Characteristics of Freight Movements in Texas

CENTER FOR TRANSPORTATION RESEARCH

The University of Texas at Austin

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1. Introduction

Surveys were conducted to gain a better understanding of, and insight into, freight movements in Texas. Questions pertained to (1) the characteristics (e.g., seasonal variation, and major origin and destinations) of commodities moving between, to, and from production and consumption centers in Texas and (2) how major shippers approach decisions about freight shipments, their satisfaction with the freight transportation system in Texas, and any concerns that they may have. This appendix summarizes the results of the survey.

2. Target Population and Sampling Units

The target population for the surveys was major shippers and economic revenue generators in Texas. A total of 569 surveys were sent by mail to a list of shippers and economic generators identified during the course of the study. A link to the survey was also included in the November newsletter of the Texans for Safe and Reliable Transportation Association (TSRT). Numerous e-mails were sent to TSRT requesting their participation in the internet survey.

The shipper/economic generator contact list was prepared by contacting approximately 180 Chambers of Commerce/Economic Development Agencies in 6 of the 8 defined economic regions[1] in Texas (refer to Figure 1) and asking for the contact details of shippers/economic generators in their regions in terms of number of employees. The Texas Workforce Commission's SOCRATES database was also used to obtain Texas shipper information. Contact information was extracted for companies employing more than 100 people. Complete contact information was obtained for 569 shippers/economic generators by these two means.

The Survey Gizmo website (www.surveygizmo.com) was used to design the internet survey. A link was provided to members of TSRT. The exact number of shippers/economic generators that are members of TSRT is unknown, but it is known that a large percentage of the members are shippers/economic generators.

[1] Shippers/major economic generators in the North IH 35 and South IH 35 Corridors were not surveyed because of the Cambridge Systematics Shipper Surveys that were conducted during the same timeframe for the Texas Turnpike Authority.

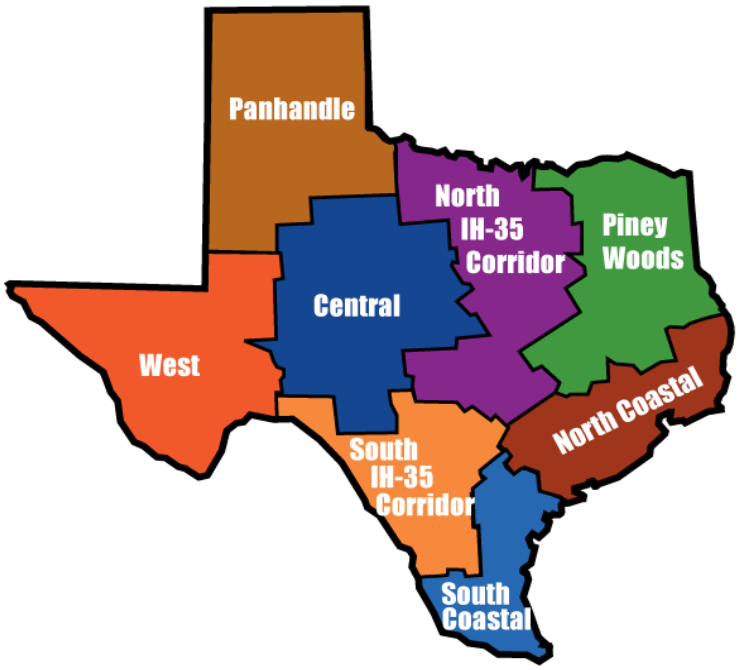

Figure 1. Texas Economic Regions

3. Survey Methodology

Mail-out mail-back surveys were sent out in July 2009. Surveys were mostly returned by December 2009. Some respondents had to be contacted to complete missing information or to clarify certain responses. The internet survey was launched in November 2009 and was closed in February 2010.

4. Survey/Questionnaire

The survey questionnaire comprised 30 questions (see Figures 2–7), grouped into six major categories:

- Business Information,
- Incoming Shipments,
- Outgoing Shipments,
- Truck Shipments,
- Rail Shipments, and
- Texas's Transportation System.

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Business/Company Name:_____
Address:_____
City: _____ County: _____Zip Code: _____

Your Business/Company

1. What is the size of your business/company at this specific site (please complete as appropriate):
   Number of employees: _____
   Number of square feet: _____
   Number of livestock: _____
   Number of acres: _____

Incoming Shipments

2. In a representative year, what is the ***most important*** commodity (in terms of loads/ tonnage) delivered to this site?

3. In a representative year, how many loads (or tonnage) of this commodity are delivered to this site?

4. What percentage of these loads (or tonnage) is delivered to this site by:
   _____ % truck
   _____ % rail
   _____ % rail intermodal (i.e., truck and rail)
   _____ % air and truck
   _____ % other (Please specify, _____)

5. If by truck, what is the typical truck type used for deliveries to this site (please check all types).

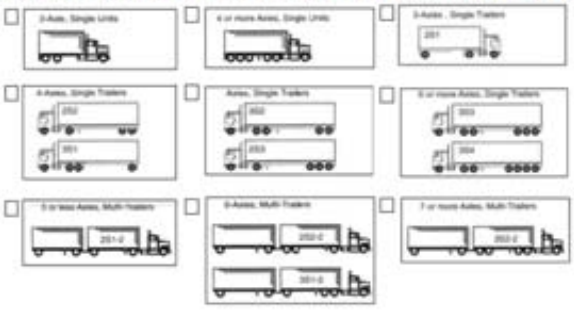


Figure 2. Survey Questionnaire: Page 1

6. What is the typical size of the shipments of the commodity provided in Question 2?
_____lbs

7. Where do the shipments of this commodity originate:
_____% in the county your business is located
_____% in another Texas county
_____% in another U.S. state
_____% internationally and imported through a Texas airport
_____% internationally and imported through a Texas seaport
_____% in Mexico
_____% other (Please specify, _____)

8. Are shipments of this commodity influenced by seasonal variation?
□ Yes
□ No

9. If yes, what is the percentage difference in the number of loads (or tonnage) delivered between low and high season?

Outgoing Shipments

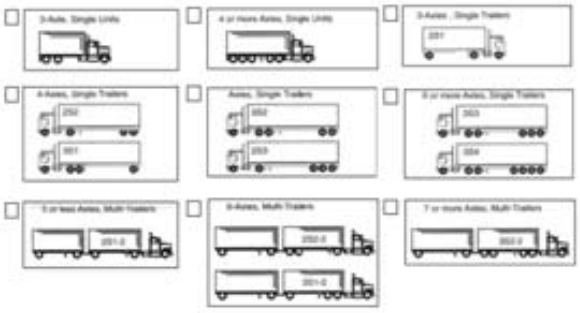
10. In a representative year, what is the ***most important*** commodity (in terms of loads/ tonnage) shipped from this site?

11. In a representative year, how many loads (or tonnage) of this commodity are shipped from this site?

12. What percentage of these loads (or tonnage) is shipped by:
_____% truck
_____% rail
_____% rail intermodal (i.e., truck and rail)
_____% air
_____% other (Please specify, _____)

Figure 3. Survey Questionnaire: Page 2

13. If by truck, what is the typical truck type used for shipments from this site (please check all types).



14. What is the typical size of the shipments of the commodity provided in Question 10?
_____ lbs

15. Where are the shipments of this commodity destined:
_____ % in the county your business is located
_____ % in another Texas county
_____ % in another U.S. state
_____ % internationally and imported through a Texas airport
_____ % internationally and imported through a Texas seaport
_____ % in Mexico
_____ % other (Please specify, _____)

16. Are shipments of this commodity influenced by seasonal variation?
□ Yes
□ No

17. If yes, what is the percentage difference in the number of loads (or tonnage) shipped between low and high season?

Truck Shipments

18. Does your business/company own a fleet of trucks?
□ Yes
□ No

Figure 4. Survey Questionnaire: Page 3

19. If yes, what is the size of your fleet in Texas?
Number of Single Units _____
Number of Truck Tractors _____
Number of Trailers _____
Number of Truck Drivers _____

20. If yes, what percentage of inbound and outbound shipments is moved by your own truck fleet?
_____ %

21. Please circle the number that best describes the importance of the service attributes listed in choosing the trucking services that you use.

□ Not applicable

Service Attribute	Extremely Insignificant				Extremely Significant
Readily available	1	2	3	4	5
Customer service	1	2	3	4	5
Fast transit time	1	2	3	4	5
Reasonable rates	1	2	3	4	5
Flexible service to many markets	1	2	3	4	5
Specialized equipment	1	2	3	4	5
On-time reliability	1	2	3	4	5
Minimal loss and damage	1	2	3	4	5
Prompt pick-up and delivery	1	2	3	4	5
Shipment value	1	2	3	4	5
Distance	1	2	3	4	5
Shipment size	1	2	3	4	5
Tracking service provided	1	2	3	4	5
Relationship with carrier	1	2	3	4	5

22. Would you be willing to pay toll charges incurred by the trucking service to (please check all that apply):
□ ensure reliable transit times
□ faster transit times
□ accommodate heavier or larger shipments
□ other. Please specify, _____
_____
_____

Figure 5. Survey Questionnaire: Page 4

Rail Shipments

23. Has your business been impacted by discontinued railroad service?
    - ☐ Yes
    - ☐ No

24. Please circle the number that best describes the importance of the service attributes listed in choosing the rail services that you use.

    ☐ Not applicable

Service Attribute	Extremely Insignificant				Extremely Significant
Readily available	1	2	3	4	5
Customer service	1	2	3	4	5
Fast transit time	1	2	3	4	5
Reasonable rates	1	2	3	4	5
Flexible service to many markets	1	2	3	4	5
Specialized equipment	1	2	3	4	5
On-time reliability	1	2	3	4	5
Minimal loss and damage	1	2	3	4	5
Prompt pick-up and delivery	1	2	3	4	5
Shipment value	1	2	3	4	5
Distance	1	2	3	4	5
Shipment size	1	2	3	4	5
Tracking service provided	1	2	3	4	5
Relationship with carrier	1	2	3	4	5

Texas's Transportation System

25. Is the Texas transportation system adequate in meeting your business/ company needs in terms of:

Reliability	☐ Yes	☐ No
Safety	☐ Yes	☐ No
Quality	☐ Yes	☐ No
Intermodal services (air, sea, rail and/ or road)	☐ Yes	☐ No
Connectivity to state, national, and global markets	☐ Yes	☐ No

Figure 6. Survey Questionnaire: Page 5

26. Please circle the number that best describes how satisfied you are with the freight transportation infrastructure in Texas

	Extremely Unsatisfied				Extremely Satisfied
Capacity of Texas roads and highways	1	2	3	4	5
Rail capacity	1	2	3	4	5
Seaport capacity	1	2	3	4	5
Airport freight capacity	1	2	3	4	5
Border port of entry capacity	1	2	3	4	5
Condition of Texas roads and highways	1	2	3	4	5

27. What are your major concerns/ challenges concerning Texas's freight transportation system (e.g., facility/infrastructure, operational/ performance, and policy) as it pertain to your business?

