



AMCA COVID Impact Survey - Member Report

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Introductory remarks:

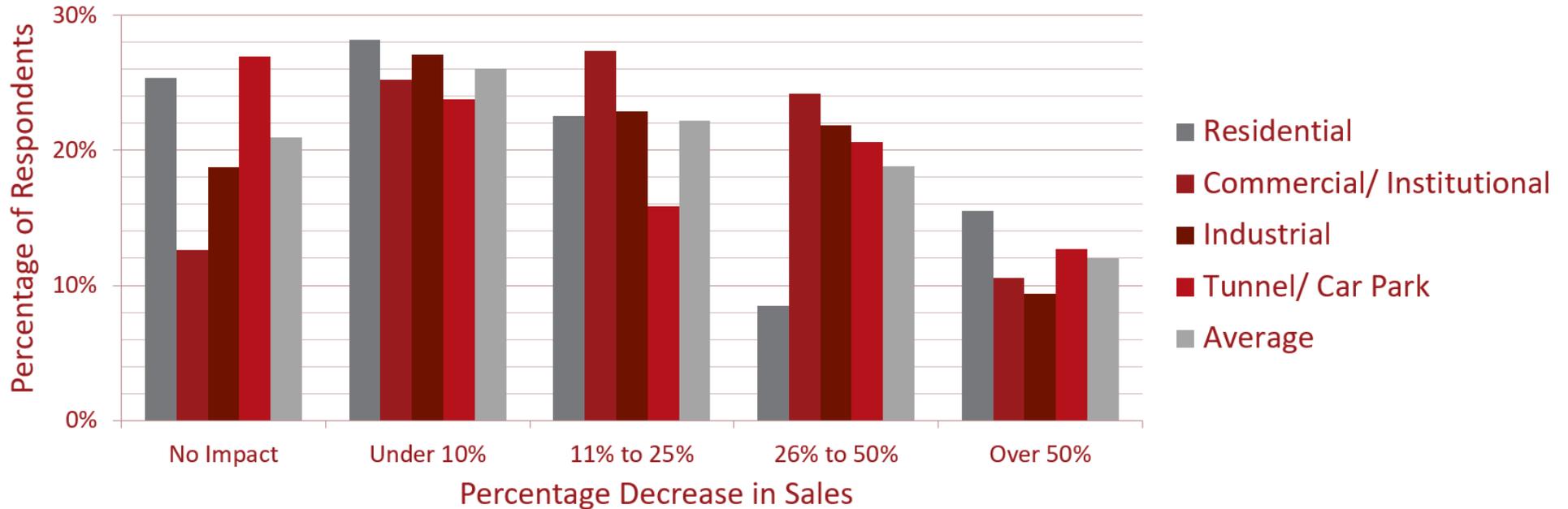
- The objective of the survey was to assess the status of AMCA members a few months into the coronavirus disease 2019 (COVID-19) pandemic.
- The survey consisted of 20 questions, some of which were compound (multi-part), and there was a fairly even distribution of quantitative and qualitative questions.
- The survey was conducted between June 24 and July 3, 2020.
- The survey was sent to approximately 700 members in 33 countries. The list of recipients was determined by selecting one – or in cases where additional contact information was available, two – primary contacts from each member company. There were 107 survey respondents from 19 countries, resulting in a response rate of 15% (individuals) and 57% (countries).
- The survey was provided in three languages – Chinese, English, and Korean.
- The breakdown of respondents by region: 41% North America, 37% Asia, 11% Middle East, 8% Europe, 2% Latin America.
- The breakdown of respondents by job function: 42% general management, 33% engineering, 19% marketing/sales, 7% other. Seventy-five percent of the respondents are senior managers or executives.
- The breakdown of respondents by business type: 44% commercial/institutional, 35% industrial, 13% residential (single- or multi-family), 8% tunnel/car-park ventilation.

