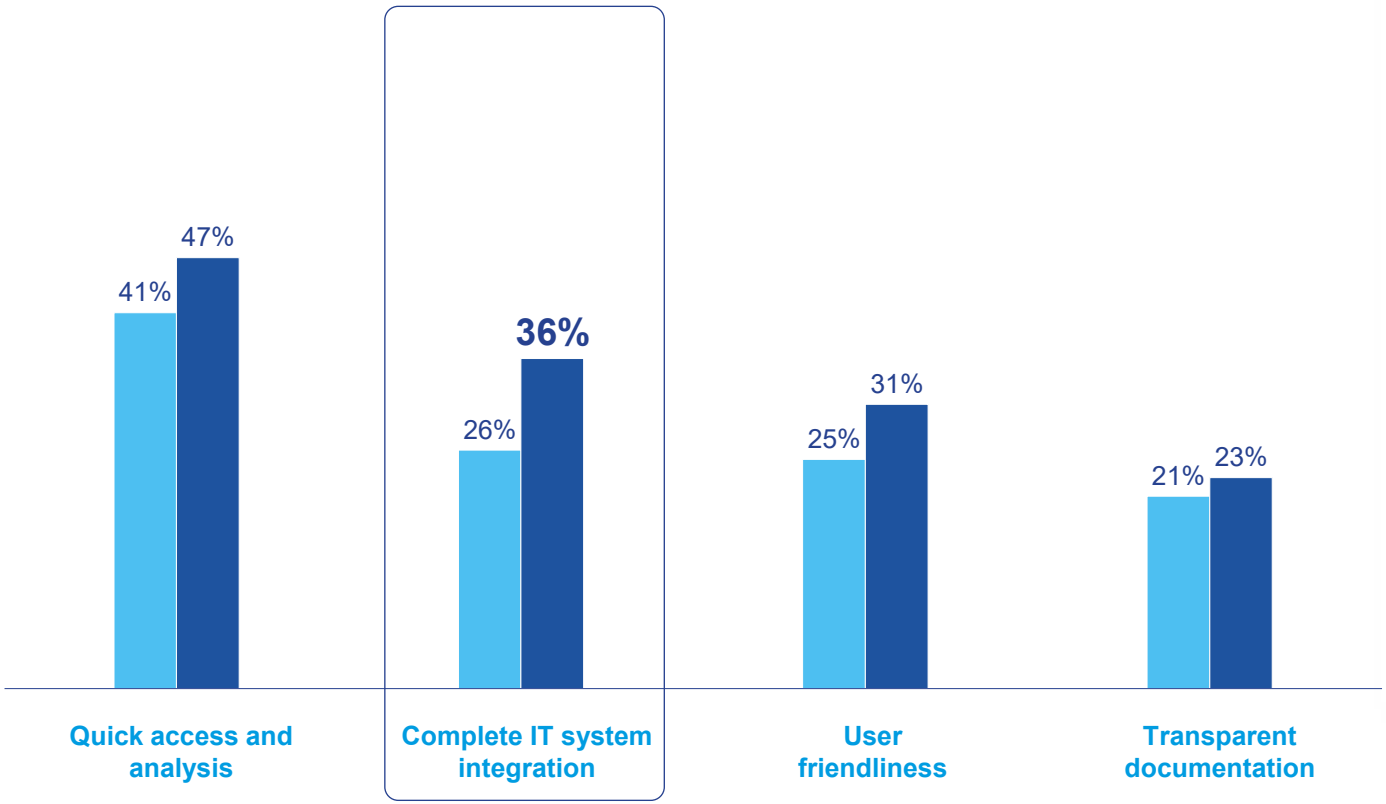
Good perception of individual aspects of IT system quality



- Small companies are less likely to have completely integrated IT systems than large ones.
- Controllers from service companies are twice as likely to see their systems as transparently documented compared to their counterparts in the manufacturing sector.
- Compared to 2018, the IT systems in around one in five companies are working entirely on the basis of real-time data in 2021.

In 2021, the accuracy and comprehensiveness of the data are rated significantly higher than in 2018 – consistency remains the critical point

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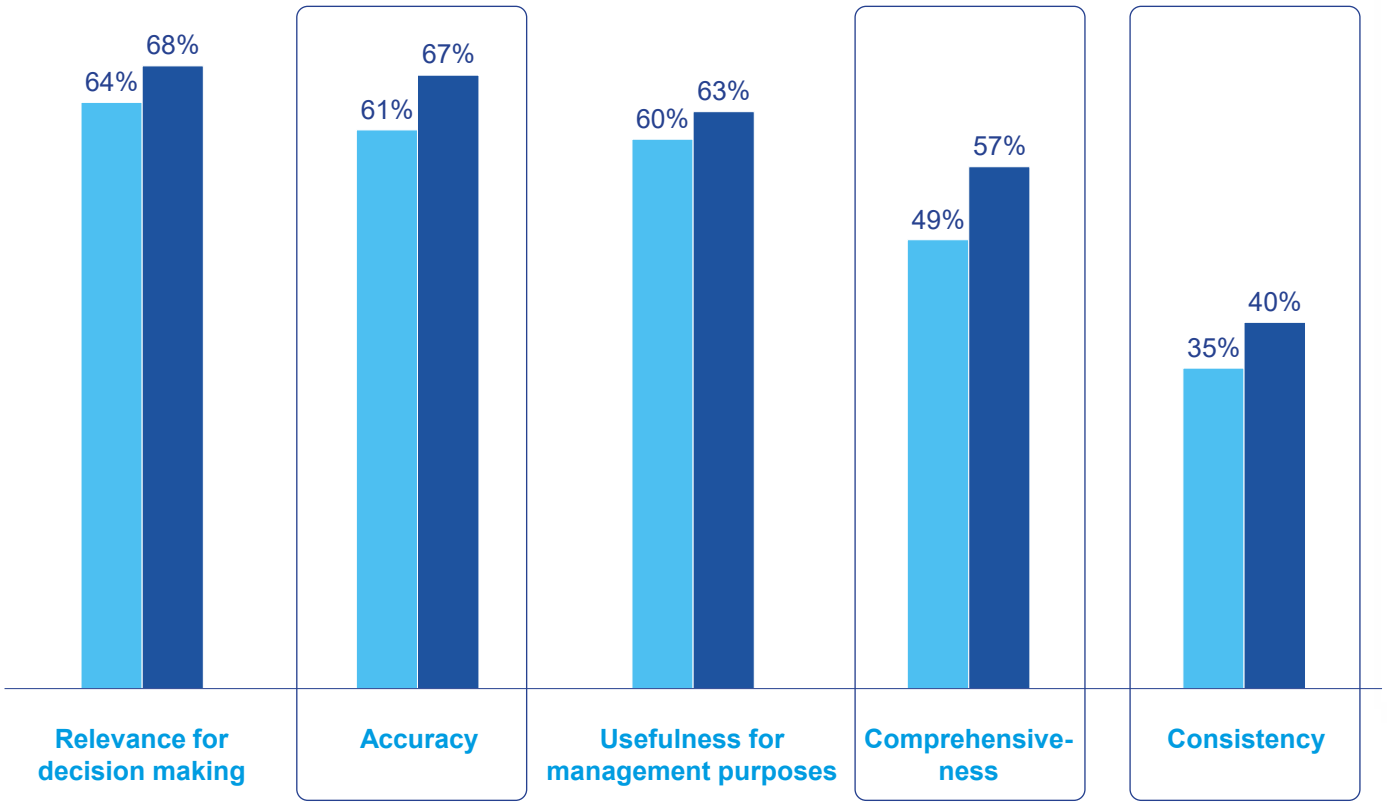
Good perception of individual aspects of data quality



- If the data are not very consistent, one in four simultaneously perceives a problem with regard to accuracy, and one in three with regard to comprehensiveness.
- In large organizations, data is more likely to be perceived as relevant to decision making and useful for management purposes.
- Controllers in successful companies are more likely to rate their data as accurate and relevant for decision making.

Sufficient controlling capacities and good cooperation with IT drive a positive evaluation of both, IT system quality and data quality

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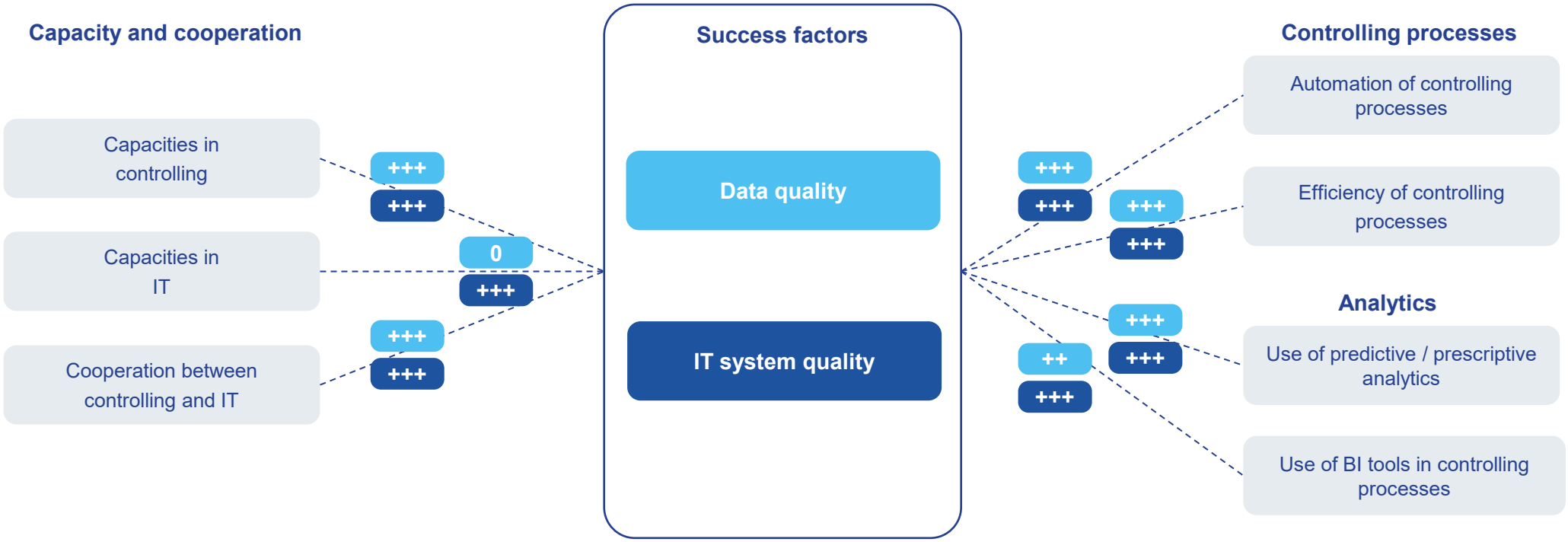
Data quality and IT system quality: Key correlations



Strength of relationship:

+++/---	strong, significant relationship
++/--	moderate, significant relationship
+/-	weak, significant relationship
0	no relationship

The degree of standardization in controlling processes has not increased between 2015 and 2018

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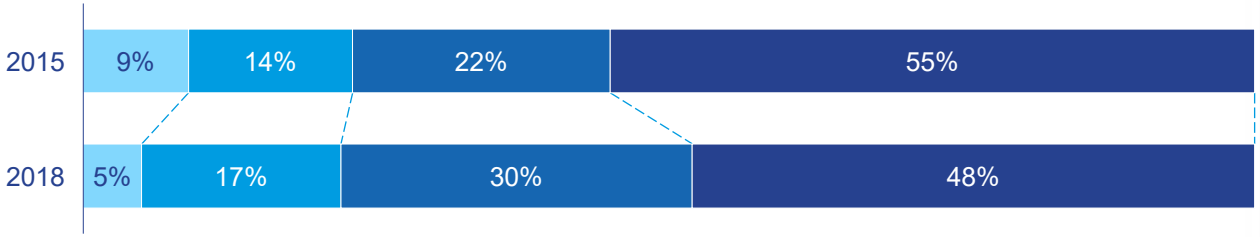
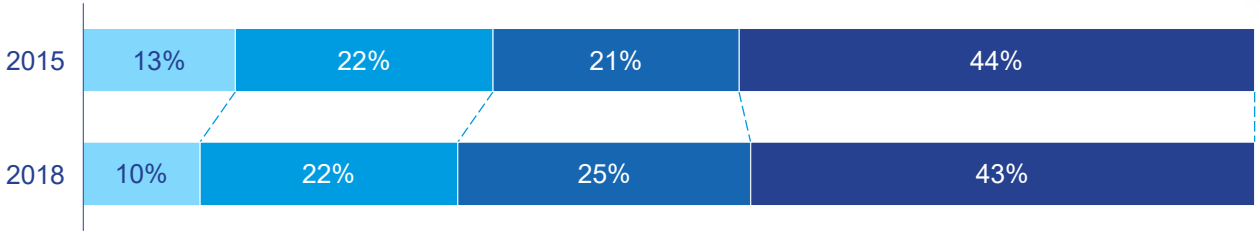
Degree of standardization for controlling processes – by year*

Reporting

Budgeting



Forecasting



- The degree of standardization for core controlling processes has been at a consistently high level between 2015 and 2018. In reporting, it averages 80%, in budgeting 70%, and in forecasting 65%.
- On average, the reporting process in more successful companies is 80% standardized – in less successful companies 75% (budgeting 75% vs. 70%, forecasting 70% vs. 60%).
- The degree of standardization is not correlated to company size.
- For reporting only, the following could be observed: A greater degree of standardization is achieved in companies in more uncertain environments and / or with a product-differentiation strategy.

* This analysis is based on only the answers of respondents who answered this question in both 2015 and 2018 (n=173).

Categories of degrees of standardization

- 0-25%
- >25-50%
- >50-75%
- >75-100%

In 2018, the degree of controlling process automation is perceived to be somewhat lower than in 2015

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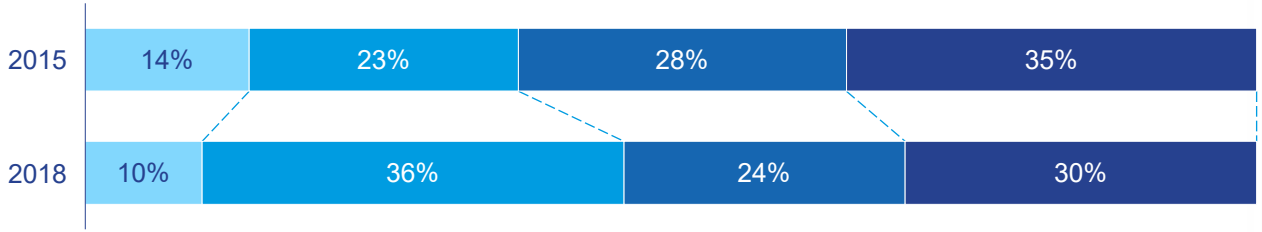
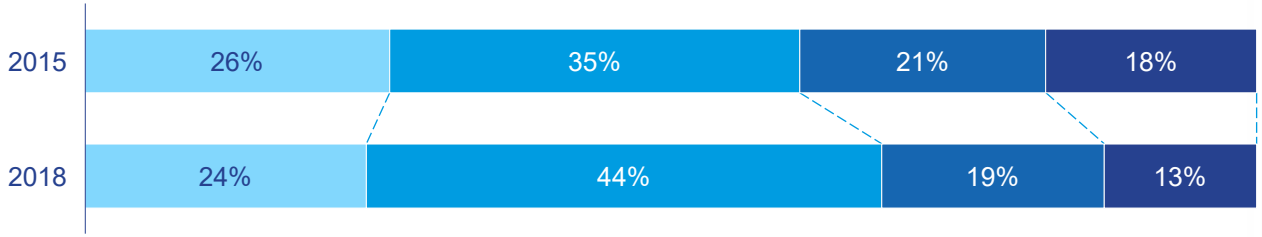
Degree of automation for controlling processes – by year*

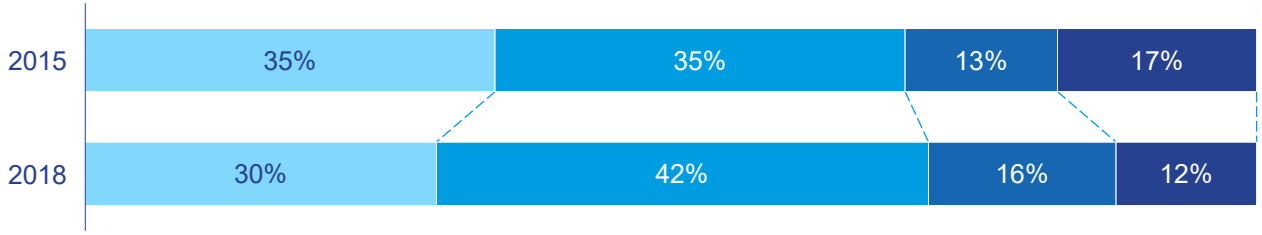
Reporting



Budgeting



Forecasting



- The reportedly low degree of automation is due in part to respondents' changing perceptions: Although nothing has changed objectively, reports may be lower due to changing expectations ("So much more is now possible.").
- In reporting, the degree of automation, on average, is 10 percentage points higher when BI tools as compared to spreadsheets are used (50% vs. 60%). In budgeting, the difference is 20 percentage points (30% vs. 50%). In forecasting, the degree of automation is twice as high when BI tools are used (25% vs. 50%).
- The degree of automation is not correlated to company size.

