



181 WEST HIGH STREET
SOMERVILLE, NJ 08876

908 927 0100 p
908 927 0181 f

July 21, 2021

West Orange Zoning Board of Adjustment
66 Main Street
West Orange, NJ 07052

Re: Use Variance Request
Public Storage - Proposed Self-Storage Facility
424 Eagle Rock Avenue
Block 111, Lot 1.08

Dear Zoning Board Members:

At the request of the applicant, our office has prepared this Traffic Generation Report in support of a use variance request for a 2.628-acre site designated as Lot 1.08, Block 111 located along Eagle Rock Road in the B-2 General Business Zone. The zone permits a variety of residential, commercial, office, and institutional uses, some of which can generate considerable traffic activity as will be described in further detail below. However, a self-storage use is not among the permitted or conditionally permitted uses in the B-2 Zone, thus a use variance is necessary. The proposed self-storage use would replace the existing structure developed on the site that was most recently used as the Eagle Rock Lanes bowling center.

The purpose of this evaluation is to outline the compelling traffic-engineering justification in support of the use variance request for the self-storage use. As will be identified within this letter, there are both permitted and conditional uses all of which would generate similar or substantially more traffic than the proposed self-storage use. This initial traffic study is not intended to serve as a detailed traffic impact analysis per se, recognizing that with the substantial traffic reduction associated with the self-storage use, unquestionably the resultant traffic impacts will be far less than generated by other permitted uses, if developed as of right in the B-2 Zone or with the continued use as a bowling center.

For this analysis, the overall "developable" tract size was identified based on the "Preliminary/Final Site Plan" prepared by Dresdner Robin, Inc. and as further refined from a review of the bulk standards within the B-2 Zone. The developable area is 2.628 acres which yields a total lot area of 114,469 square feet. Further consideration was given to the maximum allowable building area combined with the remaining area to be used by impervious coverage principally for access drives and off-street parking.

The B-2 Zone permits up to a 40% maximum building coverage and a 60% maximum lot coverage limitation. Anticipating that certain retail, office, school, and other commercial uses as permitted in the zone would be multi-story, we have reasonably concluded that the maximum building size that could be developed on the property is 114,469 square feet, assuming a 2.5-story structure. Parenthetically, the applicant proposes a total building area of 122,490 square feet, approximately

USE VARIANCE REQUEST
PROPOSED PUBLIC STORAGE SELF-STORAGE FACILITY
424 EAGLE ROCK AVENUE
BLOCK 111, LOT 1.08
B-2 GENERAL BUSINESS ZONE

JULY 21, 2021

34.6% maximum building coverage, which does not exceed the Township requirement for maximum building coverage for the B-2 Zone.

From a review of the permitted and conditional uses in the B-2 Zone, retail uses are permitted as well as office buildings, business/vocational schools, restaurants/bars, fitness centers, massage establishments, and personal service stores. Conditionally permitted uses include senior housing, fueling stations, theaters, hotels, fast food restaurants, public utility uses, video arcades, microbreweries/wineries, private clubs, and telephone exchanges, and commercial antenna. For general comparison purposes, obviously one would not develop a 100,000⁺ square foot full-service restaurant, so reasonable assumptions were made as to a typical size for these uses and associated traffic generation.

With the general parameters of typical development yield established, published traffic data from the Institute of Transportation Engineers (ITE) within the Trip Generation Manual, 10th Edition were reviewed to identify the typical weekday morning and evening peak hour traffic associated with each use, as well as the total daily traffic. The ITE data summaries are appended to this letter for reference. Also appended to this letter is a Trip Generation Comparison summary for each of the land uses, which were then compared with the proposed self-storage use.

Summarizing the trip generation calculations, without question, a proposed self-storage use on the property generates the lowest traffic generation in terms of daily trips when contrasted with all the other uses that are currently permitted (either by-right or as conditional uses) that could be developed on the subject property. The self-storage use would generate substantially less traffic than the permitted uses in the zone and in some cases would be hundreds fewer peak hour trips and literally thousands of fewer vehicle movements per day.

Because the nature of the self-storage use is passive, traffic activity at self-storage facilities is generally limited, particularly during peak hours, and with an average frequency of 1 traffic movement every 3 to 5 minutes. As such, the resultant traffic impacts would be virtually immeasurable from a traffic engineering perspective and would have no material effect on operating conditions on the adjacent roadway system.

Therefore, from a traffic engineering perspective, there is a significant benefit in terms of an opportunity to substantially reduce traffic than what would otherwise be expected from the development of a permitted use on the subject property. While the project planner will provide greater detail as to the other compelling planning reasons for the use variance, from a traffic engineering perspective, we believe there is sufficient justification to grant the requested variance with no detrimental impact on traffic conditions, circulation, or other access-related concerns.

Given the commercial nature of the zone, we believe that the subject application advances one of the stated purposes of the zoning through the development of lands and associated transportation routes that do not result in undue traffic congestion or blight. As a primarily passive use related to the

USE VARIANCE REQUEST
PROPOSED PUBLIC STORAGE SELF-STORAGE
424 EAGLE ROCK AVENUE
BLOCK 111, LOT 1.08
B-2 GENERAL BUSINESS ZONE

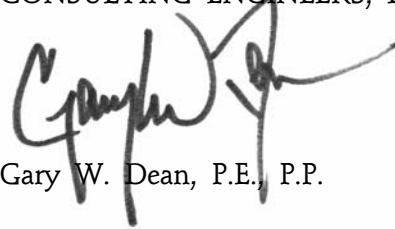
JULY 21, 2021

storage of materials, personal affects, business archives, etc., the overall application for self-storage use represents a positive traffic impact by allowing the use in the B-2 Zone.

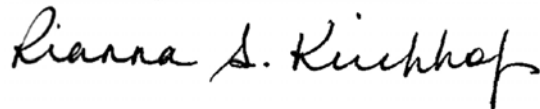
We look forward to the presentation of these findings at the appropriate public hearing and answering any questions from the Board and the public at that time.

Very truly yours,

DOLAN & DEAN
CONSULTING ENGINEERS, LLC



Gary W. Dean, P.E., P.P.



Rianna Kirchhof, P.E.

cc: Gabrielle Gornelli, P.E. GGornelli@DresdnerRobin.com
Lisa A. John-Basta ljohn-basta@csglaw.com

Trip Generation Comparison

Proposed Self-Storage Facility
Block 111, Lot 1.08

B-2 General Business Zone
2.628 Acres (114,469 SF) Developable Lot Area
40% Max. Building Coverage, 60% Max. Lot Coverage

Zoning	Land Use	Size	Morning Peak Hour	Evening Peak Hour	Total Daily Traffic
Permitted	Retail Store	114,469 SF	108	601	6,592
Permitted	Office Building	114,469 SF	134	132	1,210
Permitted	Vocational School	114,469 SF	331	213	2,318
Permitted	Restaurant, Family Style	6,000 SF	60	59	674
Permitted	Restaurant, Full Service	10,000 SF	7	78	838
Permitted	Fitness Center	44,000 SF	58	152	950
Conditional	Motor Vehicle Fueling Station	1,000 SF	85	109	1,204
Conditional	Theater	45,700 SF	10	282	3,570
Conditional	Public Utility Building	14,000 SF	32	32	186
Conditional	Senior Housing	150 units	30	39	578
Conditional	Hotel	120 rooms	56	72	1,004
Conditional	Fast-Food Restaurant	3,000 SF	110	85	1,040
Existing	Bowling Alley	25,343 SF	21	31	300
Proposed	Self-Storage	122,490 SF	12	21	186

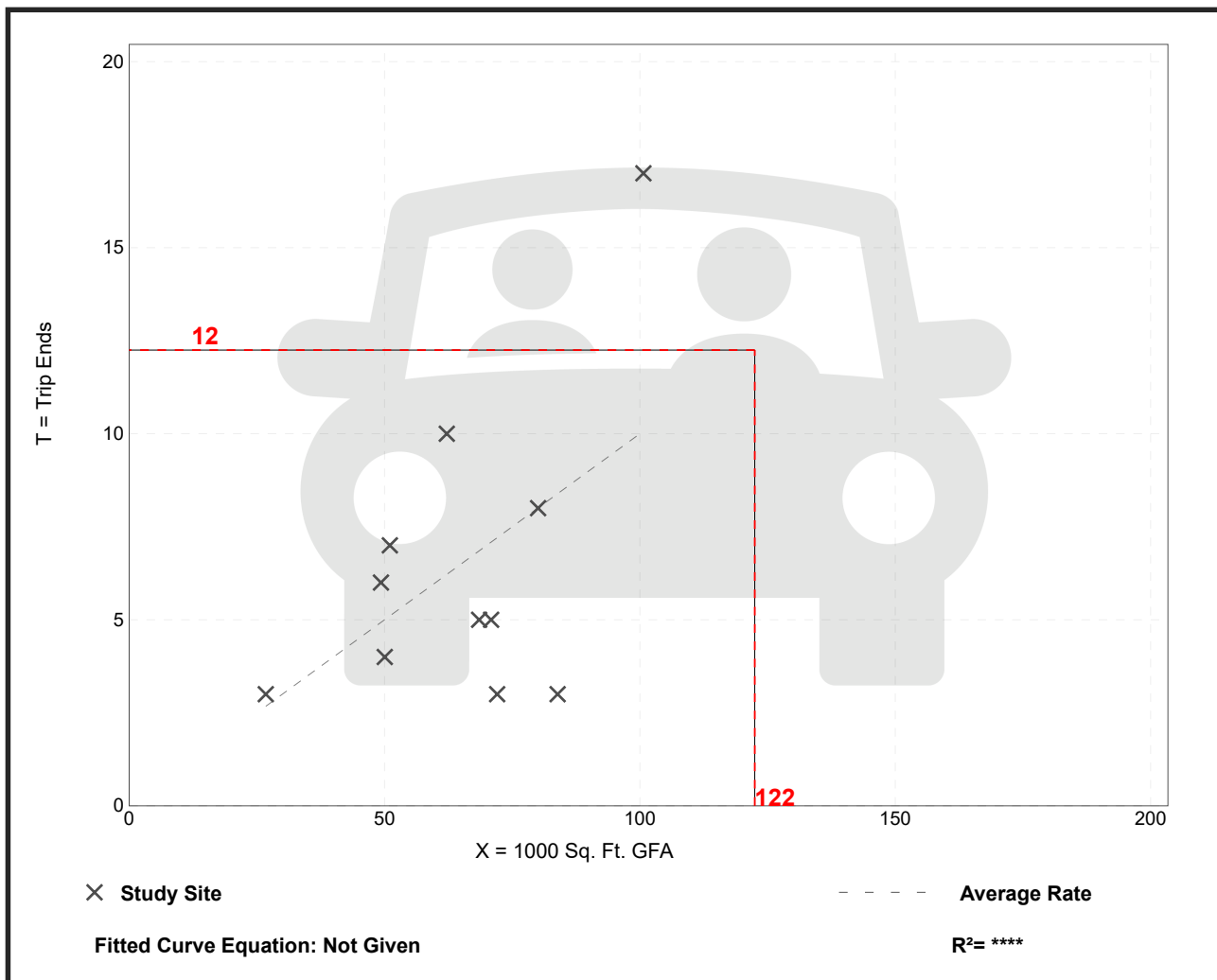
Mini-Warehouse (151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 11
Avg. 1000 Sq. Ft. GFA: 65
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.10	0.04 - 0.17	0.05