Findings not included in diagrams below:

- Most respondents indicated they will avoid face-to-face meetings for six to 12 months.
- Most respondents feel the pandemic has created new opportunities for the air-systems industry. Many respondents feel AMCA can develop advanced ventilation tactics and help members demonstrate and promote ventilation's impact on building safety.
- Regarding their business returning to pre-pandemic levels by 2021, respondents in North America are the most optimistic, respondents in Asia are somewhat optimistic, and respondents in Europe are the least optimistic.
- Regarding questions respondents said they are receiving from customers, most are focused on AMCA-specific services, air systems' ability to mitigate COVID-19, the impact of COVID-19 on production, and considerations such as cost optimization, supply-chain disruption, and impact on the economy.
- There was a general sentiment that changes to codes, standards, and regulations regarding increased ventilation rates and filtration requirements will be long-lasting.
- Many respondents reported the pandemic has led their company to increase measures related to employee safety and working conditions.

On those areas of your business that have been impacted, how severe of a downturn in sales have you had so far?

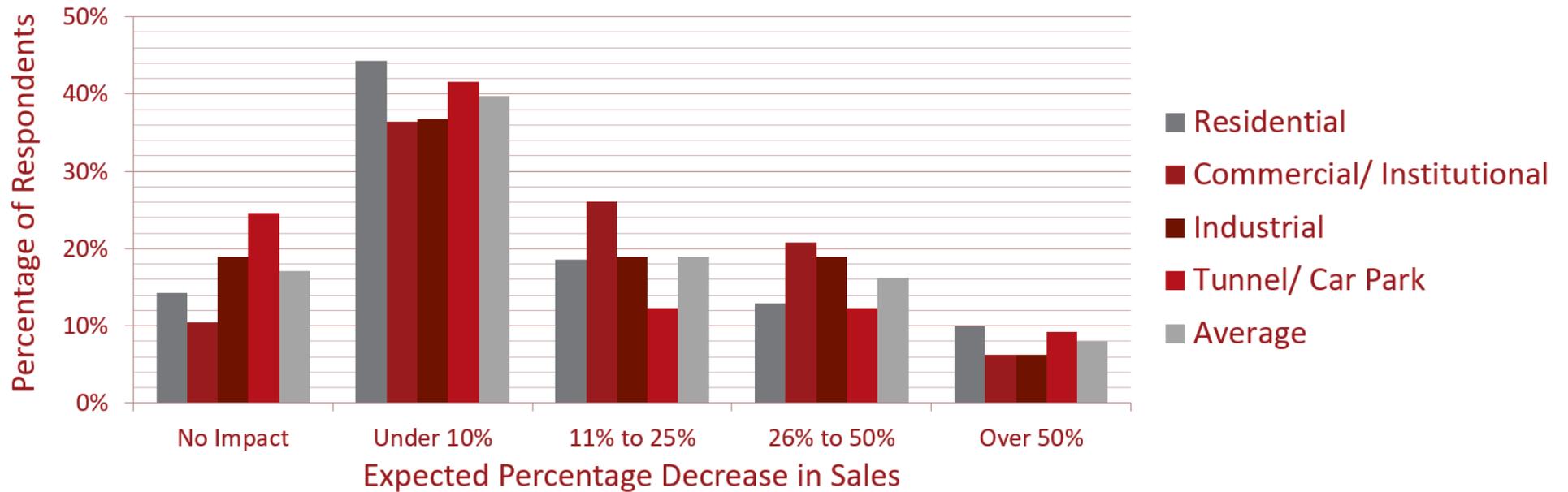
Downturn in Sales to Date, by Business Type



The chart above shows the percentage of respondents—separated by market category—who reported experiencing a decrease in sales. For example, the dark-gray bar on the far left of the chart indicates that 25 percent of the respondents who manufacture residential products reported seeing no impact on their sales from the pandemic. Overall, about 70 percent of the respondents said there has been an impact on their sales related to the COVID-19 pandemic of 25 percent or less.