* This analysis is based on only the answers of respondents who answered this question in both 2015 and 2018 (n=173).

Categories of degrees of automation

- 0-25%
- >25-50%
- >50-75%
- >75-100%

High data quality is the foundation for further standardization and automation of controlling processes

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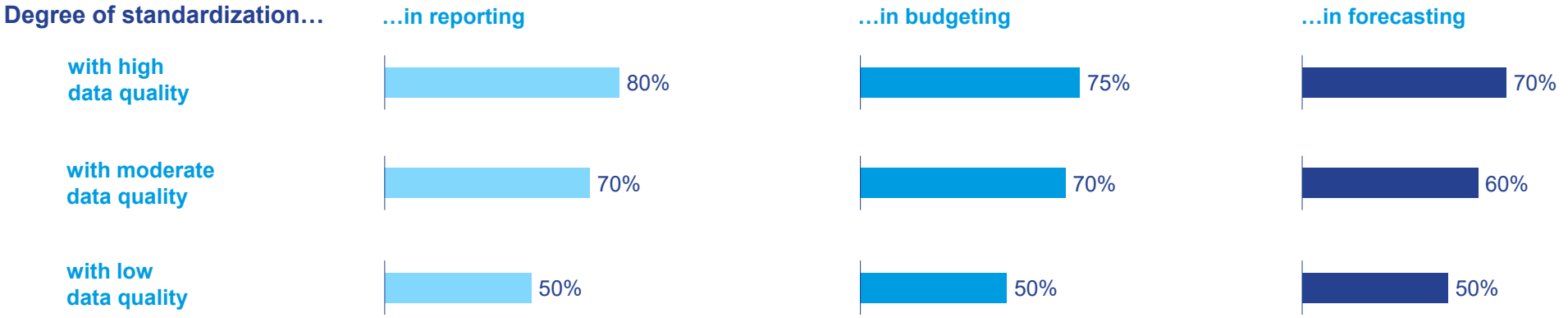
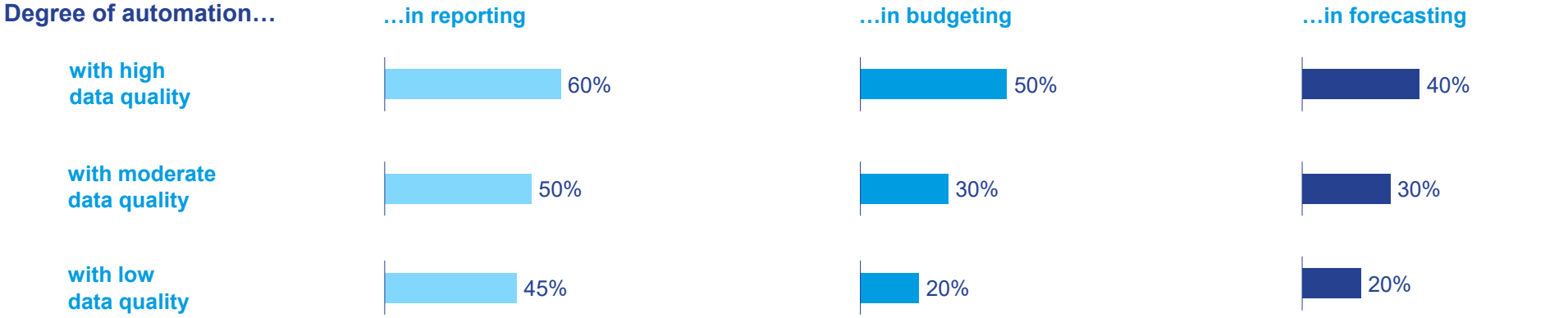
Degree of controlling process standardization – by data quality



Degree of controlling process automation – by data quality



High system quality is a key factor for automation, but it plays a less important role in terms of standardization

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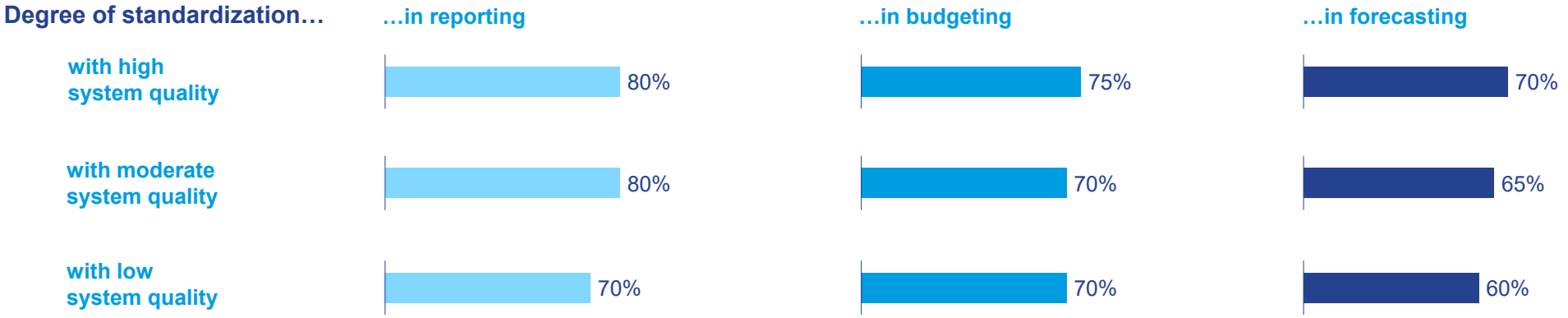
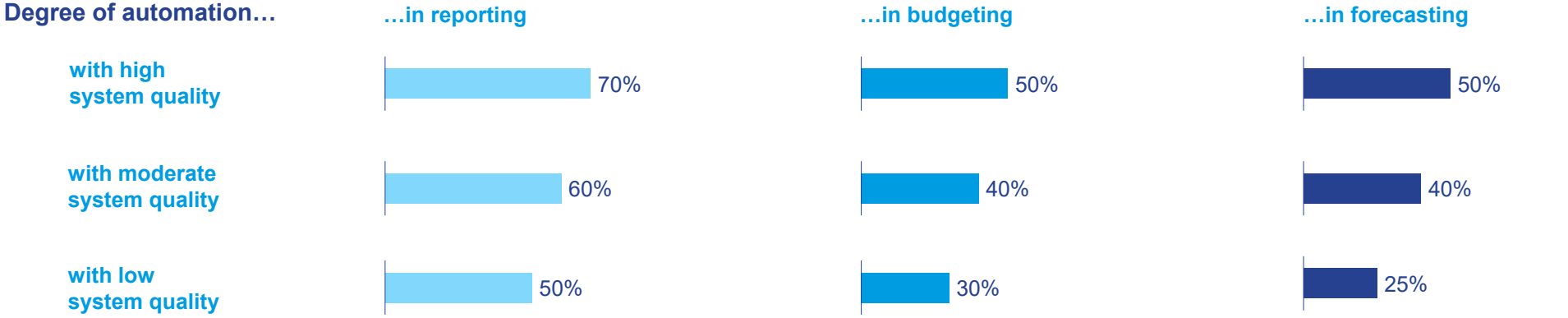
Degree of controlling process standardization – by system quality



Degree of controlling process automation – by system quality



The reporting process is considered efficient in almost half of the companies, the budgeting process only in just under a third

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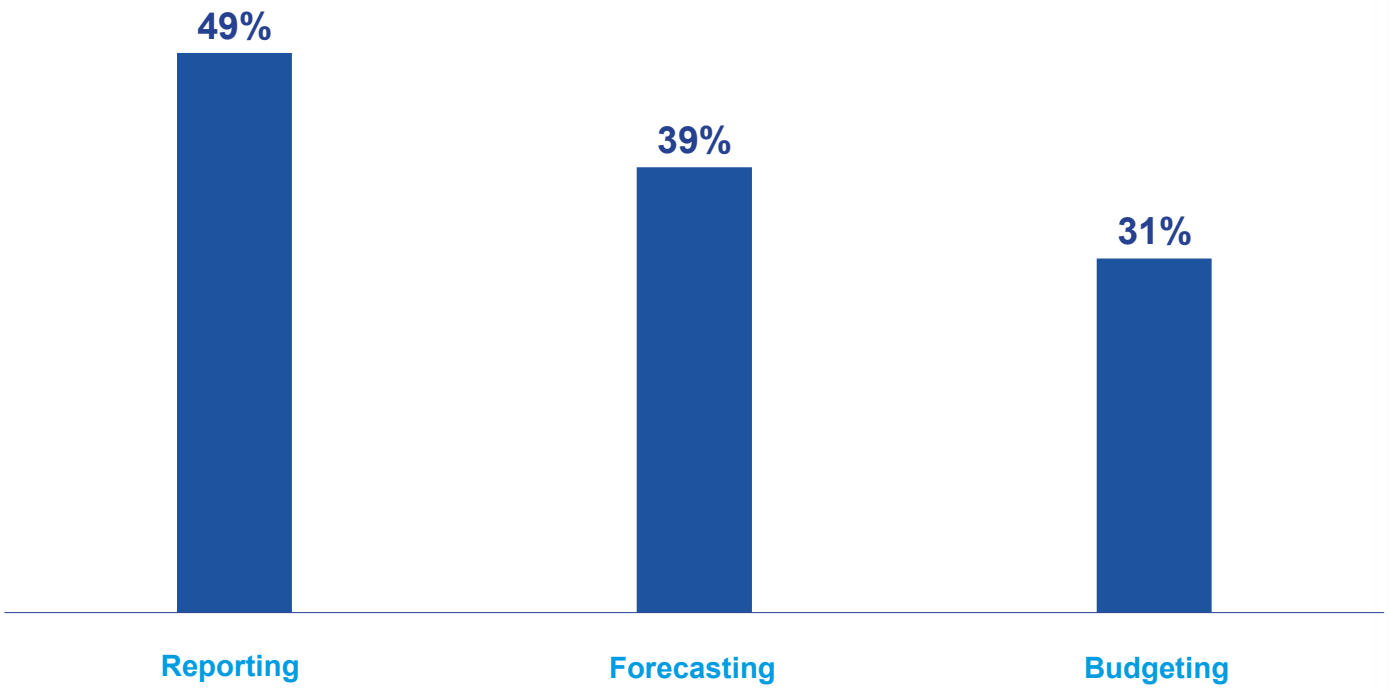
Share of companies with perceived high process efficiency – by controlling process



- In 2021, the reporting process is considered efficient in about 50% of the companies, the budgeting process in 30%. This is unchanged compared to 2015 and 2018.
- Compared to 2015 and 2018, the forecasting process is perceived as more efficient in 2021.
- Budgeting and forecasting processes are often considered efficient in successful companies.
- The perceived efficiency of the reporting process, on the other hand, is not correlated with the company's success.

System and data quality, degree of automation and personnel capacity in controlling drive the efficiency of the reporting process

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Share of companies with perceived high efficiency in the reporting process

IT system quality

Low IT system quality	High IT system quality
30%	72%

Data quality

Low data quality	High Data Quality
29%	63%

Degree of automation

0%-25%	75%-100%
24%	80%

Personnel capacity in Controlling is …

… insufficient	… sufficient
28%	52%

Sustainability

40% of companies have a sustainability strategy – it is usually integrated into the overall corporate strategy

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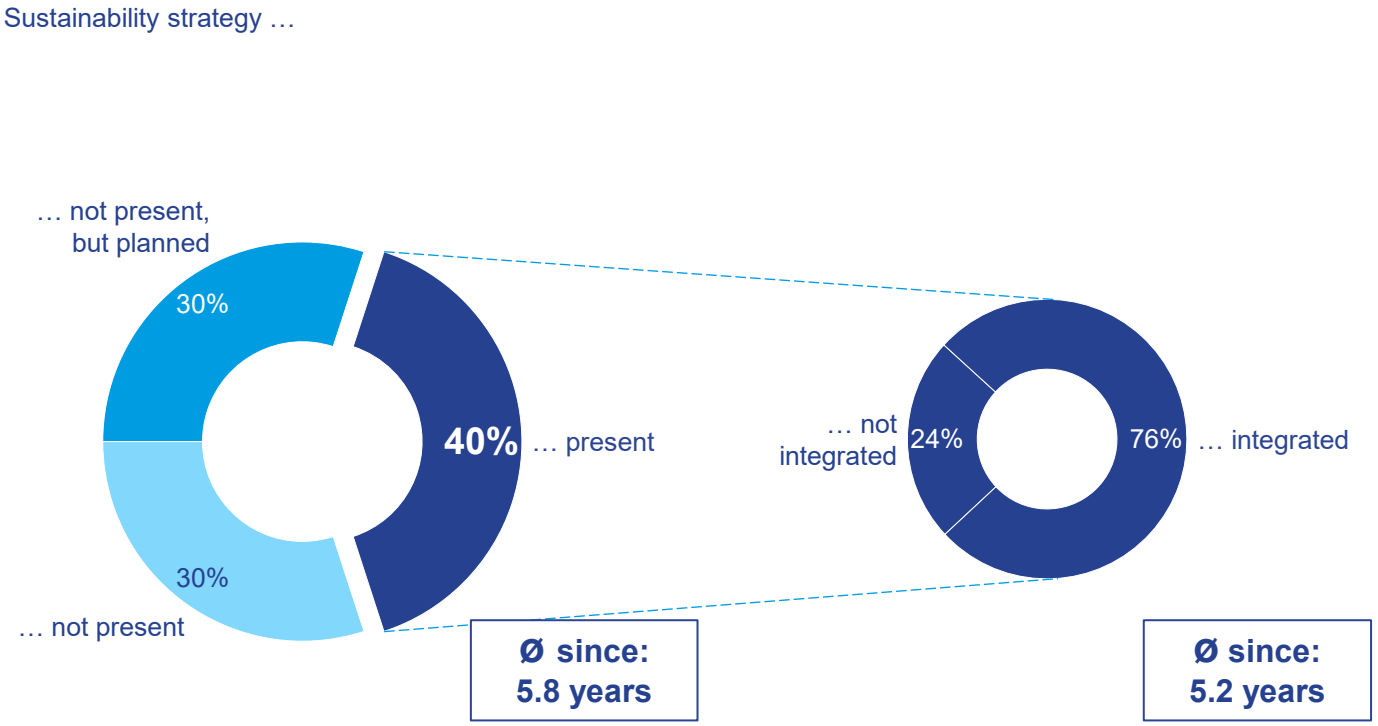
Companies' sustainability strategy and their integration into the corporate strategy



- At 71%, the vast majority of large companies have a sustainability strategy. Among small companies, this is true for only 15%.
- Successful companies are significantly more likely to have a sustainability strategy than less successful companies (42% vs. 17%).

Less than one in four companies has its own sustainability department

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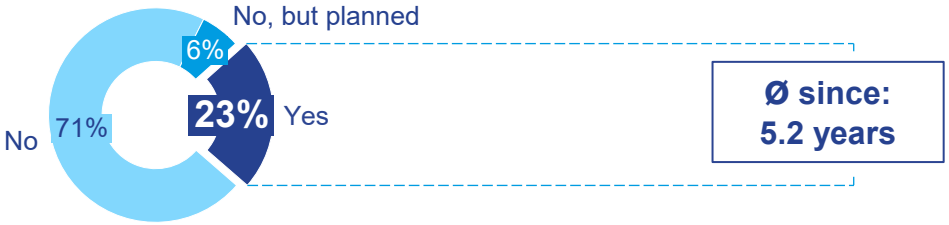
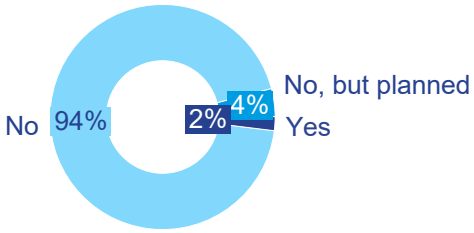
Existence of a sustainability department

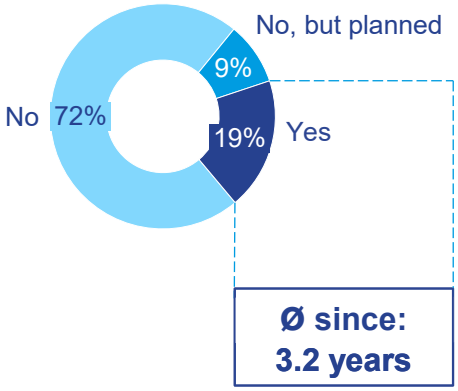


Sustainability department – by company size

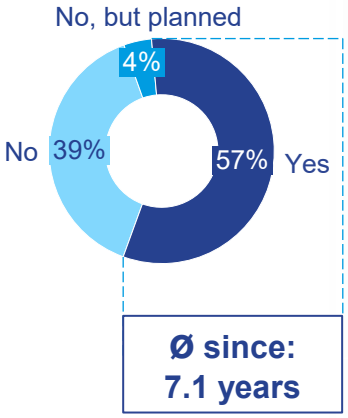
Revenue up to €50 m



Revenue between €50 m and €1 bn



Revenue over €1 bn



- A good quarter of the manufacturing companies (26%) have their own sustainability department, which is slightly more common than among service providers (19%).
- As a rule, there is a sustainability department in companies that have an (integrated) sustainability strategy.