28. What improvements/ investments are required to remedy these concerns/ challenges?

29. How do you think transportation agencies, such as TxDOT, can best address freight concerns in your region?

30. Which Texas rail and highway corridors do you consider critical to your business?

Any Other Comments?

Figure 7. Survey Questionnaire: Page 6

5. Effective Response Rate

Out of the 569 questionnaires that were mailed out, 50 were returned because of incorrect or nonexistent addresses. Table 1 lists the total questionnaires sent, the number of completed questionnaires, and the number of returned questionnaires. As Table 1 indicates, the overall effective response rate was **12.3%**.

Table 1. Mail Survey Response Statistics

Questionnaires Mailed	569
Completed Questionnaires	64
Number of Questionnaires Returned (i.e., Invalid or Incorrect Addresses)	50
Response Rate %	**11.3**
Effective Response Rate %	**12.3**

In addition, two web surveys were completed by TSRT members. This extremely low response rate persisted after repeated reminder e-mails to TSRT members. In total, the CTR research team thus analyzed the data obtained from 66 completed questionnaires.

Figure 8 illustrates the regional representation of 65[2] of the respondents: 16 respondents were located in the West Region, 10 in the Panhandle Region, 12 in the Central Region, 3 in the North IH 35 Corridor Region, 9 in the Piney Woods Region, 9 in the North Coastal Region, and 6 in the South Coastal Region of Texas.

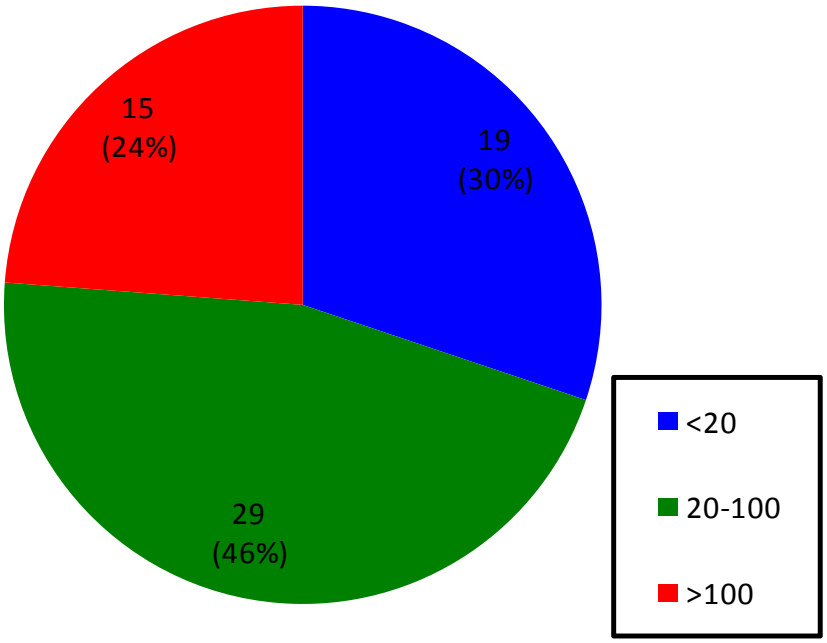
[2] One respondent did not provide his/her business address.

Figure 8. Number of Respondents by Economic Region

6. Major Survey Findings

6.1. Business Information

The first survey questions asked about the size of the company at the specific site in terms of number of employees, number of square feet, number of livestock, and number of acres. Figures 9, 10, 11, and 12 respectively illustrate responses to these questions.

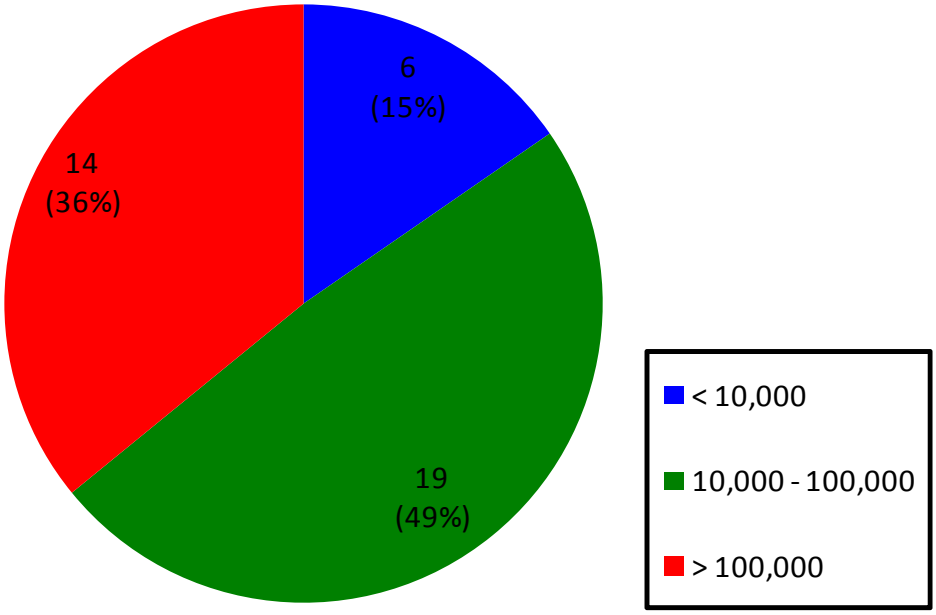


Number of Respondents: 63

Figure 9. Number of Employees

Figure 9 indicates that 19 (30%) of the respondents employ less than 20 employees. These are relatively small companies. Most of the respondents (46%), however, employed more than 20 but less than 100 employees. Finally, 15 (24%) of the respondents employed more than 100 employees. The latter respondents were mostly warehouse or "big box" companies, such as the Wal-Mart Warehouse in Plainview, Texas (Panhandle Region).

The number of square feet reported are categorized and illustrated in Figure 10. As shown in Figure 10, 6 (15%), 19 (49%), and 14 (36%) reported that the facility was less than 10,000 square feet, between 10,000 and 100,000 square feet, and more than 100,000 square feet, respectively.

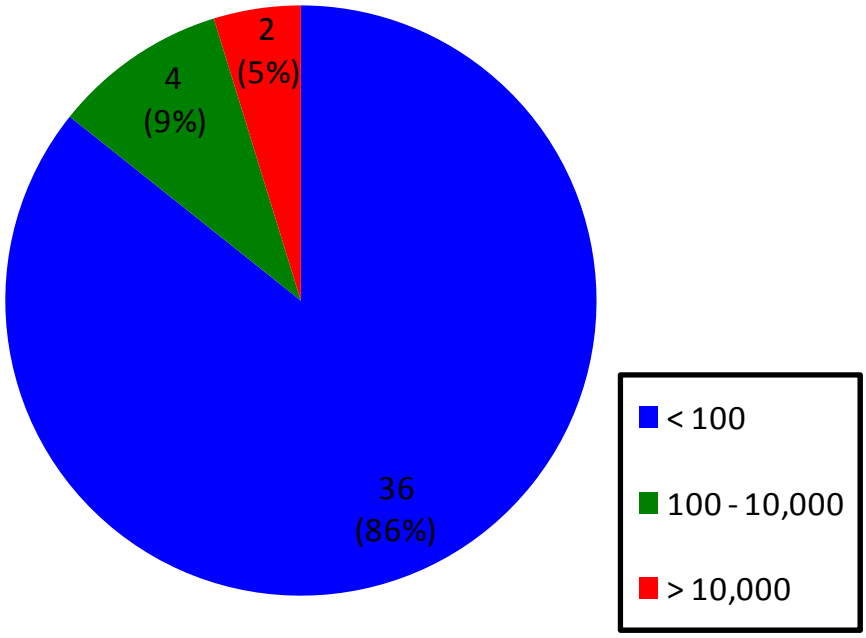


Number of Respondents: 39

Figure 10. Number of Square Feet

Only 6 (9%) out of the 66 respondents were reported to have livestock. About two-thirds of the respondents did not have livestock and 16 (24%) respondents did not provide a response to the question.

Regarding the "number of acres" question (see Figure 11), 36 (86%) reported the business site to be less than 100 acres (out of which 7 business sites were reported as 5 acres or less), 4 (9%) reported having a business site between 100 and 100,000 acres, and 2 (5%) of the respondents reported the size of business to be larger than 10,000 acres.



Number of Respondents: 42

Figure 11. Number of Acres

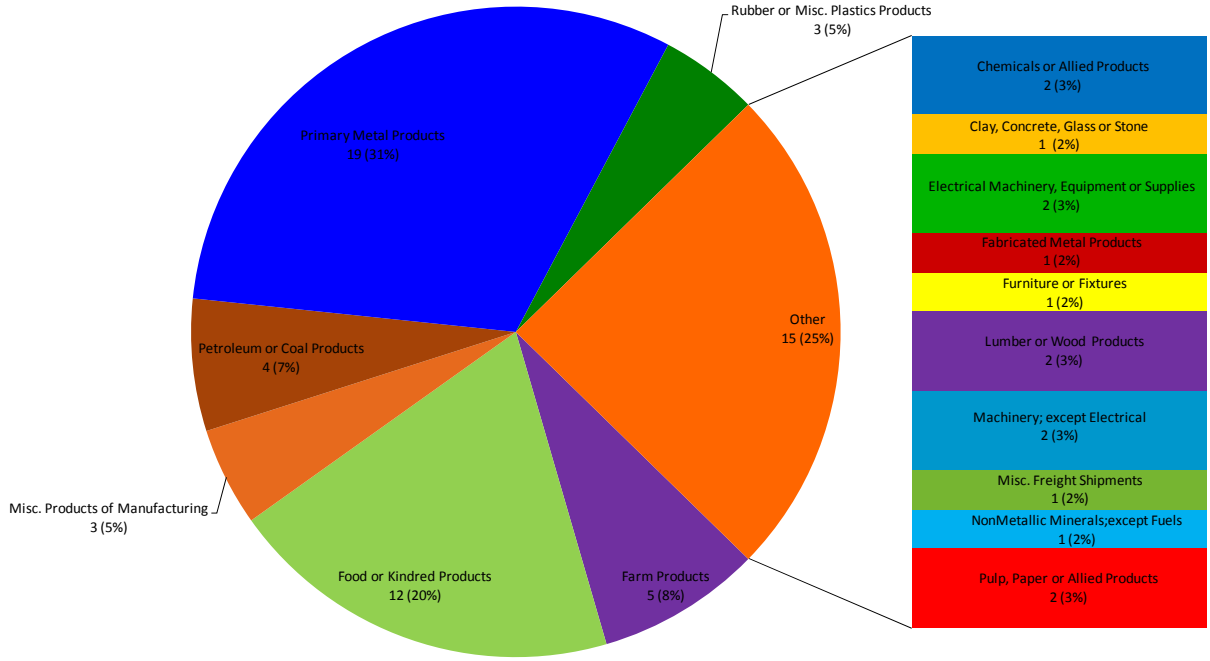
6.2. Incoming Shipments

Questions two to nine addressed shipments delivered to the business site. Specifically, the questions focused on the most important commodity delivered to the business site (in terms of loads or tonnage) and type of trucks used, origin of the commodity, and whether the commodity is affected by seasonal variation. This information provides insight into the characteristics of the commodities moving between, to, and from production and consumption centers in Texas.