Data Plot and Equation



Mini-Warehouse (151)

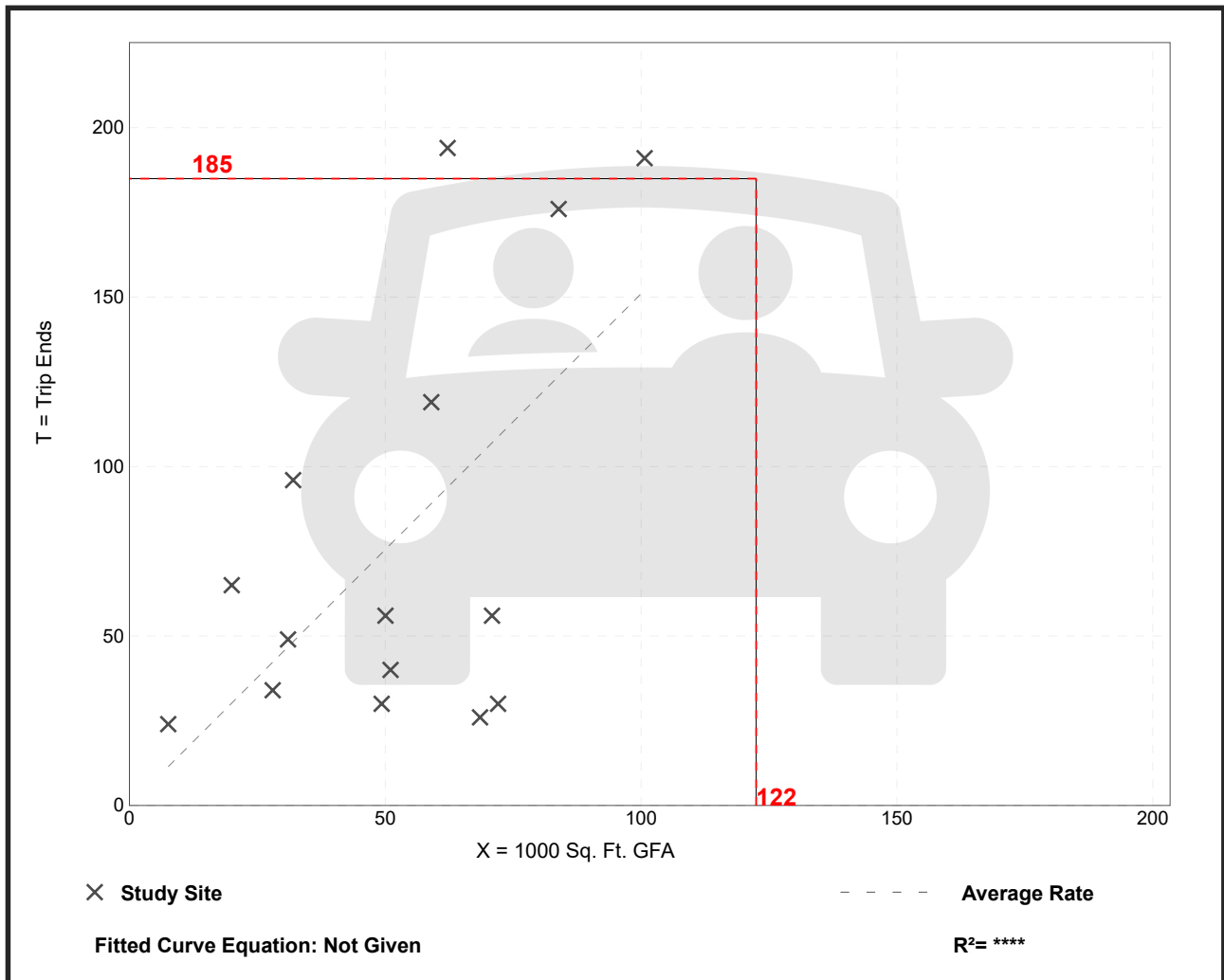
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 15
Avg. 1000 Sq. Ft. GFA: 52
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.51	0.38 - 3.25	0.95

Data Plot and Equation



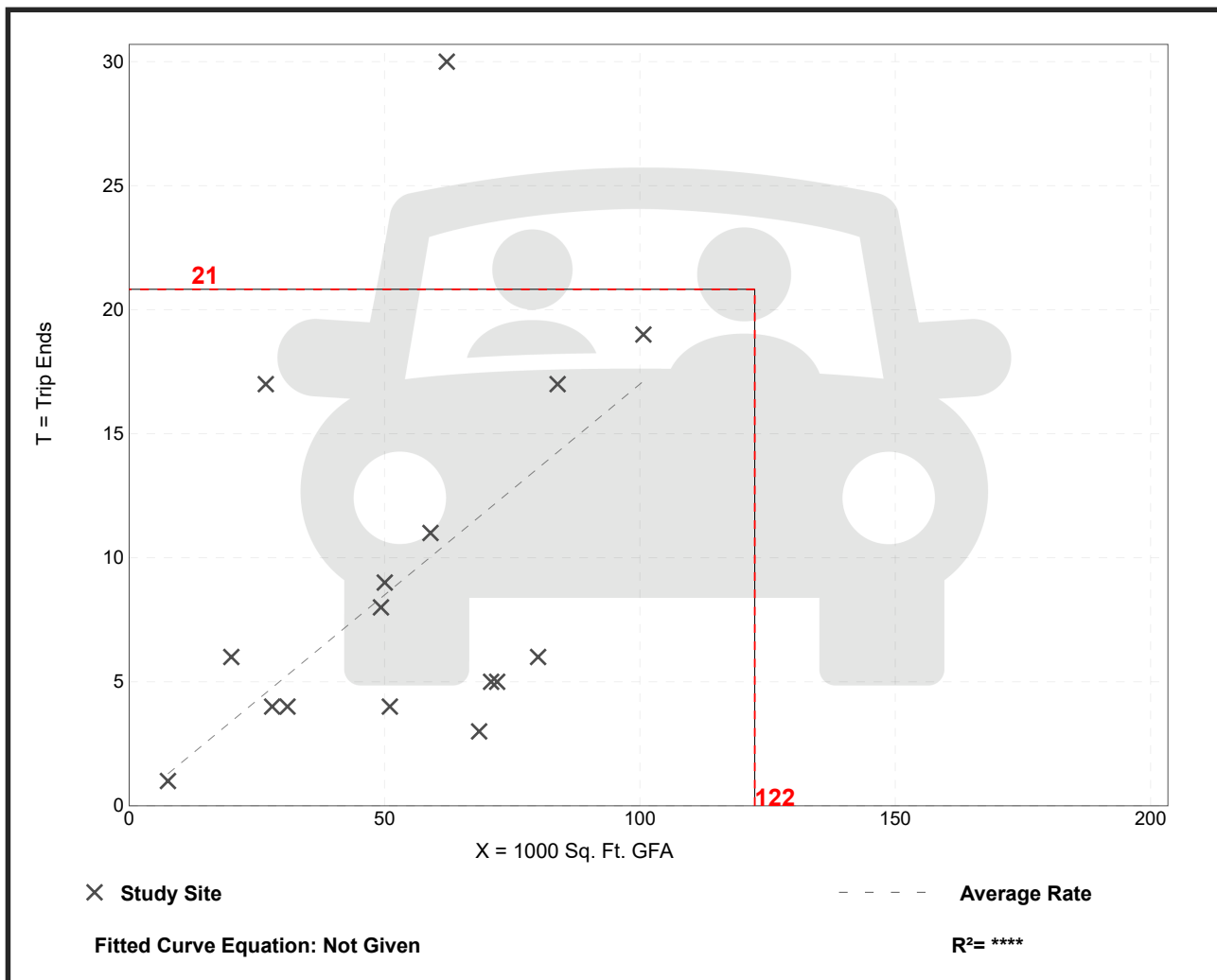
Mini-Warehouse (151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 16
 Avg. 1000 Sq. Ft. GFA: 54
 Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.04 - 0.64	0.14

Data Plot and Equation



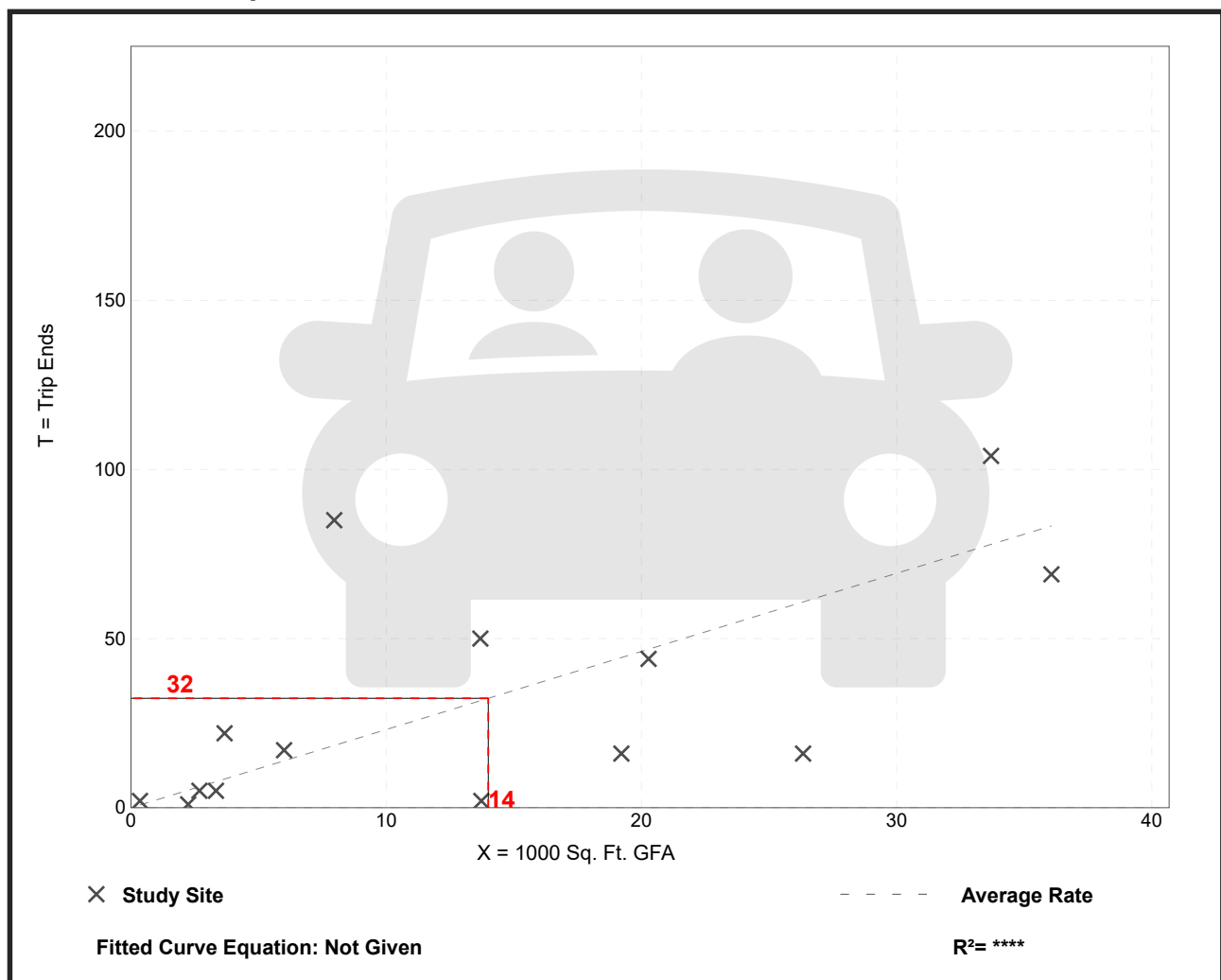
Utility (170)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 14
 Avg. 1000 Sq. Ft. GFA: 14
 Directional Distribution: 80% entering, 20% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.31	0.15 - 10.67	2.21

