



Appendix B

2021 Supply Chain Survey Results

Centralina Regional Council
Centralina Economic Development District
Charlotte Regional Business Alliance

The Centralina Regional Council and the Centralina Economic Development District are conducting an Industry Cluster Update as a part of an ongoing regional economic development strategy coordination. To inform this report, The Charlotte Regional Business Alliance conducted and compiled this 2021 Supply Chain Survey to better understand how the pandemic has impacted supply chains.

The 2021 Supply Chain Survey was initially opened in Mid-June and was kept open for two months through Mid-August. The survey was distributed to key manufacturers from 16 different counties in both North and South Carolina, represented by both Centralina and the Charlotte Regional Business Alliance. In total, the survey collected results from 116 different manufacturing companies within this region.

As the region's largest county, Mecklenburg accounted for the most respondents with 29 of the total 116 responses. The top three counties are rounded out by Cleveland County, NC with 13 respondents, and Lincoln County, NC with 12 respondents. In total, 15 different types of manufacturing operations were represented in this survey. The top 3 Industries represented were Industrial Machinery with 26 responses, followed by Plastics with 20 responses, and finally Textiles with 18 responses.

This survey also captured companies of all sizes. The most common company size in terms of employment were companies with 1-50 employees, accounting for 42% of survey responses. The remaining 58% were evenly dispersed between the ranges of 51-100, 101-200, and 201-500 employees. The remaining 5 companies had either 501-1,000 or 1,000+ employees.

At the time of the survey, on average, **25% of inputs were from international sources.** However, almost **half of the survey respondents (49.7%) indicated that they expect at least a moderate shift to their supply chain to a more domestic strategy.** This is confirmed by

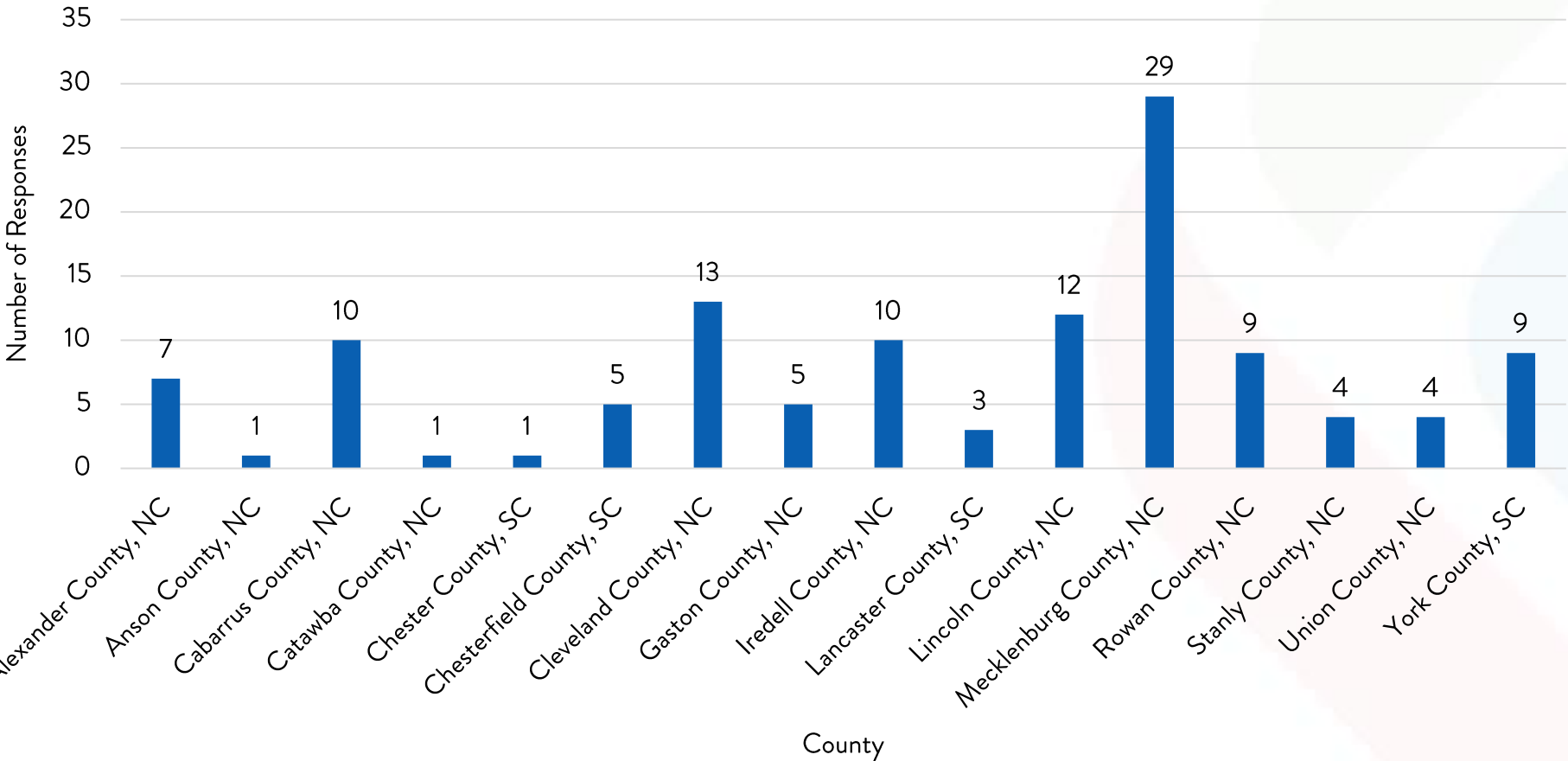
common responses in the open-ended portion of the survey expressing a desire to source some components like raw materials, metals, plastics, and others more locally. Given that those are the most common inputs manufacturers are buying, **there appears to be an opportunity for the region to attempt to recruit raw materials manufacturers to the region.**

The most prevalent theme the 2021 Supply Chain Survey captured was centered around competitive location factors. **A near unified 98% of survey respondents agreed that availability of qualified workforce was at least very important, with 78% indicating that it was extremely important.** This tied directly to the next section of the survey: Long-term factors attributing to the overall competitiveness and the resiliency of supply chains. Over 74% of respondents indicated workforce upskilling was a very important long-term factor. Additionally, about 43% of respondents agreed robotics/automation was a very important factor.

