



2023 FMI LABOR PRODUCTIVITY STUDY



September 2023

CONSTRUCTION LABOR PRODUCTIVITY: THE \$20 BILLION OPPORTUNITY



\$30 Billion to \$40 Billion

lost annually to poor productivity.

3 of the Top 4

internal factors affecting productivity are related to **planning, communication and collaboration.**

11% or More

of field labor costs are wasted, said **60%** of respondents.



4 of 5 Contractors

said **low-quality design/construction documents** are a top external factor stunting productivity.

79% of Contractors

could improve labor productivity by **6% or more** with better management.

50% Average Increase

in profitability from a **6% productivity improvement.**

KEY FINDINGS

Executive Summary

Construction is a labor-intensive business. Despite tremendous advances in design, coordination and management technologies, the physical installation of work in the field remains reliant on people. Of the nearly \$900 billion in construction put in place by labor-intensive contractors in the U.S. in 2022, FMI research suggests contractors lost approximately \$30 billion to \$40 billion to labor inefficiencies. At the individual contractor level, these labor productivity deficits translate to project and enterprise margin erosion.

Labor productivity is a challenge for the construction industry, and it appears to be getting worse. FMI's 2023 labor productivity study confirms the well-documented trend of productivity decline, with only 23% of respondents claiming labor productivity improvements over the last 12 to 18 months. Almost half of respondents (45%) saw declining labor productivity, and a third saw stable labor productivity trends in their businesses.

Labor productivity is the economic engine of labor-intensive, self-performing contractors. Labor is also the largest, riskiest, yet most controllable variable cost. Managed well, labor productivity can significantly improve bottom-line margins. Managed poorly, labor overruns, or exceeding labor budgets, can wipe out contractor profitability.

In this study, we explore the major challenges that must be addressed to improve productivity for the industry, including both internal and external obstacles that contractors face in their pursuit of performance optimization. Additionally, we identify key management practices and traits of high-performing contractors, including planning behaviors, project controls and support for the field.

To produce these findings, FMI surveyed more than 250 senior leaders from labor-intensive, self-performing contractors in summer 2023 to understand productivity challenges and best practices.

(See Appendix for details.)

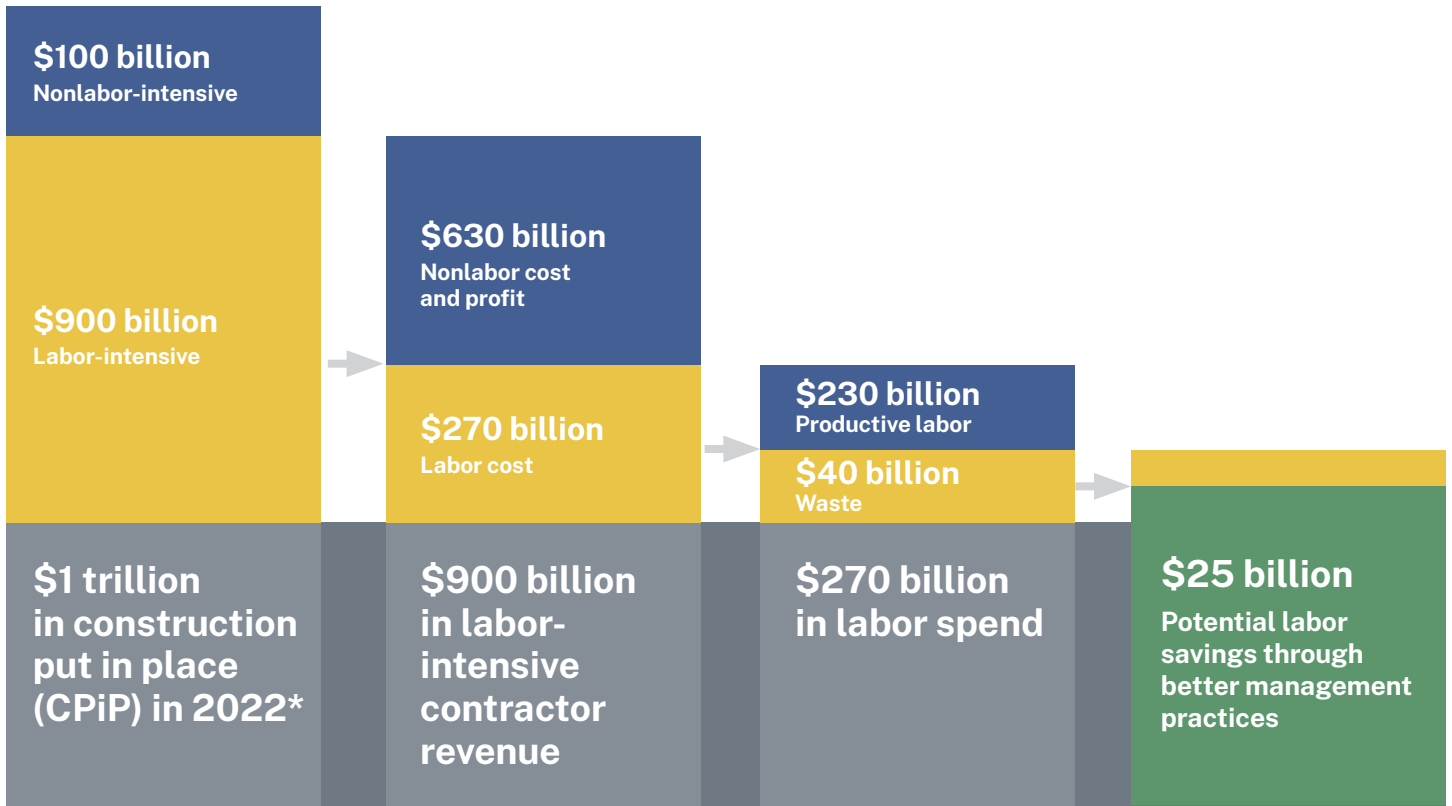
Part One of our study focuses on the industry challenges that work against optimizing labor productivity and management practices that correlate with labor and margin performance.

Part Two of our study, expected in the first quarter of 2024, will explore trends and challenges in off-site construction as they relate to improving labor productivity and performance.

Almost half of respondents (45%) saw declining labor productivity.



Waste and opportunity within the labor-intensive construction industry



Source: FMI economic analyses

*\$1 trillion in CPIP excludes single-family and improvements.