The Standard Transportation Commodity Code (STCC) classification was used to categorize the commodity information provided by respondents.

Sixty-one out of the 66 respondents provided information about the most important commodity delivered to their business site. Figure 12 indicates that for 31% of the respondents the most important commodity delivered to their business is *Primary Metal Products* (e.g., steel, iron, coil, part casing, and copper tools). The major commodities delivered are:

- *Food or Kindred Products* (e.g., milo and wheat) – 12 respondents (20%),
- *Farm Products* (e.g., cattle, wool, pecans, and cotton seeds) – 5 respondents (8%)
- *Petroleum or Coal Products* (e.g., oilfield supplies, diesel, oil, fuel) – 4 respondents (7%)

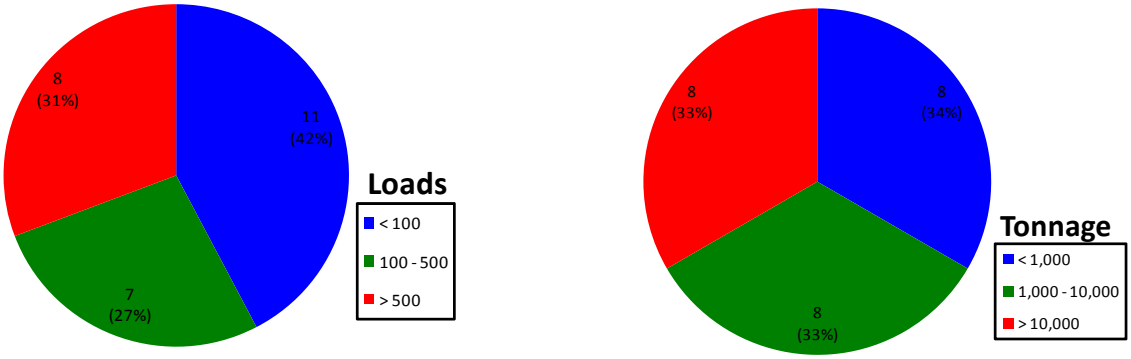


Number of Respondents: 61

Figure 12. Most Important Commodity Delivered to Business Site

The other category (25% of respondents) comprised a variety of commodity categories, including chemicals or allied products; clay, concrete, glass, or stone; electrical machinery, electrical machinery, equipment or supplies; fabricated metal products; furniture or fixtures; lumber or wood products; machinery, except electrical; miscellaneous freight shipments; nonmetallic mineral, except fuels; and pulp, paper, or allied products.

Respondents were asked to report the number of loads (or tonnage) delivered to the business site of the company's most important commodity in a representative year (refer to Figure 13).

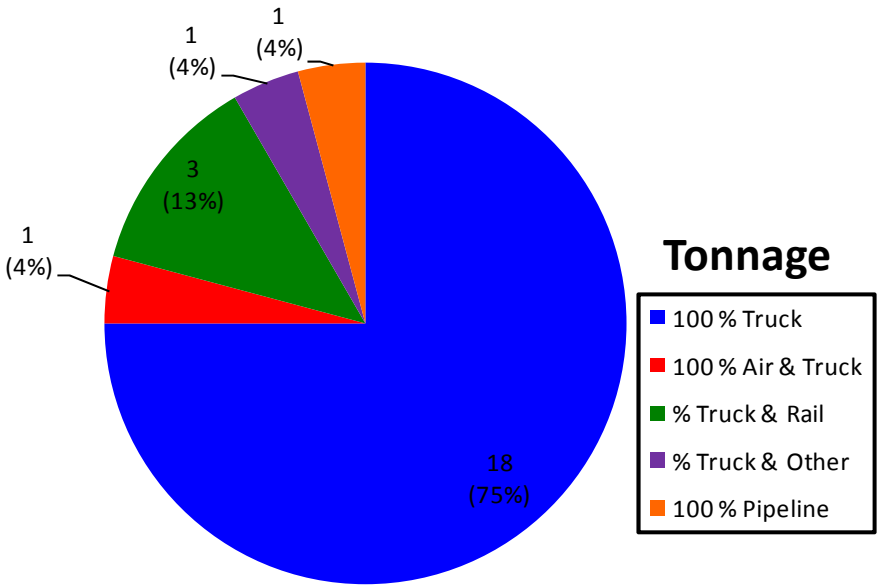


Number of Respondents: 26 Number of Respondents: 24

Figure 13. Number of Loads or Tonnage Delivered of Most Important Commodity in Representative Year

Twenty-four respondents answered the question in terms of tonnage and 26 in terms of number of loads. For those that answered the question in terms of tonnage, 8 reported a tonnage of less than 1,000 tons per year, 8 reported a tonnage between 1,000 and 10,000 tons per year, and the remaining 8 reported more than 10,000 tonnage per year. Of the 26 respondents that reported loads delivered, 11 companies received less than 100 loads per year, 7 received between 100 and 500 loads per year, and 8 received more than 500 loads per year.

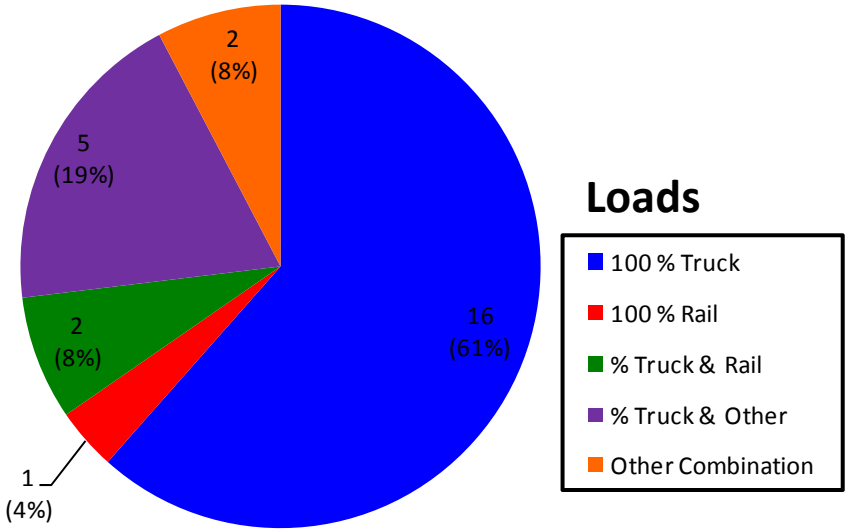
In terms of the modes used to deliver the reported most important commodity to the business site, 75% of the respondents that answered the previous question in terms of tonnage reported to use truck for 100% of the deliveries (Figure 14). In addition, 13% reported to use truck and rail for deliveries. Other mode combinations reported to be used for deliveries were air and truck, truck and other mode, and 100% pipeline, each accounting for 4% of respondents.



Number of Respondents: 24

Figure 14. Modes Used for Delivery of Most Important Commodity (Tonnage)

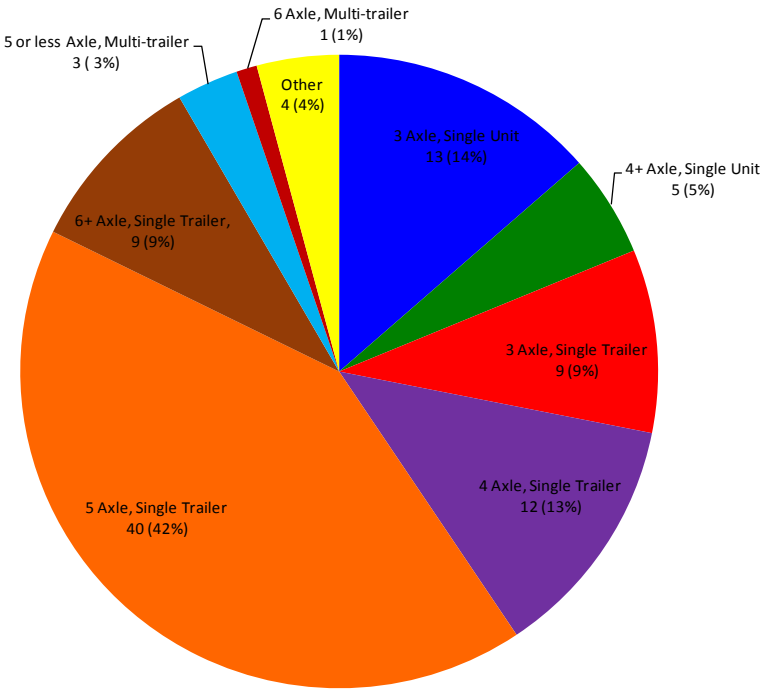
Of the respondents that answered the previous question in terms of loads (see Figure 15), 61% of the respondents reported using trucks for 100% of the deliveries, while an additional 19% reported using trucks and other modes. Only 4% (1 respondent) reported using rail for 100% of deliveries, 8% (2 respondents) used truck and rail, and 8% (2 respondents) used other combination of modes.



Number of Respondents: 26

Figure 15. Mode Used for Delivery of Most Important Commodity (Loads)

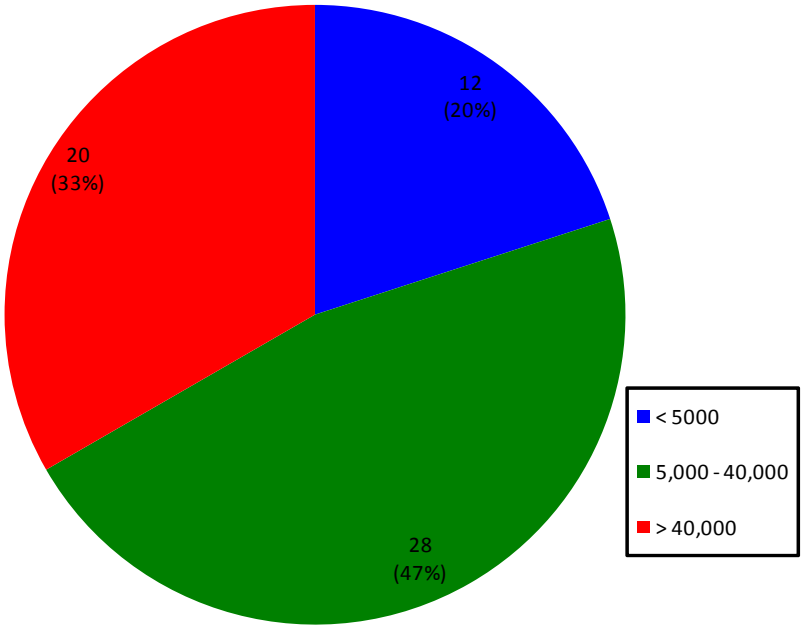
In terms of the truck types used for delivery of the major commodities, it is evident from Figure 16 that 5 Axle-Single Trailer is the dominant truck type (approximately 40% of the respondents) used, followed by the 3 Axle-Single unit (approximately 13% of the respondents), and the 4 Axle-Single Trailer (approximately 12% of respondents).