On those areas of your business that have been impacted, how severe of a downturn in sales do you expect to have six (6) months from now?

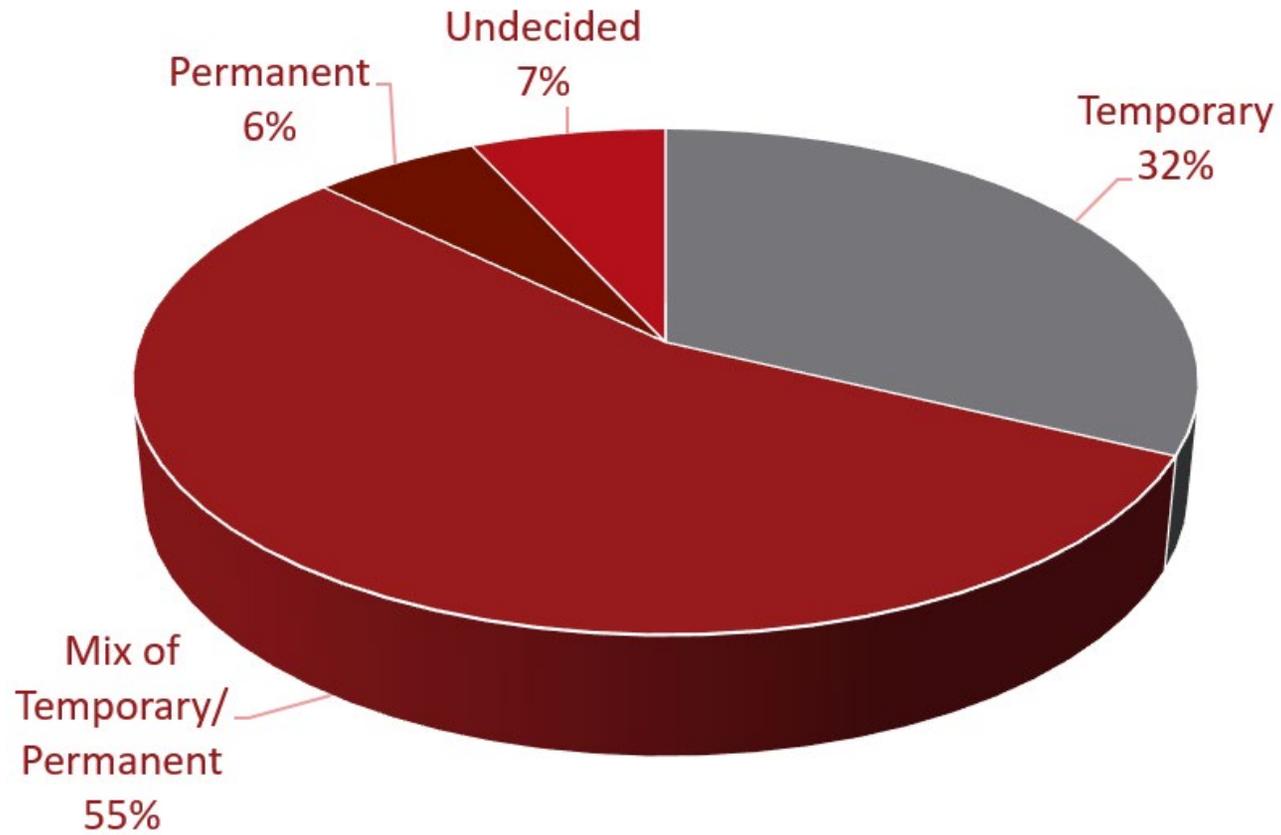
Downturn in Sales Expected 6 Months from now, by Business Type



The chart above shows the impact on sales the respondents—separated by market category—expect in six months’ time. For example, the dark-gray bar on the far left of the chart indicates that 14 percent of the respondents who manufacture residential products expect no impact on their sales related to the pandemic in six months. Overall, about 56 percent of the respondents reported feeling COVID-19 will not have a severe impact on their sales (10-percent decrease or less) in six months’ time.