1

Productivity Drives Profitability



Contractors believe 11% to 15% of field labor costs are wasted or unproductive. Although it is unfair to expect contractors to reduce their waste or unproductive time to zero, respondents conservatively believe 6% to 10% of labor spending (\$15 billion to \$25 billion) could be saved through better management practices. In short, the potential for labor productivity improvement in construction is staggering.

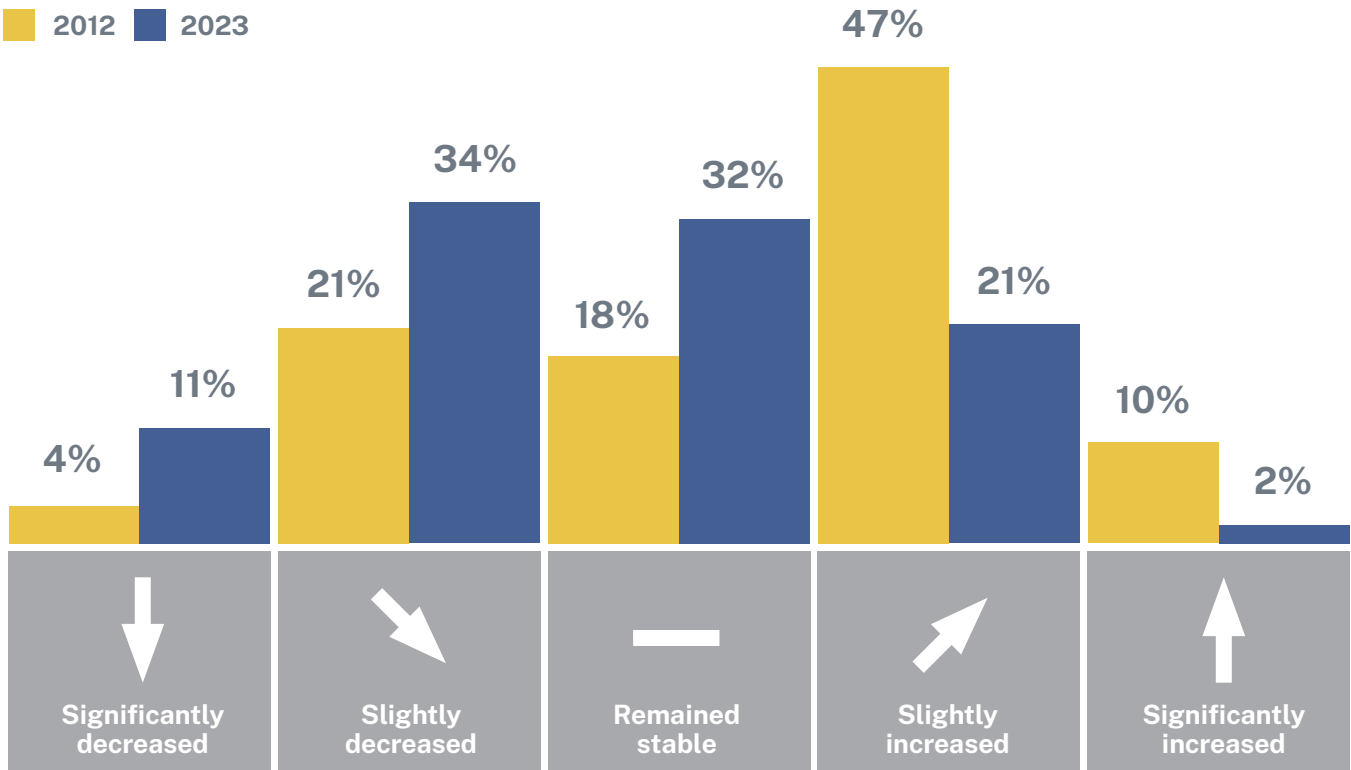
A University of Chicago examination of Bureau of Economic Analysis data found the value that each additional worker added to construction was **40% lower** in 2020 than in 1970. FMI data tells a similar story.

In 2012, 57% of those surveyed by FMI said productivity had slightly or significantly improved. By 2023 that figure fell to 23% (Exhibit 1). Similarly, in 2012 only 25% said productivity had slightly or significantly declined, and by 2023 that figure increased to 45%.

At the company level, improving labor productivity by **6% to 10%** can translate to a **2% to 3%** increase to the bottom line — in many cases, a **50% to 100%** improvement in profitability.

Exhibit 1:

The productivity trend moved from positive to negative over the past decade.



Source: FMI 2023 and 2012 Labor Productivity Studies

1.1 Key Challenges to Labor Productivity

Humans are the biggest driver of putting work in place, so it's no surprise that many of the top challenges, either internal or external, uncovered in our survey were directly related to people. First and foremost is finding skilled workers, especially in the field. As [FMI's 2023 talent study](#) revealed, 93% of firms can't find the workers they need, with the biggest gap in talent associated with field leadership.

Our labor productivity study backs that up with 63% of respondents citing lack of qualified craft labor as the No. 1 internal factor impacting productivity. After a lack of labor, contractors said their top internal struggles were associated with poor planning and communication by field management and project management, as well as subpar project team collaboration and site logistics.

"Labor is the biggest risk where costs can quickly accelerate," said Bo Walters, president of Alabama-based Dunn Construction, a heavy civil contractor. "Most problems stem from a lack of communication or how something is communicated."

Unlike the labor supply challenge, contractors have direct control over how their teams plan, communicate and collaborate across projects.

While it sounds simple to improve communication across teams, each construction project brings together unique partners to build a bespoke project in a unique environment. Therefore, achieving efficient and predictable collaboration at scale is often a daunting task.

Companies need to be innovative when it comes to addressing issues that are within their control. For example, Walters saw the need to

find different ways to reach field staff and communicate everything from company policies to short reminders about staying hydrated during hot days. He created a proprietary communications application that can push videos, emails, text messages and other alerts directly to workers, no matter where they're located or which shifts they're working.

"We had a problem of relaying our vision and maintaining culture," said Walters. "We had to figure out a way to push all this information through the smartphone and make it as easy as possible for our people to do their jobs. This app that we built, we feel like half of it is what I call people, and half of it is process. Both of those are equally important. If you're all processes, you have no fun. If you're all people, you're not productive. It is a big investment, but it's working."

“

I always like to say productivity is not an individual sport. It's a team sport. It's not a field issue, it's not an office issue, it's an us issue. One of our key focus points is to understand that everybody is dependent on the other people in the chain to really be efficient. To produce at max productivity, everybody needs to do his or her job.