Sustainability is rarely anchored in Controlling

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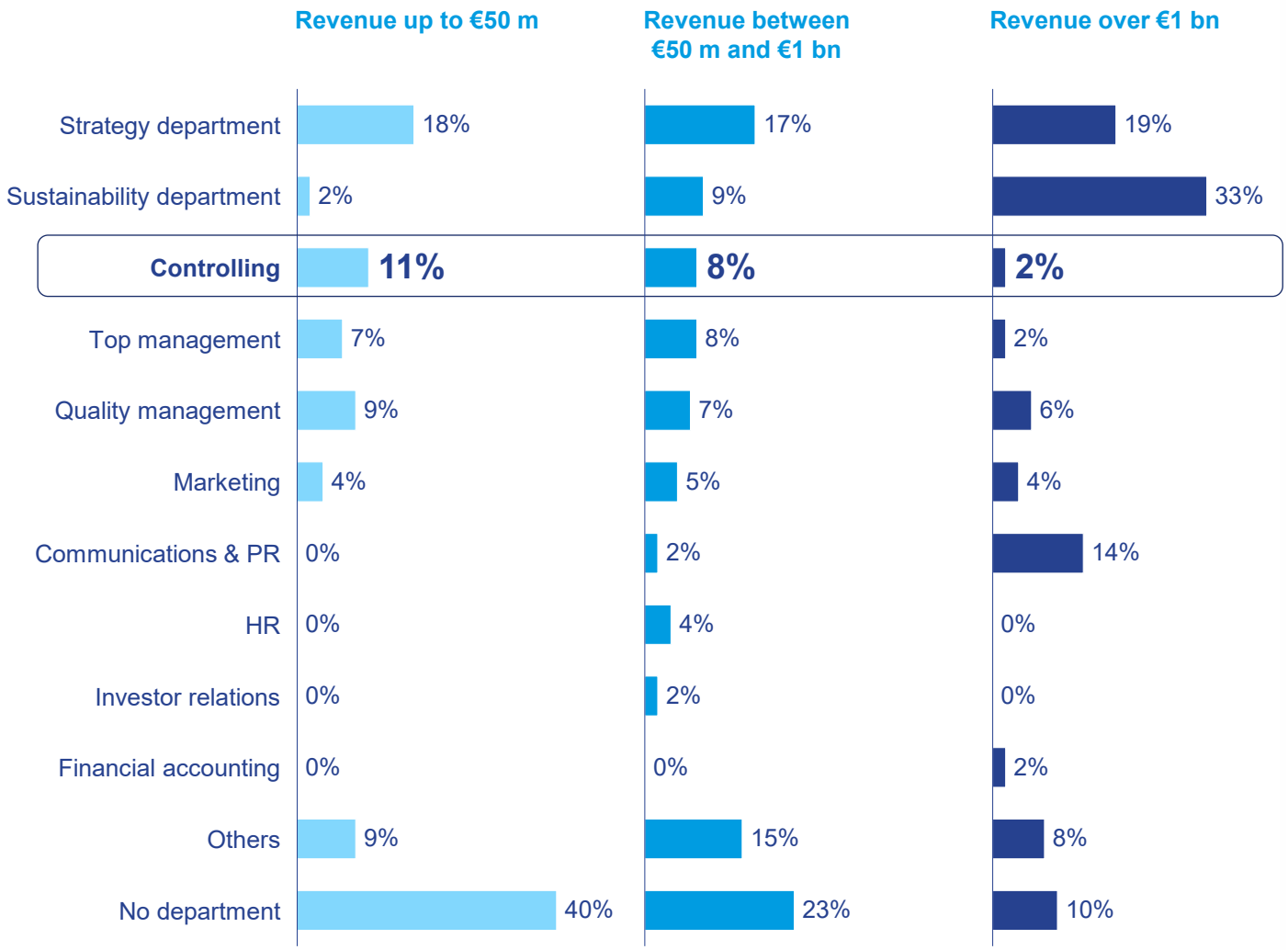
Primary anchoring of sustainability in companies – by company size



- The topic of sustainability is more frequently anchored in Controlling in service companies than in manufacturing companies.
- The second solution favored by service providers is anchoring in the strategy department.
- Manufacturing companies tend to establish sustainability in their management or quality management.
- Companies are more likely to choose anchoring in controlling if the legislator is perceived as a strong driver of the topic.
- If, on the other hand, the capital market is considered a strong driver, the sustainability and strategy departments are clear favorites. Here, anchoring in controlling is found only in few cases.
- The list of other departments in which the topic of sustainability is anchored – especially in medium-sized companies – is long and varied. It ranges from production and purchasing to R&D, operations, internal auditing, service units, and the legal department. If the topic is not anchored in a single department, decentralized project teams are responsible.

In most companies, Controlling is no major player in the corporate sustainability effort

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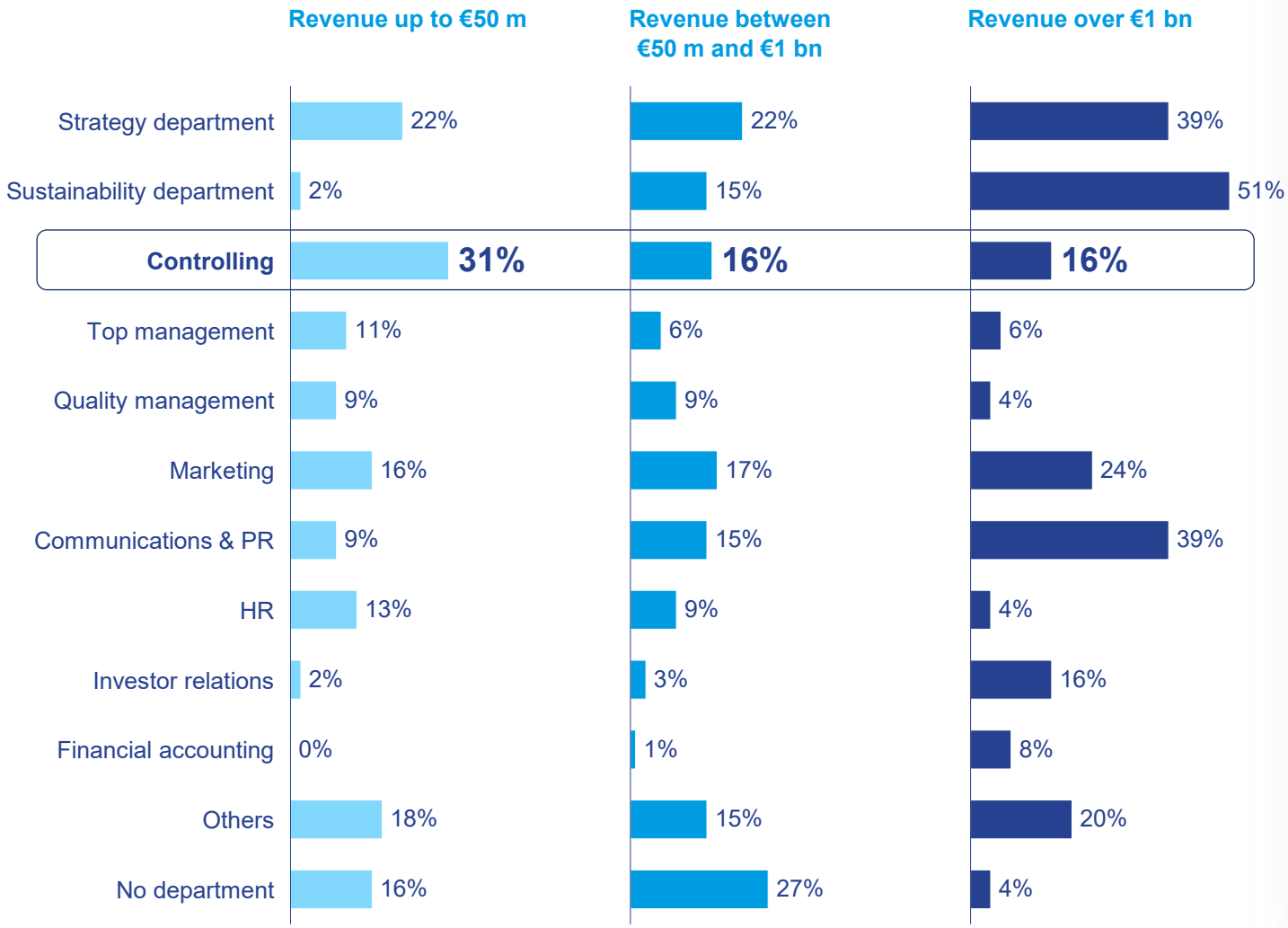
Departments that drive sustainability – by company size (multiple answers possible)



- In addition to the question of where the issue of sustainability is formally anchored in the company, we also wanted to know which departments are driving sustainability forward in the company in terms of content. Multiple answers were possible here.
- Around one third of the respondents stated that no department in their company drives sustainability. Likewise, one third named only one department.
- In 18% of the companies, three to five different departments drive sustainability in the company in parallel. The majority of these are large companies.
- If Controlling is one of the drivers of sustainability in the company, only in a quarter of the cases is the topic also organizationally anchored in Controlling. More often, sustainability is anchored in another department – usually the sustainability or strategy department – while Controlling has a supporting role.

As of summer 2021, more than half the companies that need to comply with the upcoming EU taxonomy do not have a sustainability report

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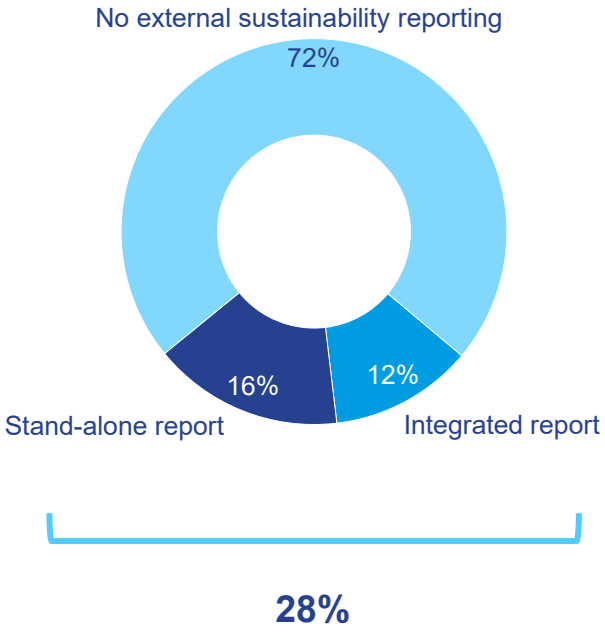
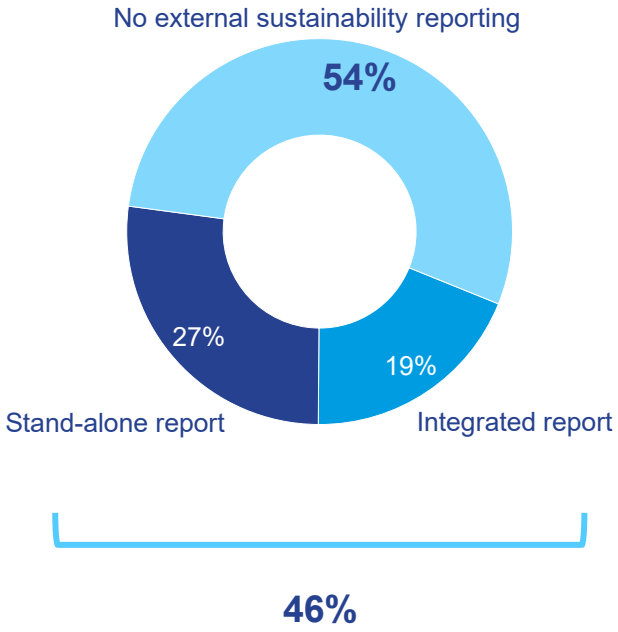
External sustainability reporting

Companies <500 employees



28%

Companies ≥500 employees
(have to comply with EU taxonomy)



46%

- Regulatory background: The Non-Financial Reporting Directive (NFRD) of the EU (valid since 2018) requires companies to disclose the environmental impact of their business. The new EU taxonomy sets specific reporting standards for companies with at least 500 employees as of January 2022.
- External sustainability reporting can be found in most listed companies. Nevertheless, as many as 19% of listed companies do not report externally on sustainability aspects.
- Among the large companies with more than 1 billion € in sales, 27% do not submit an external sustainability report.
- If companies have their own sustainability department, they almost always report externally on sustainability aspects.
- In addition, external sustainability reporting seems to be strongly linked to the external image of the company. Sustainability aspects are reported more frequently by those companies in which the topic is anchored in Communications & PR.

While many controllers do not know which standard is actually applied, standards perceived as simple and clear are used most frequently

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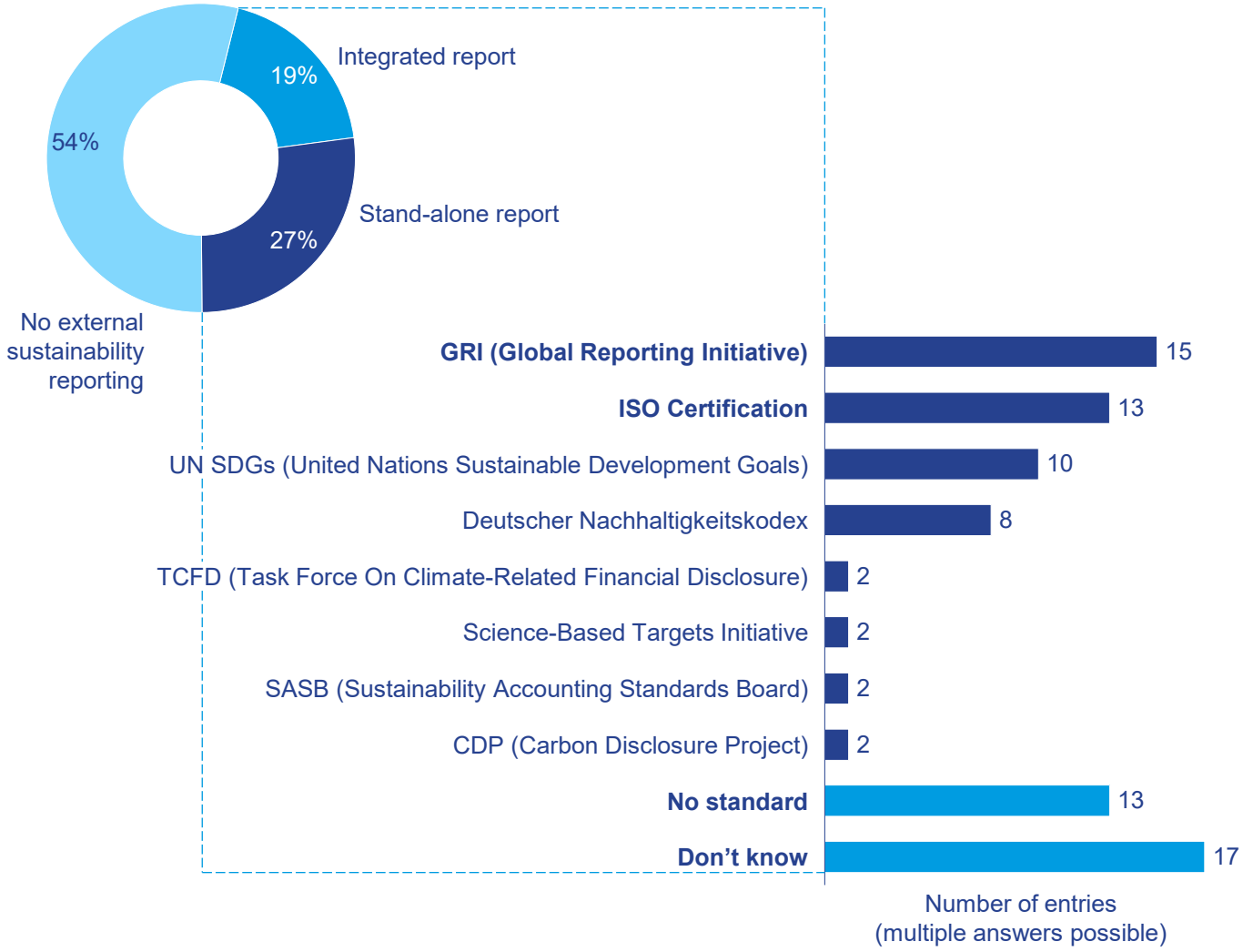
Standards applied in external sustainability reporting – in companies ≥500 employees



- One in four companies that report sustainability KPIs externally applies more than one standard. This is often a combination of two different standards. In some cases, up to four standards are used in parallel. As a rule, these are large companies.
- Satisfaction with the individual standards varies greatly. While respondents whose companies apply the GRI and the Deutscher Nachhaltigkeitsindex give relatively high average satisfaction ratings of 4.4 and 4.7 respectively, the verdict for the ISO standard and the UN SDGs is more critical at 3.9 and 3.7 respectively.
- With a mean score of 3.6, the respondents who do not currently use a standard in external reporting rate the existing standards relatively critically – a possible reason for not using the standards.