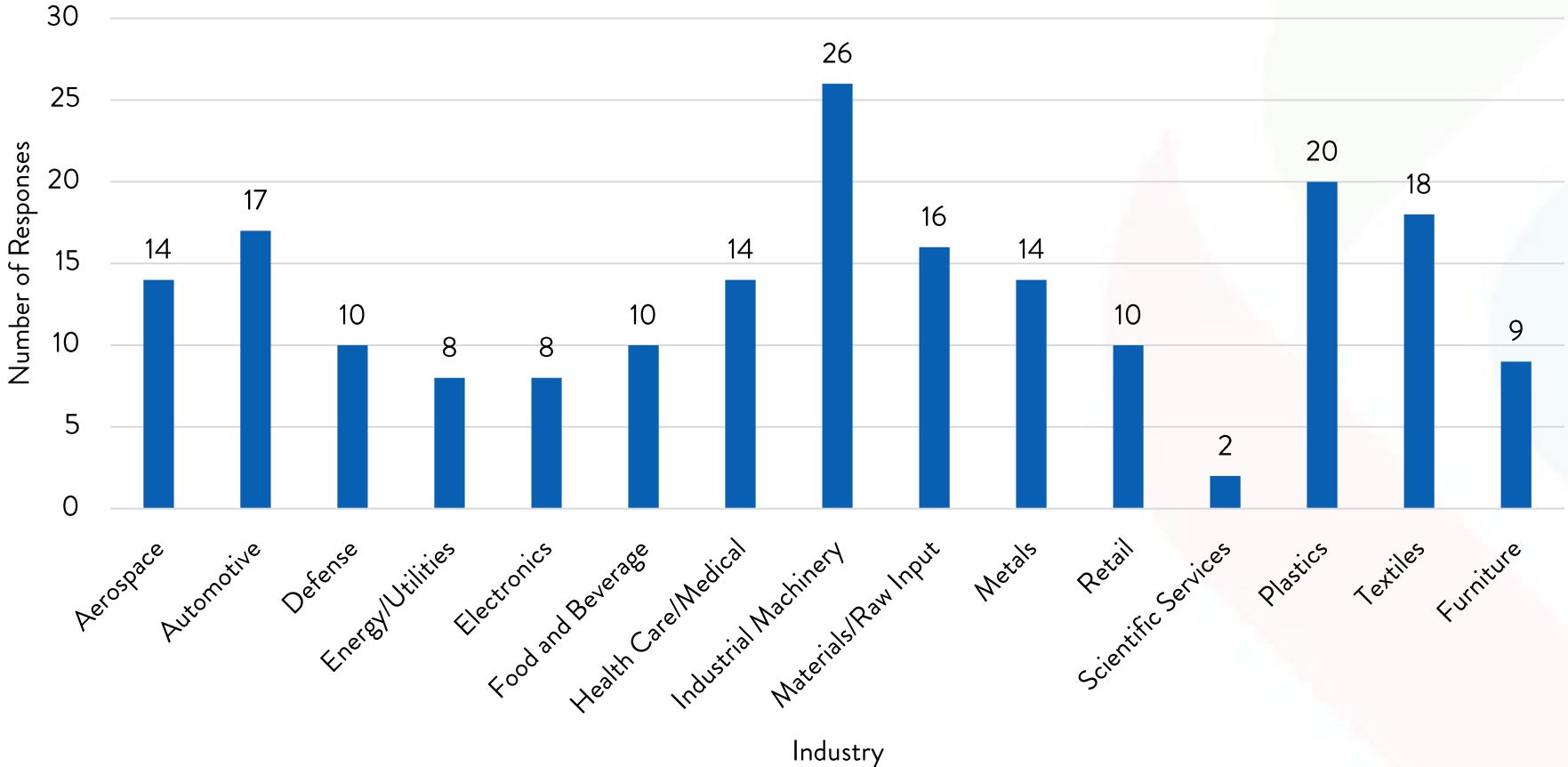
This begs the question of what can be the solution to the very apparent labor issue? If we think the lack of labor is creating supply chain challenges, will workforce upskilling and other incentives help bring employees back? Or will we see a more rapid shift to automation permanently eliminating these jobs if staffing issues continue? **Based off the results from the survey, it seems, as of now, that there is more of a focus on workforce upskilling and incentives rather than automation.**

To find an even more comprehensive dive into the data please visit this [2021 Supply Chain Survey Power BI](#) compiled by the Economic Research Team at The Charlotte Regional Business Alliance.

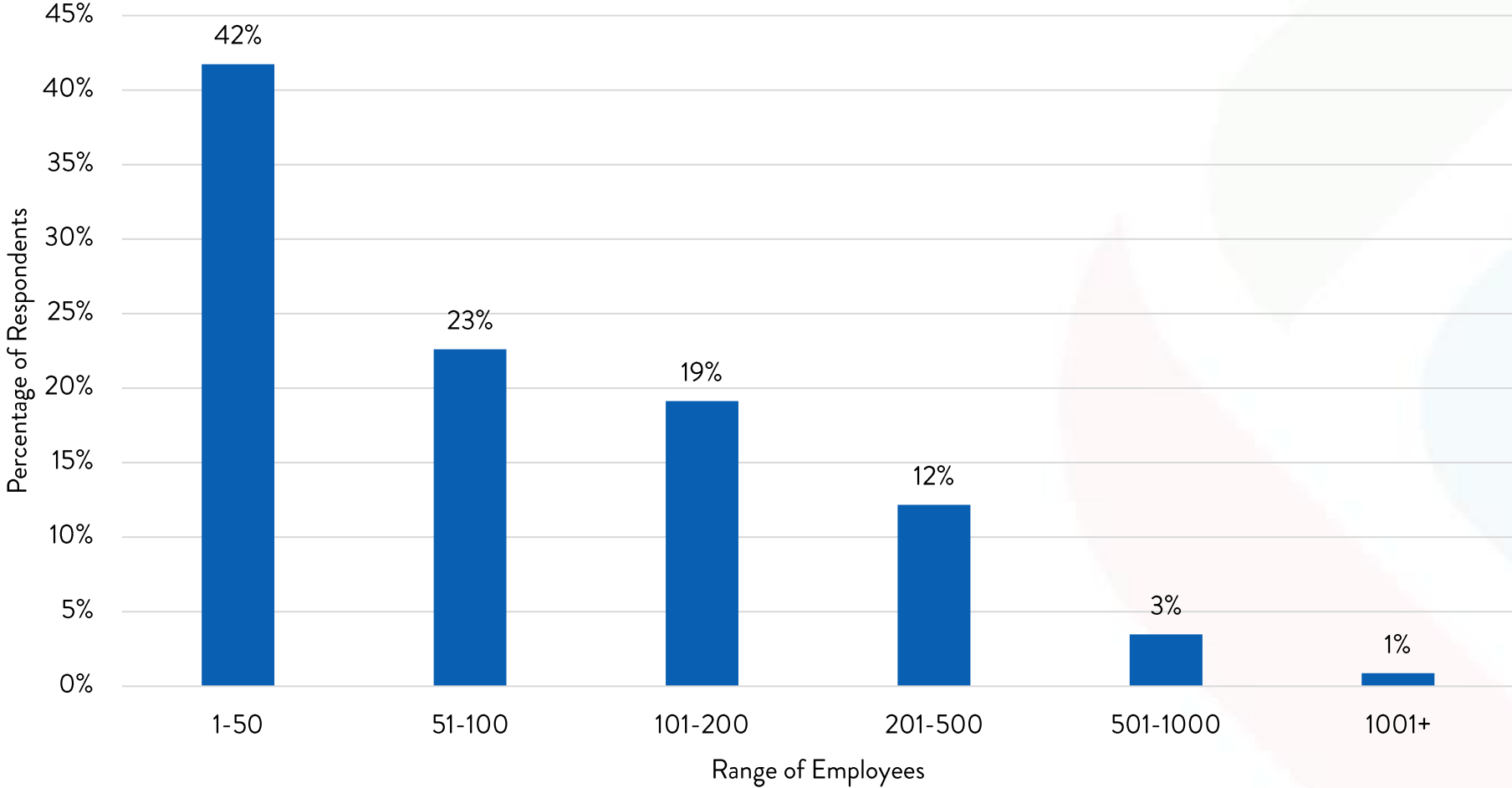
In which of the following counties does your company have manufacturing operations?