Brian Hornung
Chief Operating Officer
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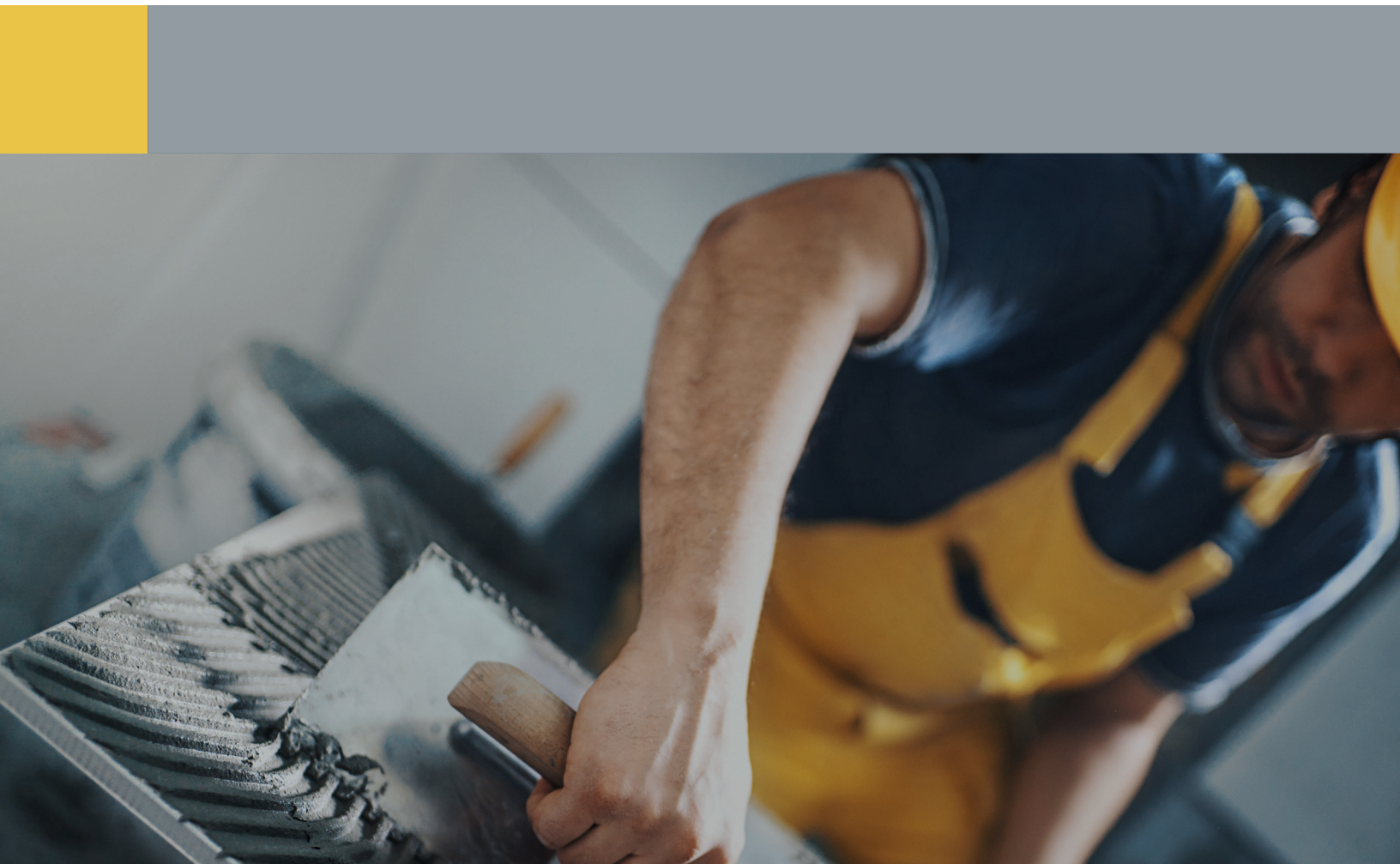


When it comes to external challenges, participants cited low-quality design and construction documents, outdated and unrealistic schedules, lack of coordination with general contractors, and change order inefficiencies as their biggest areas of concern.

Daniel Blosser, president of Riddleberger Brothers, Inc., a Virginia-based mechanical, electrical and plumbing contractor, uses its own internal building information modeling (BIM) department to coordinate design documents for use in its prefabrication processes. But even this proactive approach to coordination faces challenges.

“The whole BIM process is getting short-circuited because jobs are coming out, and the designs are incomplete,” he says. “That leads to a lot of labor inefficiencies and poor communication to the field in that the BIM department’s waiting on answers, or our project managers are waiting on answers, which in turn holds up the installation process. We’re having to do a lot of disjointed work.”

The central theme of these findings is weak project coordination. While these factors are not always within the direct control of self-performing contractors (typically engaged as a trade partner to a general contractor), there is plenty of opportunity to influence these factors through management rigor.



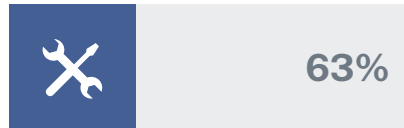
TOP 5 Challenges to Productivity

Internal

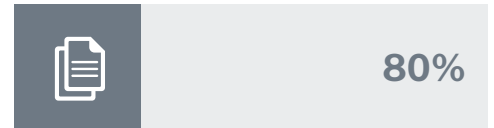
External

“ While it is easy to blame general contractors for these challenges, universal acquiescence to these issues creates the risk of victim mentality. Construction is a team sport. The best trade contractors have disciplined management practices for communicating with and influencing general contractors. When schedules compress and change orders back up, high-performing trade contractors step up and are firm but fair in letting general contractors know what is needed to get the project back on track.