Controllers' thoughts on …

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… the standards applied in external sustainability reporting (selected quotes)

"**Large heterogeneity** of different standards leading to **much effort with partly questionable benefit**"

"The **applicability is not transparent** and the ability to influence of the components is not clear."

"Calculation and definition of sustainability-related **KPIs not yet fully clarified**"

"ISO standards **do not always reflect operational reality** and are difficult to translate into financial KPIs."

"The different reports (CSR, SDG, ESG, EU Taxonomy) are very difficult to get on top of each other, a "satisfaction" of all needs and an explanation / interpretation of the results is demanding for many target groups."

Internal sustainability reporting is a starting point for any steering effort – external and internal sustainability reporting tend to go hand in hand

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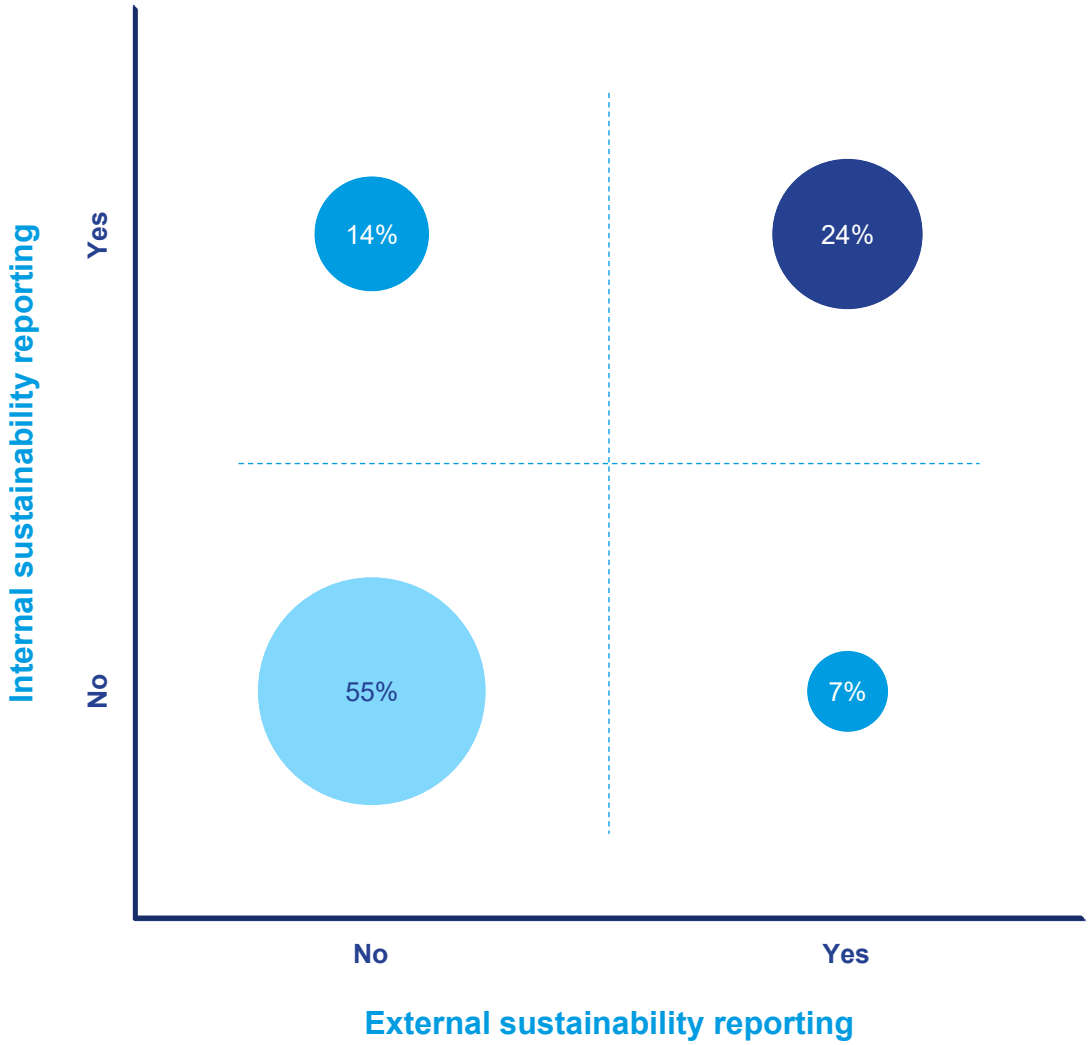
External and internal sustainability reporting



- While 55% of the companies report neither externally nor internally on sustainability, the ratio is reversed in large companies. Here, 53% report both externally and internally on sustainability aspects. In contrast, 22% submit neither an external nor an internal sustainability report.
- These large companies, which do not report on sustainability either externally or internally, are predominantly manufacturing companies.
- Similar to external reporting, the same applies to internal reporting of sustainability aspects: Companies that anchor the topic in their own sustainability department usually also report internally on sustainability (75%).
- In addition, internal sustainability reporting is more likely to exist when the topic is anchored in controlling or when controlling at least collaborates on it.
- If, on the other hand, sustainability is part of marketing, HR, or top management, sustainability aspects are generally not part of internal reporting.

Companies that include sustainability in their internal management report have an average of seven sustainability-related metrics

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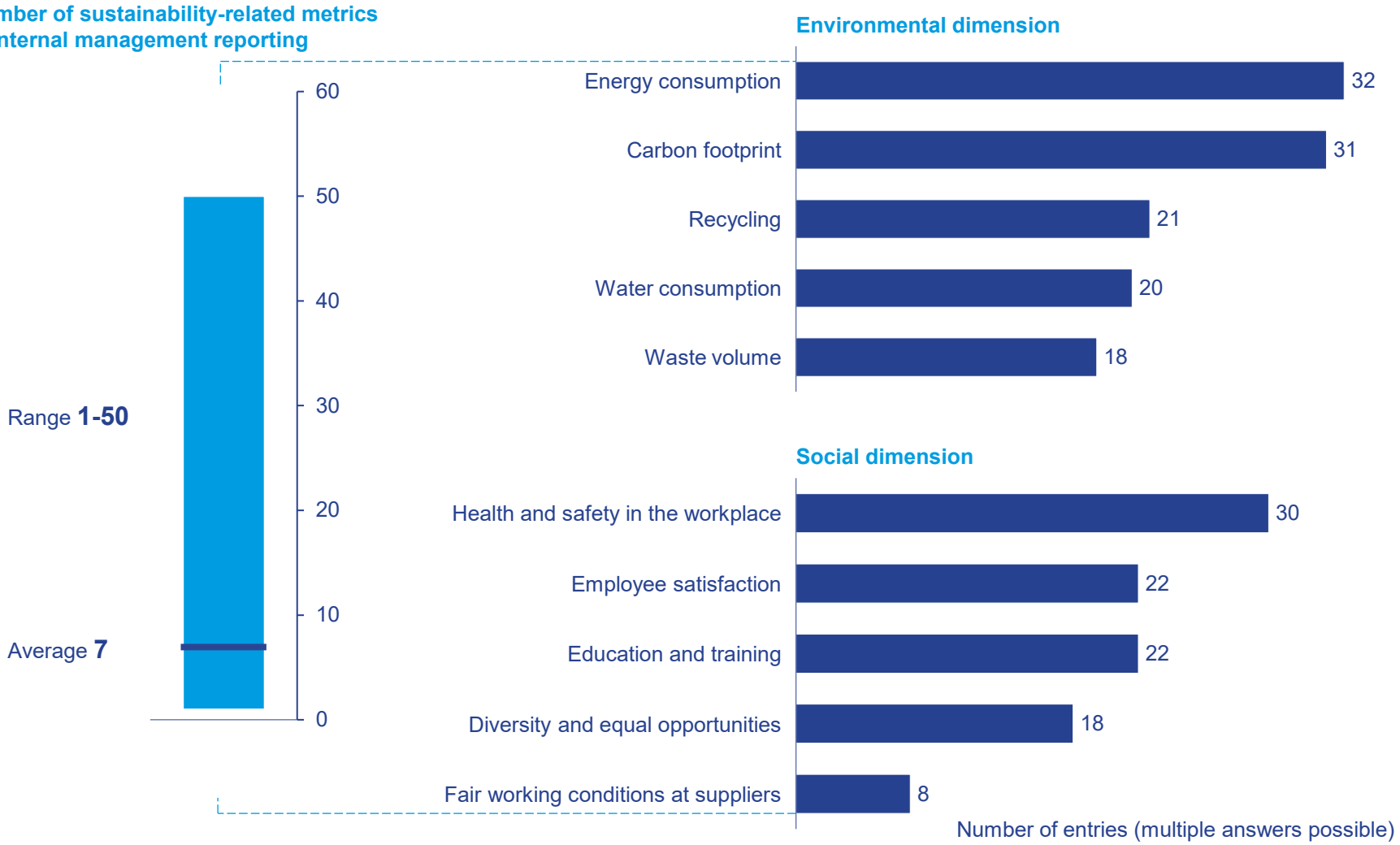
Number and dimensions of sustainability-related metrics in internal management reporting



With respect to quantitative sustainability targets, smaller companies are lagging behind

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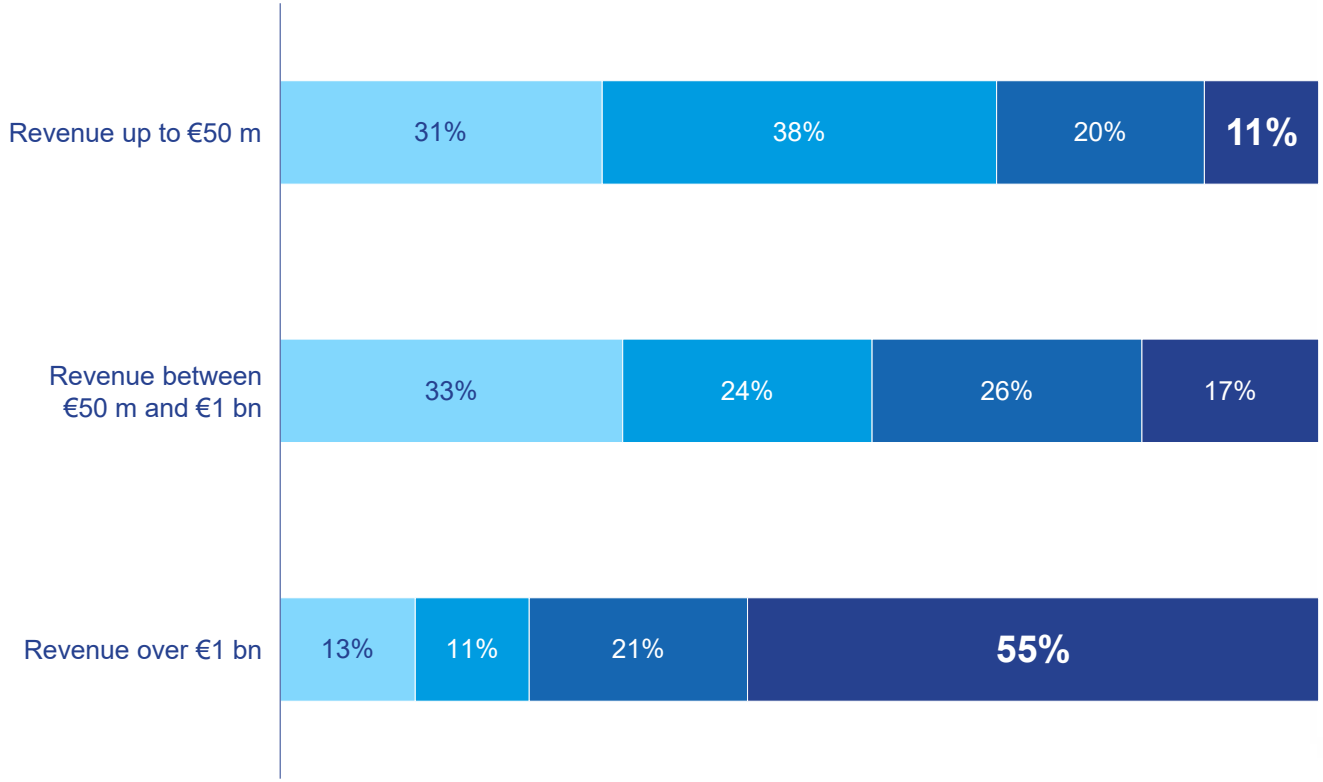
Existence of sustainability targets – by company size



- As a rule, companies that have comprehensively anchored the topic of sustainability internally have concrete, quantitative sustainability targets. Among the companies with concrete, quantitative sustainability targets:
  - 83% have a sustainability strategy,
  - 59% have a sustainability department,
  - 86% have external sustainability reporting,
  - 60% have internal sustainability reporting (half of them integrate sustainability into management reporting).
- Quantitative sustainability targets are more likely to be set by companies in which the topic of sustainability is at least partly anchored in the corporate culture. 53% of companies with a strong sustainability culture have quantitative targets, but only 8% with a low sustainability culture.

In 2021, only a minority of companies have fully integrated the principle of sustainability in their steering approaches

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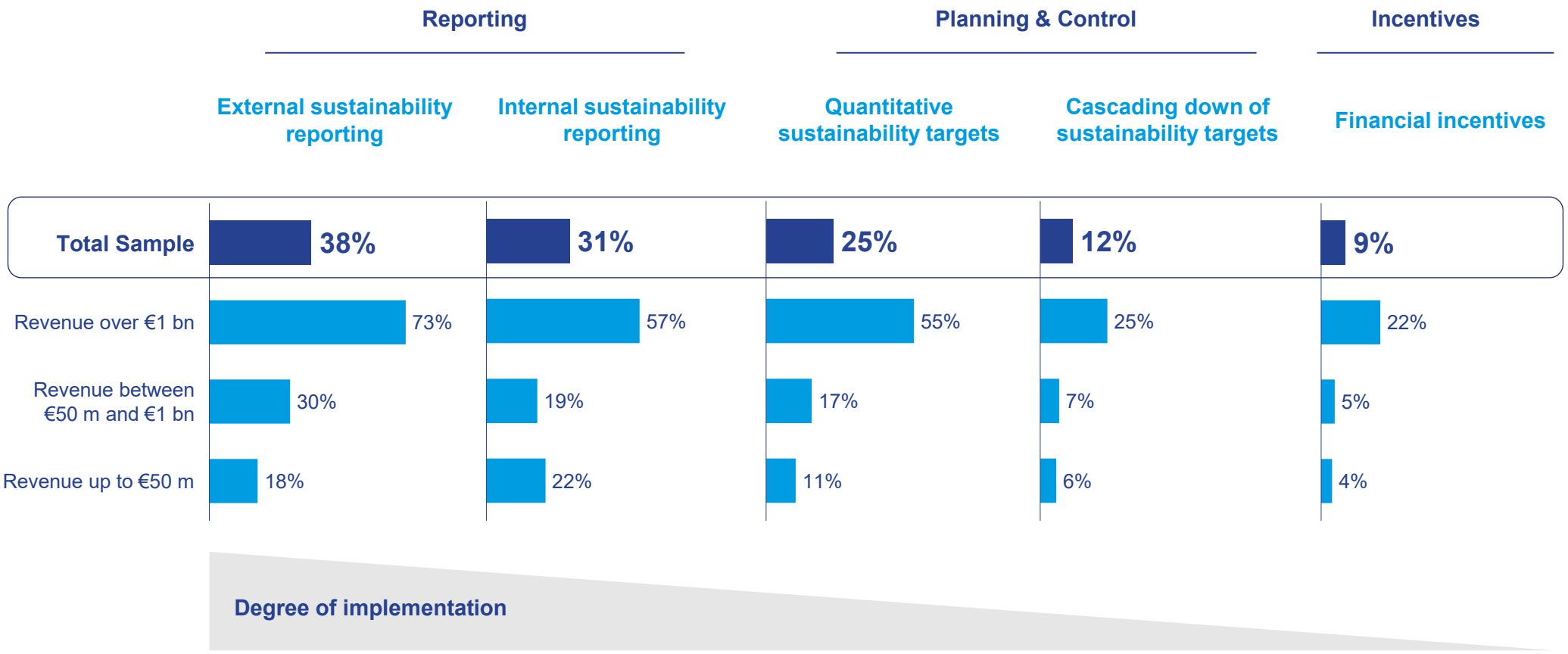
Integration of sustainability in different steering dimensions (share of companies)



In most cases, concrete sustainability targets relate to the carbon footprint and energy consumption