Number of Respondents: 64

Figure 16. Truck Types Used for Delivery of Major Commodity

Figure 17 illustrates the typical shipment size (in lbs) of the most important commodity reported to be delivered to the business site.

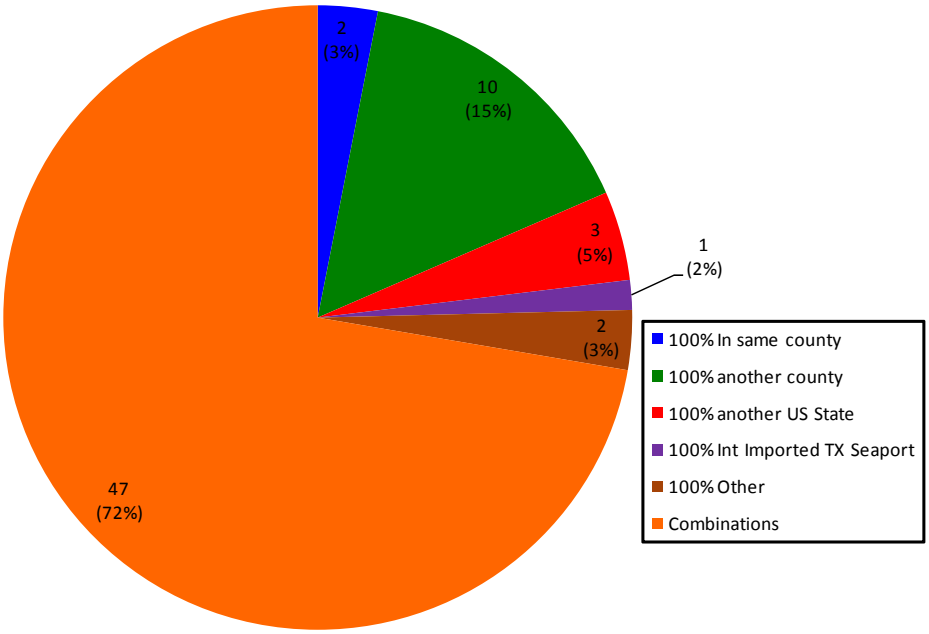


Number of Respondents: 60

Figure 17. Typical Shipment Size (in lbs) of Most Important Commodity

As shown in Figure 17, most respondents (43%) reported the typical size of the delivery shipments of the most important commodity to be between 5,000 and 40,000 lbs, followed by 31% of respondents reporting a shipment size of in excess of 40,000 lbs. Finally, 12 respondents (18%) reported receiving shipments of their most important commodity in quantities of less than 5,000 lbs.

Respondents were also asked about the origins of the most important commodity delivered to their business site (see Figure 18).

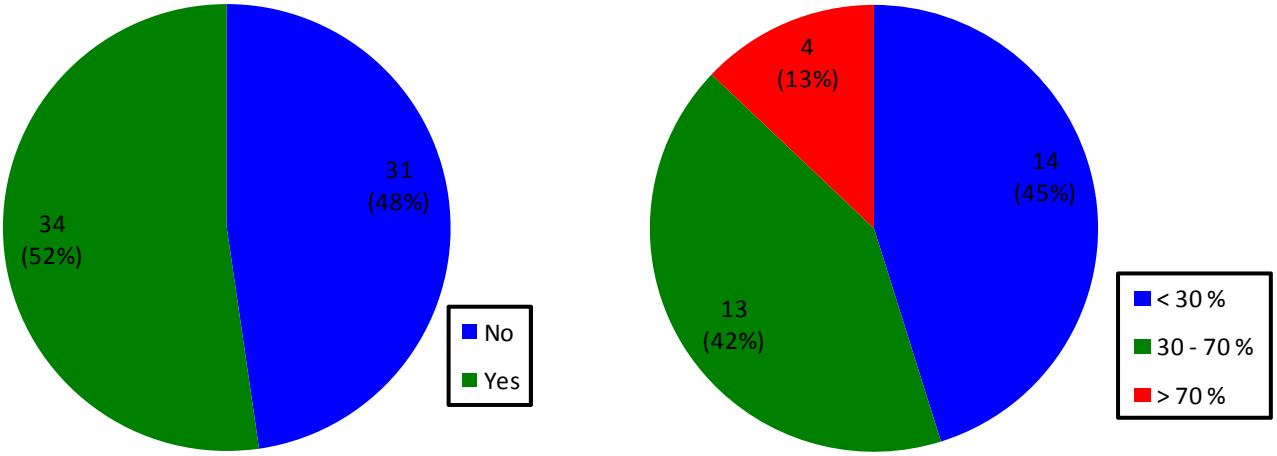


Number of Respondents: 65

Figure 18. Origins of Major Commodities Delivered

Most respondents (72%) reported a variety of origins for the major commodities delivered to their business site. For example, one respondent reported that 30% of the major commodity delivered to the business site originates in another U.S. state and 70% is imported through a Texas seaport. Very few respondents' sole source their major commodity from a single geographic location (see Figure 18).

Finally, respondents were asked whether shipments of the major commodity delivered are influenced by seasonal variation (see Figure 19).



Number of Respondents: 65 Number of Respondents: 31

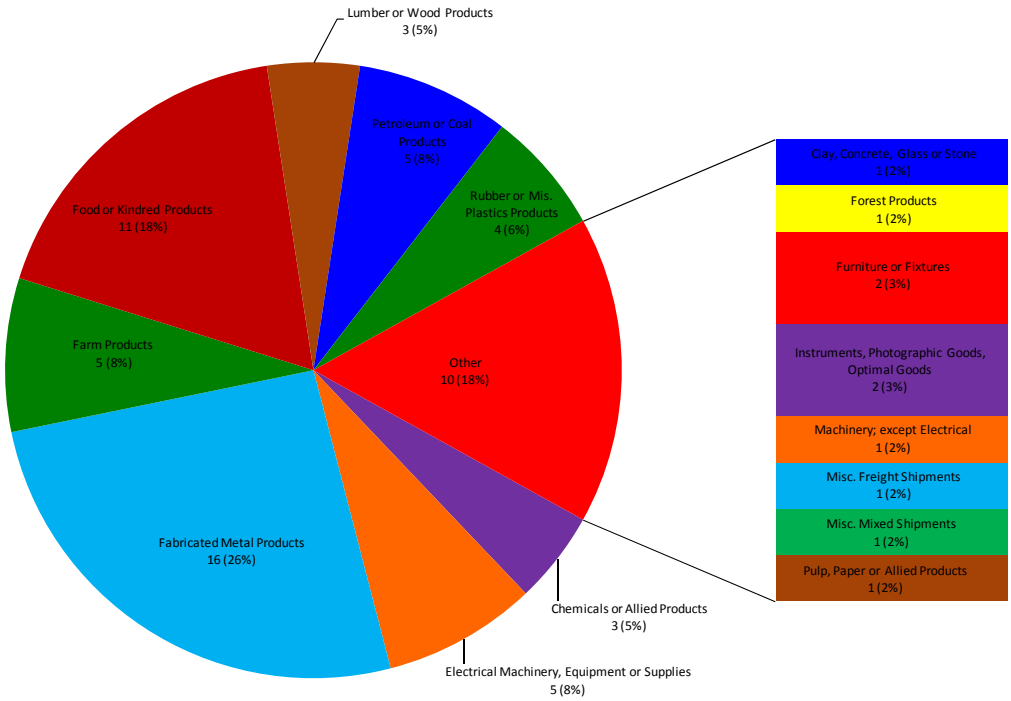
Figure 19. Commodity Affected by Seasonal Variation

Of the 65 respondents that completed this question, 34 reported that the major commodity received by the company is influenced by seasonal variation. Of the latter, 14 reported that the difference between low and high season is less than 30%, 13 reported a difference between 30 and 70%, while 4 respondents (13%) reported a difference in excess of 70% between low and high season.

6.3.Outgoing Shipments

Questions 10 to 17 addressed outgoing shipments from the business site. Specifically, the focus of the questions was on the most important commodity shipped from the business site (in terms of loads or tonnage), the modes and type of trucks used, the commodity destination, and whether the commodity is affected by seasonal variation.

Figure 20 illustrates the most important commodities shipped by respondents in a representative year.



Number of Respondents: 62

Figure 20. Most Important Commodity[3] Shipped from the Business Site

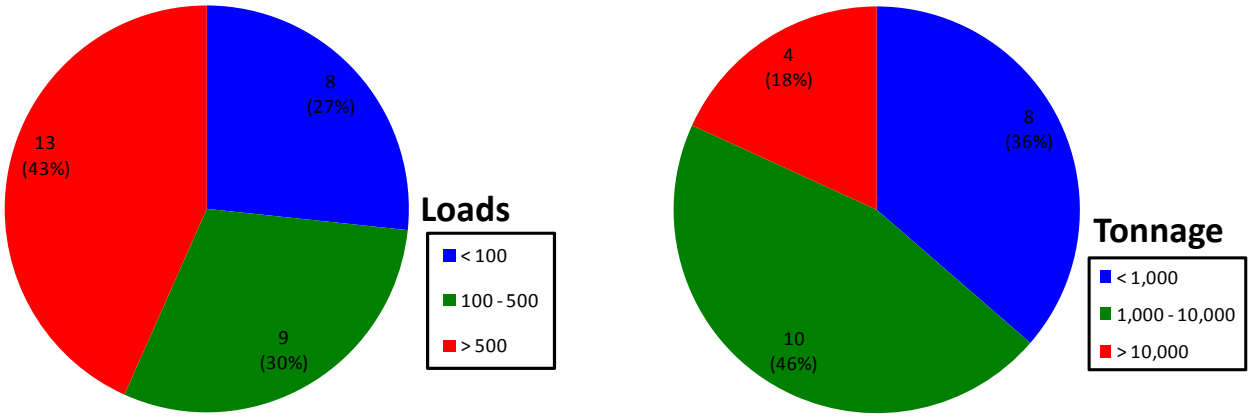
As is evident from Figure 20, 26% of the respondents reported that the most important commodity shipped is *Fabricated Metal Products* (e.g., metal stampings, metal plates, vessels, beams, and casting). The other major commodities shipped are:

- *Food or Kindred Products* (e.g., poultry, finished canned juices, and flour) – 11 respondents (18%).
- *Petroleum and Coal Products* (e.g., oilfield supplies, gas, diesel, and petroleum liquid) – 5 respondents (8%)
- *Farm Products* (e.g., potting soil, seed, and cottonseed oil) – 5 respondents (8%)

The remaining commodity categories were each mentioned by four or fewer respondents.

[3] As in the case of incoming shipment, the STCC was used to categorize the commodity information provided by respondents.