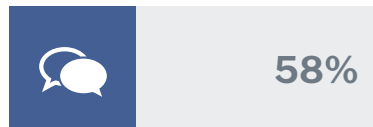
Tyler Paré
Partner
FMI



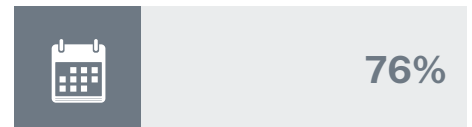
Lack of qualified craft labor



Low-quality design/construction documents (plans and specs)



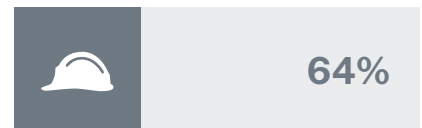
Poor planning and communication by field management



Schedule challenges



Poor planning and communication by project management



General contractor



Poor project team collaboration/teamwork



Change order inefficiencies



Poor site logistics coordination



Other trades

2

How to Solve the Labor Productivity Problem



2.1 Project Labor Budget Performance

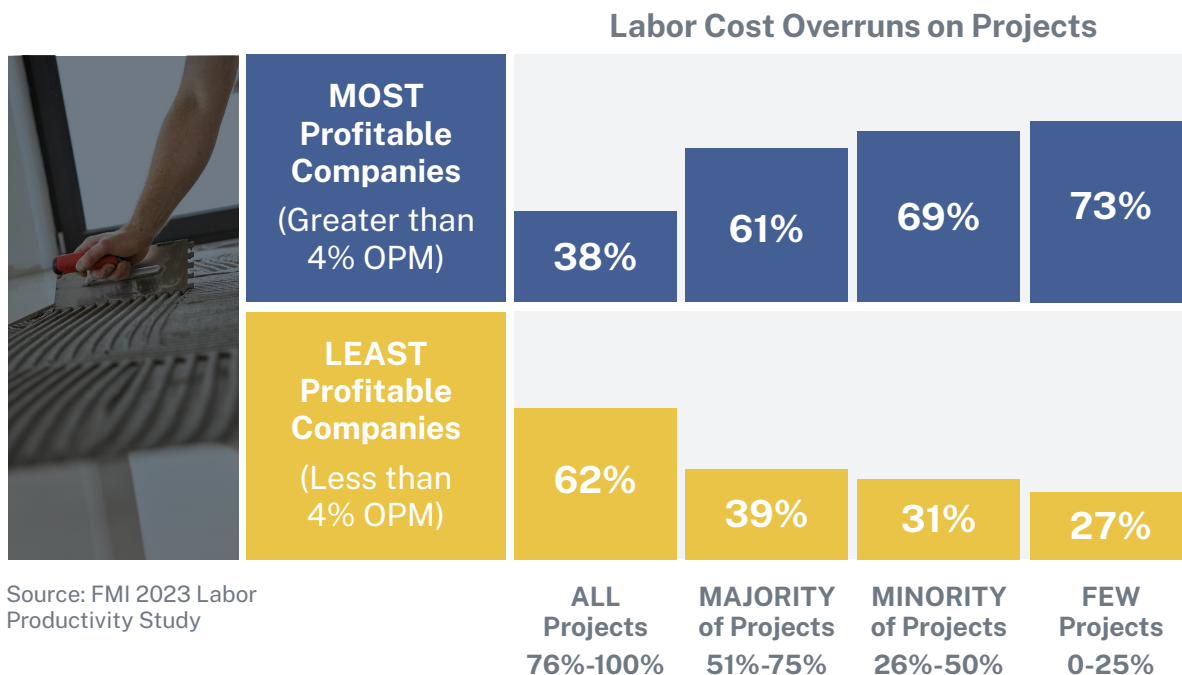
Contractors are in the labor management business, and understanding labor costs has a clear, direct effect on profitability. One of the ways FMI assesses the overall efficiency of labor-intensive contractors is how regularly they meet or beat estimated labor budgets.

When projects overrun on labor budgets, project margins suffer. If project labor overruns are a common occurrence, enterprise profitability suffers. This obvious connection between labor performance and profitability is confirmed through contractor feedback in our study. Those firms with fewer labor overruns tend to be more profitable.

Avoiding labor overruns on a singular project can be managed by experienced project and field leadership. However, avoiding labor overruns at scale across a large number of projects requires organizational standards for proactive planning and project controls.

Exhibit 2:

Contractors with fewer labor cost overruns tend to have higher operating profit margins (OPM)



The average operating profit margin (OPM) in this study and for self-performing contractors across the industry is 4%. Our proprietary database of financial benchmarks shows the historical norm for OPM is 4% to 5%. In this study, we use this as a benchmark for characterizing above-average contractors, or those with OPMs above 4%, while those under this threshold are considered below-average performers.



2.2 Planning Is Critical

You only get one chance to start a project with confidence and momentum. Projects that fall behind early rarely make miraculous recoveries. The discipline of in-depth, collaborative field and office planning prior to mobilization (pre-job planning) is one of the greatest influences on labor productivity.

“The buck really stops with the staff on the ground,” explains Kyle Young, president at Acoustic Ceiling & Partition, an interior finishing contractor in Westerville, Ohio.

“It’s important to have a kickoff to get buy-in, doing it early and often,” Young says. “It hinges on pre-job planning and something as simple as a flowchart. We put in place all these best practices to improve the bottom line, but it’s also helped us grow in volume and through acquisitions.”

In FMI’s research and industry experience, the critical missing link is often early, in-depth involvement, engagement and buy-in from field leaders.

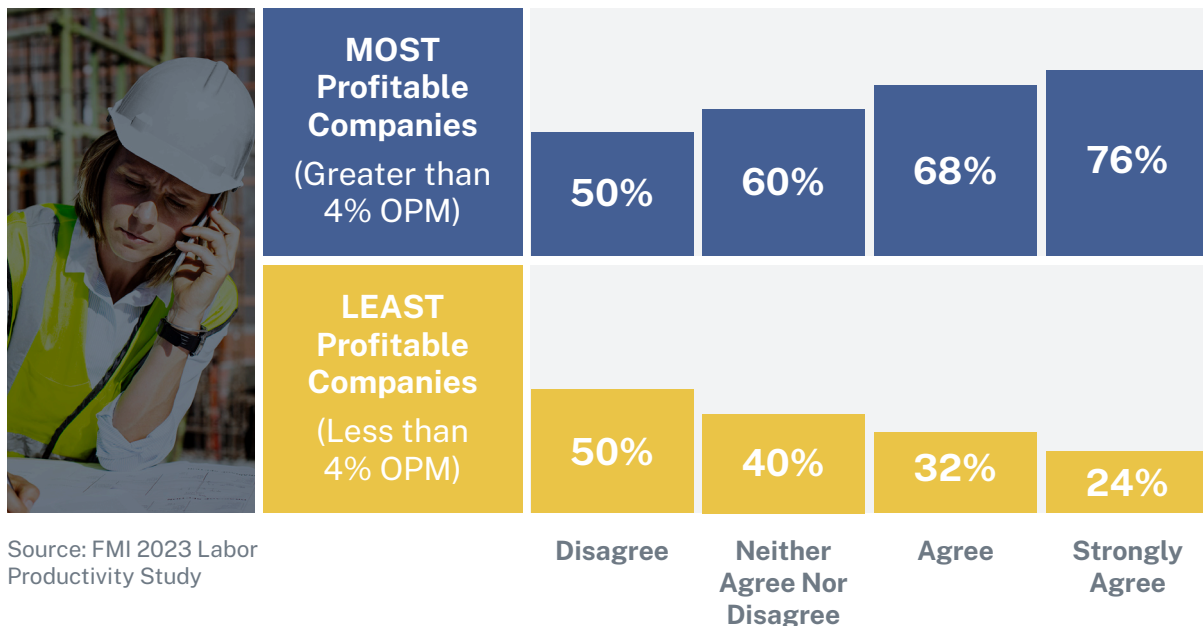


This has allowed Young and his management team to shift from managing work day to day to forecasting backlog and working toward the company’s overall vision.