Data Plot and Equation



Utility (170)

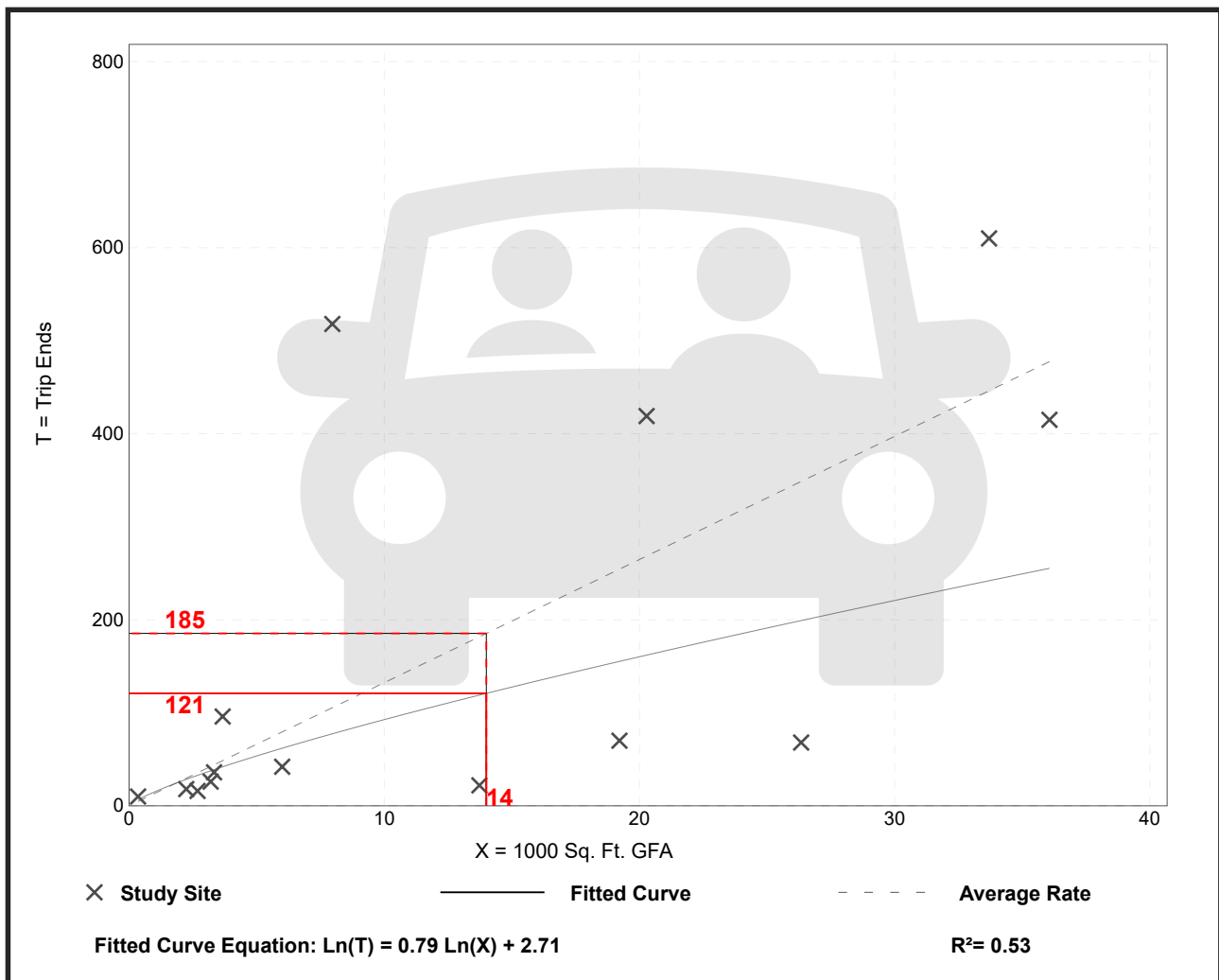
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 14
Avg. 1000 Sq. Ft. GFA: 13
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
13.24	1.60 - 65.03	13.72

Data Plot and Equation



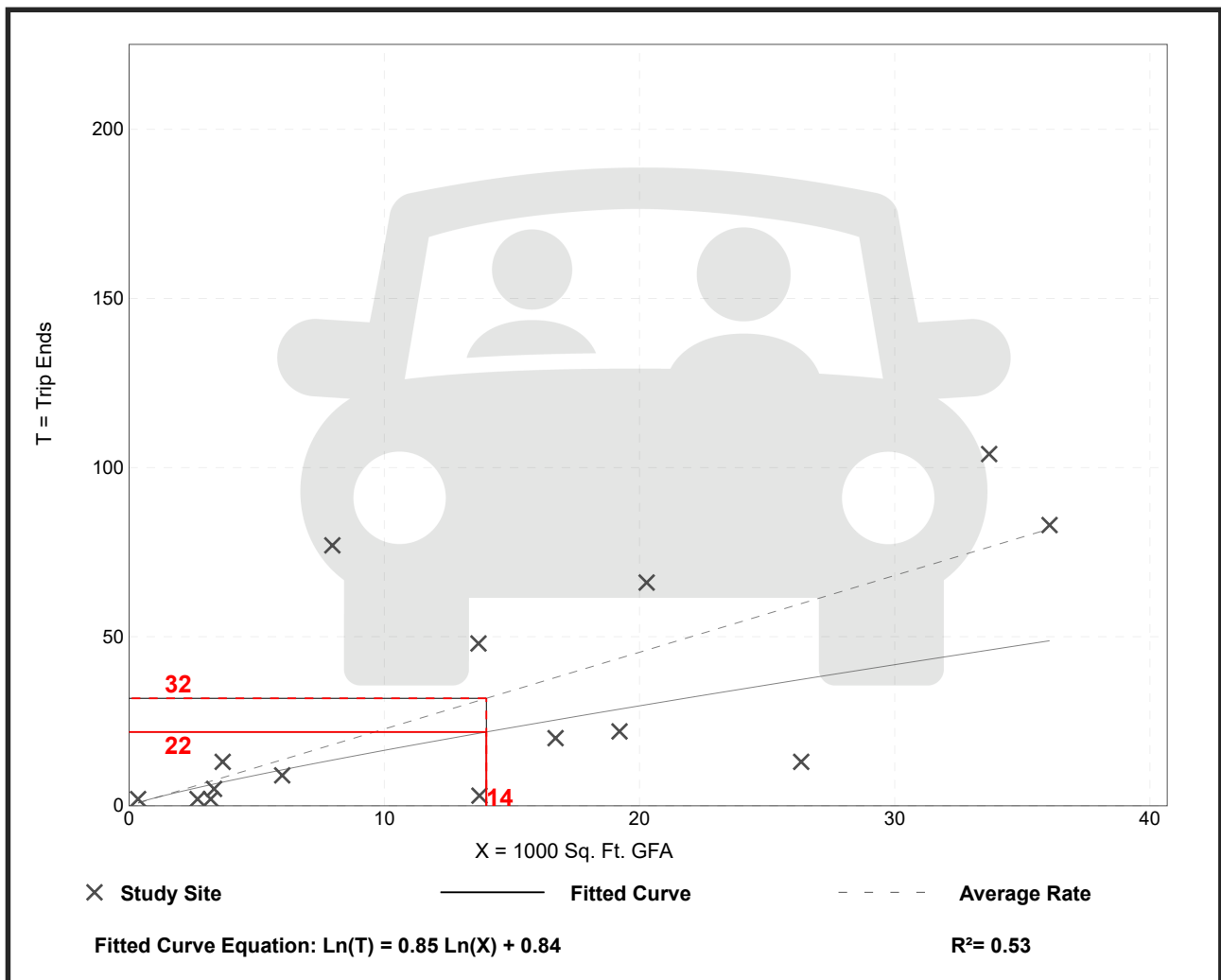
Utility (170)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 15
 Avg. 1000 Sq. Ft. GFA: 14
 Directional Distribution: 20% entering, 80% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.27	0.22 - 9.67	1.92

Data Plot and Equation



Senior Adult Housing - Attached (252)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 11

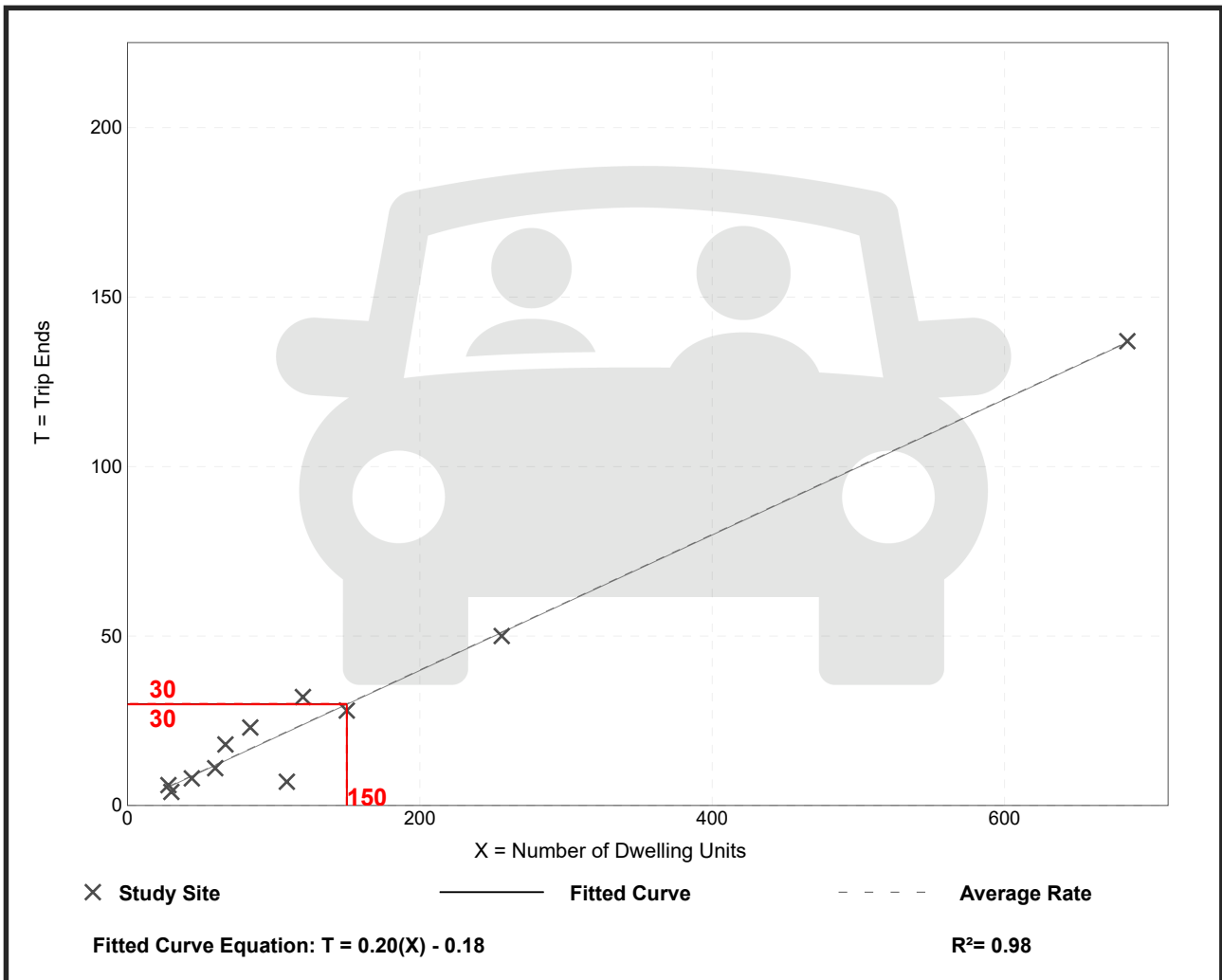
Avg. Num. of Dwelling Units: 148

Directional Distribution: 35% entering, 65% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.20	0.06 - 0.27	0.05