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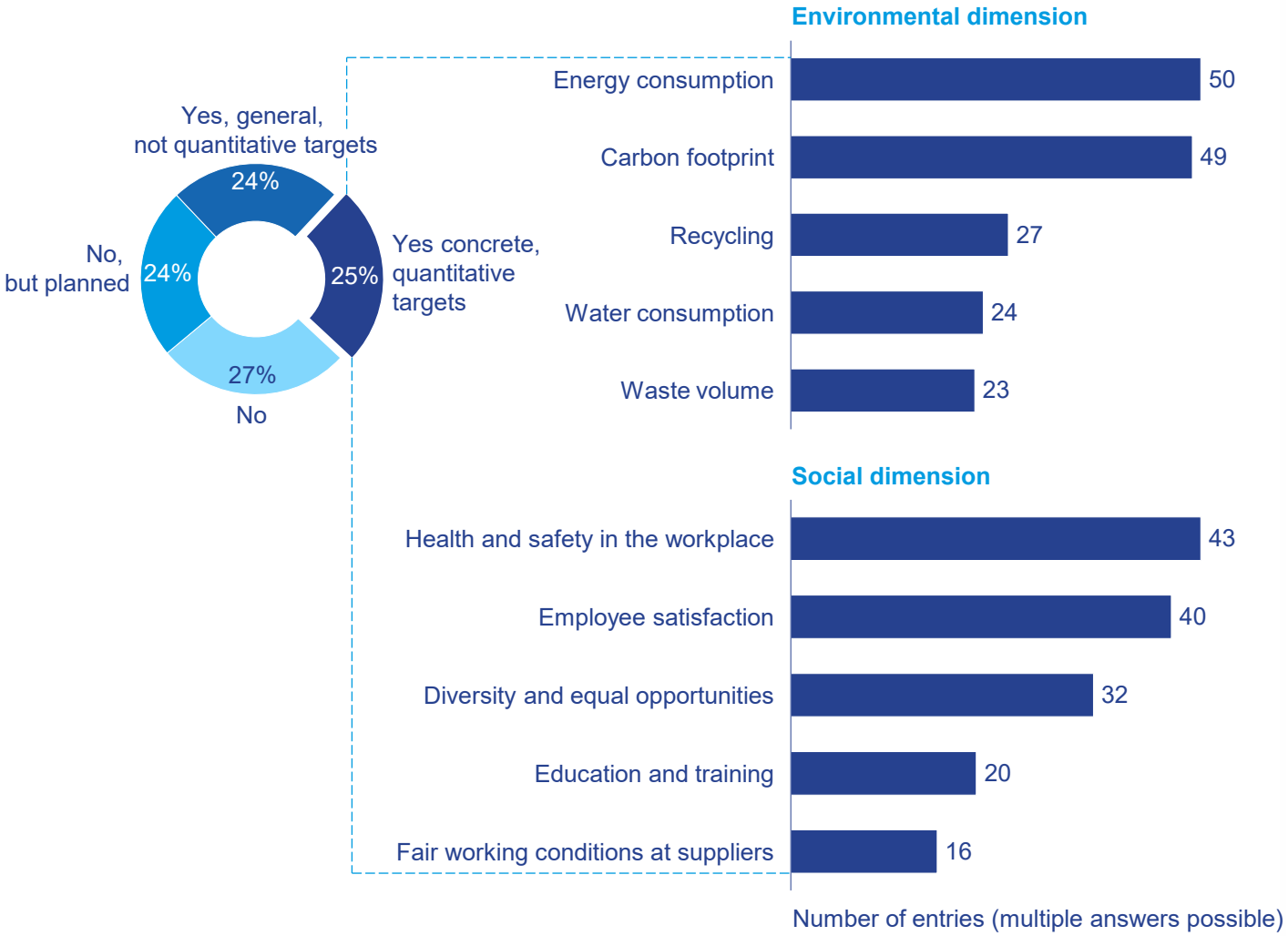
Existence of sustainability targets and dimensions



- Companies that have set quantitative sustainability targets often pursue these targets in several dimensions in parallel. Around half of the companies with quantitative targets have them in four to six different fields. In some cases, respondents even specify targets in all ten of the dimensions surveyed.
- Large companies are more likely to pursue targets in multiple dimensions than small ones.
- On the basis of the available data, no correlation can be established between company size, industry or other characteristics and the question of which specific content-related target dimensions the companies are pursuing.
- Targets in the area of carbon footprint exist more frequently in companies in which communications and marketing drive the issue of sustainability. Targets in this area therefore seem to be more strongly linked to the external image of the company than other targets.

Controllers' thoughts on …

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… the quantitative sustainability targets their companies set and the respective time horizons (selected quotes)

> **Climate neutral by 2040 with deposit of annual targets**"

> **Zero net greenhouse gas emissions by 2050 or earlier,** including the value chain; business ambition for 1.5 degrees Celsius"

> CO2 neutrality by 2050 (Net Zero) and reduction of CO2 emissions by -25% compared to the base year 2018; **sales of products that promote sustainability** of EUR 22 billion in 2025"

> **Women's quota, accident rate** (accidents per 1 million hours worked), **quota of e-vehicles**, number of trainees"

> **Energy efficiency increase of 10%** with no change in conditions by 2030; reduction in total water use of 10% by 2030; reduction in total waste use of 10% by 2030"

> Reduction emission, **sustainable product life cycle**, CO2 reduction and waste reduction along the entire product life cycle, contribution to climate neutrality and reduction of global warming"

50% of large companies, but only 33% of small companies, consider sustainability aspects in investment planning

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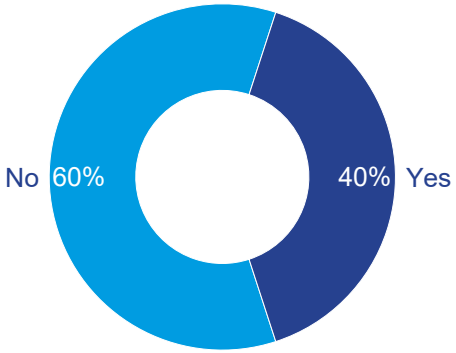
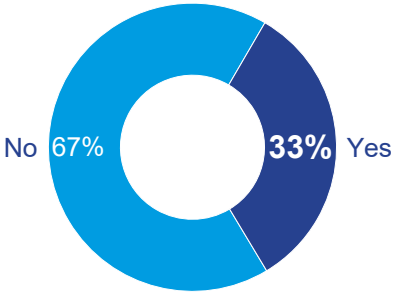
Consideration of sustainability aspects in investment planning

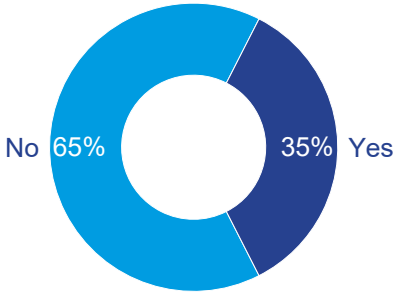


Consideration of sustainability aspects in investment planning – by company size

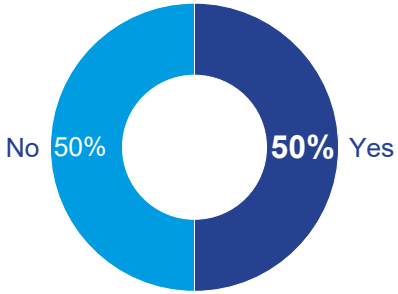
Revenue up to €50 m



Revenue between €50 m and €1 bn



Revenue over €1 bn



- If the topic of sustainability is anchored in a separate department or in controlling, around 60% of companies also consider sustainability aspects in investment planning.
- In 64% of the companies, sustainability is also considered in investment controlling, when the controlling department drives the topic of sustainability in the company.
- Companies that integrate sustainability in their reporting and have defined sustainability targets usually also integrate the topic into their investment planning.
- No industry differences can be identified.

The majority of companies do not make investment decisions exclusively on the basis of economic objectives

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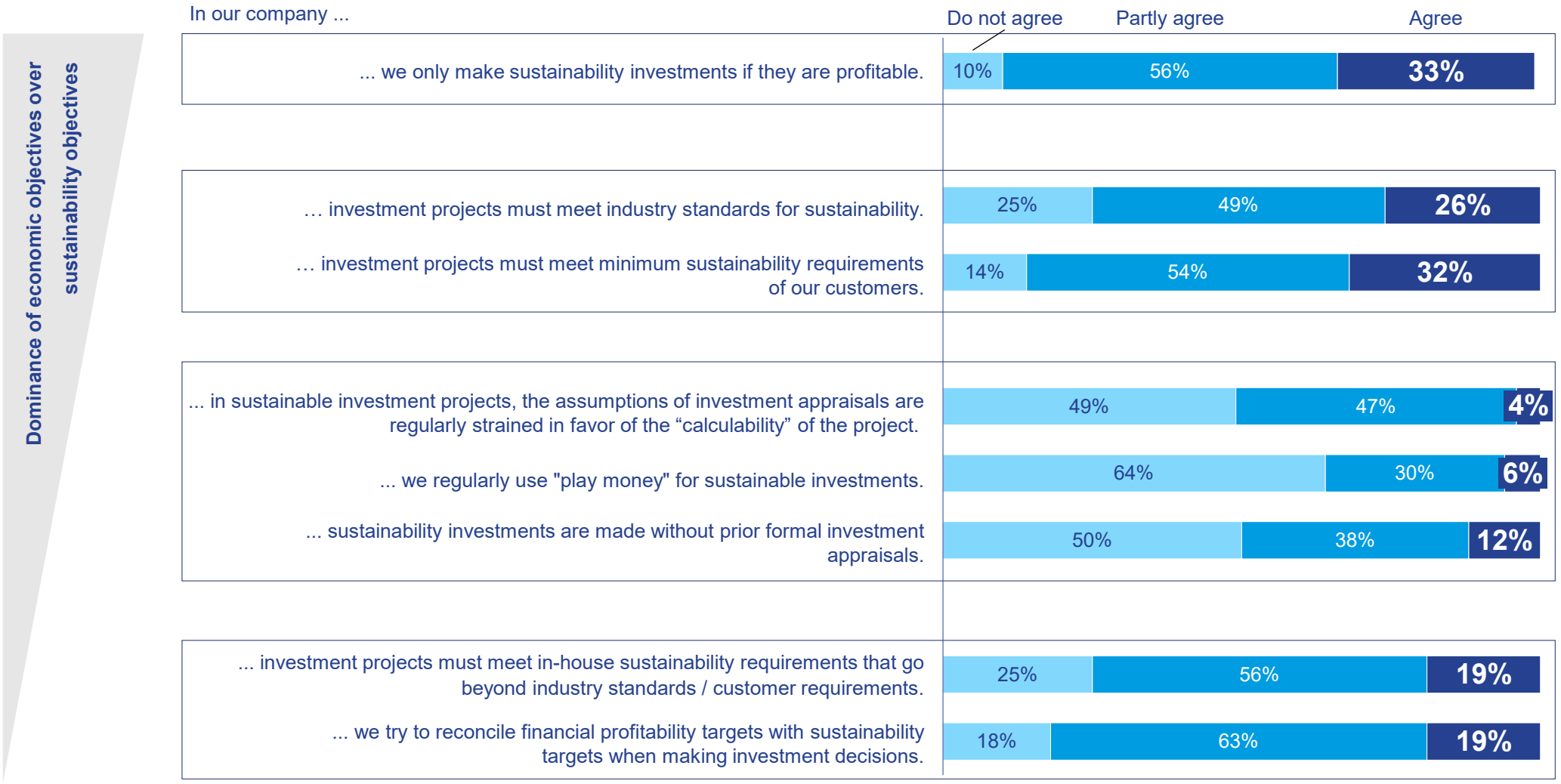
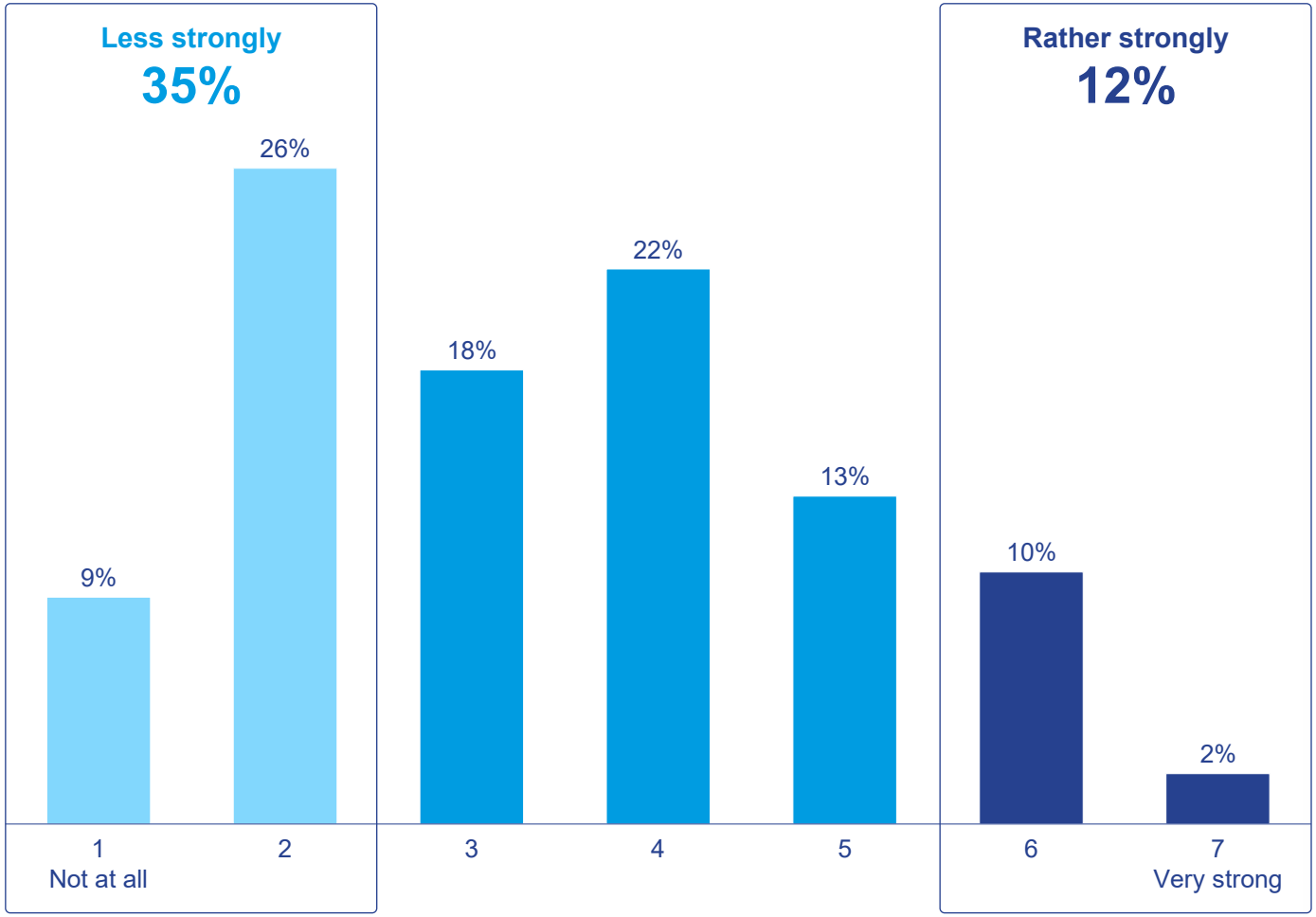
Importance of different objectives for sustainable investment projects and resource allocation



In 2021, few companies seem to have a strong sustainability culture

“How strongly is sustainability integrated in your corporate culture?”



- Respondents from small companies in particular (34%) perceive a less pronounced sustainability culture. In large companies, only 18% of respondents see sustainability as only weakly anchored in their corporate culture.
- The extent of the sustainability culture is independent of the industry.
- A sustainability culture that is strongly anchored in the company is more likely to be found where the companies have a sustainability strategy and may even have established a sustainability department.
- Within the company, the activities of Controlling, strategy, communications and marketing seem to drive the establishment of a sustainability culture. If, on the other hand, there is no primary department driving sustainability, it is generally not anchored in the corporate culture either.