Do you feel the changes to our industry brought on by the COVID-19 pandemic are temporary or permanent? What are some of the permanent changes your business will most likely incur?

Distribution of Responses



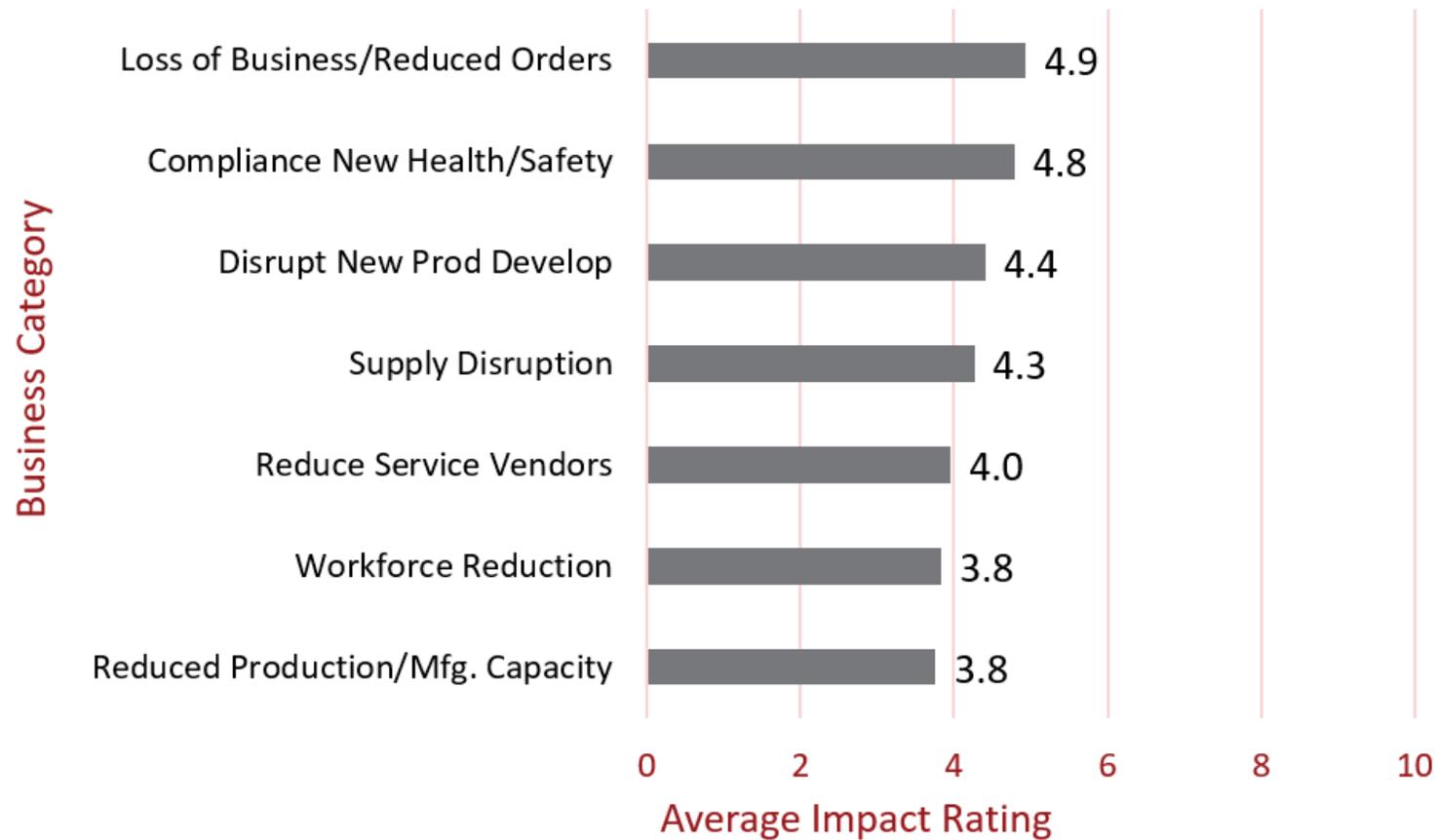
Anticipated Permanent Changes	% of Respondents
More staff working remotely	20%
More focus on air filtration/quality	13%
Workspace changes	13%
Changes to sales/marketing	12%
Reduced/no travel	8%
More virtual meetings	8%
Higher use of infection mitigation	5%
Increased sanitation/cleanliness	4%
Permanent business closures	4%
Less face-to-face contact	3%
Increased automation/technology	3%
Unsure	7%