Data Plot and Equation



Senior Adult Housing - Attached (252)

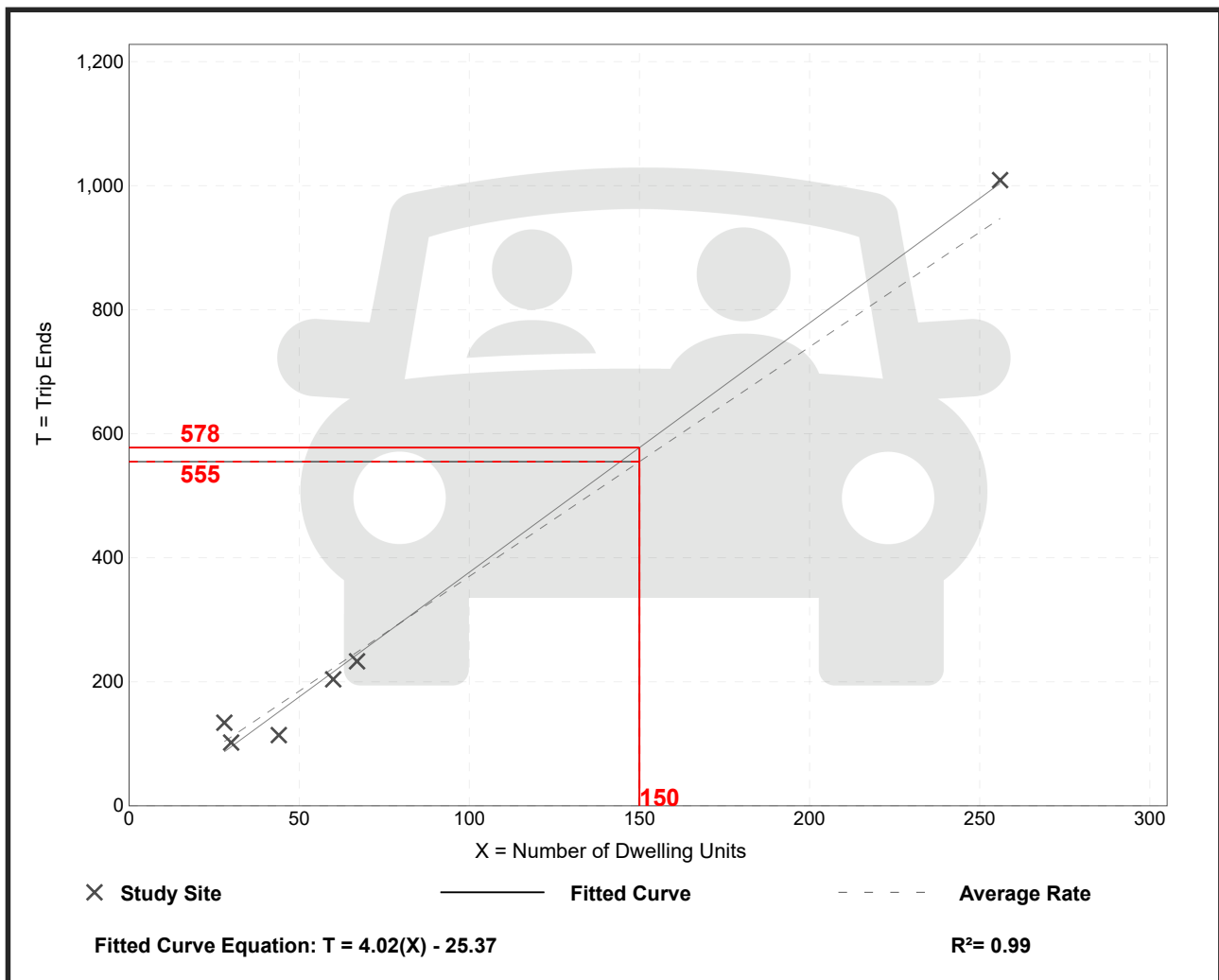
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. Num. of Dwelling Units: 81
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
3.70	2.59 - 4.79	0.53

Data Plot and Equation



Senior Adult Housing - Attached (252)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 11

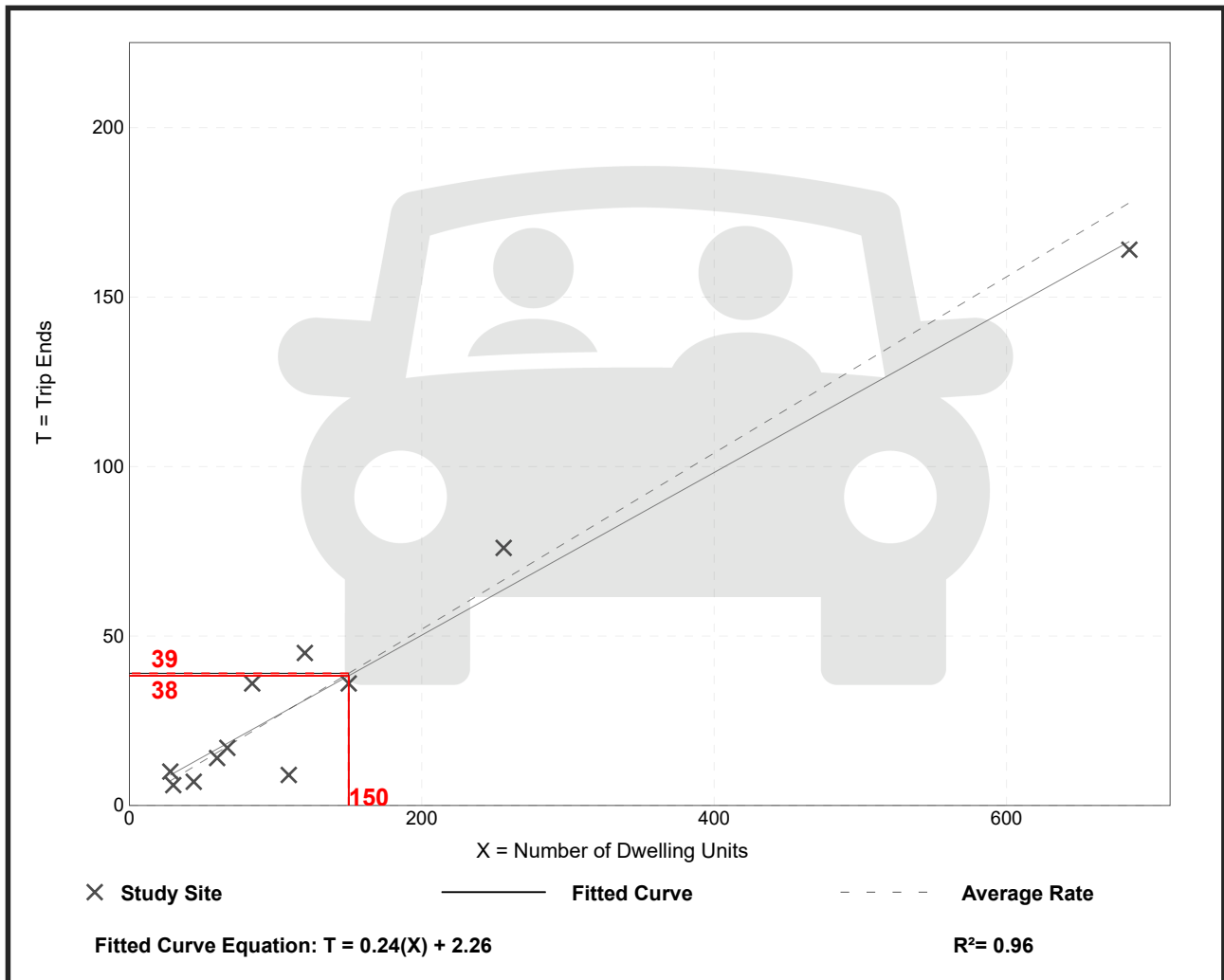
Avg. Num. of Dwelling Units: 148

Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.26	0.08 - 0.43	0.08

Data Plot and Equation



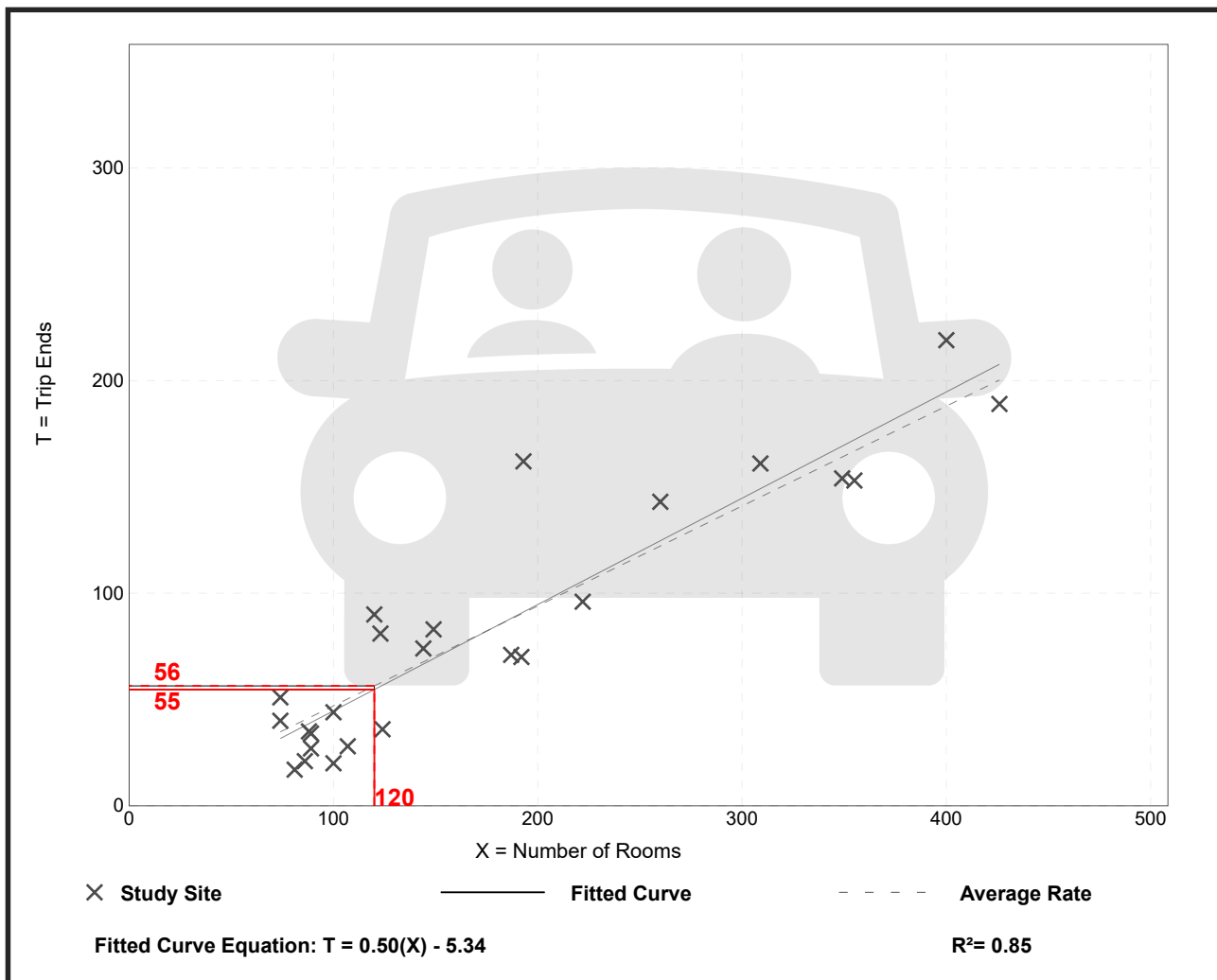
Hotel (310)