Respondents were subsequently asked to report the number of loads (or tonnage) of the company's most important commodity that is shipped from the business site in a representative year (see Figure 21).



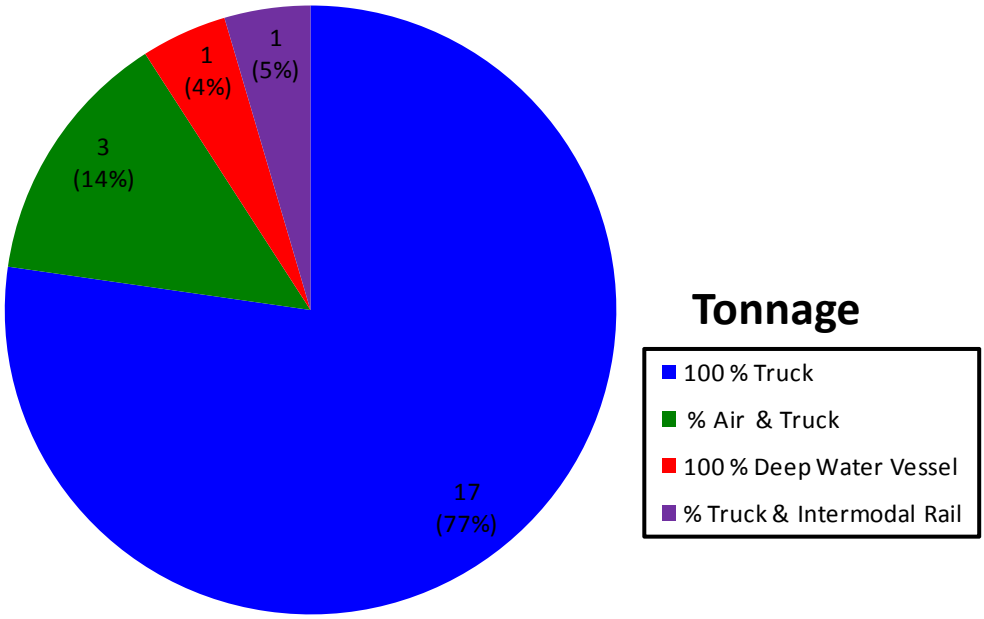
Number of Respondents: 30

Number of Respondents: 22

Figure 21. Number of Loads or Tonnage of Major Commodity Shipped in Representative Year

Thirty respondents answered this question in terms of loads and 22 in terms of tonnage. In terms of those that reported tonnage, respondents reported shipping less than 1,000 tons per year, 10 reported between 1,000 and 10,000 tons per year, and 4 reported more than 10,000 tons per year. In terms of those that reported the number of loads, 8 reported shipping less than 100 loads per year, 9 reported between 100 and 500 loads per year, while 13 reported more than 500 loads per year.

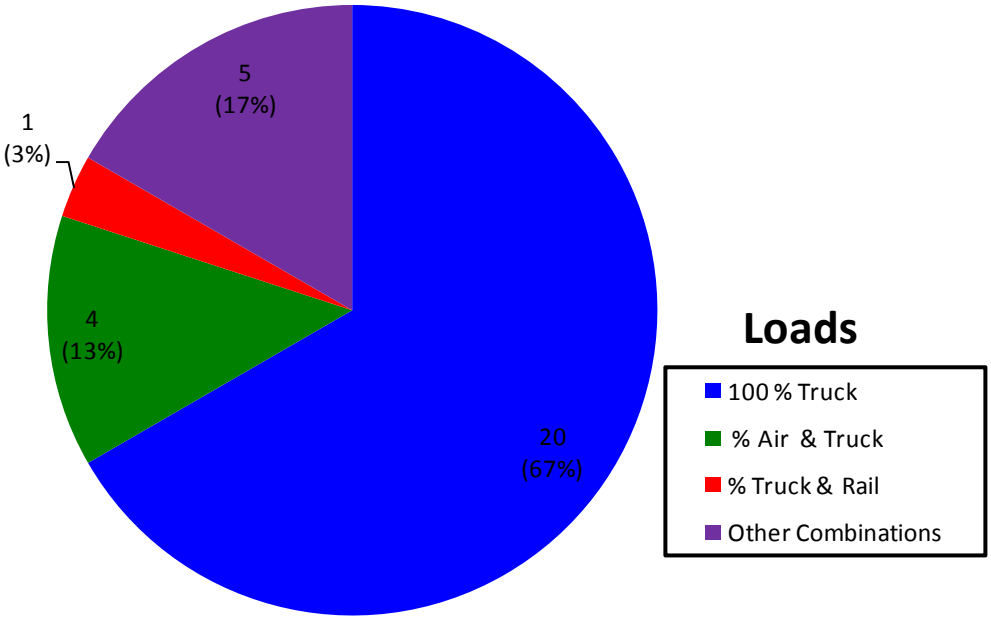
In terms of the modes used to ship the company's most important commodity from the site, 77% of the respondents reported that 100% of the tonnage is shipped by truck, 14% reported using air and truck to ship the commodity tonnage, 4.5% reported that all tonnage is shipped by deep water vessel, and 4.5% reported using truck and intermodal rail to ship the commodity tonnage from the business site (see Figure 22). Finally, note that none of the respondents seem to use a truck and rail combination to ship their most important commodity.



Number of Respondents: 22

Figure 22. Modes Used for Shipping Most Important Commodity (Tonnage)

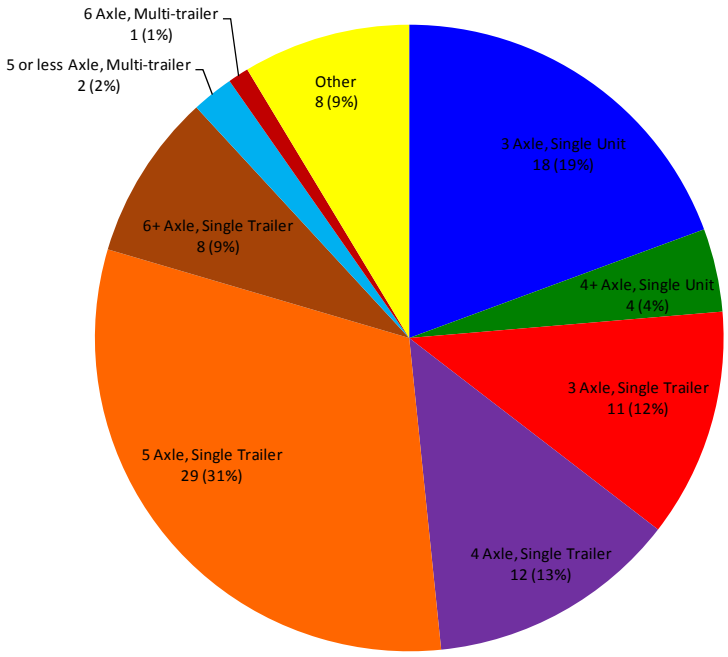
Figure 23 indicates that 67% of the respondents reported that 100% of the loads of the company's most important commodity are shipped by truck, 13% is shipped by air and truck, and 3% is shipped by truck and rail. Other combinations include the use of truck, intermodal rail, and air; truck and consumer in-person pickup (i.e., the consumer uses his/her own private vehicle to transport the commodity); truck, rail, and intermodal rail, among others.



Number of Respondents: 30

Figure 23. Modes Used for Shipping Most Important Commodity (Loads)

Figure 24 illustrates the reported typical truck type used by respondents to ship from the business site.

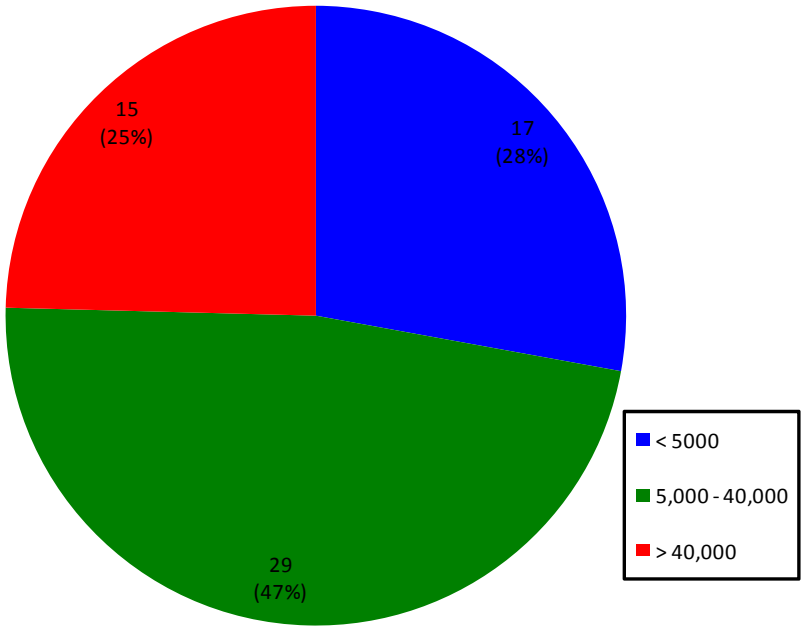


Number of Respondents: 63

Figure 24. Truck Types Used for Shipping of Major Commodity

As shown in Figure 24, the *5 Axle-Single Trailer* truck is used by approximately 29% of the respondents to ship their major commodities from the business site, followed by the *3 Axle-Single* unit truck (approximately 18% of respondents), and the *4 Axle-Single Trailer* (indicated by approximately 12% of respondents).

Figure 25 illustrates the typical shipment size (in lbs) of the most important commodity reported to be shipped from the business site.

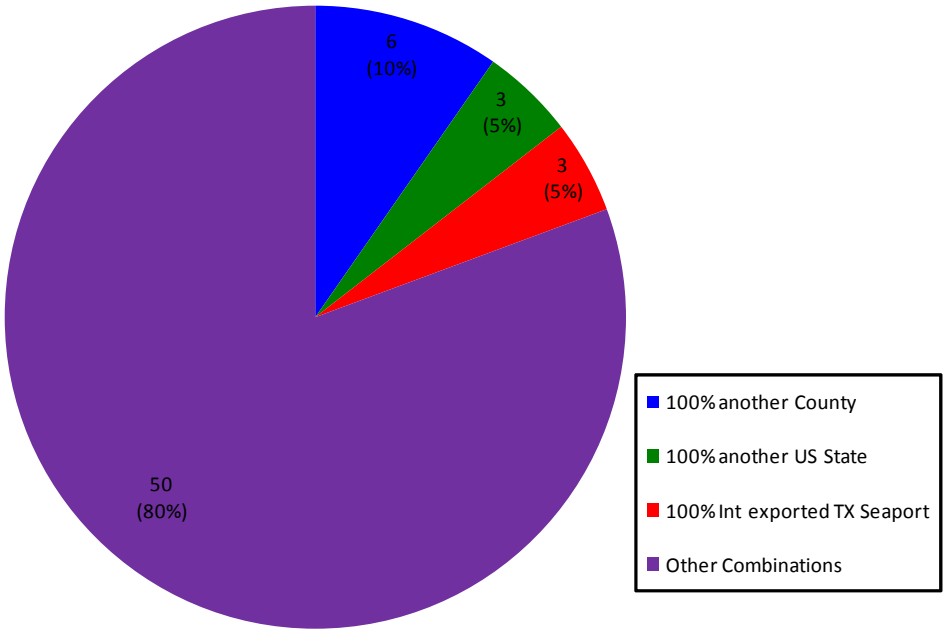


Number of Respondents: 61

Figure 25. Typical Shipment Size (in lbs) of Most Important Commodity

As shown in Figure 25, 29 respondents (47%) reported typical shipment size of between 5,000 and 40,000 lbs for the major commodity shipped from the business site. In addition, 17 (28%) of the respondents reported a typical shipment size of less than 5,000 lbs and 15 (25%) reported a shipment size in excess of 40,000 lbs.