Impetus for a sustainable orientation of the company comes primarily from family offices as well as legislators and customers

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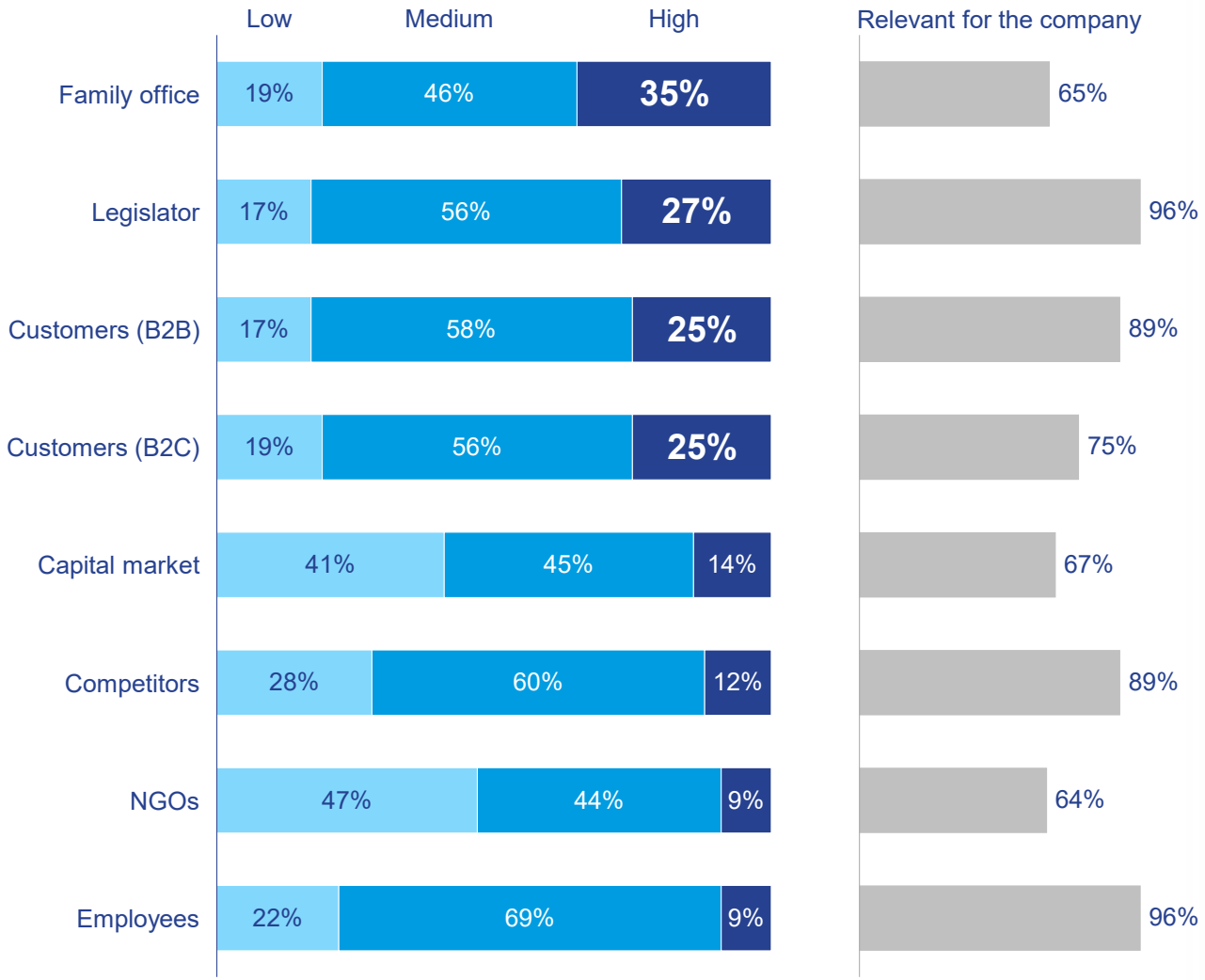
Influence of stakeholders on the sustainable orientation of the company



- Where an owner (family office) has a decisive influence on the sustainable orientation, external sustainability reporting was established at an above-average early stage.
- Companies in which the capital market or NGOs have a significant influence on sustainability are more likely to have an external sustainability report.
- If customers influence the sustainable orientation of the company, companies more frequently consider sustainability KPIs in internal reporting.
- A strong correlation can be observed between the sustainability culture of the company and the influence of owners, employees and customers. In contrast, the capital market and legislators have no influence on the sustainability culture.

Controlling in times of the COVID crisis

Between March and May 2020, the degree to which companies felt affected by the Covid crisis remained high

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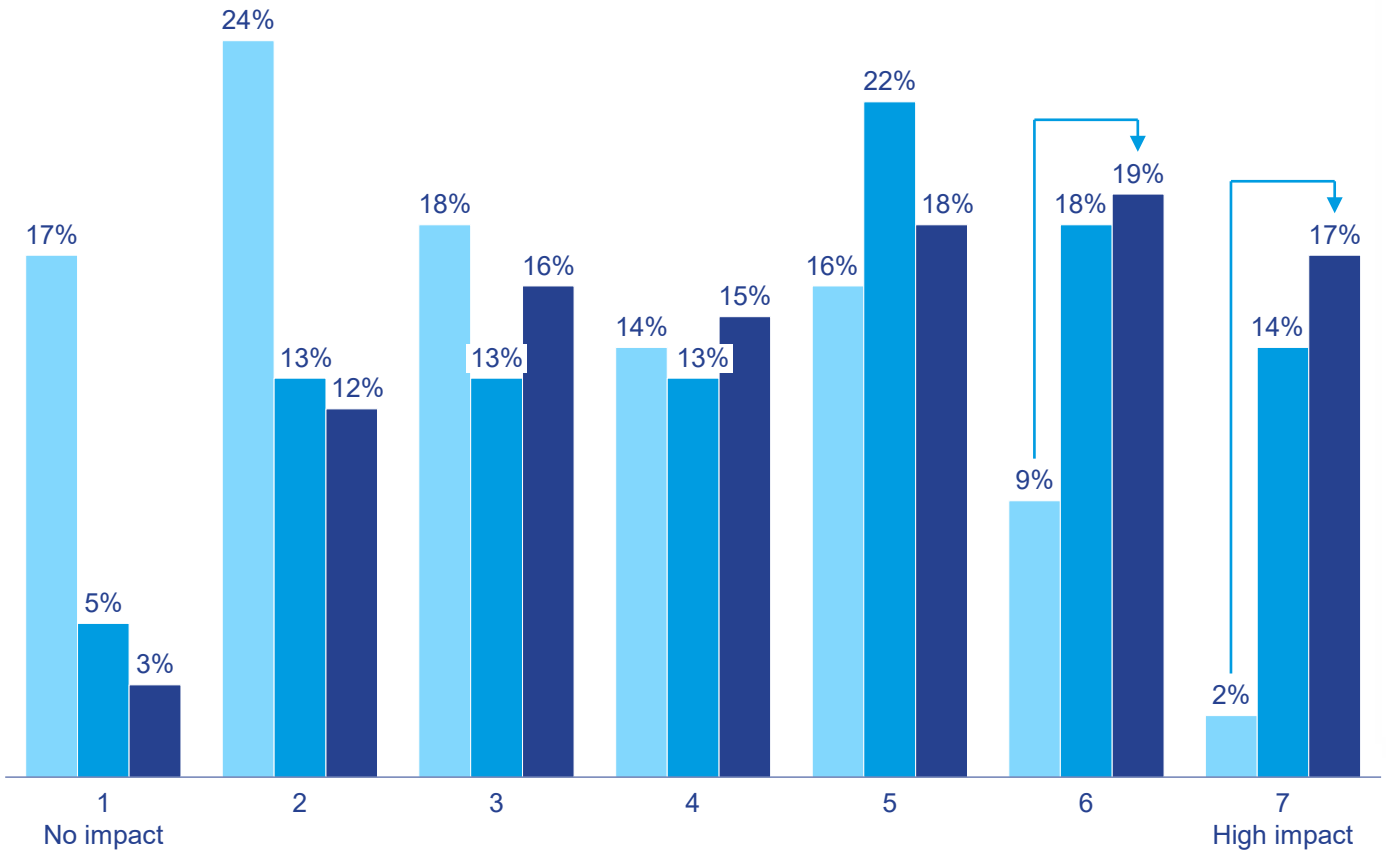
Development of crisis impact – Fall 2019 vs. March 2020 vs. May 2020



- In May, the respondents rated the degree to which they were affected by the crisis at 4.6. In March, the value was at the same level at 4.5.
- We can still speak of a systemic crisis. Regardless of company size, all companies were equally affected by the crisis.
- The same applies to the sectors: Here, too, there are no differences at all.

In the beginning of the Covid pandemic in March 2020, the crisis was perceived as a systemic crisis – ultimately all companies were affected

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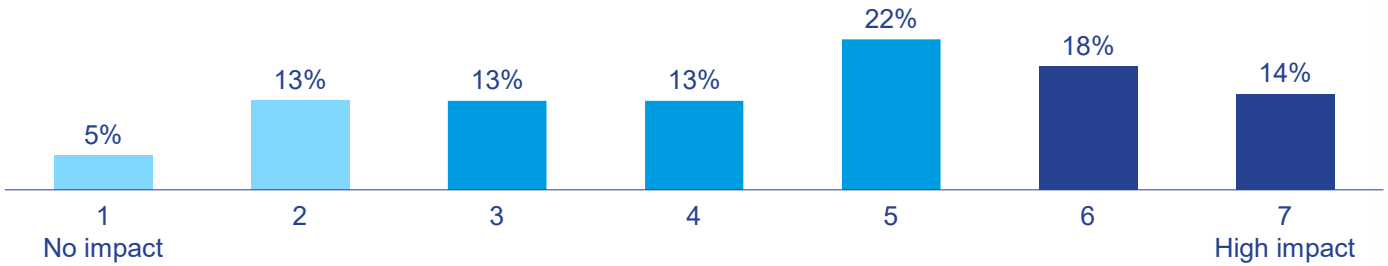
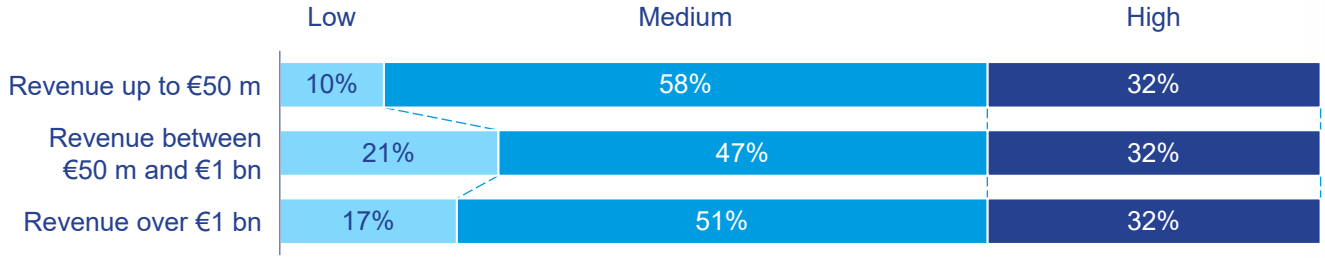
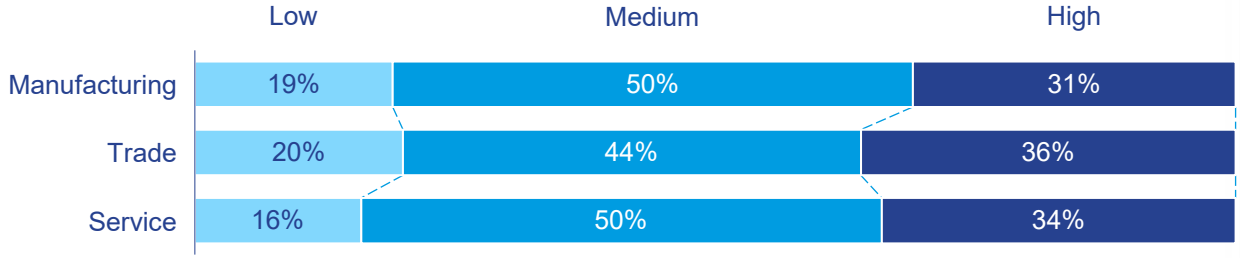
Crisis impact – March 2020



Crisis impact – by company size



Crisis impact – by industry



- In fall 2019, we asked the participants of the WHU Controller Panel for the first time if they were affected by a crisis. At that time, 41% of respondents stated that they were hardly or not at all affected by an economic crisis. Only 11% felt strongly or very strongly affected by a crisis. On average, the respondents rated their company as being affected by a crisis at 3.2. In March 2020, the value rose to 4.5.
- Regardless of whether the respondent is a CFO or a controller without management responsibility, the self-assessment of how affected they were by the Covid crisis is independent of their position.
- Crisis exposure does not correlate significantly with company size.
- 10% of the companies surveyed assessed the effects of the Covid crisis as threatening their existence. This perception is predominantly found among small companies.

Particularly smaller companies and those more severely affected by the crisis were steering completely on sight

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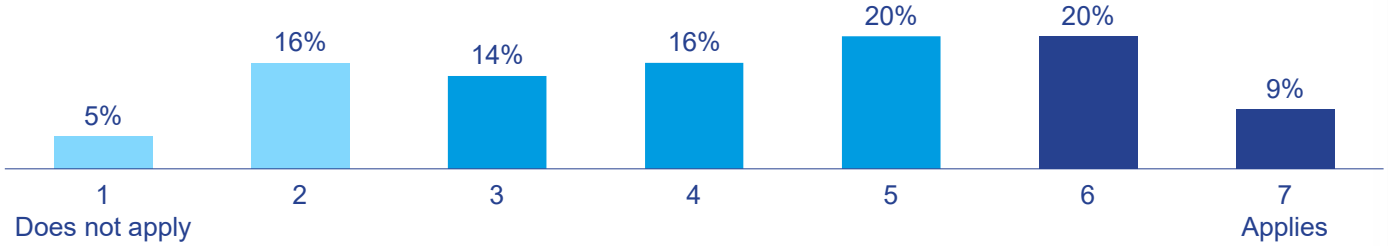
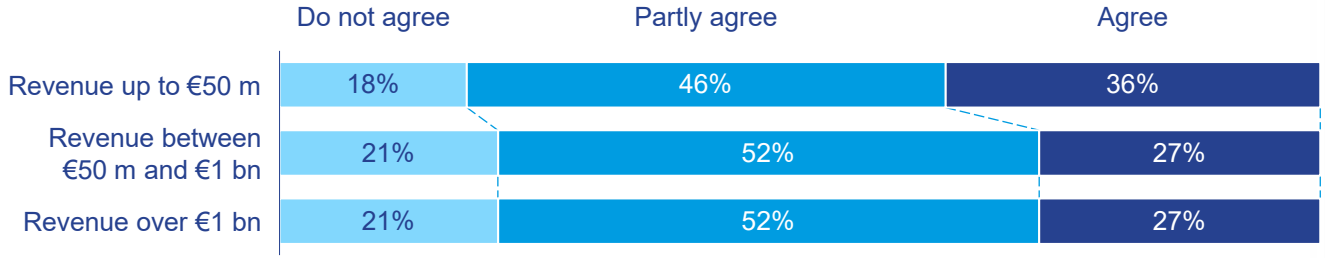
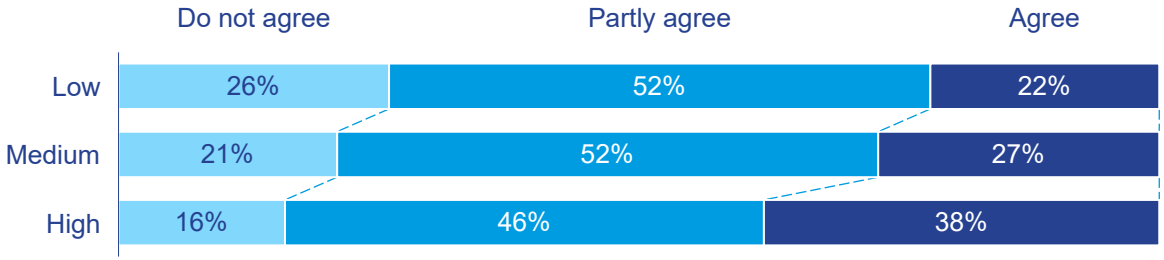
“We’re steering completely on sight at the moment, we don’t consider mid- and long-term implications.” – March 2020