Vehicle Trip Ends vs: Rooms
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 25
 Avg. Num. of Rooms: 178
 Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.47	0.20 - 0.84	0.14

Data Plot and Equation



Hotel (310)

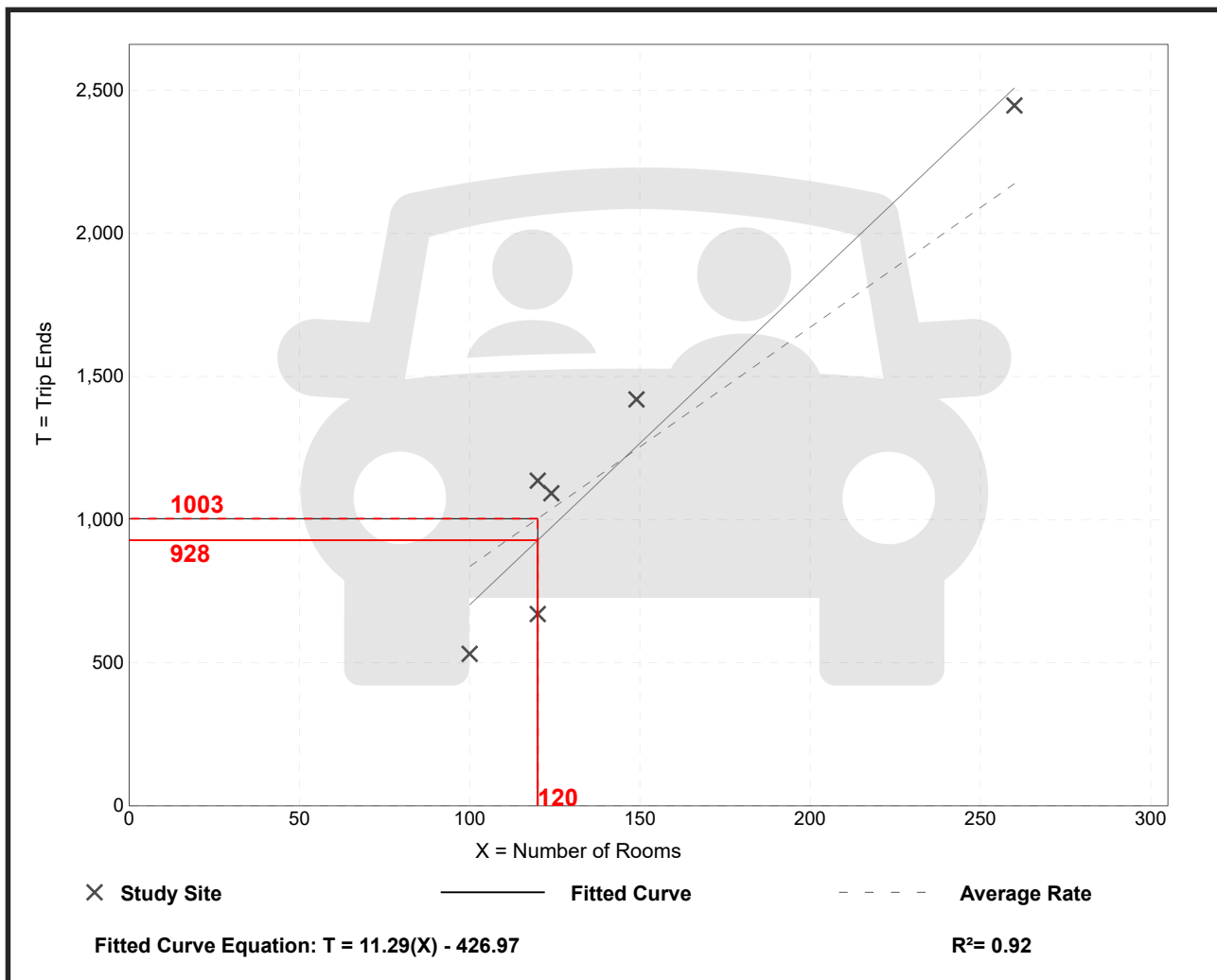
Vehicle Trip Ends vs: Rooms
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. Num. of Rooms: 146
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
8.36	5.31 - 9.53	1.86

Data Plot and Equation



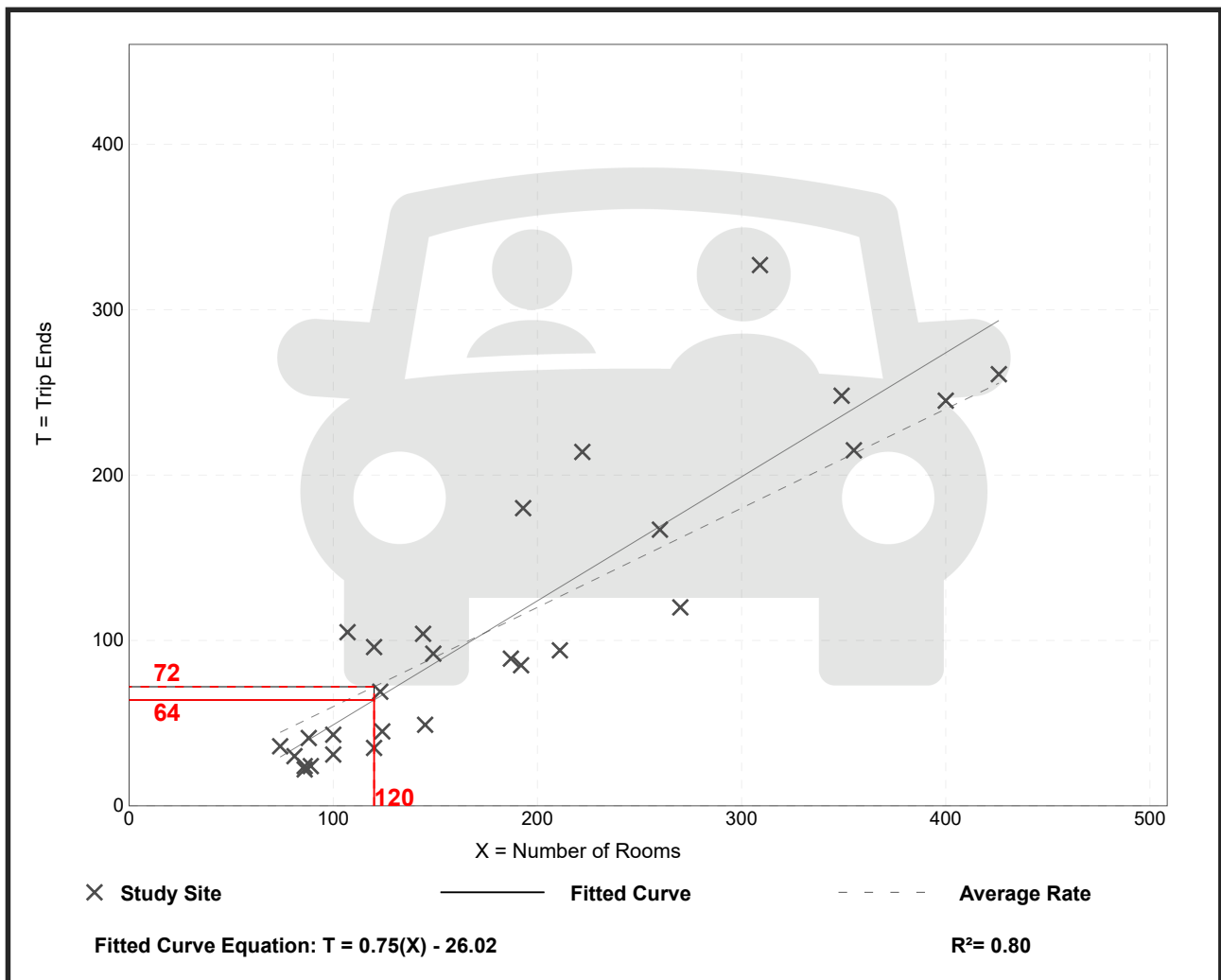
Hotel (310)

Vehicle Trip Ends vs: Rooms
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 28
 Avg. Num. of Rooms: 183
 Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.60	0.26 - 1.06	0.22

Data Plot and Equation



Bowling Alley (437)