Similar to the question for incoming shipments, respondents were also asked about the destinations of the most important commodity delivered from their business site (see Figure 26).

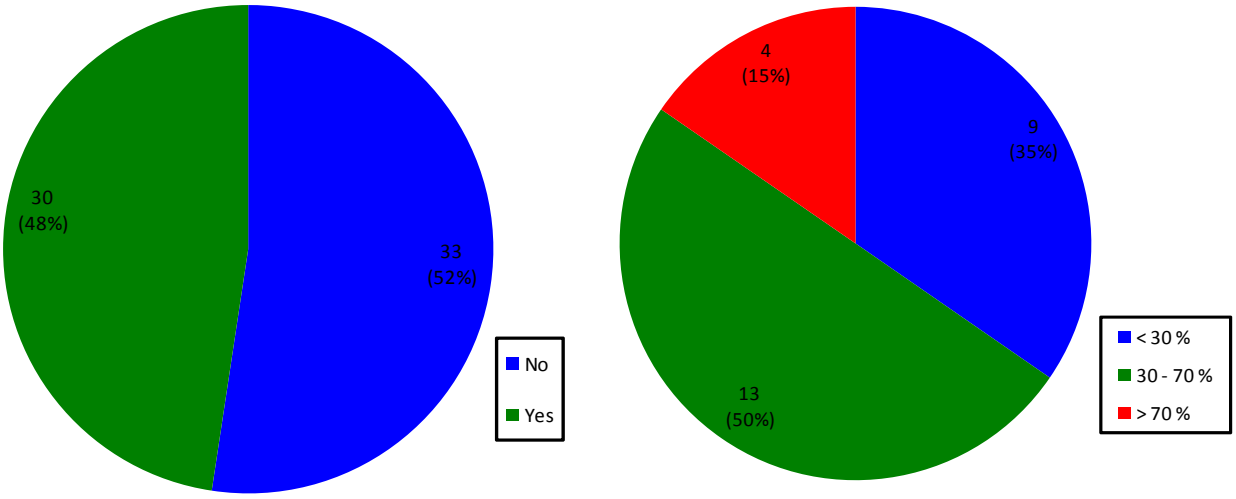


Number of Respondents: 63

Figure 26. Destinations of Major Commodities Shipped

For two companies this question was not applicable and one company did not respond to it. The results show that 6 (9%) of the companies surveyed reported that the destination of their most important commodity is in another county, 3 respondents reported that it is in another U.S. state, and 3 respondents reported that it is through the Texas Seaport shipped for international markets. As was the case for the origins reported for incoming shipments, most respondents (80%) reported a variety of destinations for the major commodities shipped from the business site. For example, one respondent reported shipping 65% of its major commodity to a destination in the same county, 10% to a destination in another Texas county, and 25% to a destination in another U.S. state. Very few respondents reported a single geographic location (i.e., county export port, U.S. state) as the sole market for their major commodity. For example, a combination from one company is 65% sales in the same county, 10% in another Texas county, and 25% in other U.S. state.

Finally, respondents were asked whether shipments of the major commodity shipped are influenced by seasonal variation (see Figure 27).



Number of Respondents: 63 Number of Respondents: 26

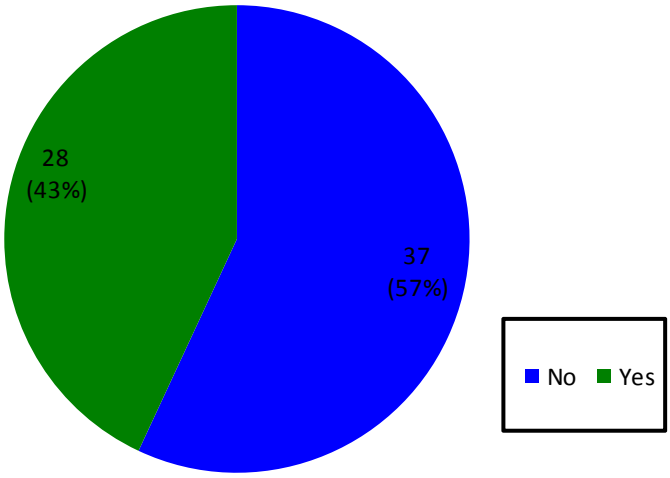
Figure 27. Commodity Affected by Seasonal Variation

Of 63 respondents that completed this question, 30 reported that the major commodity shipped from the business site is influenced by seasonal variation. Of the latter, 9 reported that the difference between low and high season is less than 30%, 13 reported the difference to be between 30% and 70%, and 4 respondents reported the difference to be in excess of 70%.

6.4.Truck Shipments

Questions 18 to 22 pertained specifically to the trucking shipments of the business. These questions were included to improve the understanding of the attributes businesses consider when procuring services.

First, respondents were asked whether their business/company owned a fleet of trucks. Refer to Figure 28.

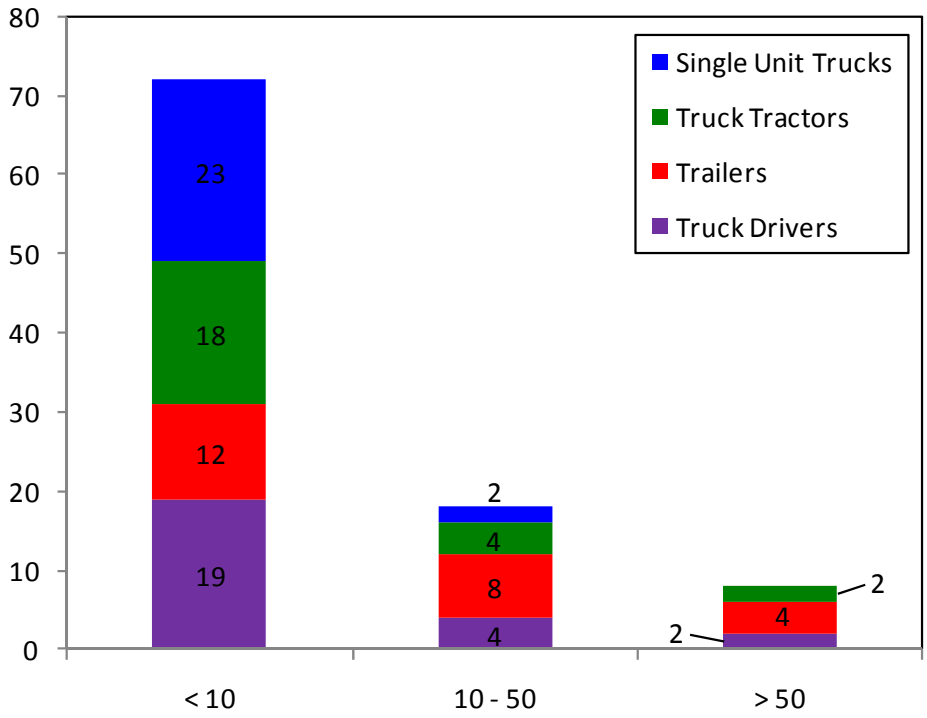


Number of Respondents: 65

Figure 28. Owning a Truck Fleet

As Figure 28 shows, 28 respondents (43%) reported that their company owned a truck fleet, while 37 (57%) reported that their company did not own a fleet of trucks.

Those that responded affirmatively to owning a trucking fleet were subsequently asked about the size of their fleet in Texas and the percentage of their inbound and outbound shipments moved by their own trucking fleet (see Figure 29).



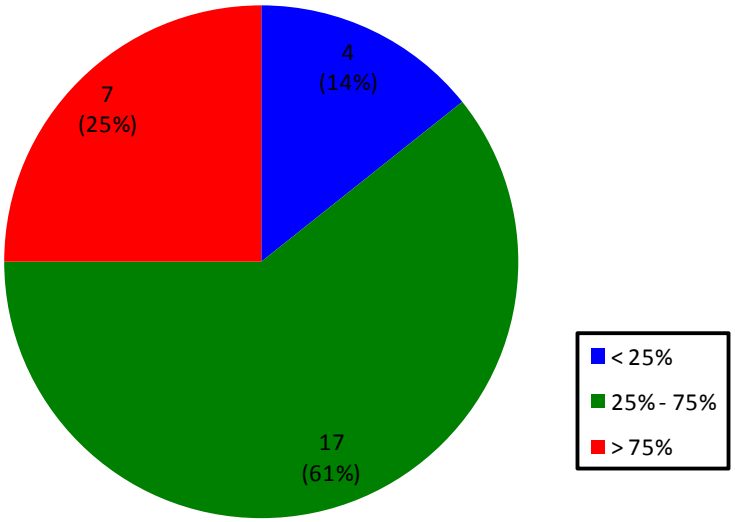
Number of Respondents: Single Unit Trucks (25), Truck Tractors (24), Trailers (24), Truck Drivers (25)

Figure 29. Size of Truck Fleet

Of 28 respondents that indicated that their business/company has their own fleet of trucks:

- 23 respondents indicated they own less than 10 single unit trucks and 2 have between 10 and 50 single unit trucks (i.e., one owns 11 single unit trucks and the other owns 30 single unit trucks).
- 18 respondents indicated they have less than 10 truck tractors, 4 have between 10 and 50 truck tractors, and 2 have more than 50 truck tractors.
- 12 respondents indicated they have less than 10 trailers, 8 have between 10 and 50 trailers, and 4 respondents own more than 50 trailers.
- 19 respondents indicated that their business employs less than 10 truck drivers, 4 employ between 10 and 50 truck drivers, and 2 respondents employ more than 50 truck drivers.