“Steering on sight” – by company size



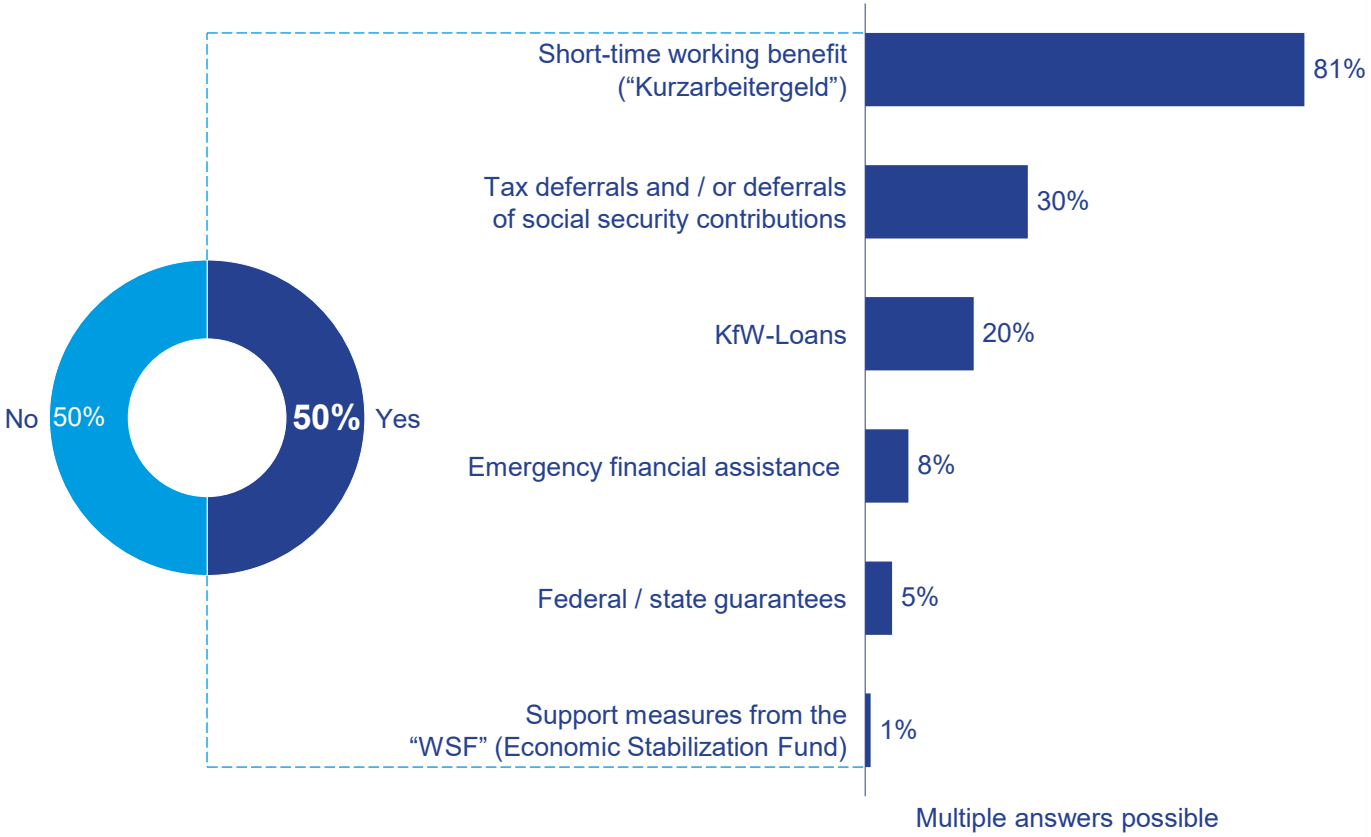
“Steering on sight” – by company's crisis affectedness



- “Steering on sight” tends to be more pronounced the more the individual companies were affected by the crisis.
- This is particularly true when individual crisis phenomena affected the company more severely: Especially in the case of liquidity bottlenecks and restrictions on production, “steering on sight” was particularly pronounced.
- If the existence of the company was threatened, “steering on sight” was often the only option.
- This is not very conducive to the sentiment among employees: The number of satisfied employees iss cut in half when medium- and long-term goals were temporarily postponed.
- The effectiveness of crisis management and the industry show no correlation with the decision whether or not to completely ”steer on sight”.

In May 2020, every second company had taken advantage of Covid emergency federal aid

“Have you applied for or already received emergency federal Corona assistance? If so, which ones?”



- In May 2020, in the group of companies severely affected by the crisis, three out of four had already applied for or already used Corona emergency aid from the federal government. Among those less affected by the crisis, it was only one in four companies.
- The use of state aid depends on size: 51% of small and 56% of medium-sized companies had already secured state aid, while only 38% of large companies have had to do so.
- The industry also plays a role: While 55% of companies in the manufacturing sector took advantage of state aid, the figure for service companies is only 39%.
- However, companies were not only taking advantage of government aid, but were also trying to respond to the crisis by adjusting their management control: The management was increasingly based on actual values, agreed targets and the frequency of forecasts were adjusted if necessary, and budgeting for 2020 was suspended or postponed if necessary.

Two months into the crisis, more respondents considered their company to be in little or no danger of going out of business

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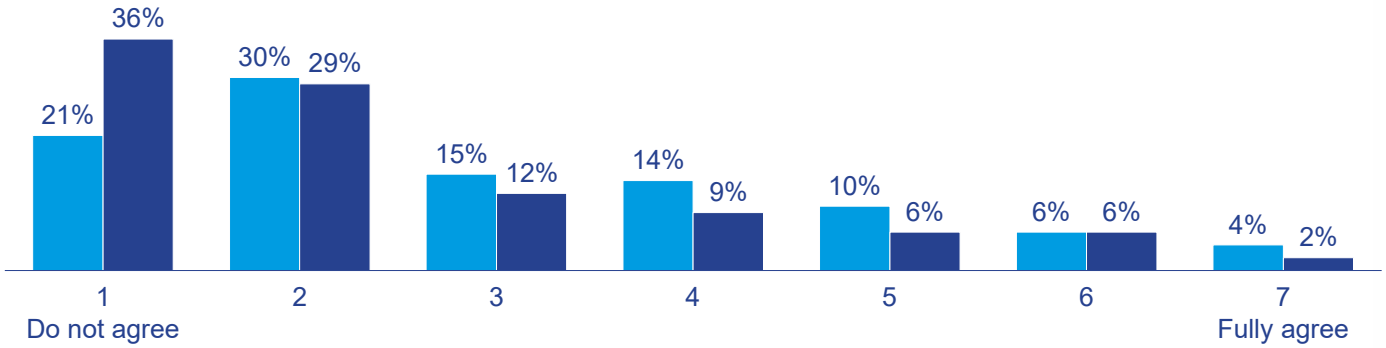
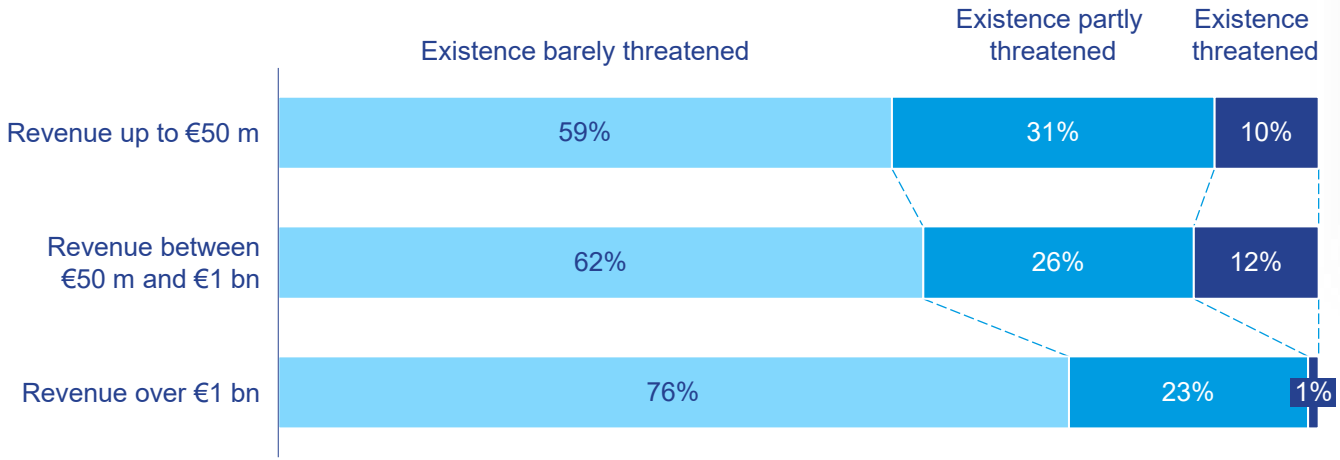
“Our company is facing conditions that threaten its existence.”



Existential threat – by company size



- In the manufacturing sector, one in ten companies saw its existence threatened. In the service sector, the figure is only one in twenty.
- Companies whose existence was threatened by the crisis were more often “steering on sight” (44%) than those whose existence was not threatened (14%).
- Almost 90% of the companies at risk of going out of business had applied for short-time allowance, twice as many as in the group not at risk of going out of business.
- In almost one-third of these companies, there had already been crisis-related layoffs (vs. 9% in those not threatened with bankruptcy).

Upper chart

March 2020 May 2020

Crisis symptoms changed over the months – declining sales increased, while working conditions and supply chains decreased

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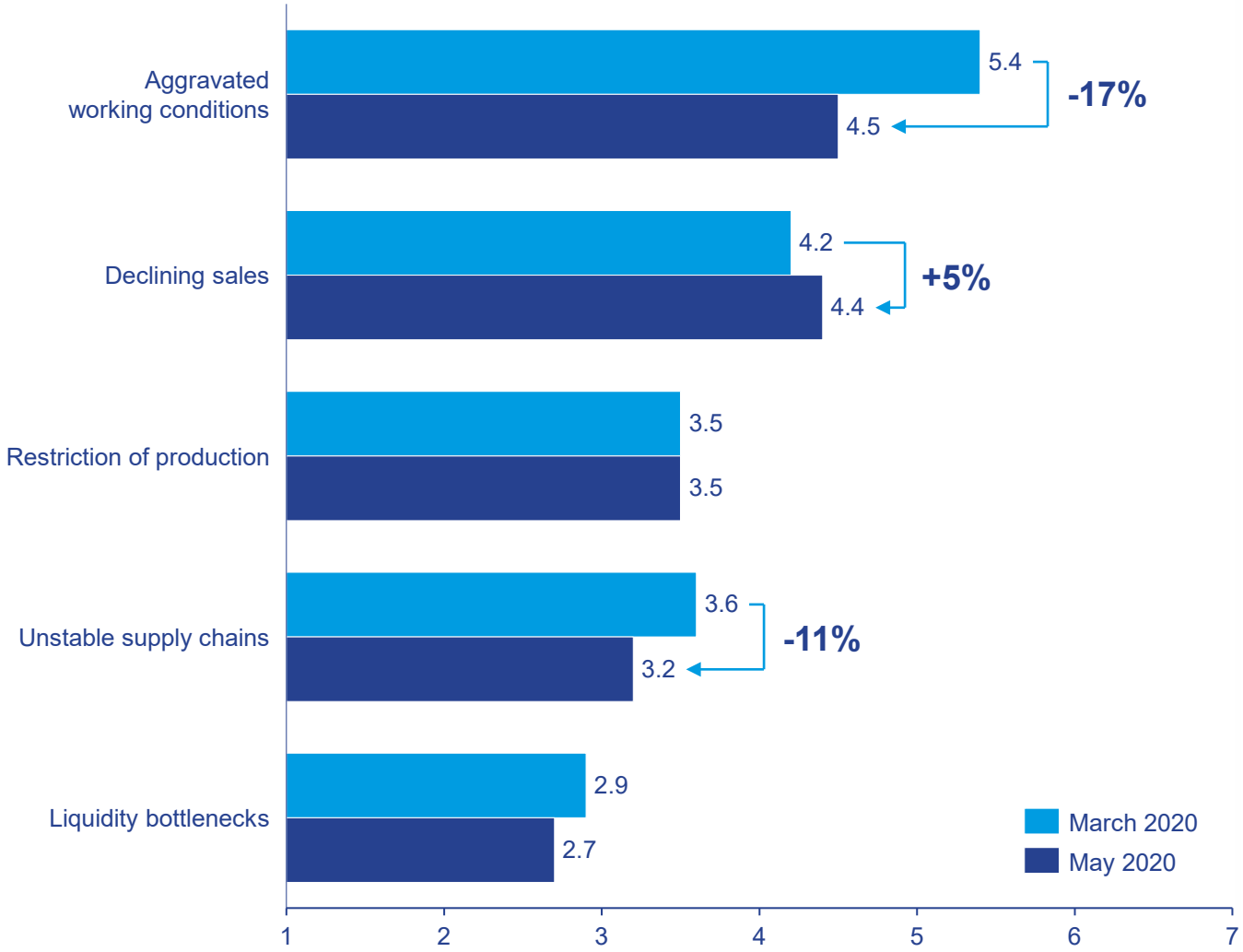
Affected by individual crisis phenomena – March vs. May 2020



- Unlike in March, companies appear to be equally affected by sales slumps in May, irrespective of their size.
- At the same time, sales problems were the clearest sign of crisis. When the crisis was severe, almost 90% of companies had to contend with a slump in sales. When the crisis was less severe, the figure is only 8%.
- Manufacturing companies had more severe sales problems than service providers (4.6 vs. 4.1).
- Similarly, supply chain instability and other production constraints affected the manufacturing sector more than the services sector (supply chains instability: 3.5 vs. 2.6 / production constraints: 3.9 vs. 3.0).
- As in March, liquidity bottlenecks played a minor role among the crisis symptoms in May. However, it should be noted that manufacturing companies were somewhat more affected than service providers (2.9 vs. 2.5).
- The challenges posed by the crisis in terms of difficult working conditions had eased considerably between March and May 2020. By May, differences by industry can no longer be identified.

In May 2020, 60% of the respondents were not confident about when the situation will return to normal

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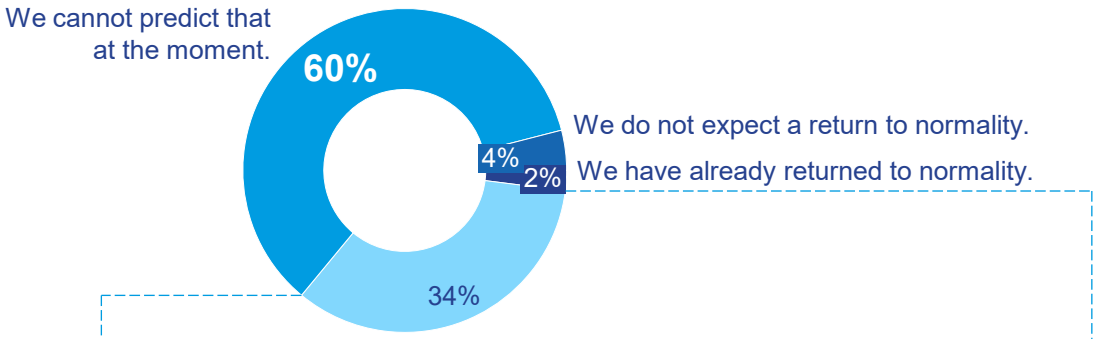
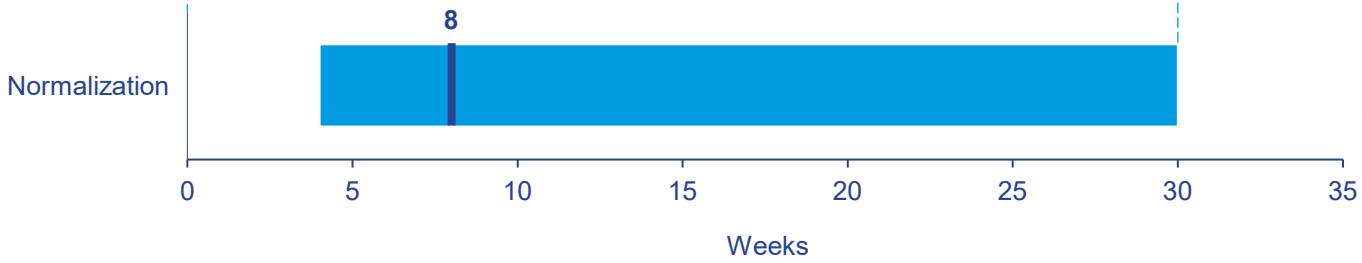
"In your view, by when do you think the situation in your company will have returned to normal?"



Time horizon within which normalization is expected



- Among the companies that saw themselves back to normal in May, the majority were small in size.
- The few companies that did not expect a return to normality are mostly from the manufacturing sector, with a focus on the automotive and automotive supply industries.
- The time horizon within which normalization was expected varied a lot. Some participants did not expect the situation to return to normal for more than a year.
- The expected time horizon tended to be longer in case of higher crisis exposure and poorer crisis management.
- Those who saw normalization in the distant future had already adjusted their 2020 targets in May.