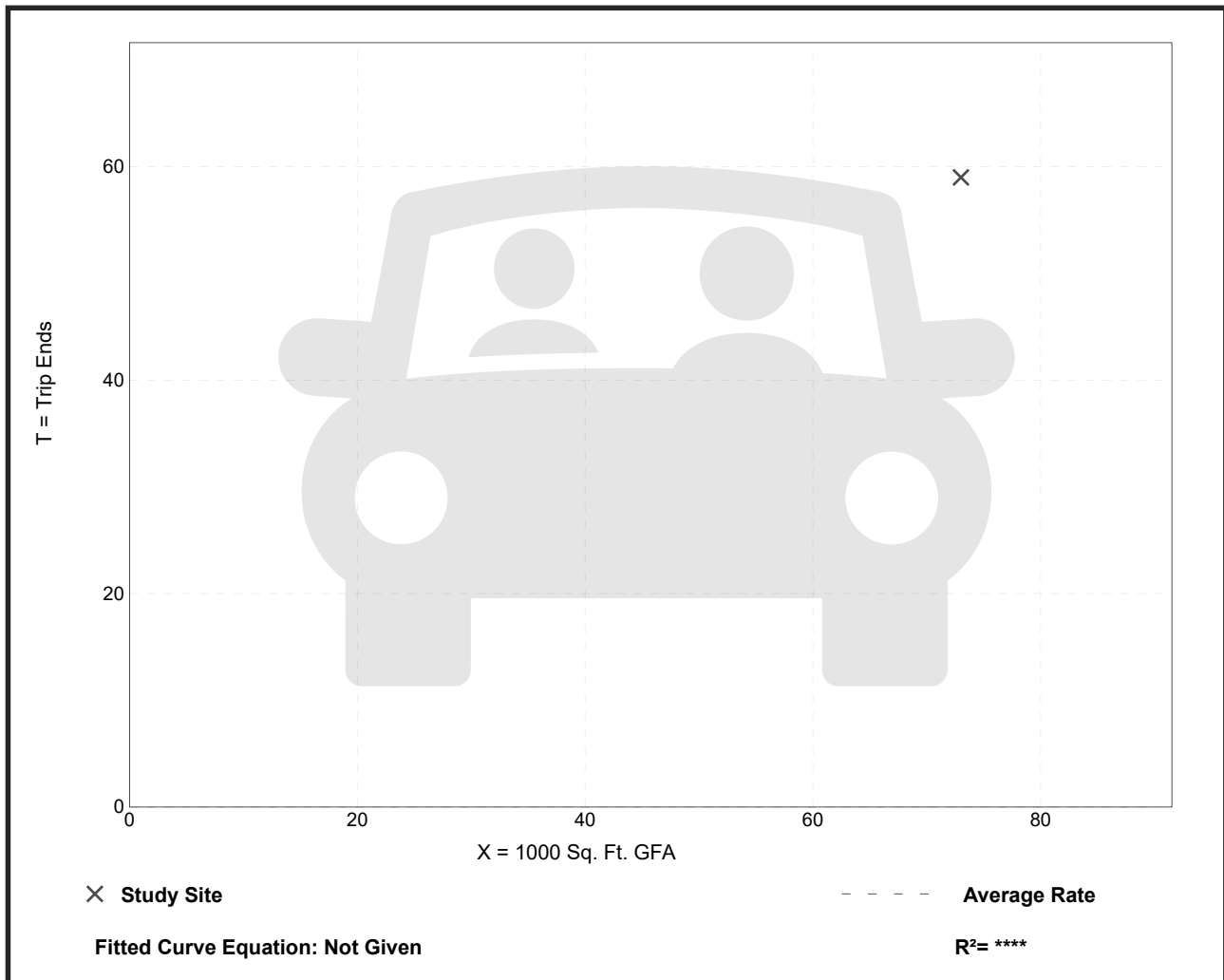
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 1
 Avg. 1000 Sq. Ft. GFA: 73
 Directional Distribution: 95% entering, 5% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.81	0.81 - 0.81	*

Data Plot and Equation

Caution – Small Sample Size



Bowling Alley (437)

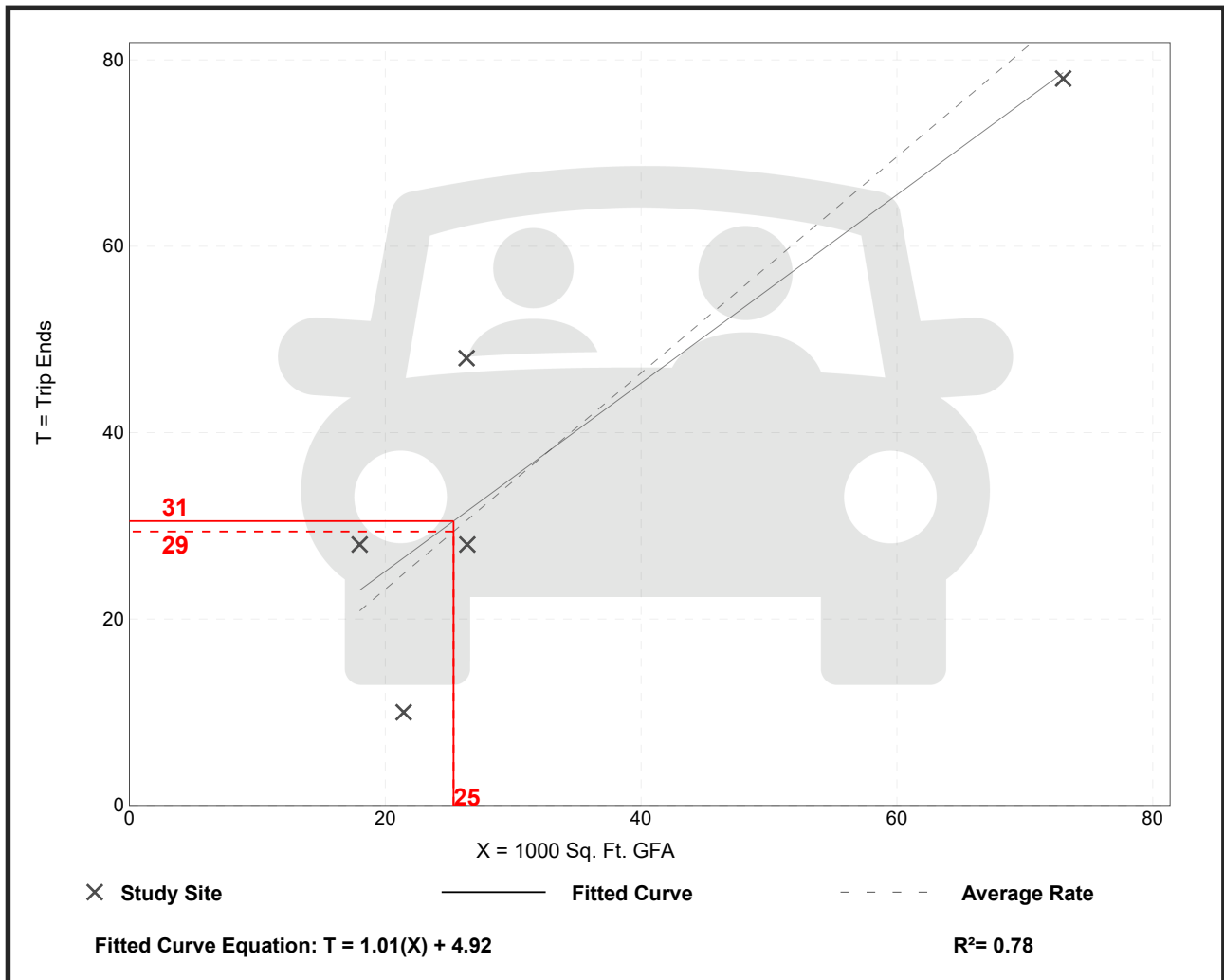
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 5
 Avg. 1000 Sq. Ft. GFA: 33
 Directional Distribution: 65% entering, 35% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.16	0.47 - 1.82	0.44

Data Plot and Equation

Caution – Small Sample Size



Movie Theater (444)

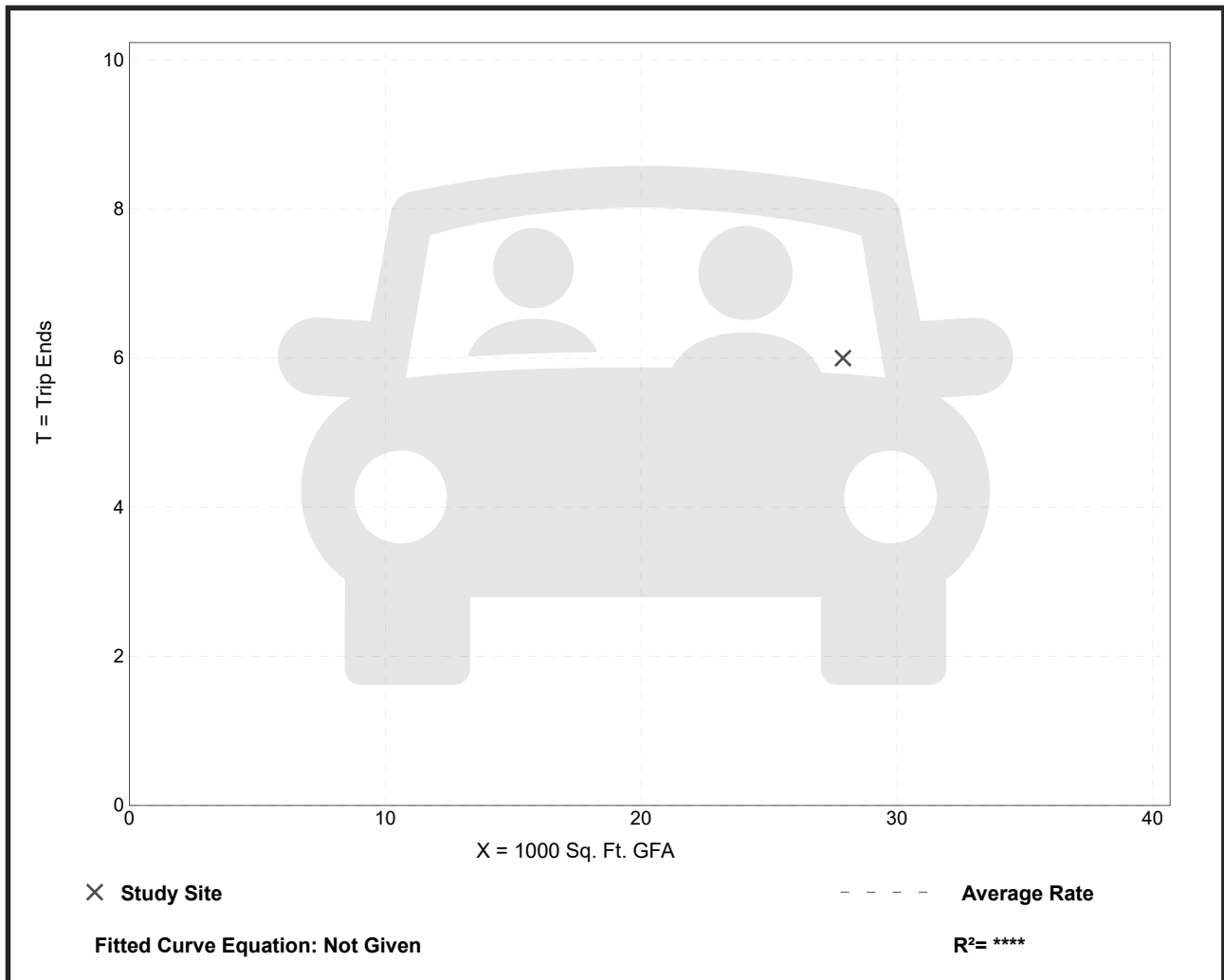
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 28
Directional Distribution: Not Available