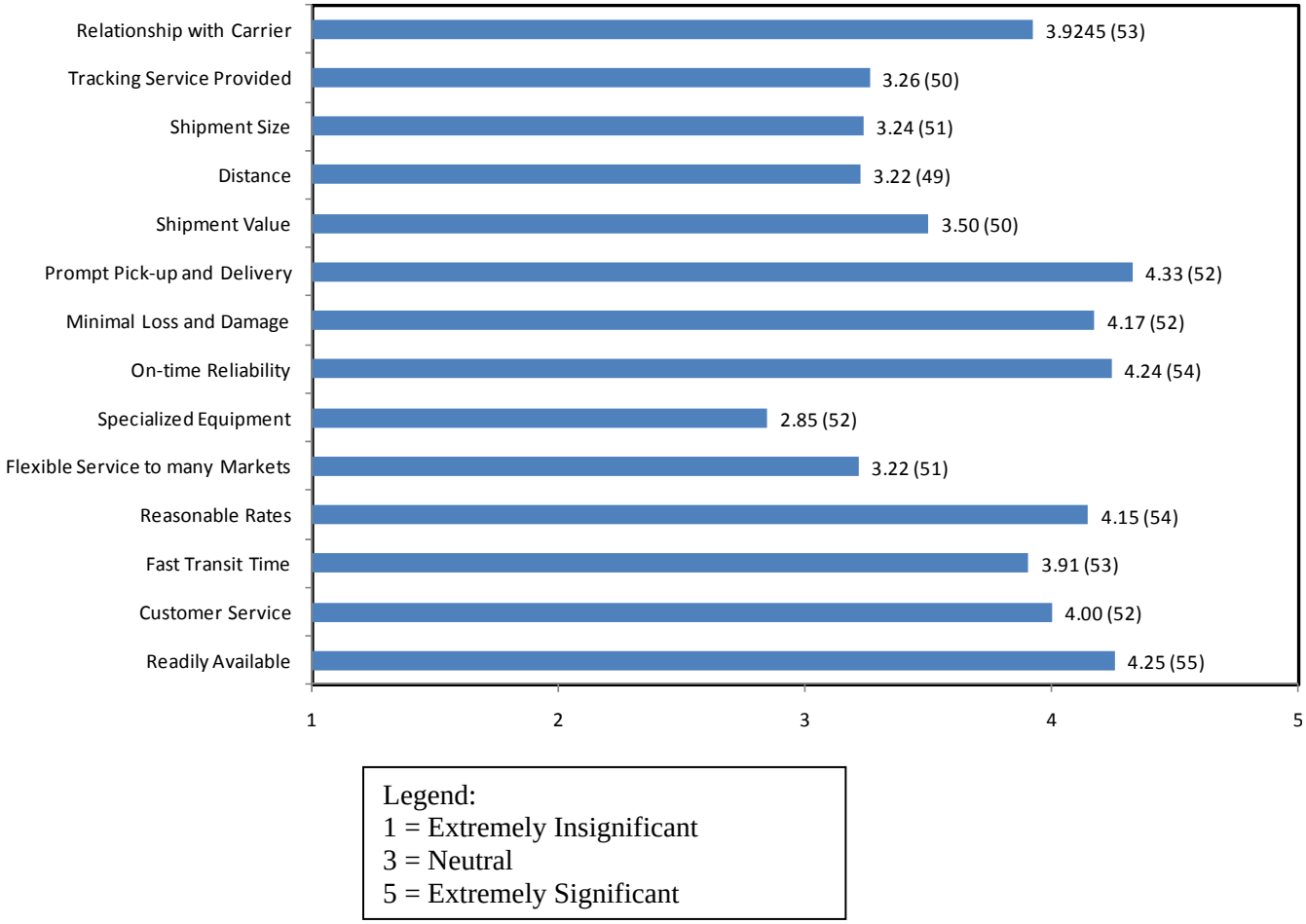
Figure 30 illustrates that 4 respondents reported moving 25% of inbound and outbound shipments by their trucking fleet, 17 respondents reported to move between 25 and 75% of their inbound and outbound shipments by their own trucking fleet. Finally, seven respondents reported they move more than 75% of their shipments by their own trucking fleet. Of the latter, 4 respondents reported they move all their shipments (i.e., 100%) by their own trucking fleet.



Number of Respondents: 28

Figure 30. Percentage of Inbound and Outbound Shipments Moved by the Company Truck Fleet

Respondents were subsequently asked to rate the importance of specific attributes in their decision when procuring trucking services. Figure 31 lists the responses received.



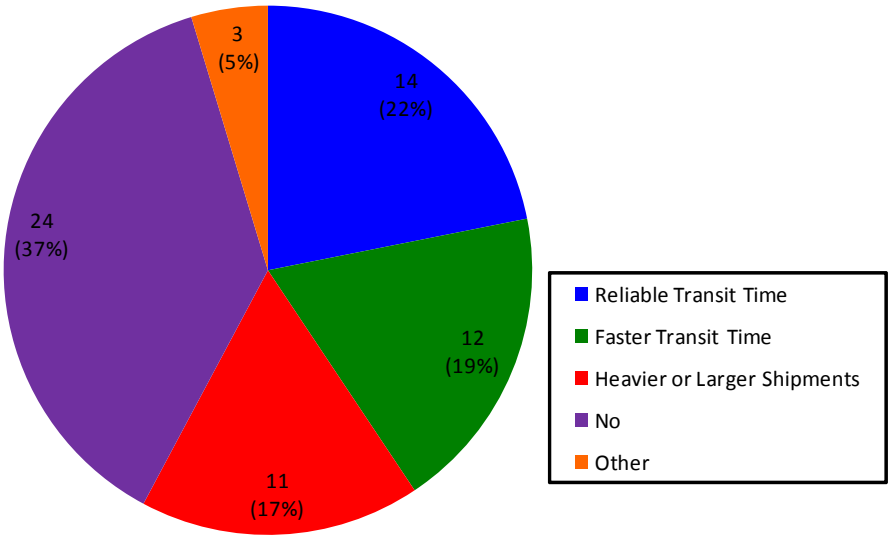
Note: Number of Respondents provided in parentheses

Figure 31. Importance of Trucking Service Attributes

Figure 31 demonstrates that specialized equipment, flexible service to many markets, distance, shipment size, and tracking service provided are the least significant factors in the respondents' decision when procuring trucking services. On the other hand, prompt pick-up and delivery, readily available, on-time reliability, minimal loss and damage, and reasonable rates are the most significant service attributes in the respondents' decision when procuring trucking services.

Finally, respondents were asked if their business/company would be willing to pay toll charges if certain benefits can be realized.

Figure 32 shows that 24 (37%) respondents indicated that their business/company would not be willing to pay the toll charges incurred by a trucking service despite the listed benefits (i.e., reliable transit time, faster transit time, and heavier or larger shipments) On the other hand, it was evident that respondents would be willing to incur a toll charge to ensure reliable transit time (22% of responses), to ensure faster transit time (19% of responses), and have the ability to accommodate heavier or larger shipments (17% of responses).



Number of Respondents: 64

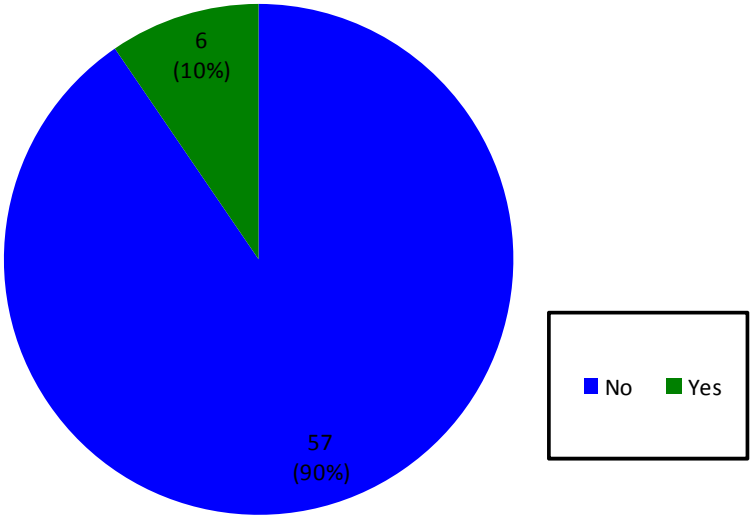
Figure 32. Benefits Company Would Be Willing to Pay Toll For

6.5. Rail Shipments

Questions 23 and 24 pertained specifically to the rail shipments of the business or company. These questions were included to improve the understanding of the attributes businesses consider when procuring rail services.

First, respondents were asked whether their business had been impacted by discontinued rail services.

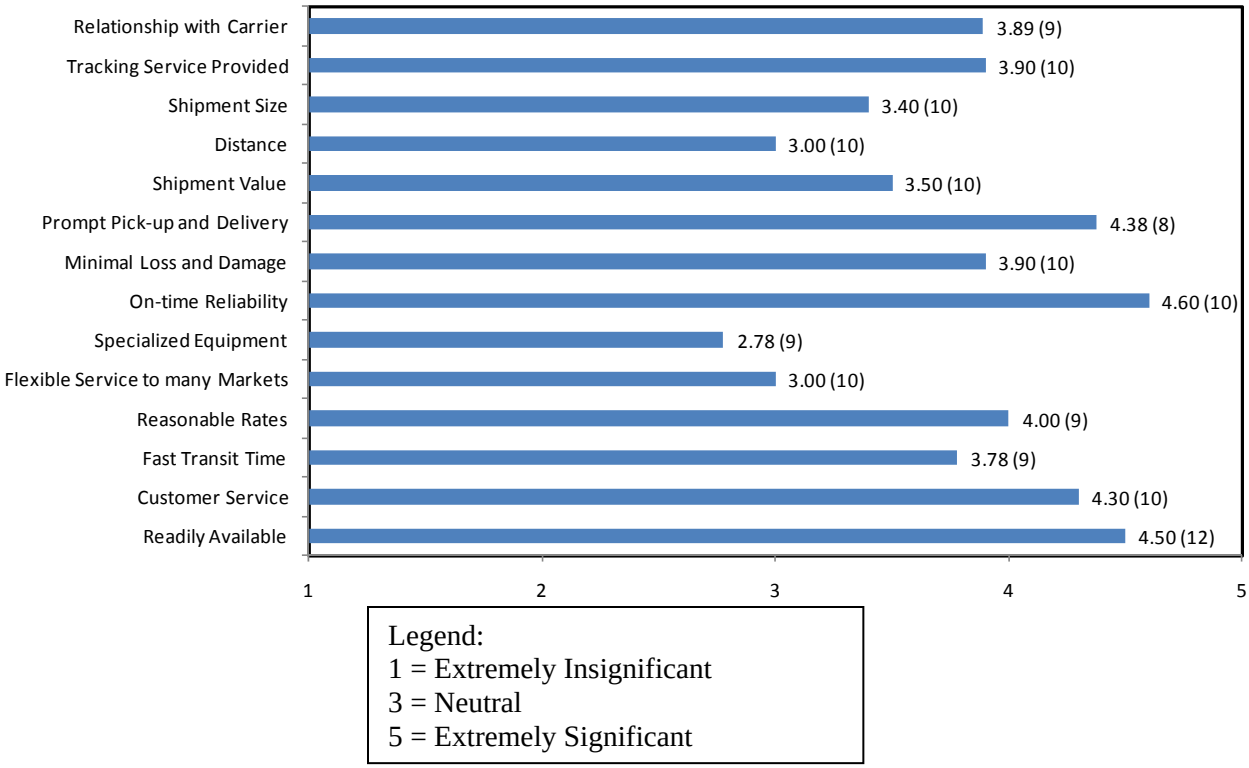
The vast majority (57 respondents or 90%) of the respondents reported that their business/company had not been impacted by a discontinuation of rail services (Figure 33). Only six respondents reported that their business/company had been impacted by the discontinuation of rail services in their area.