Young is right. Our data shows that the earlier field leaders are involved and the better prepared they are prior to mobilization, the higher the profit margins. The percentage of contractors with OPMs greater than 4% steadily increases along with their field teams’ levels of readiness. (Exhibit 3)

Exhibit 3:

Field manager preparedness as an indicator of OPM



However, field managers who shoulder the stress of on-site execution are particularly susceptible to burnout. Our research found that executives expect 30% turnover for field managers over the next five years, which means that keeping staff engaged and providing the right support will be crucial.

Field leaders often manage more than seven figures in project labor costs annually. If field managers are not supported with the resources and information needed to be successful, it is difficult to expect them to take ownership of project outcomes.

In fact, if field managers feel like they are repeatedly set up to fail on projects, they are at high risk of being lured away by more organized competition. Conversely, companies that do a great job of supporting the field and empowering field leaders to engage in and own the planning effort have a much greater likelihood of attracting and retaining top talent.

Look-ahead planning, typically in three- to six-weeks' intervals, maps the details of materials, labor, equipment and information needs to ensure that the project timelines and responsibilities are clear. The objective is for field managers to communicate plans to the project team to help them understand what resources are needed and at what time to support the job.

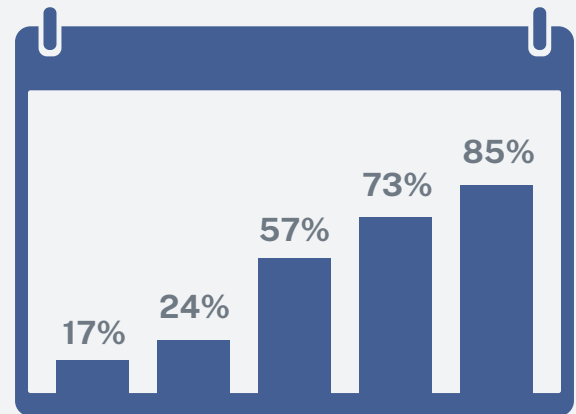
Not surprisingly, contractors who have built discipline around look-ahead planning in the field have fewer resource emergencies. These resource-related delays are one of the biggest drivers of labor productivity losses. When a crew doesn't have what it needs in terms of information, access, materials, equipment or labor, that manpower is idle, and productivity drops.

In Exhibit 4, we compared the duration of look-ahead planning and how frequently field managers have resource emergencies. Results show that the further out contractors plan, the fewer emergency events they have on a weekly basis. Of the contractors that do minimal planning, 83% have resource emergencies multiple times a week, while only 15% of contractors that plan for three weeks or beyond have resource emergencies multiple times a week.

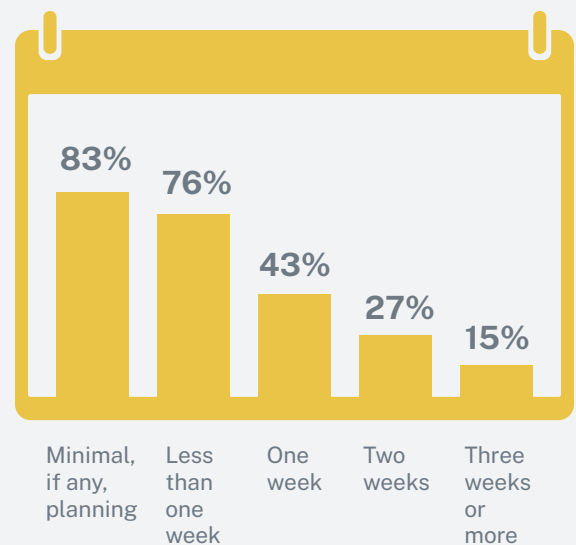
Exhibit 4:

Duration of look-ahead planning and correlation with frequency of emergency needs

Emergency needs **LESS** than once a week



Emergency needs **MULTIPLE** times a week or more



Source: FMI 2023 Labor Productivity Study

MINIMAL duration of look-ahead planning = **MORE** emergency need.

GREATER duration of look-ahead planning = **LESS** emergency need.

2.3 Cost-to-Complete Forecasting: A Differentiator

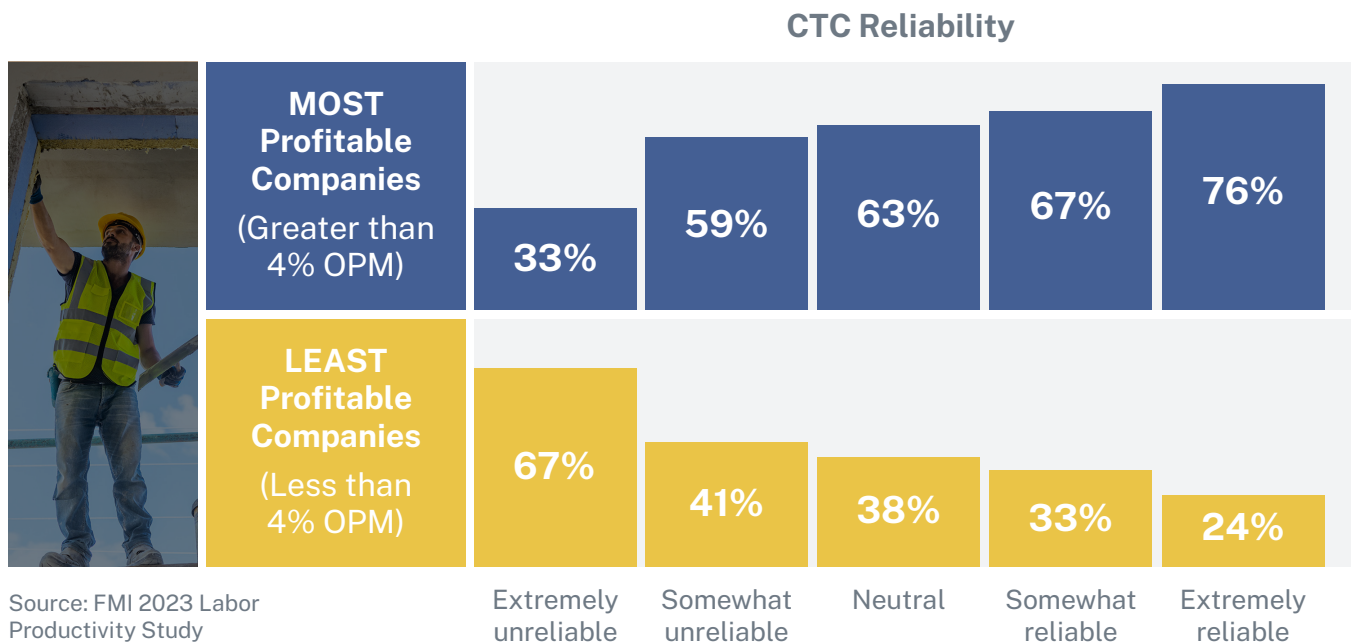
In addition to field leader preparedness and detailed look-ahead planning, accuracy of cost-to-complete (CTC) forecasting correlates with higher profit margins. Cost forecasting discipline is a key marker of contractor maturity and sophistication. Contractors that can accurately forecast their costs know where their projects stand and what it will take to finish the job.