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.22	0.22 - 0.22	*

Data Plot and Equation

Caution – Small Sample Size



Movie Theater (444)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

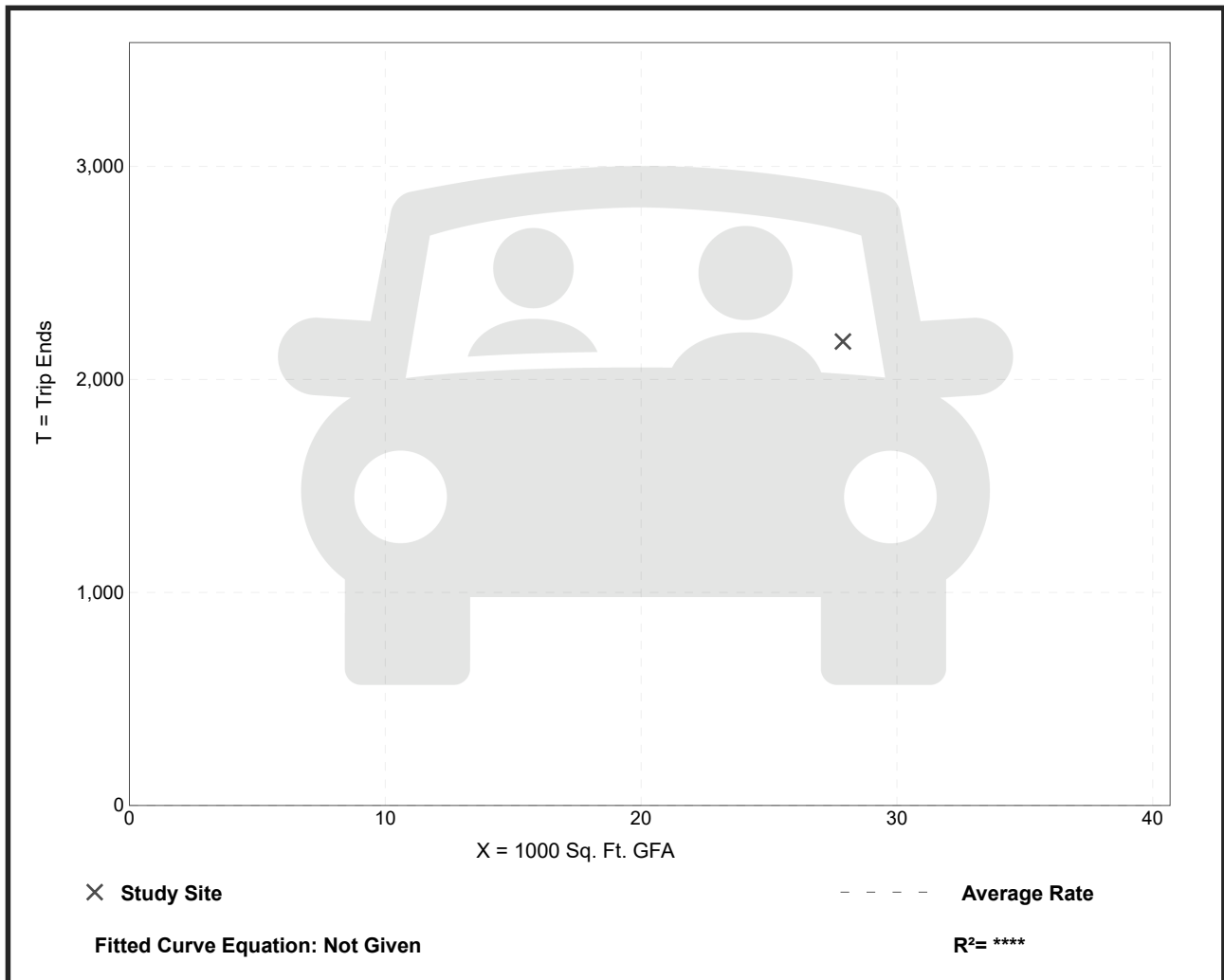
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 28
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
78.09	78.09 - 78.09	*

Data Plot and Equation

Caution – Small Sample Size



Movie Theater (444)

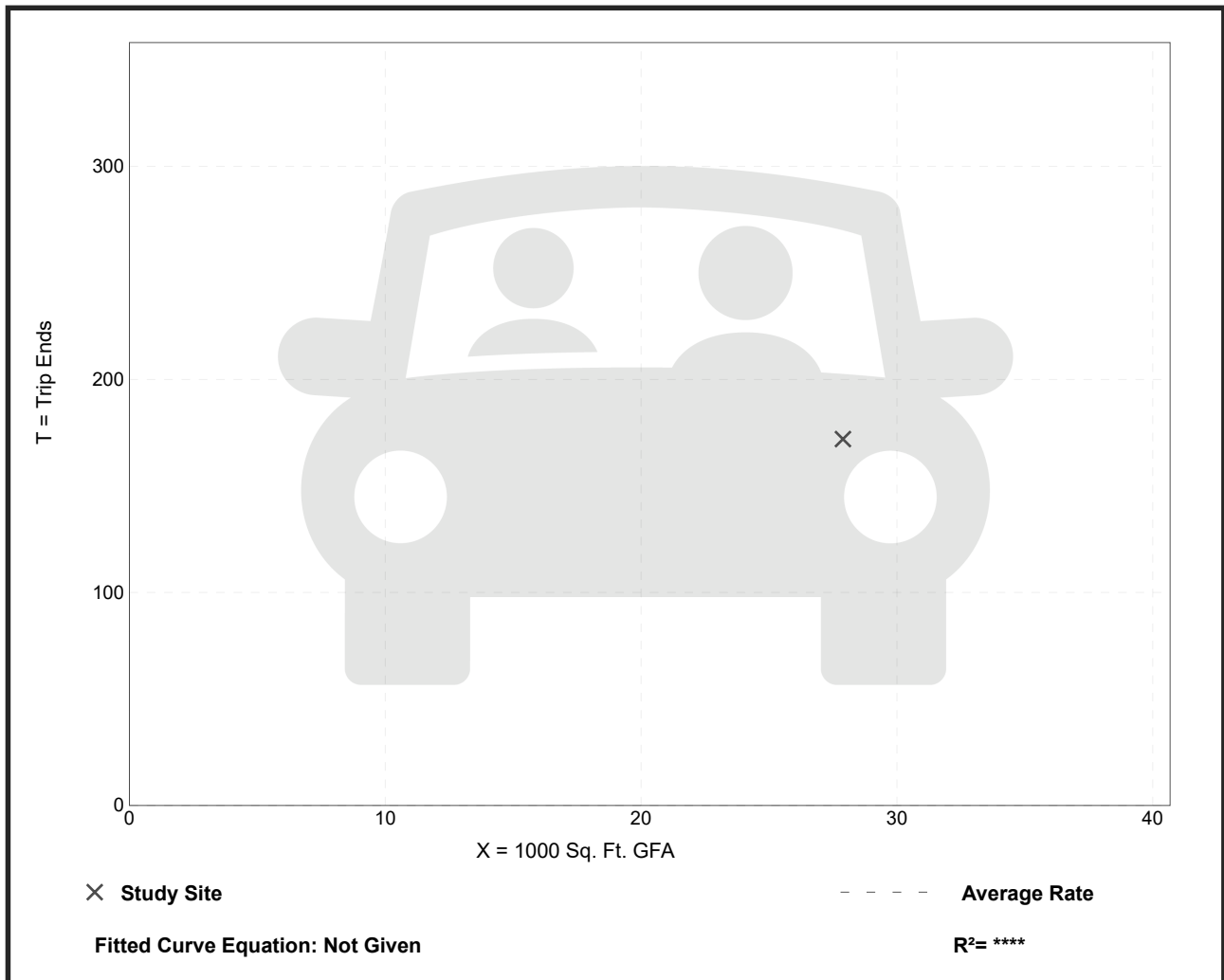
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 1
 Avg. 1000 Sq. Ft. GFA: 28
 Directional Distribution: 94% entering, 6% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
6.17	6.17 - 6.17	*

Data Plot and Equation

Caution – Small Sample Size



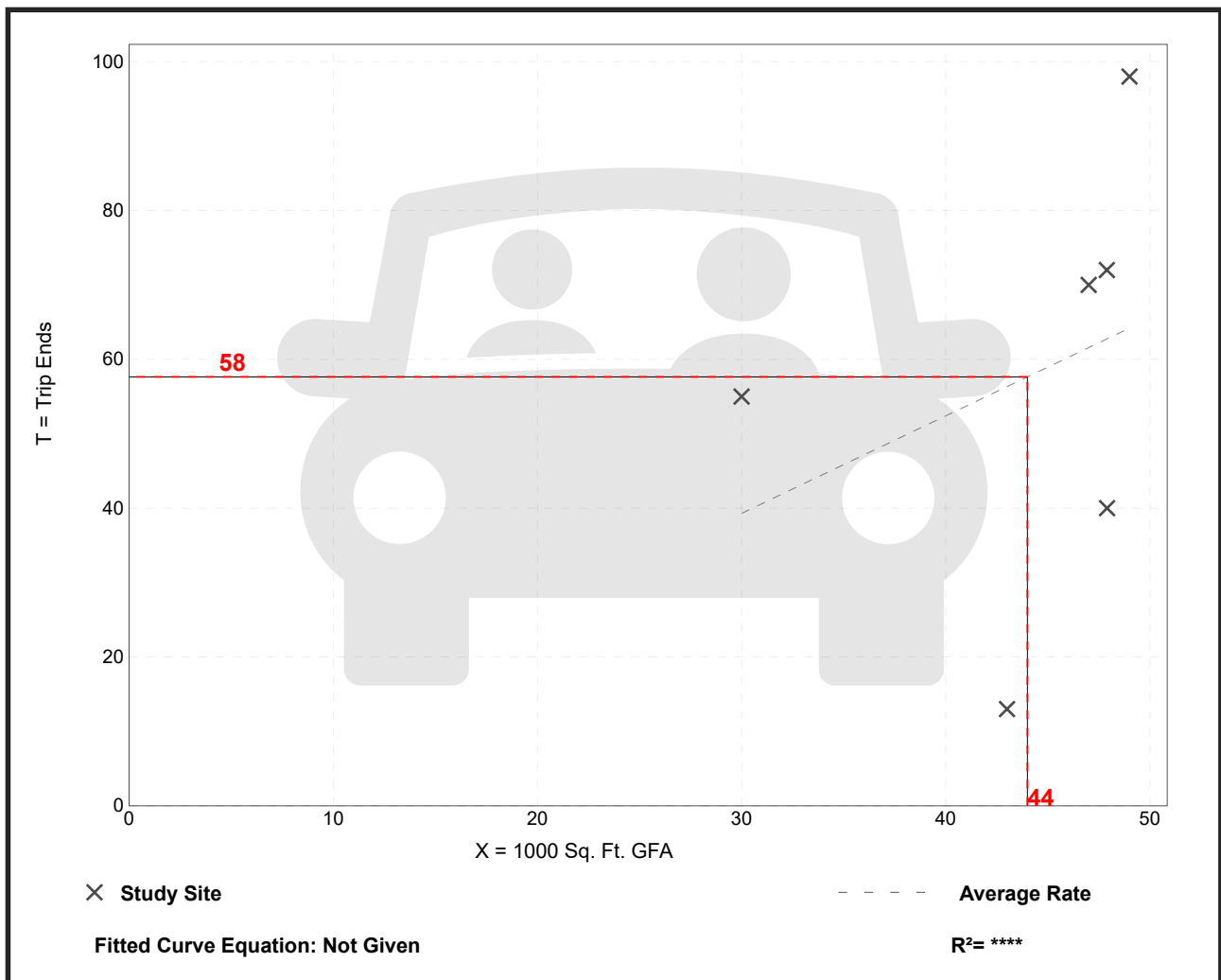
Health/Fitness Club (492)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 6
 Avg. 1000 Sq. Ft. GFA: 44
 Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.31	0.30 - 2.00	0.64