Following are representative comments from respondents:

- “The impact of the epidemic has intensified market competition. Subsequent cost reduction and efficiency increase are continuous activities for the survival of enterprises.”
- “A lot of people will continue to work from home even when things are normal. This will result in lower demand for office space.”
- “Some temporary restrictions of the use of air-conditioning equipment have been enforced, for public-health reasons. These short-term restrictions started a campaign against mechanical building ventilation, which is perceived as a threat to the occupants.”
- “Commercial sector will be severely hit. Social distance will impact the construction of commercial centers, office buildings and oil related industries.”
- “Social changes that impact peoples’ beliefs and may impact their buying habits/behaviors.”

On those areas of your business that have been impacted, how severe of an impact would you say that COVID-19 has had?

Average Impact Rating to Business by Category



The chart above shows the degree to which respondents believe COVID-19 has impacted different aspects of their business. The rating scale ranged from 0 (no impact) to 10 (severe impact), with a rating of 5 indicating moderate impact.

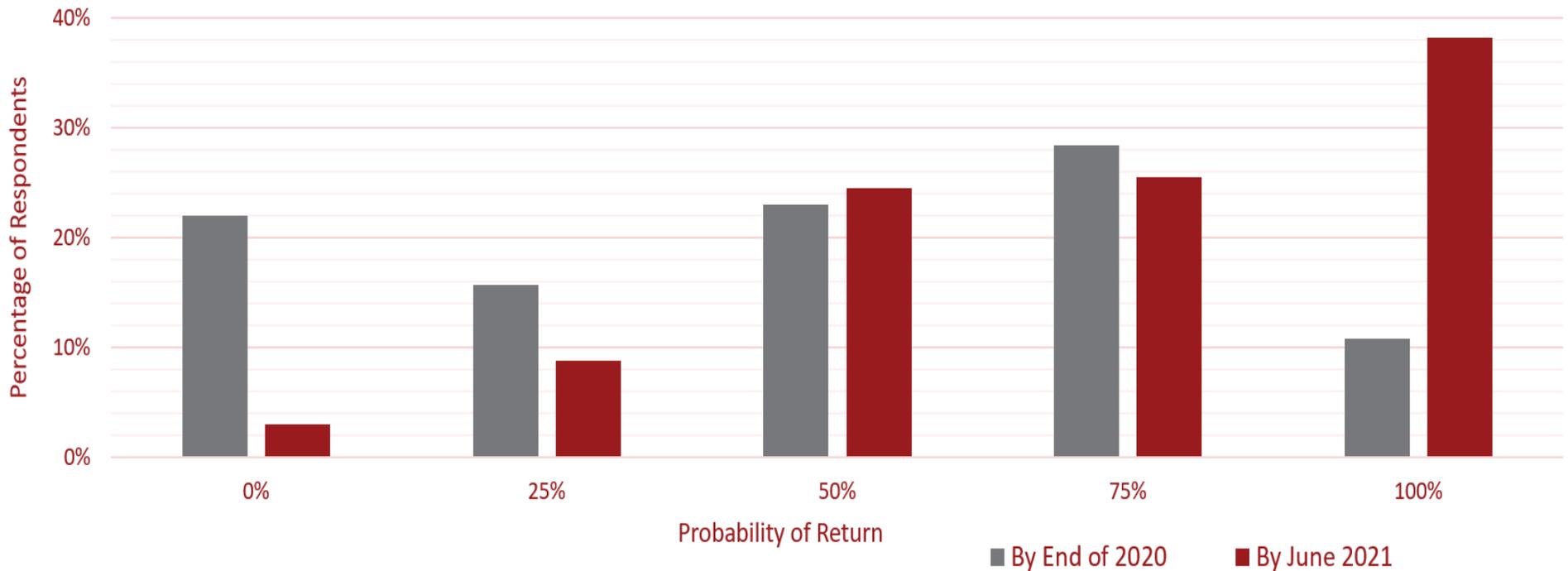
Average Impact to Business by Region

AMCA Region	Average Impact Rating (across all categories)
Asia	4.2
Europe	4.6
Middle East	5.4
North America	3.9
Overall	4.3