Median

80% of the companies

By May 2020, 61% of companies increased the frequency in forecasting, 41% the level of detail

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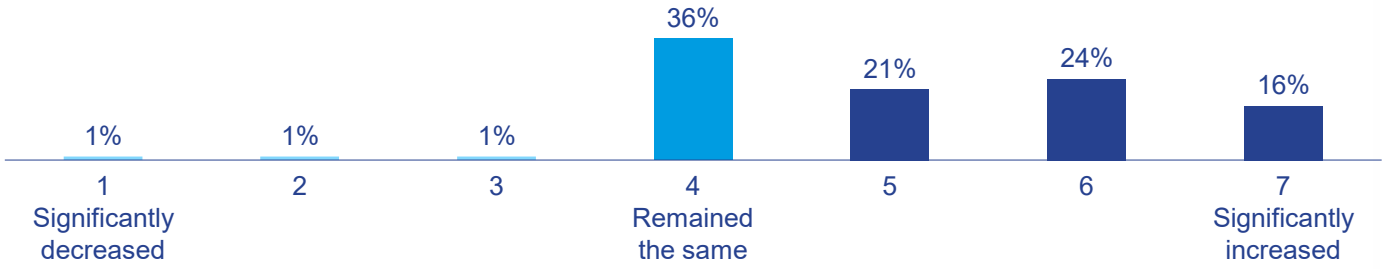
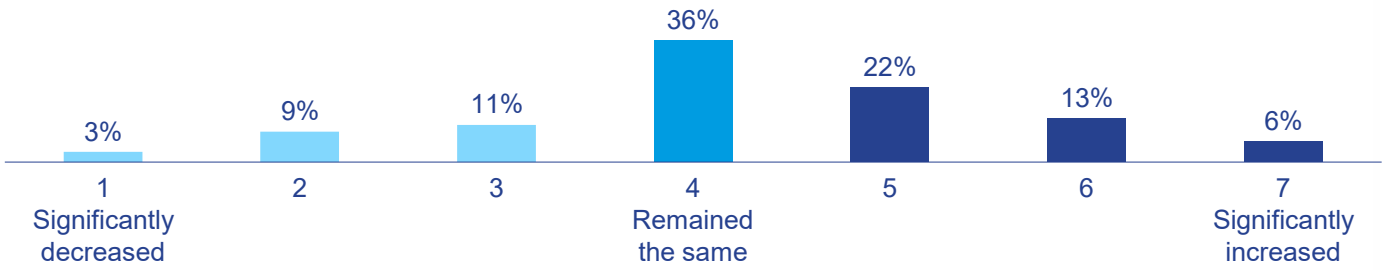
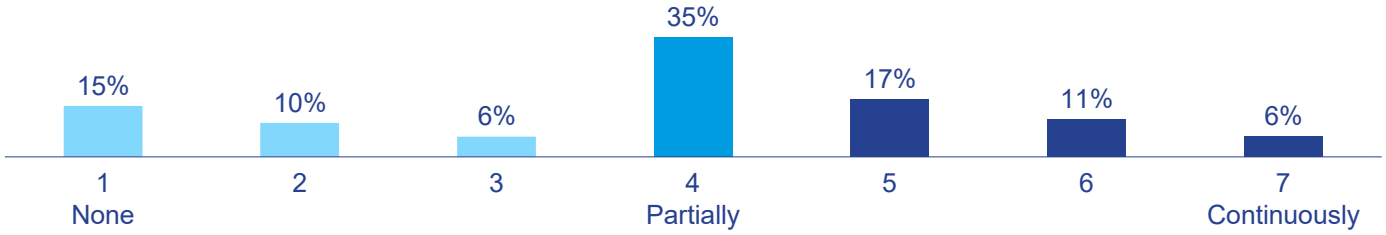
"How has frequency in forecasting changed in the Corona crisis?"



"How has the level of detail in forecasting changed in the Corona crisis?"



"To what extent do you use range in your forecast?"



- One way of responding to the crisis in management control was to adjust forecasting.
- In May, 61% of the companies in our sample have increased the frequency of their forecasts and only 3% have reduced it. The adjustment of the frequency was driven by the crisis impact: While 50% of the companies with a low crisis impact have made adjustments, 78% of the severely affected companies have done so.
- The level of detail in the forecasts was increased in 41% of the companies, while in 23% of the companies the trend was in the opposite direction. There is obviously no clearly dominant strategy here. The adjustment of the level of detail is also driven by the extent to which the crisis has affected the company: 50% of the companies only slightly affected by the crisis, but 76% of the heavily affected companies have made adjustments to the level of detail.
- 68% of the companies use range in the forecast at least partially, 17% work with them intensively.

On average, investments in digitalization were reduced significantly less than investments in other areas – some were even increased

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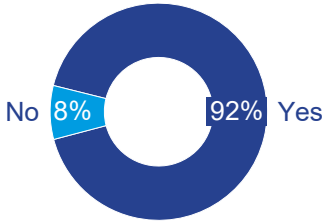
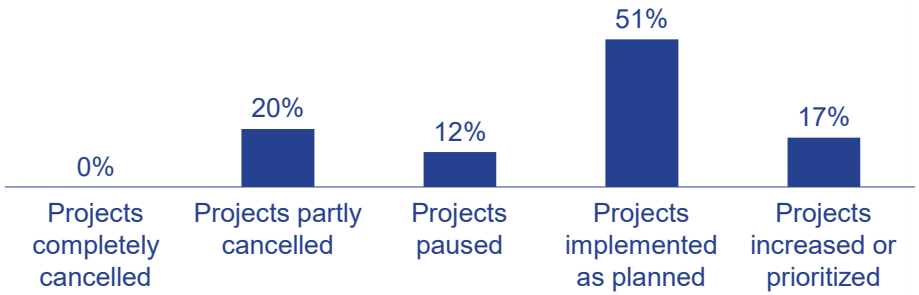
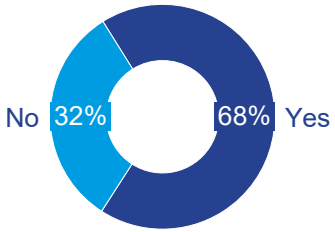
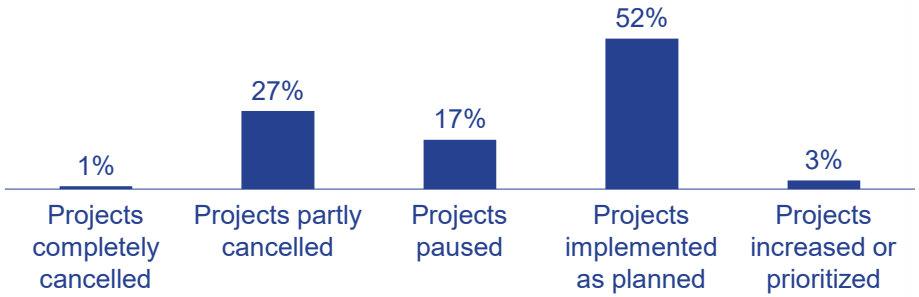
Digitalization projects



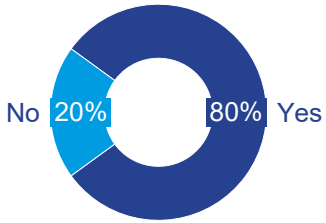


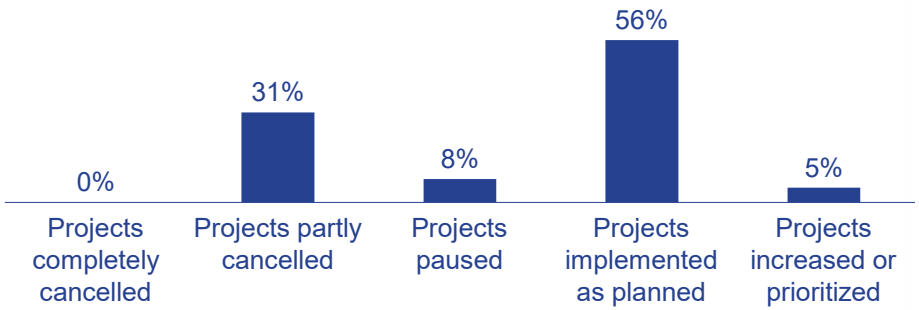
Sustainability projects





R&D projects





- It is interesting to ask how companies deal with investments planned before the crisis in the first period of the crisis. Specifically, we asked about projects in the areas of digitalization, sustainability and R&D.
- Investments in digitalization were reduced significantly less on average across all companies than investments in other areas. 17% of companies increased their investments in digitalization, while only 20% partially eliminated them.
- We also find a strong correlation with company size for all project types: While 76% of small and 74% of large companies implemented digitalization projects at least as planned, only 63% of medium-sized companies did.
- When it comes to sustainability projects, large companies in particular stayed on track: While only 48% of small and 49% of medium-sized companies carried out these projects at least as planned, the figure for large companies is 67%.
- 15% of small companies put R&D projects on hold completely, compared to only 9% of medium-sized companies and less than 2% of large companies.

In 2020, the CFOs and controllers surveyed continued to rate employee sentiment as good

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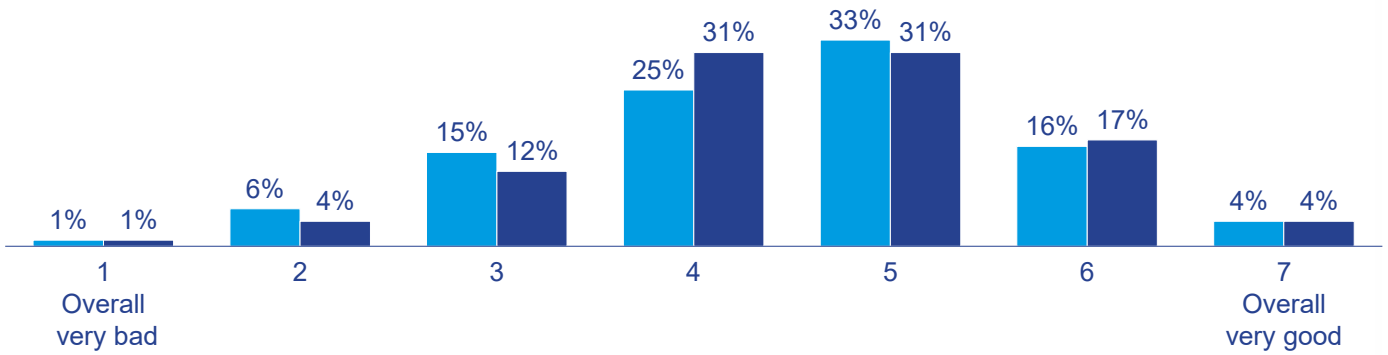
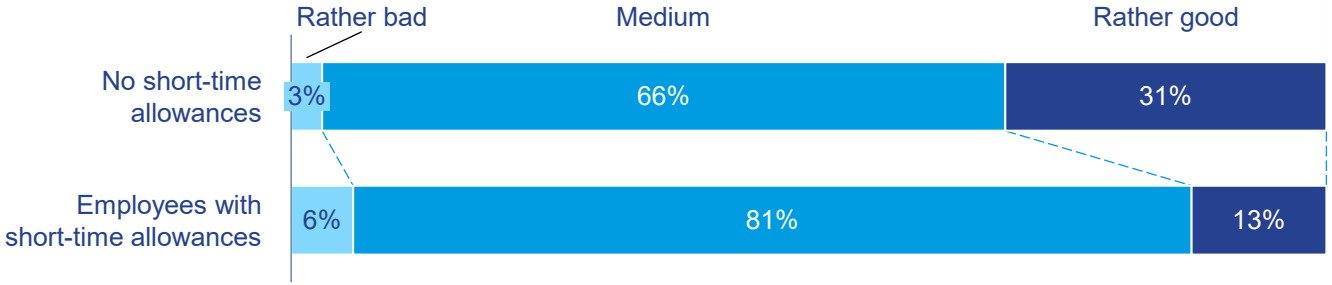
"How do you currently rate the sentiment among employees in your company?" – March vs. May 2020



Sentiment among employees in the company



- Over the course of the crisis from March to May 2020, the assessment of sentiment among employees has not changed significantly on average.
- The sentiment in companies severely affected by the crisis, with an average score of 4.1, was significantly worse than in companies less affected by the crisis (5.2).
- In the context of crisis-related layoffs, sentiment also deteriorated, albeit to a lesser extent than in the case of short-time work. In companies where there have already been layoffs, the mean assessment of sentiment is 4.1, and 4.7 if there have been no layoffs.
- Where working conditions were significantly more difficult due to the crisis, employee sentiment was worse (4.4 vs. 5.1) than where working conditions were less restricted.

Upper chart

March 2020 May 2020

In March 2020, almost half of the CFOs and controllers surveyed saw the crisis also as an opportunity – seven weeks later, the figure increased

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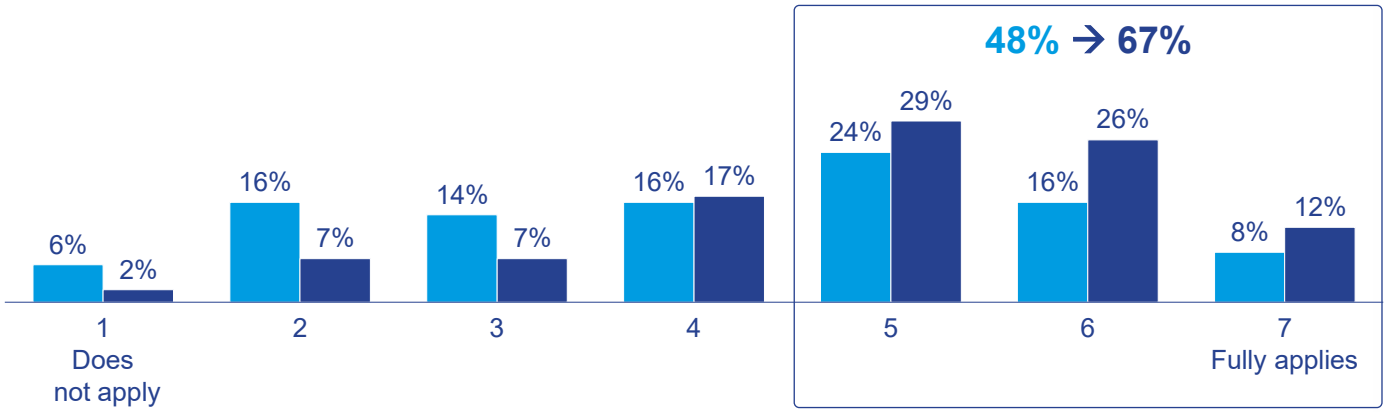
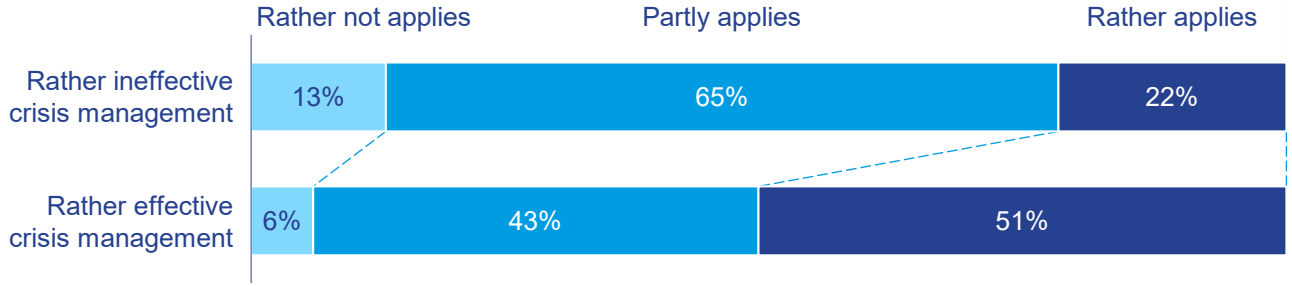
"We are currently also thinking about opportunities in the crisis." – March vs. May 2020



"We are currently also thinking about opportunities in the crisis." – according to the company's crisis management



- Opportunities in the crisis were addressed more frequently in service companies than in manufacturing companies (45% vs. 32%).
- In companies that were "steering on sight" in May, it was significantly less common to also think about the opportunities of the crisis. Where companies were almost completely "steering on sight", the opportunities presented by the crisis were a major topic in only 31% of cases. If people hardly or not at all "steered on sight", the share rises to 54%.
- Considering also the opportunities in the crisis goes hand in hand with a good sentiment among employees: In 47% of companies with a good sentiment among employees, there was a pronounced focus on opportunities in the crisis, but only in 13% of companies with a less good sentiment.

Upper chart

March 2020 May 2020

Controllers' thoughts on …

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… the opportunities for their company at the beginning of the Covid crisis (March 2020)

"I think it's also a **breath of fresh air** for many SMEs in terms of home office, digitalization, etc."

"**Opportunity to introduce modern methods**"

"**Digitalization is being driven more strongly**. Automation of production. Review of customers and refocusing on new customer groups. Reorganization of the company. Reorganization of sales."

"In the future **focused and efficient work on projects**, it will be easier to spend 2-3 days in the home office (we have open plan office)."

"**Focus on the essentials** is now much more of a given."

"**Strong together**, no matter what the crisis :-)"

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The Institute of Management Accounting and Control (IMC)

The Institute of Management Accounting and Control at WHU is one of the leading research institutes in controlling and strategy execution. Under the joint directorship of Lukas Löhlein, Marko Reimer and Utz Schäffer, the institute unites the efforts of associated professors, doctoral students, and other staff members to achieve shared goals in research, teaching, and business engagement.

We are deeply convinced that a strong cooperation between academia and management practice adds value for both sides. The institute's research and teaching therefore have a strong empirical focus. Our key platforms for cooperating with the corporate world include:

- The **Center for Controlling and Management** (CCM): Established in 2000, the CCM is a leading think tank for controlling and strategy execution. It brings together the heads of the Controlling Group and senior controllers at large German companies to discuss current challenges, trends, and solutions in controlling.
- The **WHU Controller Panel:** Launched in 2007 as a joint initiative of the IMC and the International Association of Controllers (ICV), the WHU Controller Panel derives benchmarks and identifies best practices in controlling. Regular surveys among approximately 1,000 CFOs and controllers enable us to track developments in controlling.
- The **WHU Campus for Controlling:** An annual conference hosted on our Vallendar campus, which is specifically aimed at CFOs, managers, and senior controllers. Our mission is to foster an intensive and innovative dialogue between corporate practice and research in the field of controlling.
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