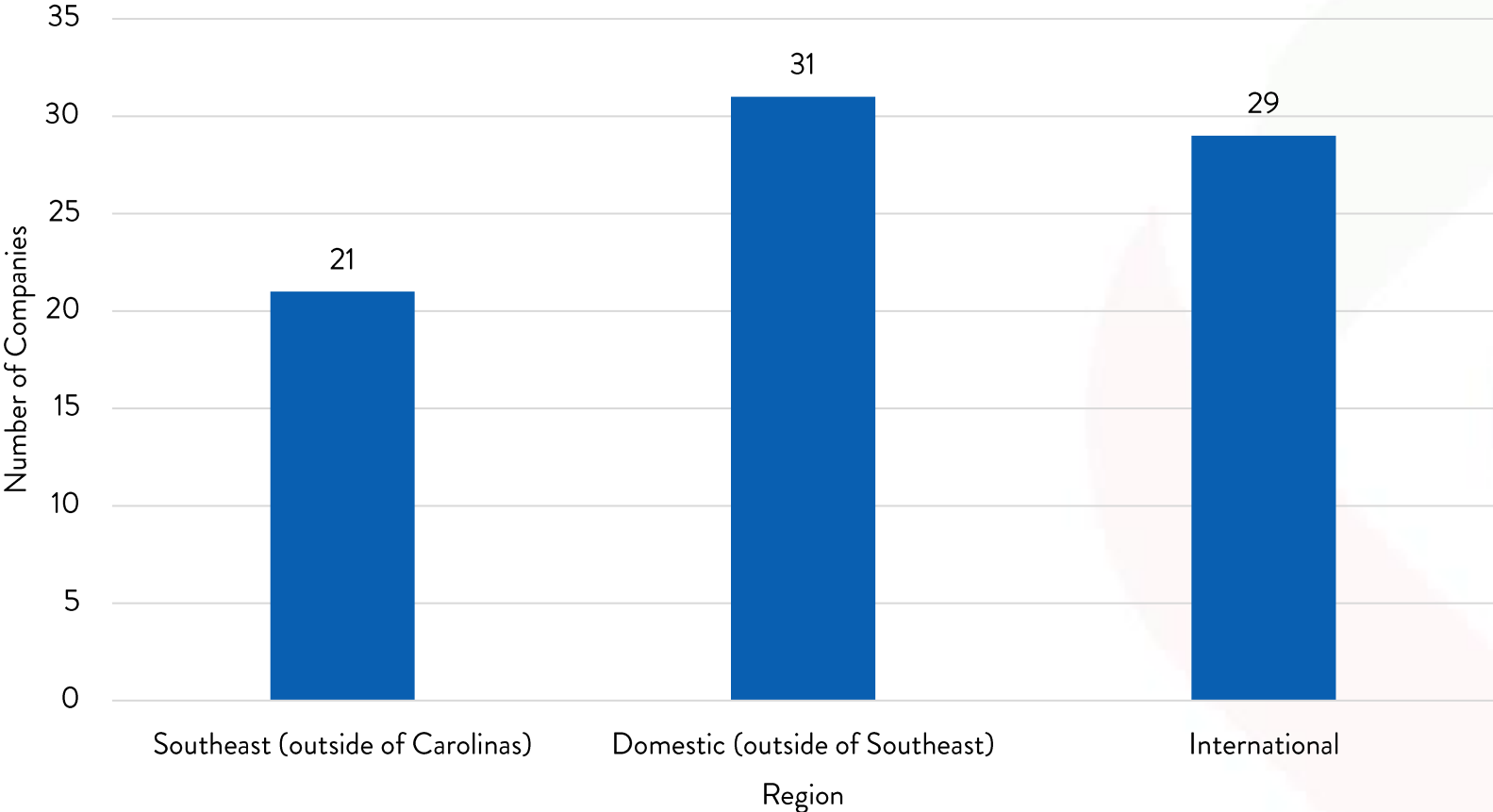
Which of the following best describes your company's manufacturing operations in the Charlotte Region?

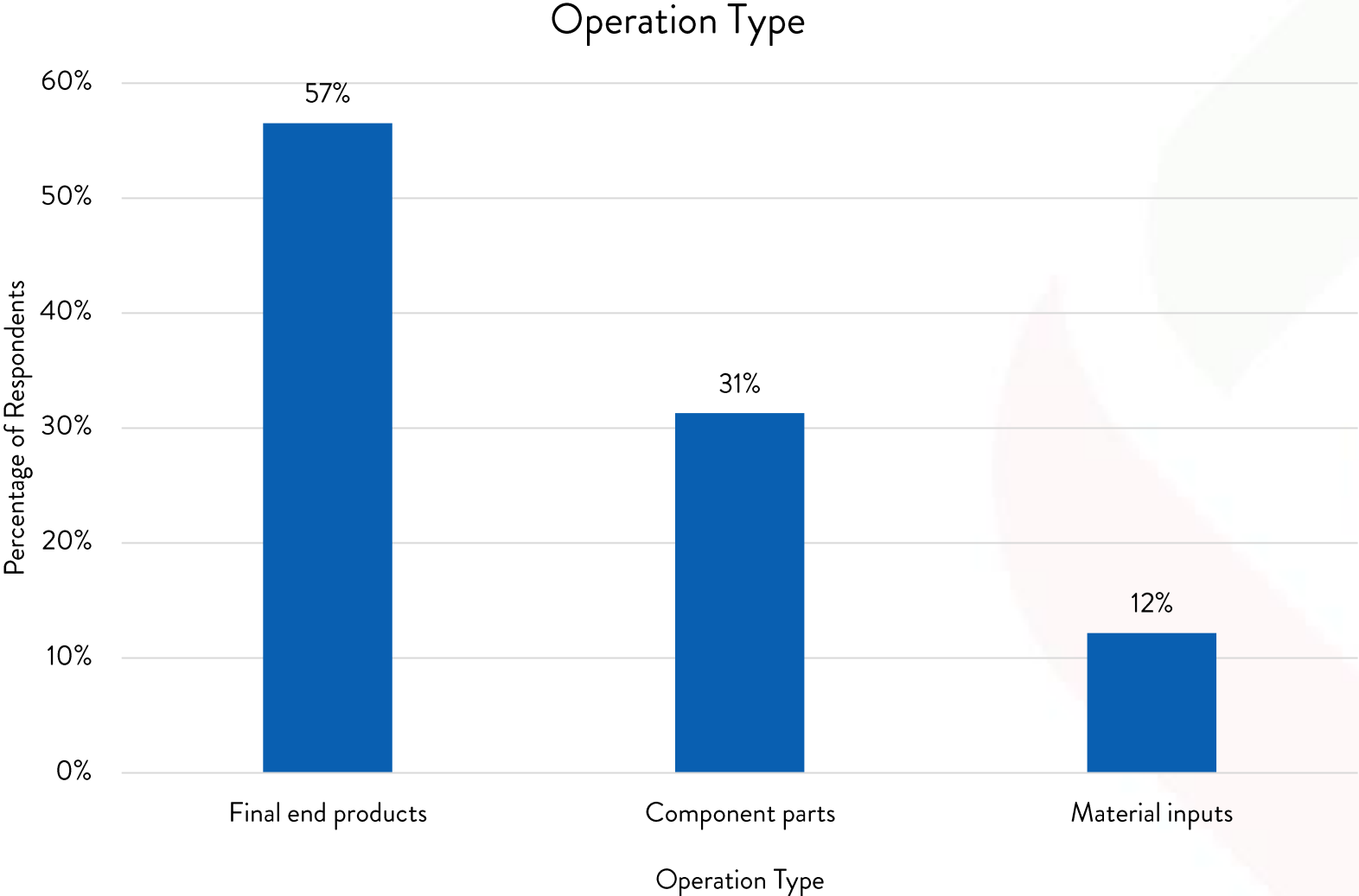


How many employees does your facility have?