The chart above shows the degree to which respondents—separated by region—believe COVID-19 has impacted their business. The rating scale ranged from 0 (no impact) to 10 (severe impact), with a rating of 5 indicating moderate impact. The Middle East had the highest average impact rating, while North America had the lowest.

What is the probability your business will return to 2019 levels by the end of 2020 or by the end of June 2021?

Outlook on Probability of Return to 2019 Levels by Different End Dates



The chart above shows respondents' belief their business will return to pre-pandemic levels either by the end of 2020 or by June 2021. For example, the gray bar on the far left of the chart indicates that 22 percent of respondents believe there is no chance of recovery by the end of 2020. Overall, this chart indicates a generally positive outlook regarding recovery, as the majority of respondents feel the probability of recovery by the end of 2020 is high. Nearly 40 percent of the respondents reported feeling that 2019 levels will be reached by June 2021.

What are the most significant challenges your business faces as a result of the COVID pandemic?

This question was open-ended, so the responses were grouped into categories of challenges. Though specific wording of responses differed, the sentiments conveyed in each response were sortable into the categories shown in the table below.

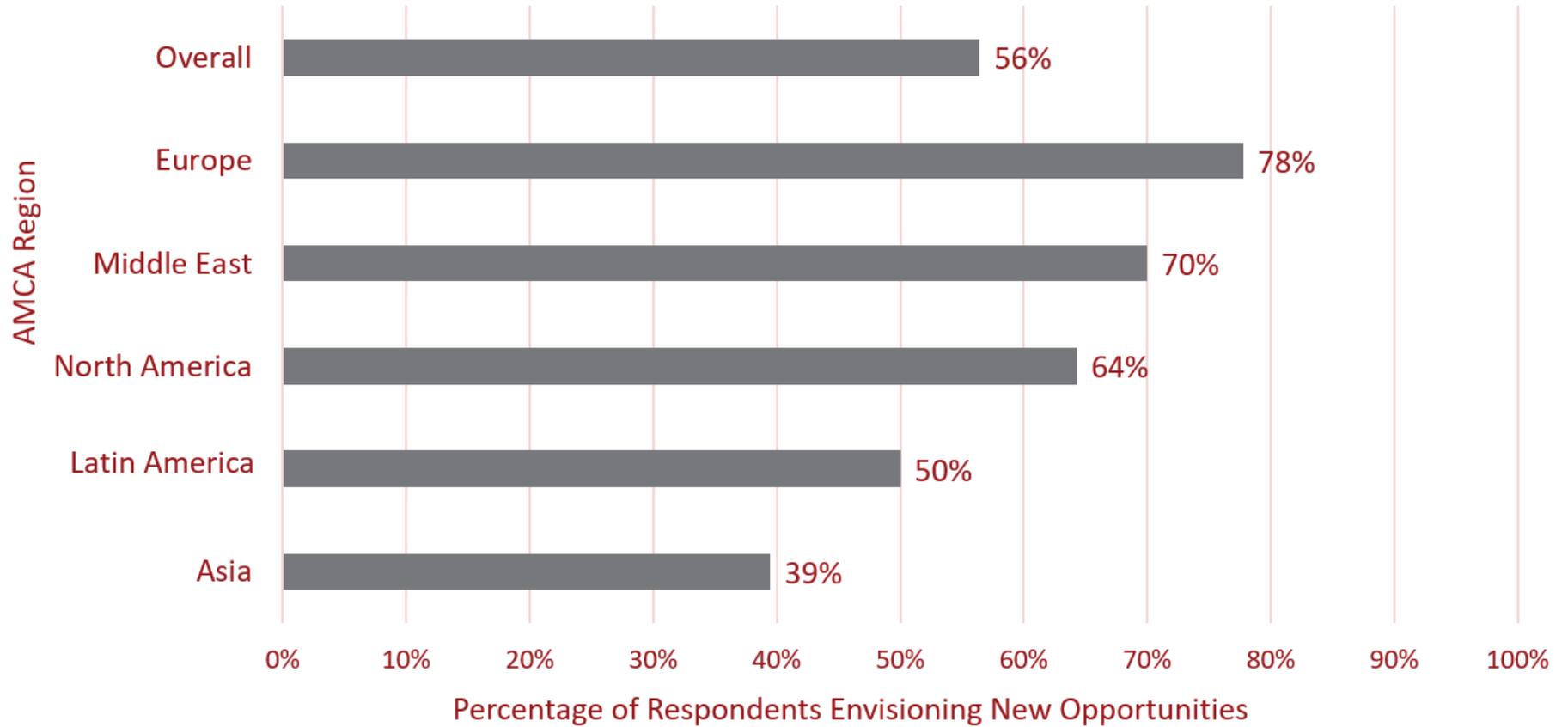
Challenges	% of Respondents
Decrease in sales/business	31%
Health/safety concerns	28%
Maintain/build customer relationships	20%
Supply chain issues	14%
Uncertainty	7%