That level of confidence requires accurate tracking of installed quantities and labor hours from the field, reliable cost reporting and strong communication between field managers and project managers.

Exhibit 5:

The relationship between accuracy of cost-to-complete forecasts and higher margins

CTC Reliability vs. Operating Profit Margin



The same discipline necessary for producing accurate cost forecasts is also required for producing meaningful labor productivity feedback for field leaders. When field leaders know how they're doing in terms of labor productivity, they take ownership of labor performance and can influence it accordingly.

Alternatively, if field managers do not receive regular feedback on labor performance, it is impossible for them to proactively manage labor. Furthermore, when field managers know that the time they spend recording installed quantities and actual labor hours in the field will be reported to them in the form of useful labor productivity feedback, they are much more likely to accurately capture field data.

Not surprisingly, contractors who provide regular labor productivity feedback to their field leaders also have greater confidence in the accuracy of their cost forecasting. Of those surveyed, 78% of contractors with extremely reliable cost-to-complete information receive productivity feedback weekly or daily.

3

What Top-Performing Companies Do Right



Optimizing labor productivity is an organizational and cultural journey that requires teams and individuals to adjust their planning and communication habits. The infrastructure that allows this behavioral change to take hold and scale is underpinned by disciplined management practices, proven to support the field, minimize resource-related delays and optimize labor productivity.

1

Pre-job planning:

This requires consistent and thorough translation of project information from estimating to operations, followed by in-depth planning by project teams to develop strategies for optimizing labor productivity and project performance.

2

Look-ahead planning:

This needs a weekly cadence of field leaders communicating resource needs (labor, equipment, materials, subcontractors and information) for upcoming activities to be coordinated and supported by project management.

3

Daily goal setting:

Field leaders establish and communicate clear, quantifiable production expectations and objectives for crews on a daily basis.

4

Labor productivity tracking and feedback:

Field leaders and project teams need regular reporting of productivity information in digestible formats so they can discuss project performance and detect labor risk early. This requires well-vetted budgets with hours and quantities prior to mobilization, accurate reporting of time and quantities by field leaders throughout the project, and reinforcement of the right behaviors.

5

Cost-to-complete forecasting:

This critical report is based on a monthly analysis of the costs incurred to date, the percentage of the job that is completed, accurate forecasting and reestimating the cost to complete the remainder of the scope of work. Accuracy of the cost-to-complete forecast increases with up-to-date direct cost accounting, early buyout and locked in pricing, field input on the remaining work, and accurate productivity tracking that can be utilized to project labor costs.

6

Exit strategy:

During this phase, the project team meets to reenergize, focus and develop a plan to finish a project on time and mitigate the risk of late project margin fade. This would typically occur when the project is near 80% completion.

7

Post-job review:

After project closeout, this meeting shares and documents the lessons learned, provides production feedback to estimating, and captures lessons learned for future success and continuous organizational improvement.

Having standard operating procedures documented is one thing, but getting the entire organization to buy in to doing things consistently is another. Beyond establishing the fundamental expectations for project execution, contractors must invest heavily in training their teams to understand the importance of execution consistency, the benefits to the individual employees, and how to successfully operate within their systems.



Exhibit 6:

Benefits of investing in operational practices that drive labor productivity



Increasing margins.



Becoming a destination employer that can more easily attract and retain needed workers.



Having consistent systems for onboarding new employees.



Accelerating the development of field leaders and reducing field succession risk.

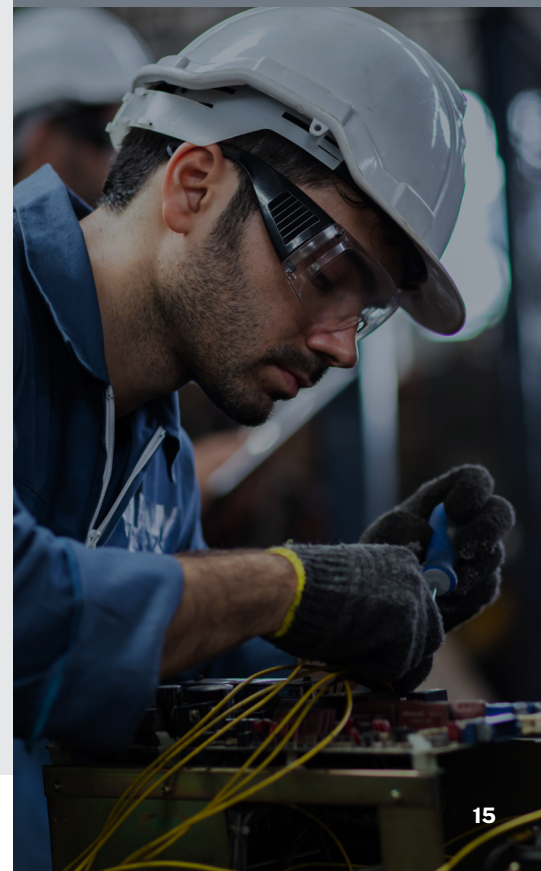


Improving communication and coordination to foster an engaging culture that breeds success.