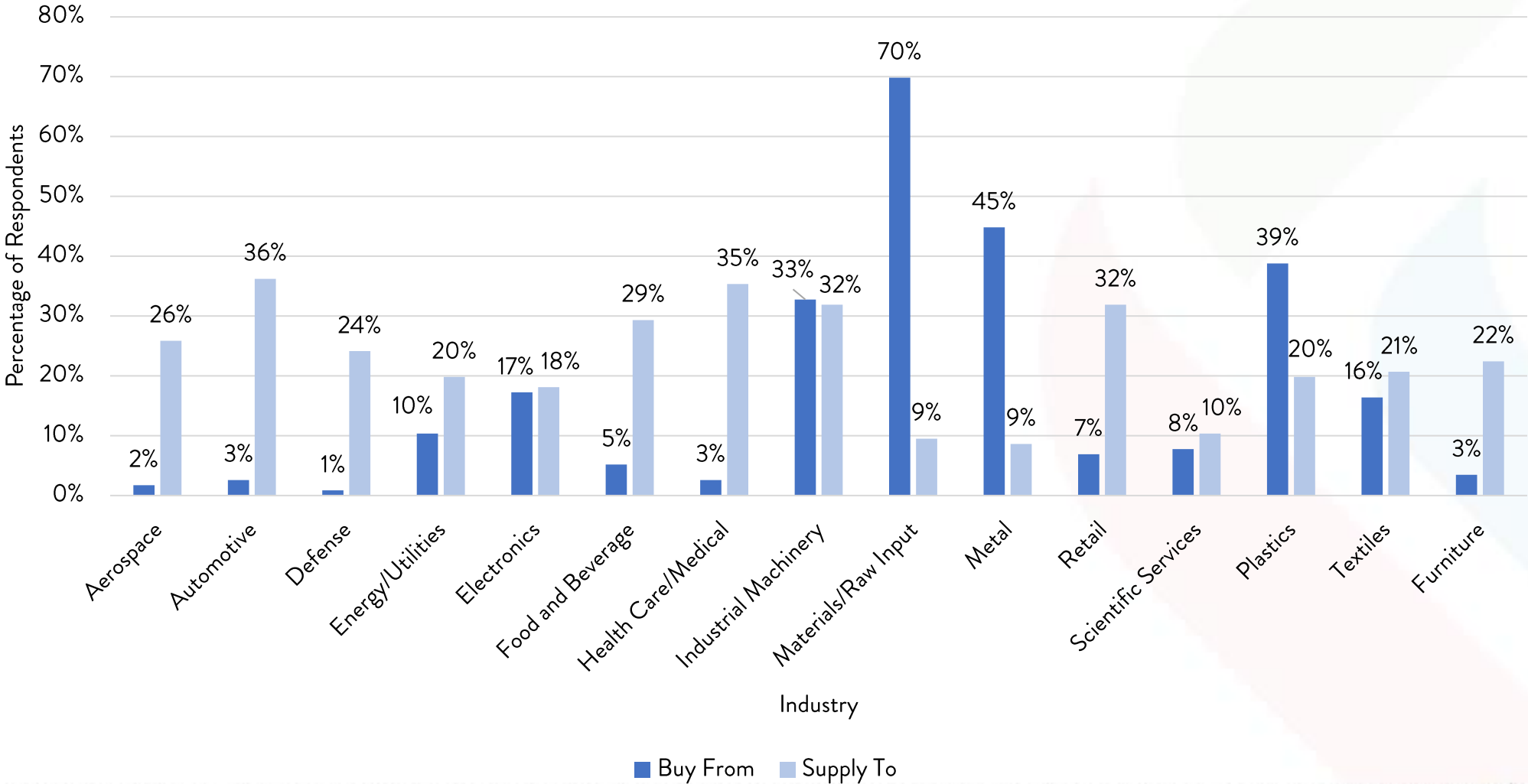


Companies with Locations Outside of the Carolinas

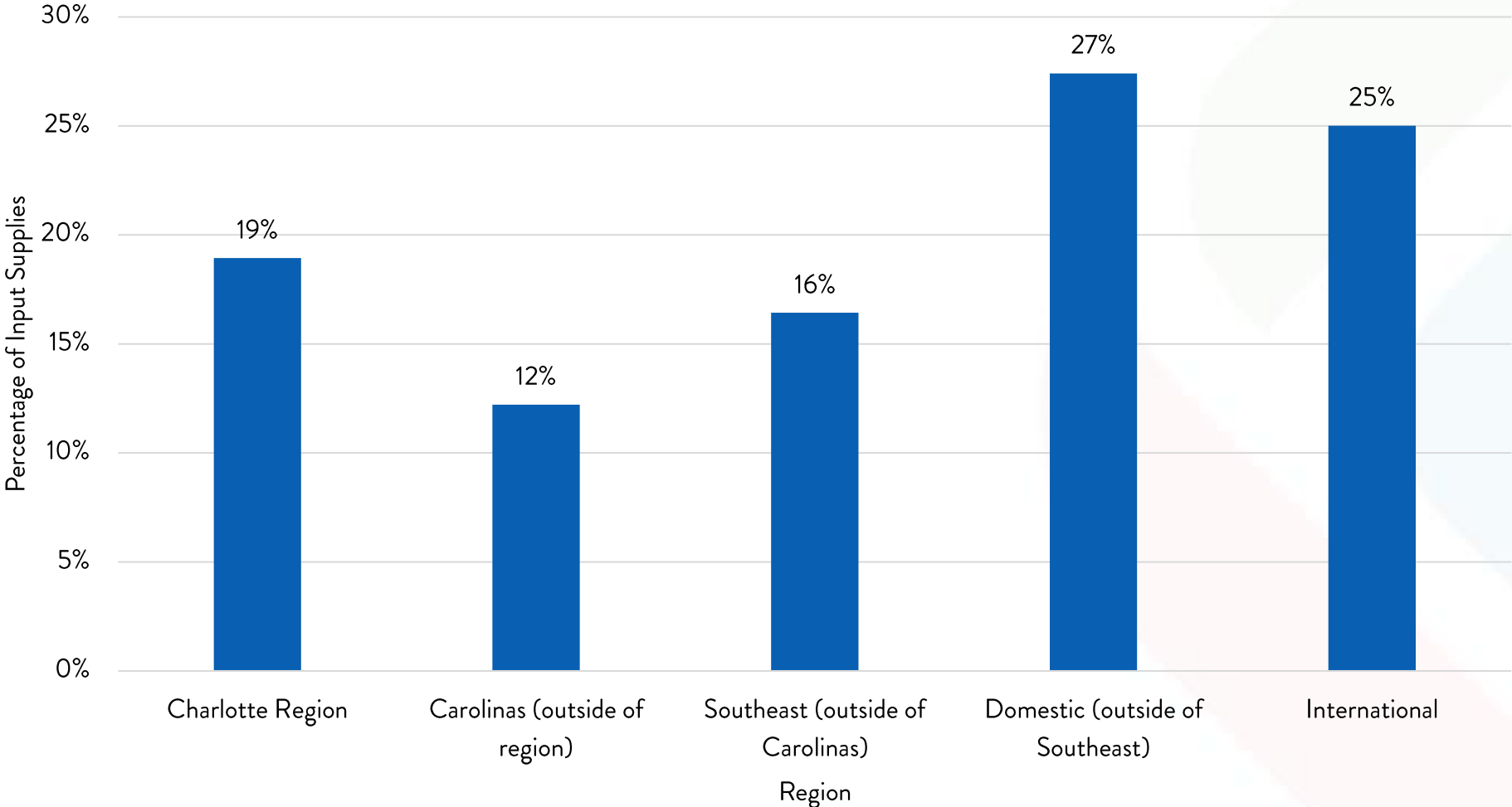




Which of the following industries do you buy inputs from/supply to?