Number of Respondents: 63

Figure 33. Impacted by Discontinued Rail Services

Respondents were subsequently asked to rate the specific service attributes in their decision when procuring rail services. Figure 34 lists the responses received.



Note: Number of Respondents provided in parentheses

Figure 34. Importance of Rail Service Attributes

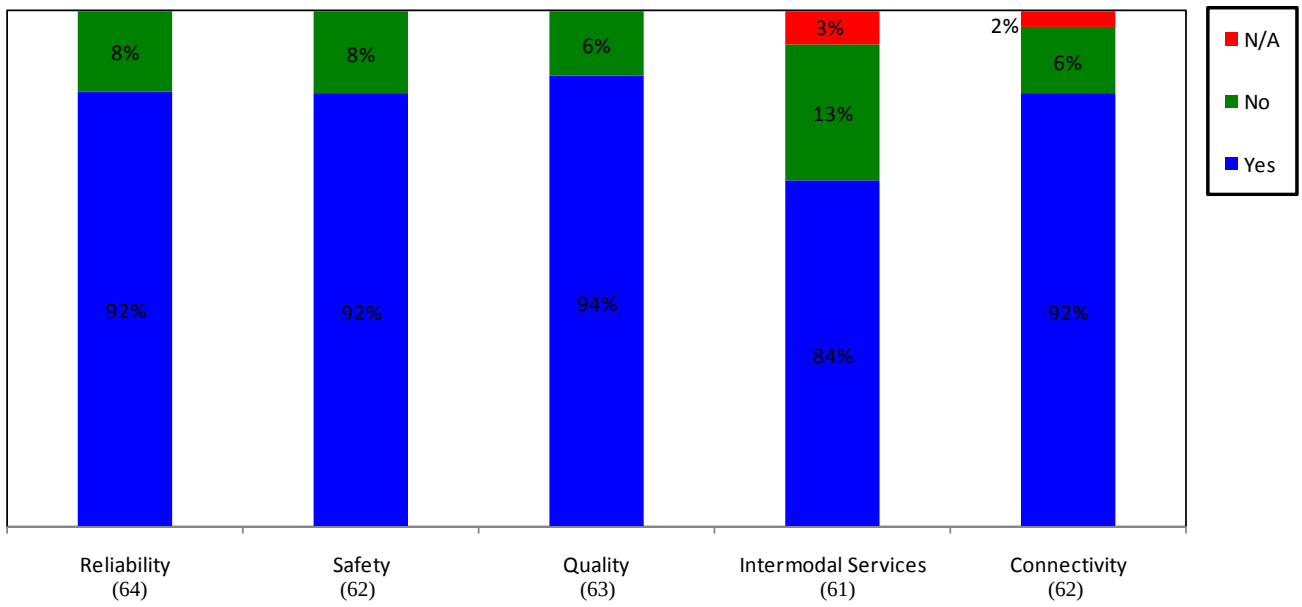
From Figure 34, it is evident that specialized equipment, flexible service to many markets, and distance are the least significant in the respondents' decision when procuring rail services. On the other hand, on-time reliability, readily available, and prompt pick-up and delivery are the most significant service attributes in the respondents' decision when procuring rail services.

6.6. Texas's Transportation System

Questions 25 to 30 addressed respondents' satisfaction with and concern relating to Texas's transportation system.

First, respondents were asked whether Texas's transportation system is adequate in meeting their business/company needs in terms of reliability, safety, quality, intermodal services, and connectivity.

Figure 35 indicates that the majority of respondents felt that Texas's transportation system is adequate in meeting their business needs in terms of reliability (89%), safety (86%), intermodal services (77%), and connectivity (86%). There was, however, some concern surrounding the adequacy of intermodal services with eight respondents indicating that their needs are not met in terms of this component/aspect of Texas's transportation system.

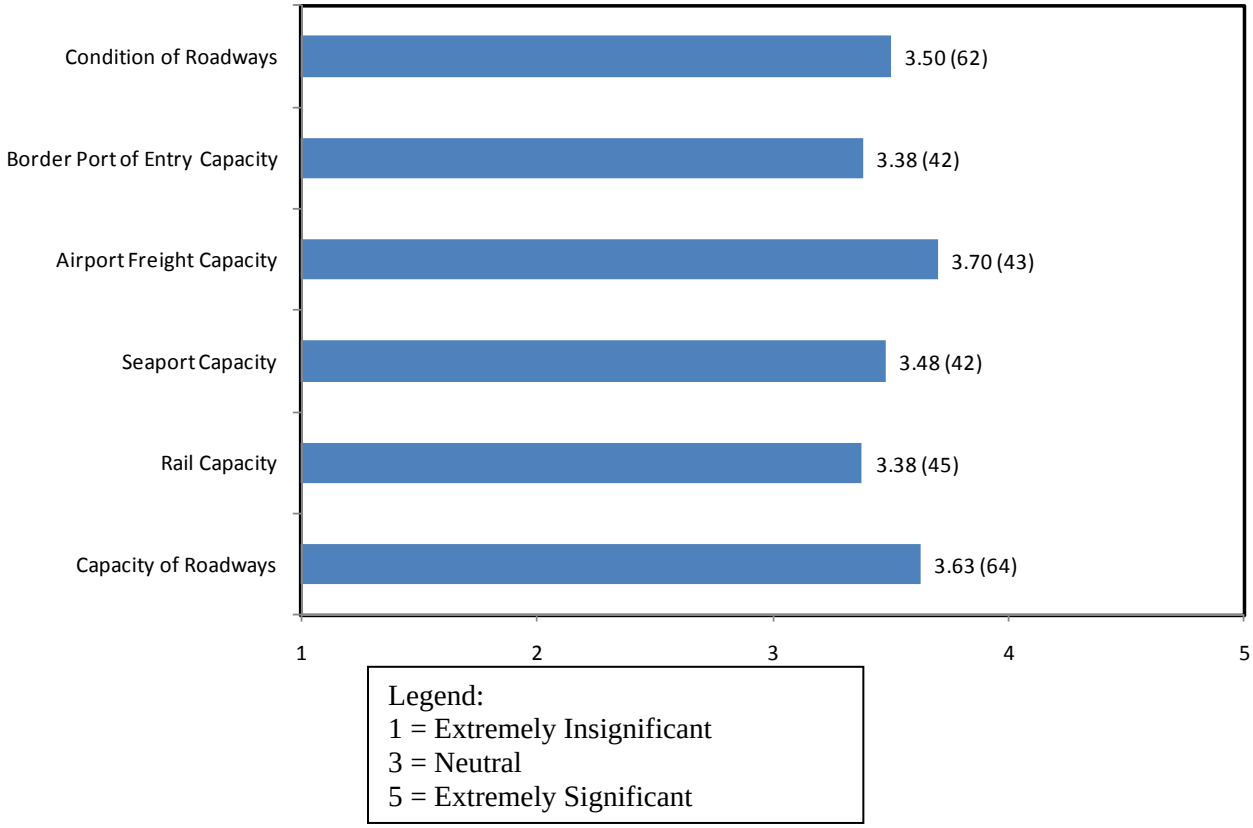


Number of Respondents are indicated in parentheses.

Figure 35. Adequacy of Texas's Transportation System in Meeting Business Needs

Respondents were subsequently asked to indicate their satisfaction—on a scale of 1 to 5—with Texas's freight transportation infrastructure in terms of the (a) capacity of the roadways, (b) rail capacity, (c) seaport capacity, (d) airport freight capacity, (e) border port of entry capacity, and (f) condition of the roadways.

From Figure 36, it is evident that the respondents are, in general, between neutral and satisfied with Texas's freight transportation infrastructure. Respondents seem to be the most satisfied with Texas's airport freight capacity and the least satisfied with Texas's rail and border port-of-entry capacity.



Note: Number of Respondents provided in parentheses

Figure 36. Average Satisfaction with Texas's Freight Transportation Infrastructure

Finally, a number of open-ended questions were included to solicit (a) major concerns/ challenges concerning Texas's freight transportation system, (b) improvements/investments needed to remedy the identified concerns/challenges, and (c) how transportation agencies can best address the identified fright concerns. Thirty-five respondents answered the first question indicating concerns in safety, rising costs (gasoline taxes, toll road fees, etc.), and restrictive regulations (i.e., weight restrictions).

In terms of improvements/investments needed, 25 respondents indicated the need for continued road maintenance, increased customer service, decreased taxes, increased road and border capacity, higher quality roads, investment in better access to routes, increased rail track speeds, and the promotion of rail service from Presidio to Dallas/Fort Worth in an effort to divert truck traffic from Highway 67 to rail.

In terms of what transportation agencies can do to address the identified freight concerns, 29 respondents provided the following suggestions: provide financial stability, limit government involvement, expand highways through small towns, integrate rail, separate trucks from cars, complete construction work on time, and promote alternative non-highway modes.

Finally, respondents were asked to list which Texas rail and highway corridors they consider critical to their business. This was an open question and 40 respondents completed this question. The corridors mentioned by these respondents are:

- TX 64, TX 225, TX 36, TX 130
- US 259, US 59, US 77, US 385, US 290, US 287, US 87, US 54, US 84, US 69, US 281, US 44, US 271, US 75, US 83
- IH 610, IH 10, IH 45, IH 35, IH 40, IH 27, IH 20, IH 25, IH 37

The rail corridor information was less specific, i.e., BNSF mainline, MP/Shortline, and TNER.

7. Concluding Remarks

In total, 66 respondents completed the shipper survey. Although this represents a relatively small sample of Texas shippers, the survey results do provide some insight into the commodities shipped, modes used, mode choice factors, and attitudes towards Texas's transportation system, and more specifically, freight infrastructure. The more salient findings of the survey include:

- Metal products were the major commodity shipped and received by the respondents to the survey.
- The majority of the respondents (70%) use truck as the primary mode for shipments received and shipped. The typical truck used is the 5 axle-single trailer truck.
- Most of the respondents receive shipments from and deliver to a variety of origins and destinations, respectively.
- Approximately, 36 % of the respondents indicated that their business/company would not be willing to pay the toll charges incurred by a trucking service despite the listed benefits (i.e., reliable transit time, faster transit time, and heavier or larger shipments).
- The most important service attribute in procuring trucking services was the prompt pick-up and delivery of cargo.
- In procuring rail services, the most important service attribute was on-time reliability.
- In general, it was found that Texas's transportation system meets the needs of the respondents in terms of reliability, safety, quality, intermodal services, and connectivity.
- Finally, restrictive regulations, the maintenance of Texas's transportation system, increasing costs, and safety were of concern to respondents.