Increasing consistency in project outcomes.

Having standard operating procedures documented is one thing, but getting the entire organization to buy in to doing things consistently is another.



What has had the largest positive impact on your company over the last 18 months?



Implementation of Technology and Digital Tools



Enhanced Pre-construction and Planning Efforts



Leadership and Communication



Workforce Development and Training



Prefabrication and Off-Site Construction

4

Building a Better Future

Not surprisingly, 70% of contractors in our study highlighted improving planning and execution practices as their top priority for adjusting operations over the next 18 months. Additionally, leadership training and development was the second-highest priority listed.

Contractors that establish sound operating processes and train their people to be successful in their systems perform better than their peers. This takes significant time and discipline. If done well, however, it can have a significant impact on the bottom line and improve employee engagement and retention.

High-performing companies stand out with their focus on productivity and operational excellence. They're hyperaware of the connection between profitability and labor productivity, and they take steps to maximize both in the safest and most logical manner possible. In most situations, high labor productivity delivers the best project outcomes—that's where the money is made.

By getting a handle on productivity, giving workers the tools needed to be successful, and diligently planning for jobs, companies can improve margins and profitability. In an industry where one bad job can make or break a company, harnessing the power of your biggest asset – your people – will ensure you continue to successfully operate and thrive.

As you look to the future and think about your field operations and labor productivity, ask yourself:

- 1 Are you consistently meeting or beating the labor budgets on your projects?
- 2 Is there an opportunity to improve the labor productivity on your projects?
- 3 Do you have documented, standard management practices in place for optimized planning, communication and collaboration in the field?
- 4 Have your project teams been trained to those standards to where these practices are consistently implemented on the vast majority of your projects?
- 5 What would be the financial impact of improving labor productivity at your organization by 5% to 10%?



RESEARCH TEAM AND AUTHORS



Michael Keller focuses on providing expert guidance on strategic planning, productivity and operational excellence. He helps organizations recognize maximum operational potential and find data-driven, proactive solutions to complex problems.

Before FMI, Michael spent several years in commercial construction project management, completing projects ranging from minor tenant improvements to large health care projects.

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Tyler Paré leads FMI's Performance practice, which helps contractors optimize profitability and manage risks. His team focuses on the major performance drivers for contractor organizations – operations, risk management, compensation and technology – helping client organizations secure and execute work profitably, pay and incentivize people effectively, and collaborate and share information efficiently.

As a consultant with FMI, Tyler leverages his construction experience and business knowledge to assist contractor clients in implementing work acquisition and project execution best practices in support of competitive strategy.

Tyler also facilitates contractor executive peer groups, which bring construction industry leaders together to collaborate and learn from each other.

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Jake Howlett is an analyst in FMI's performance practice where he focuses on facilitating data analytics processes for client deliverables and internal projects. His expertise is in front-end analysis and backend data process development.

While obtaining his masters degree he engaged in data consulting projects as part of capstone projects. Jake also comes from a construction background, working for his family construction contracting business in the private wellness, pool and spa industry.

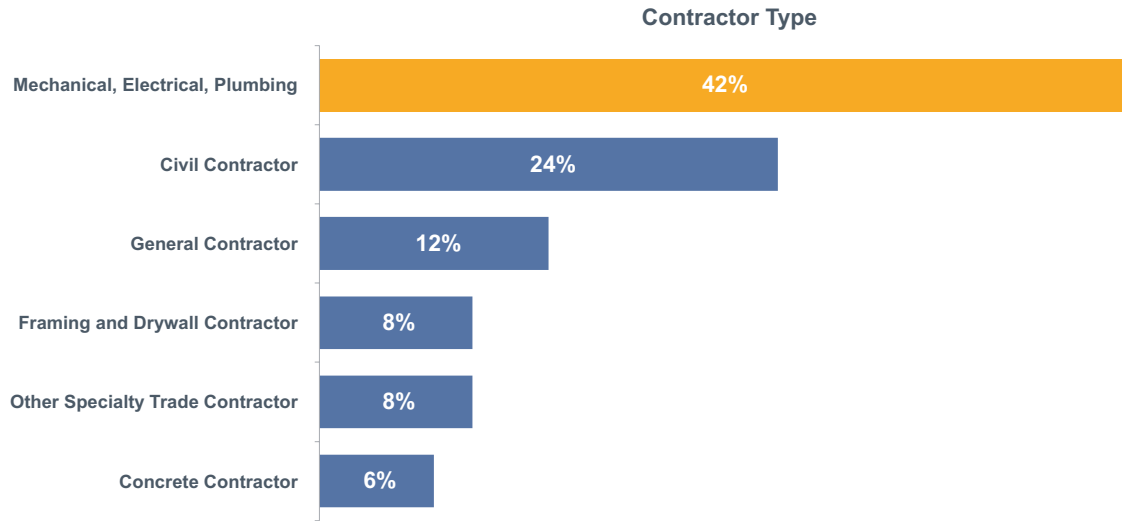
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Appendix



Response Rate by Contractor Type

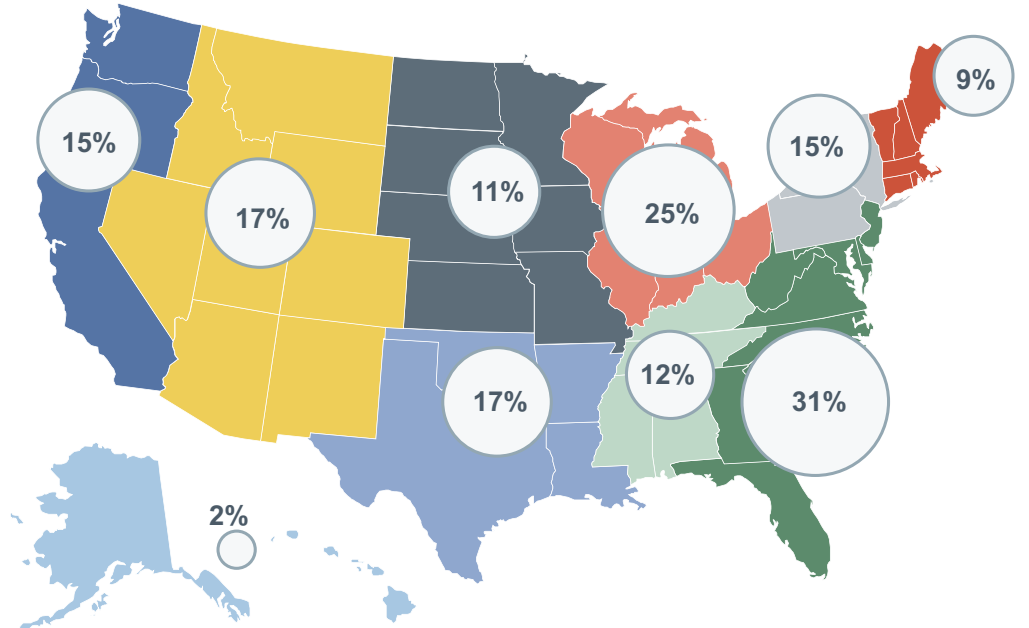
259 contractors responded to the productivity survey, the largest percentage being mechanical, electrical, plumbing (MEP) contractors at **42%**.