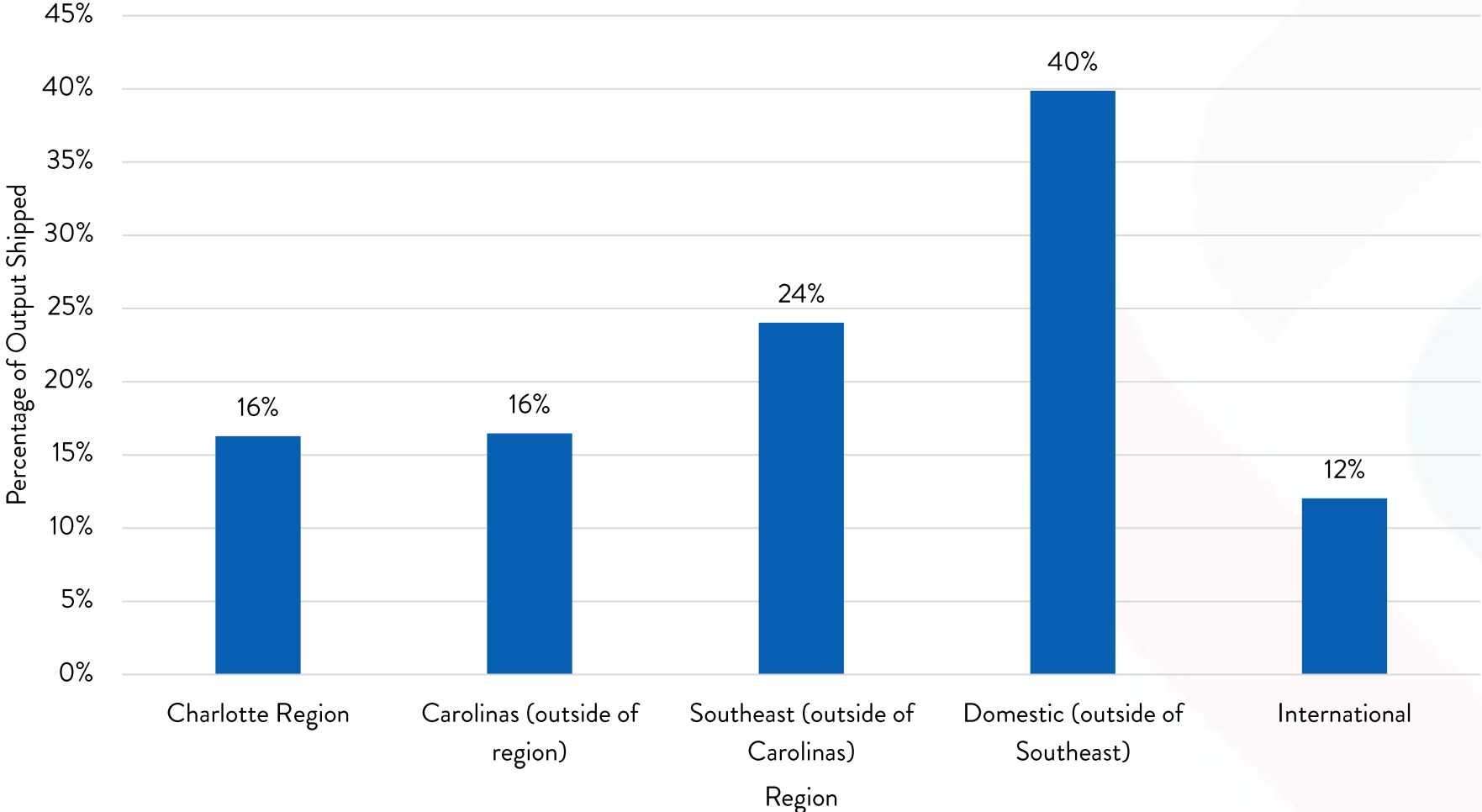


Percentage of Input Supplies That Originates From The Following Regions



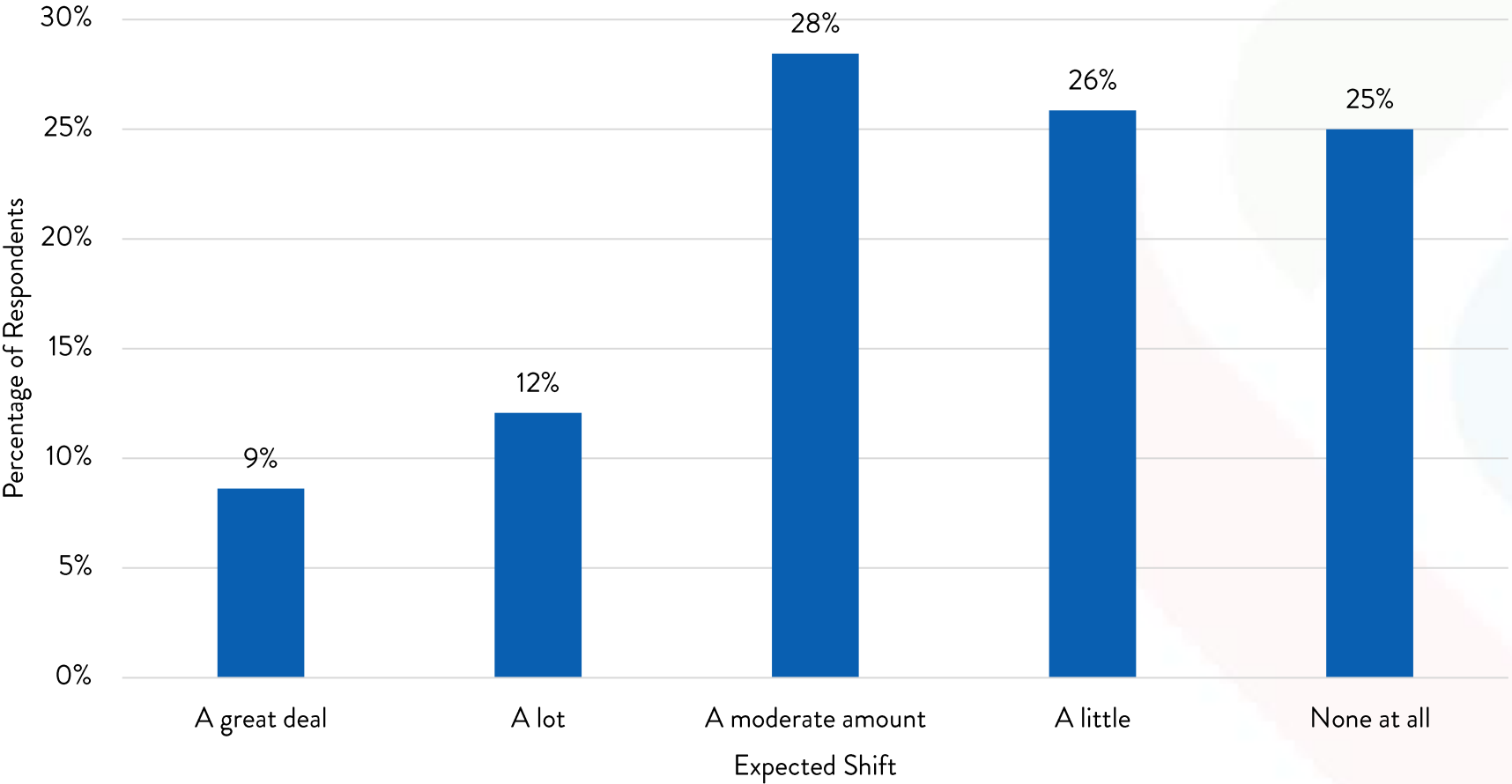
*Percentage from Charlotte Region may be slightly undercounted because of different definitions of Charlotte Region