Following are representative comments from respondents:

- “Reduced customer spending / projects on hold or cancelled. Longer lead times from sub-suppliers.”
- “Safety for our workforce. Uncertainty of supply chain. Face-to-face connection with customers.”
- “It is difficult to [conduct] face-to-face in sales activities, so customer response is not immediately available.”
- “We believe that an international scaled-determination is required to diminish the complex impacts of pandemic. This is a global pandemic which affects social, health and economical bases. Indoor air quality control and regulation must be strongly develop[ed].”
- “No contact with customers. No tradeshow to find new customers.”

As a result of the COVID pandemic, do you see new opportunities that the industry needs to meet? What new opportunities does the industry need to meet?

Perception of New Industry Opportunities as Result of COVID-19



The chart above shows the percentage of respondents in each AMCA region who envision new opportunities as a result of the pandemic.

Perceived New Industry Opportunities as Result of COVID-19

New Opportunities	% of Respondents
Advanced/better ventilation tactics	34%
Demonstrate/promote ventilation's impact on building safety	11%
Address project/industry specific needs	9%
New demand for isolation facilities/pressure rooms	8%
More focus on working together	6%
More product development	6%
New ventilation codes	6%
UV Air cleaning	6%
Develop best practices/guidelines	4%

Following are representative comments from respondents:

- “Much more focus on how to work together in the future without travelling.”
- “Demonstrating that properly-engineered building ventilation systems may increase, rather than reduce, the safety of the building occupants, thus encouraging the diffusion of such systems.”
- “Longer foresight to future product and market development.”
- “Centralized advisory effort by expert to give advices to members to help them manage work in similar cases in future.”
- “Providing technical guidance on the role of ventilation in mitigating COVID-19. And the value of better fan selections as power requirements rise.”
- “There are new test labs going up for COVID testing and there will be new requirements for indoor air quality that will come out of this.”
- “Outside Air codes need to be adjusted to reflect public sentiment, IAQ needs to take a front seat, filtration solution demand will increase.”