Other specialty trade category includes: Roofing, Masonry, Glass and Glazing, Building Envelope, Insulation, Miscellaneous Metals, Marine and Steel Erection

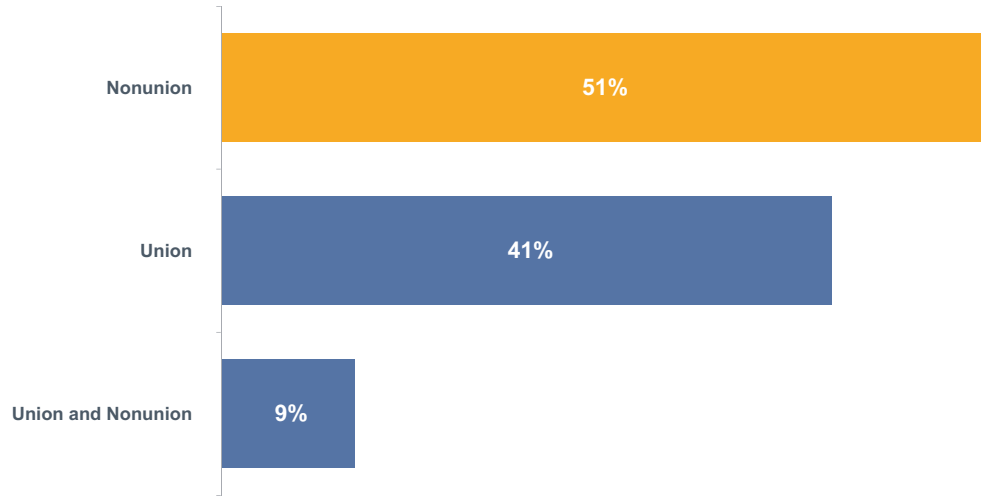
Response Rate by Contractor Region

FMI received strong response rates **across all geographic regions** in the U.S.



Response Rate by Union Affiliation

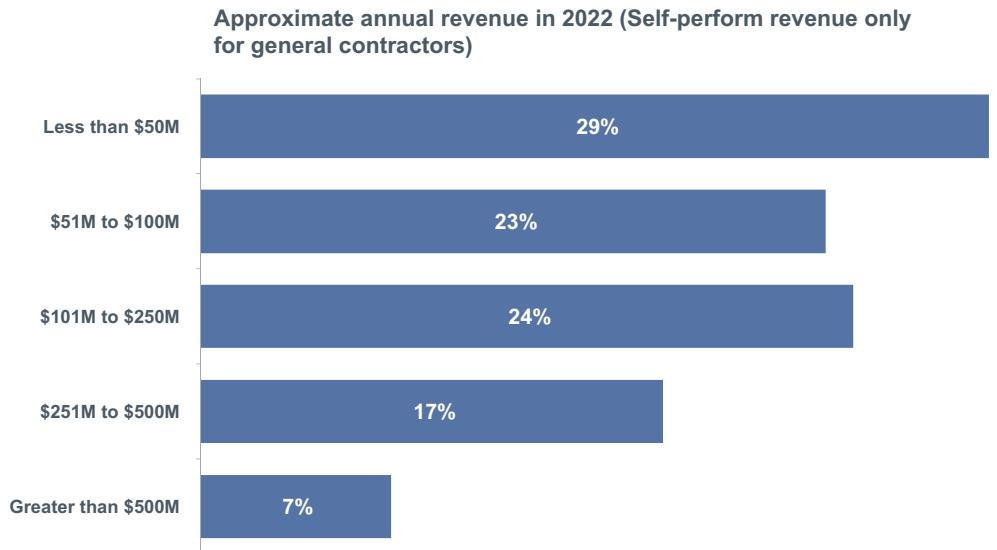
Nonunion contractors represented **51%** of the survey respondents.



Percents may not total 100 due to rounding throughout.

Response Rate by Revenue Distribution

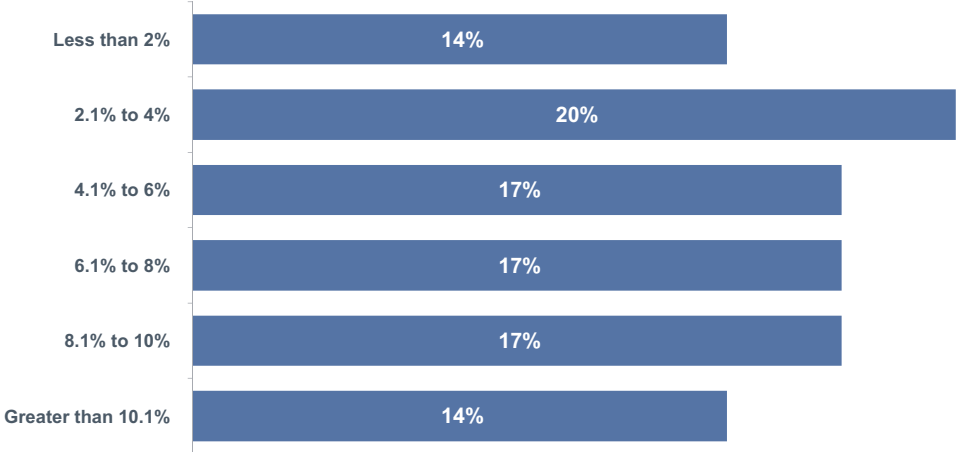
The distribution of contractors in the survey with 2022 revenue above and below **\$100 million** is nearly even – **48% to 52%**.



Response Rate by Operating Profit Margin

The highest concentration of contractor operating profit margin is between **2.1% to 4%**, although the median operating profit margin is **4.1% to 6%**.

Approximate operating profit margin in 2022 (Does not include Paycheck Protection Program or Employee Retention Credit funding)





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