Percentage of Output Shipped to the Following Regions

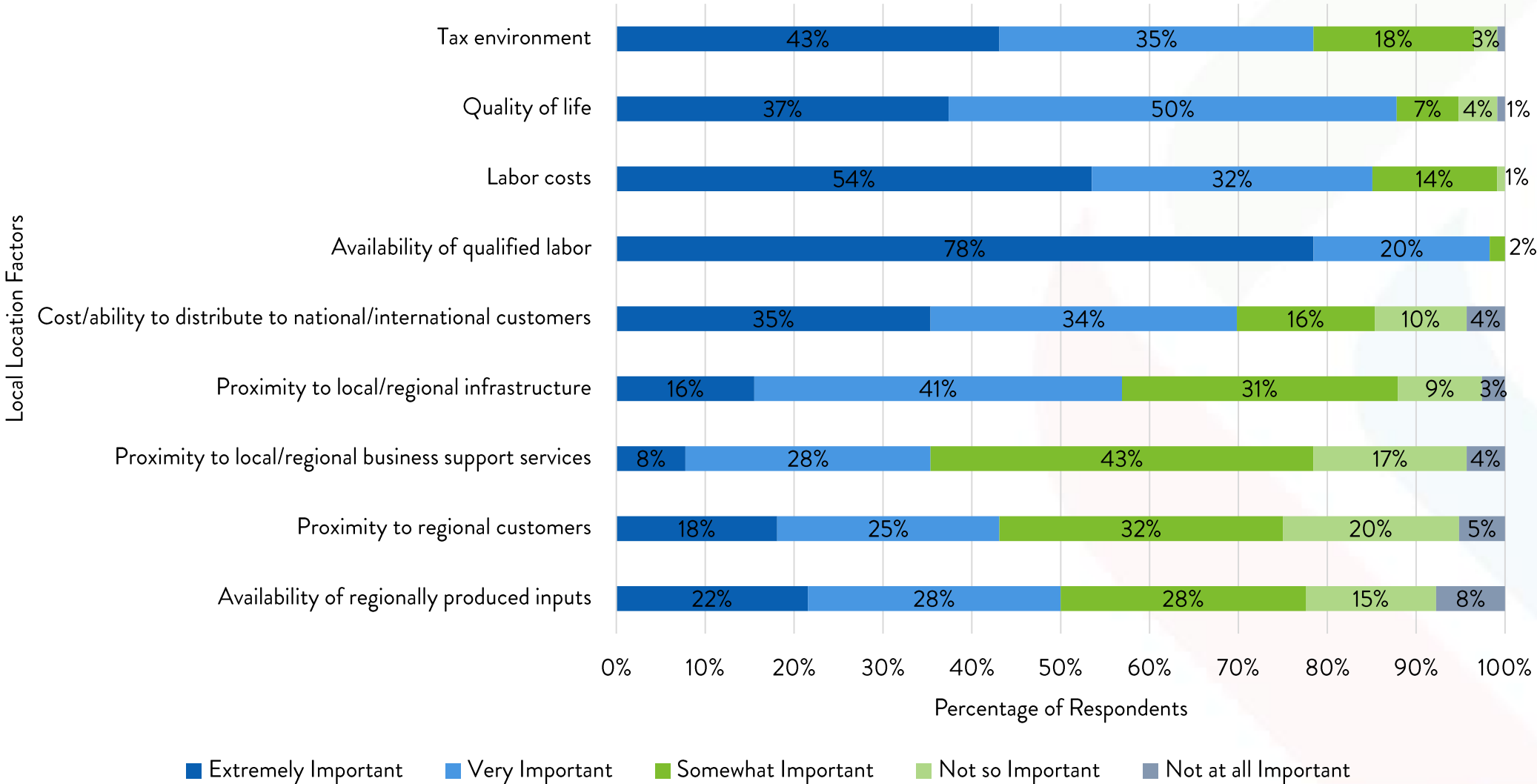


*Percentage to Charlotte Region may be slightly undercounted because of different definitions of Charlotte Region

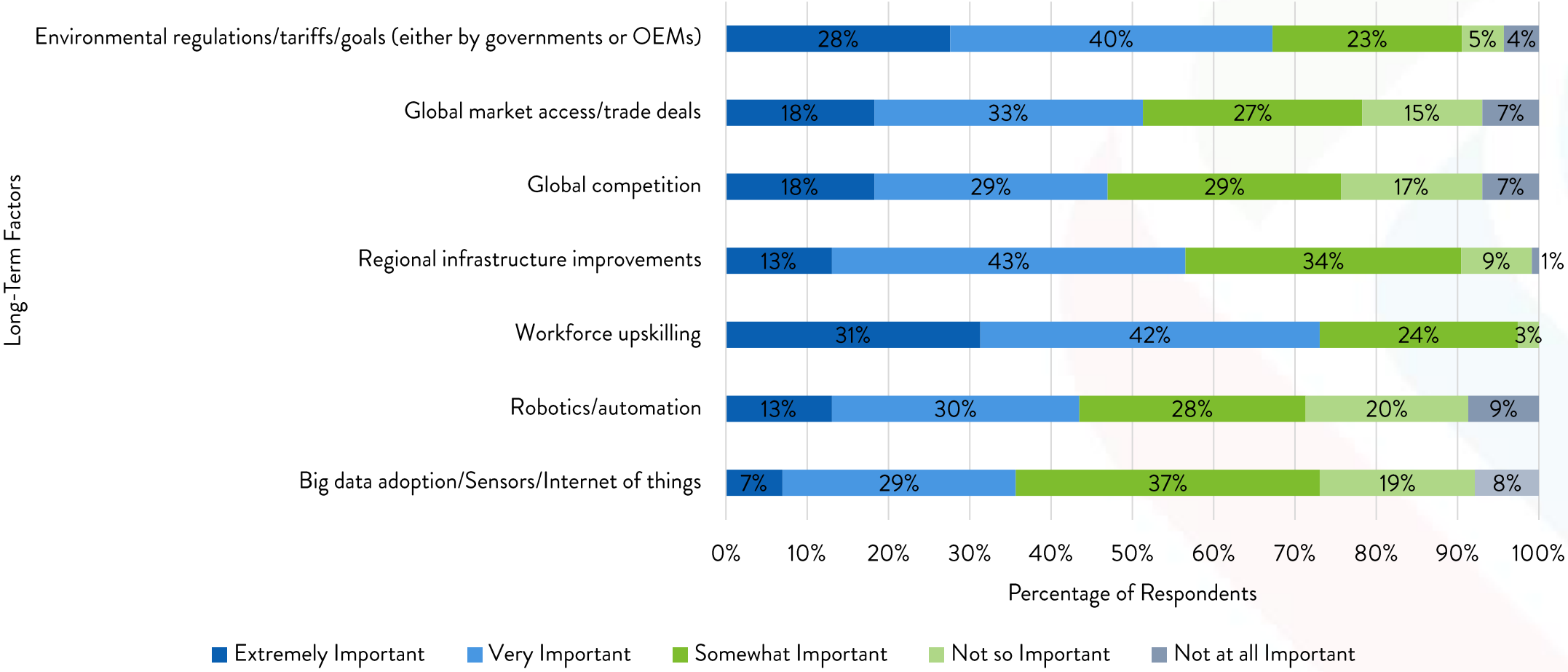
To what extent do you expect a shift in your supply chain to a more domestic strategy?



How important are the following local location factors to your competitiveness?



How important are the following long-term factors to your competitiveness and the resiliency of the supply chains in your industry?





Appendix Slides

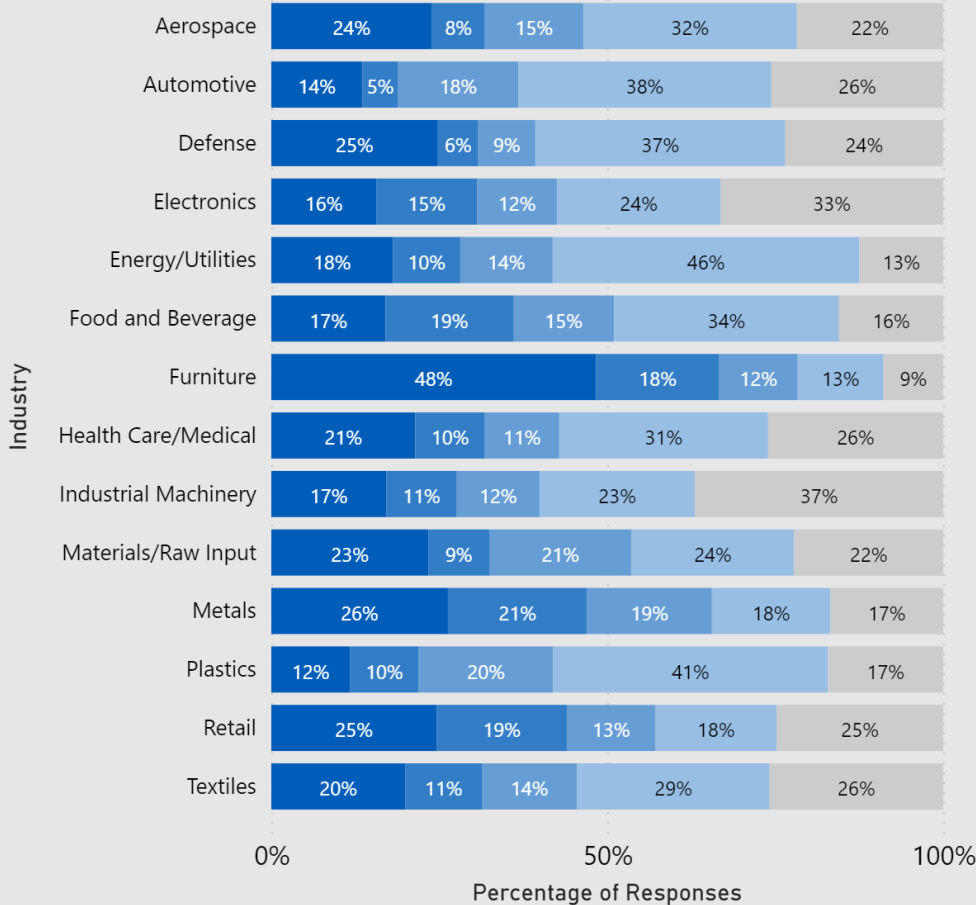
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Breakdowns by Industry



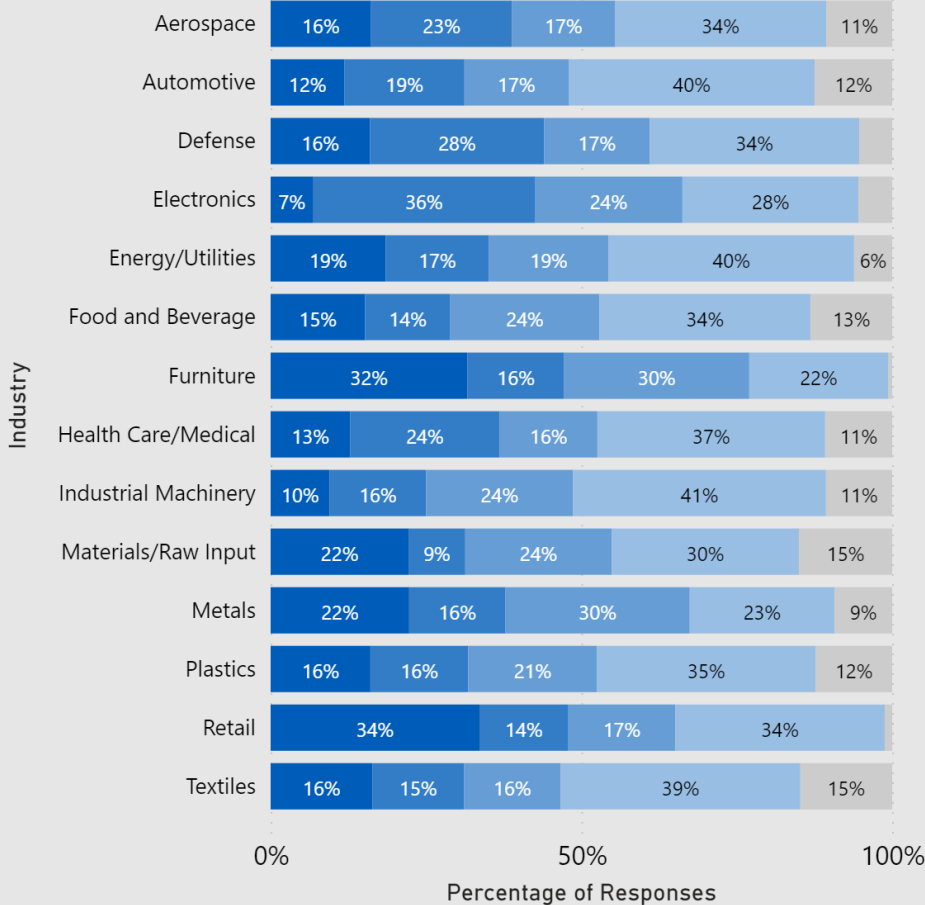
In general, please estimate the percentage of your input supplies that originates from the following regions.

Geography ● Charlotte Region ● Carolinas ● Southeast ● Domestic ● International



In general, please estimate the percentage of your output that is shipped to the following regions.

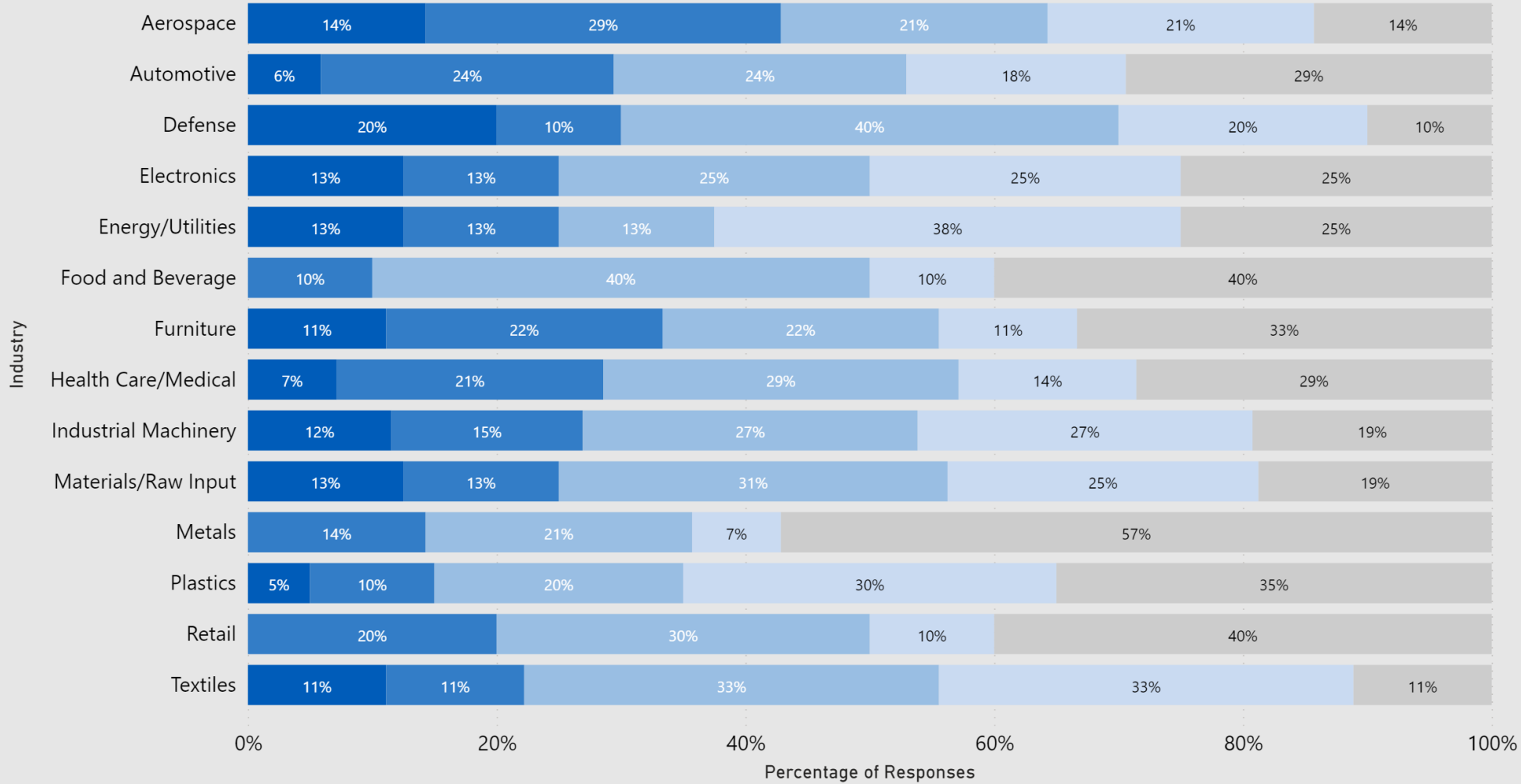
Geography ● Charlotte Region ● Carolinas ● Southeast ● Domestic ● International



*Mutually exclusive regions (e.g. Carolinas (outside of Charlotte Region), Southeast (outside of the Carolinas), etc.)
 **Percentage to/from Charlotte Region may be slightly undercounted because of different definitions of the Charlotte Region.

To what extent do you expect a shift in your supply chain to a more domestic strategy?

Answer ● A Great Deal ● A Lot ● A Moderate Amount ● A Little ● None At All



How important are the following local location factors to your competitiveness? (% which selected "Very Important" or "Extremely Important")

Location Factors	Aerospace	Automotive	Defense	Electronics	Energy/ Utilities	Food and Beverage	Furniture	Healthcare/ Medical	Industrial Machinery	Materials /Raw Input	Metals	Plastics	Retail	Textiles
Availability of qualified labor	100%	100%	100%	88%	100%	100%	100%	100%	100%	100%	100%	100%	90%	100%
Availability of regionally produced inputs	64%	59%	60%	75%	38%	50%	89%	64%	35%	64%	57%	35%	80%	50%
Cost/ability to distribute to national/international customers	71%	71%	60%	63%	75%	60%	67%	64%	69%	71%	50%	70%	50%	78%
Labor costs	86%	94%	90%	75%	75%	80%	75%	79%	81%	86%	93%	80%	56%	76%
Proximity to local/regional business support services	36%	29%	30%	50%	25%		22%	36%	35%	36%	29%	20%	40%	28%
Proximity to local/regional infrastructure	64%	59%	60%	63%	13%	10%	22%	36%	58%	64%	64%	40%	40%	44%
Proximity to regional customers	57%	53%	80%	63%	38%	40%	44%	57%	31%	57%	50%	45%	50%	44%
Quality of life	93%	100%	90%	88%	75%	80%	78%	79%	84%	93%	86%	90%	80%	94%
Tax environment	79%	82%	80%	75%	88%	90%	78%	93%	65%	79%	79%	80%	80%	94%

How Important are the following long-term factors to your competitiveness and the resiliency of the supply chains in your industry? (% which selected "Very Important" or "Extremely Important")

Long-Term Factors	Aerospace	Automotive	Defense	Electronics	Energy /Utility	Food and Beverage	Furniture	Healthcare /Medical	Industrial Machinery	Materials /Raw Input	Metals	Plastics	Retail	Textiles
Big data adoption/Sensor s/Internet of things	50%	53%	50%	75%	13%	10%	22%	36%	38%	44%	36%	16%	70%	39%
Environmental regulations/tariffs/goals (either by governments or OEMs)	57%	71%	60%	75%	63%	40%	44%	79%	69%	63%	86%	60%	60%	61%
Global competition	50%	59%	50%	63%	50%	10%	11%	43%	72%	44%	21%	35%	20%	50%
Global market access/trade deals	71%	59%	60%	50%	75%	20%	11%	64%	73%	38%	36%	37%	40%	56%
Regional infrastructure improvements	71%	71%	70%	63%	63%	40%	44%	57%	54%	56%	69%	50%	70%	56%
Robotics/automation	43%	71%	50%	63%	25%	20%	11%	43%	50%	44%	43%	58%	30%	17%
Workforce upskilling	71%	88%	90%	88%	63%	70%	44%	79%	84%	75%	86%	60%	80%	61%

10. How important are the following local location factors to your competitiveness? (Other Comments)

“Availability of qualified labor is #1 concern.”
“We need people to staff the facility.”

Q 11. What components or inputs would you prefer to source regionally (versus domestically or internationally) that would bolster your supply chain resiliency?

“Raw Materials and local vendors that we can have a relationship with, to help us meet critical deadlines. We are vested to the regional supply chain and would buy more and more and more if we could.”

“All of them. They must meet quality and cost requirements. Today, none of them are available anywhere in the US.”

“Everything.”

Q 12. How Important are the following long-term factors to your competitiveness and the resiliency of the supply chains in your industry? (Other Comments)

“Workforce availability.”

“Labor! I need people to work.”

Q 13. Briefly explain why your selections in the previous question would improve your competitiveness and resiliency

“To have skilled people and a great area to attract talent and more businesses to the region can only strengthen our business growth.”

“No matter what we do in business, we have to be competitive. Having more viable options closer to our facilities, better supply chain infrastructure, and skilled labor will allow us to be more competitive in all markets we choose to serve.”

“With the continued struggle to find labor, robotics and automation investment will continue to increase for our business.”

“Our business depends on local input to succeed, as we are a Carolinas regional company.”

“Environmental Regulations/Tariffs/Goals are always important to a business, making it more complicating or costly.”

2021 Supply Chain Survey

Open-Ended Responses Key Takeaways

Unquestionably the one theme dominating these open-ended responses was again workforce availability/access to qualified labor. An almost unanimous 98% of survey respondents indicated that availability of qualified labor was a very important factor to their competitiveness. This sentiment was made abundantly clear in an overwhelming number of written responses. As a reaction to this, many respondents indicated that automation would be important to the success of their business. Jump starting automation efforts to counteract the lack of labor availability seems like a potential outcome based off the comments of these survey respondents.

Another important takeaway/theme from the open-ended section of this survey, while not as prevalent as the labor issue but still important, was a desire to source many more components and inputs locally. Some of the most common components mentioned were raw materials, steel, metal, and plastics. There is an overall desire to source many components more regionally among many survey respondents.

Lastly, there were several mentions of the impact of tariffs in the open-ended section of this survey. Considering over 67% of survey respondents indicated Environmental regulations/tariffs/goals were very important long-term factors to competitiveness and resiliency of supply chains, it is not surprising that there was some discussion in the open-ended questions. Generally, respondents indicated that tariffs always have potential to complicate local supply chains and overall produce many challenges.