Data Plot and Equation



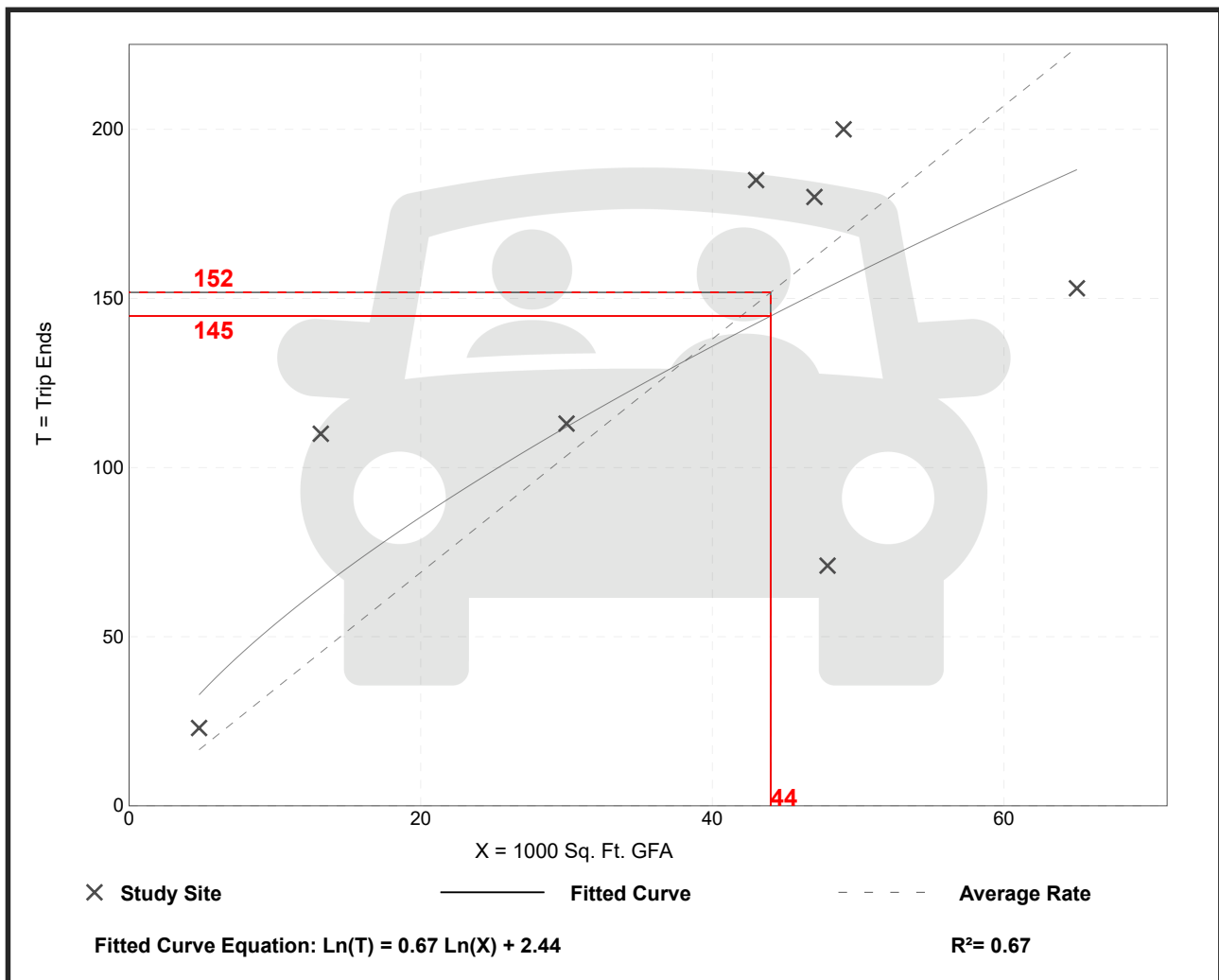
Health/Fitness Club (492)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 8
 Avg. 1000 Sq. Ft. GFA: 37
 Directional Distribution: 57% entering, 43% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.45	1.48 - 8.37	1.57

Data Plot and Equation



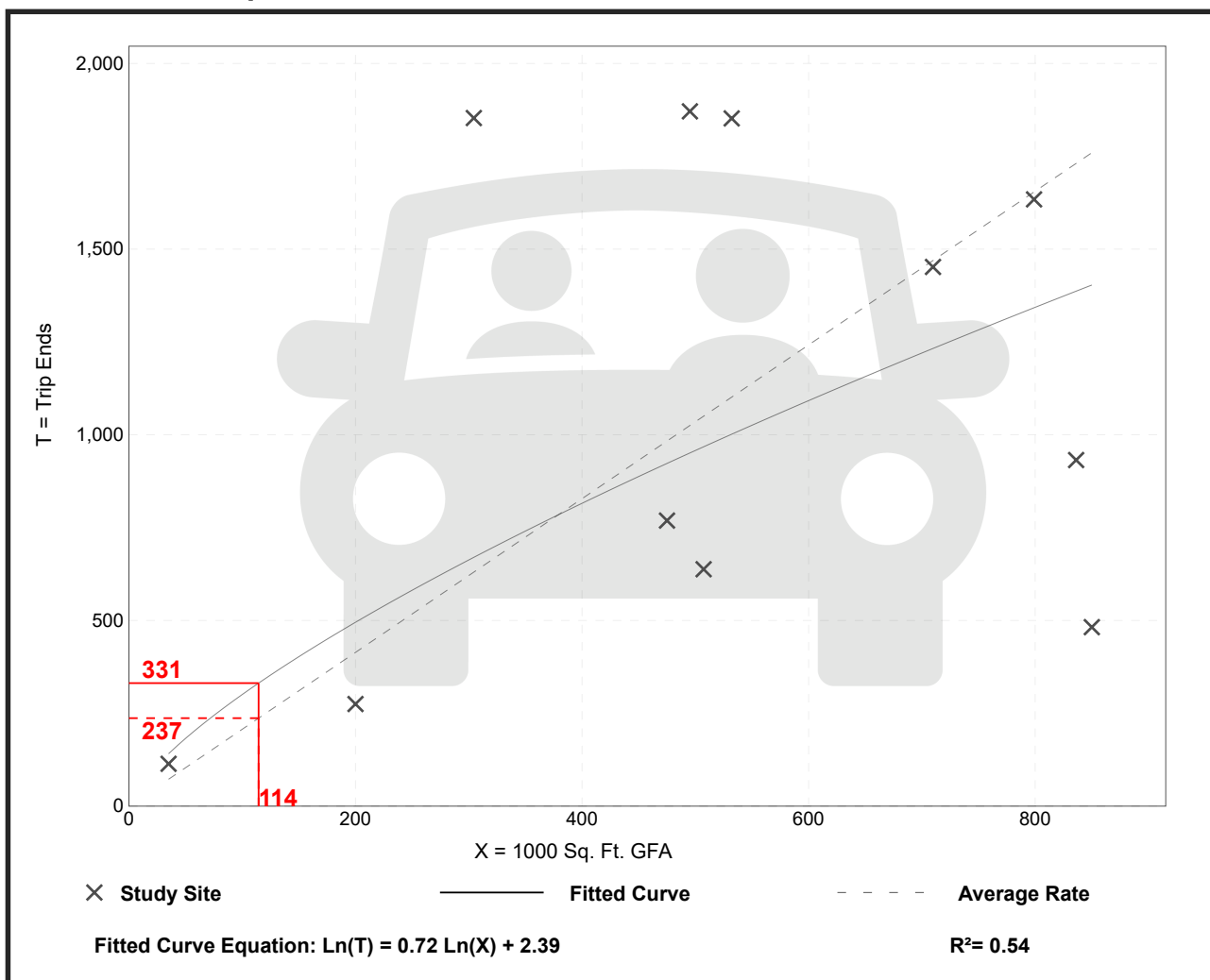
Junior/Community College (540)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 11
 Avg. 1000 Sq. Ft. GFA: 522
 Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.07	0.57 - 6.09	1.43

Data Plot and Equation



Junior/Community College (540)

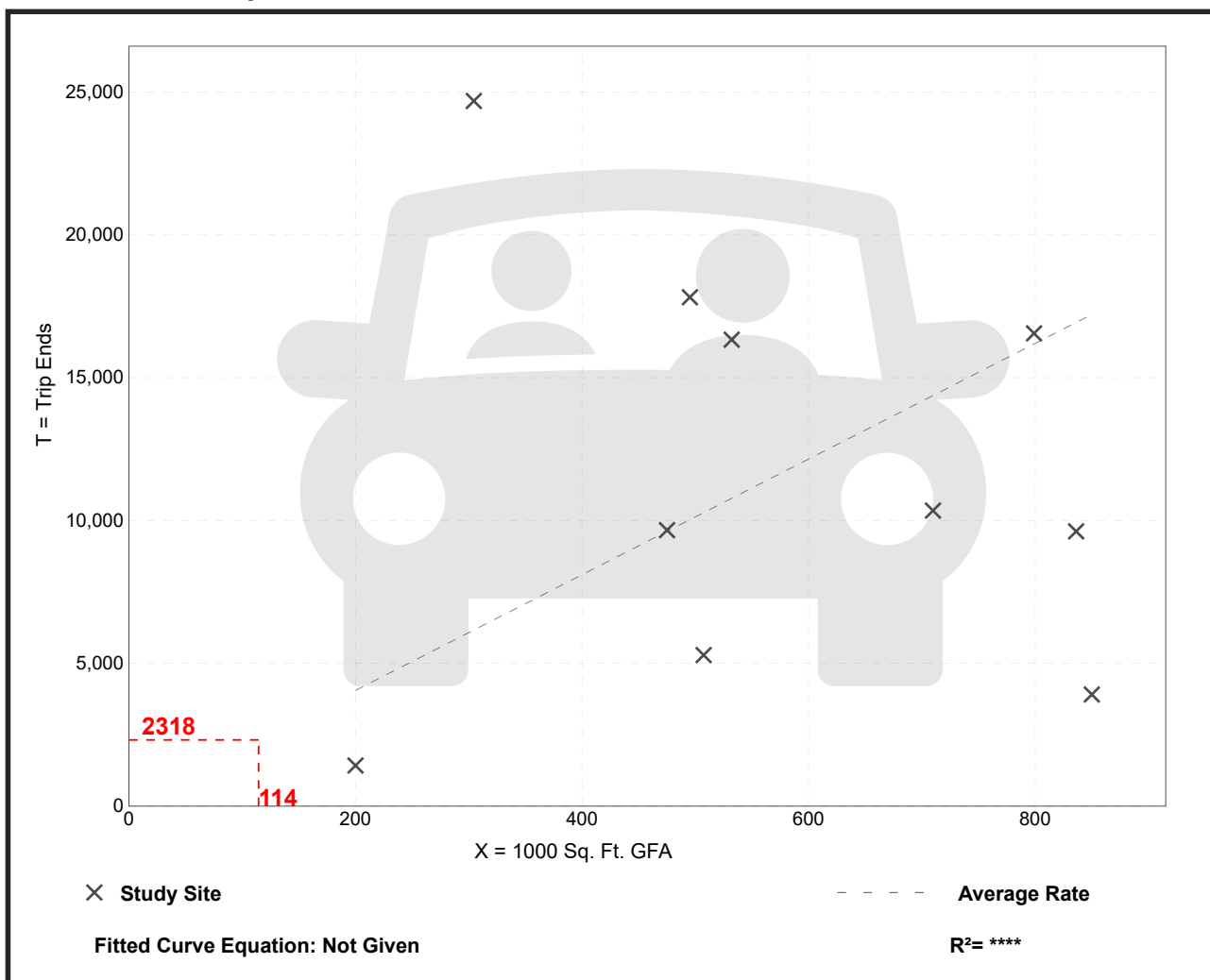
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 10
Avg. 1000 Sq. Ft. GFA: 571
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
20.25	4.60 - 81.08	18.11

Data Plot and Equation



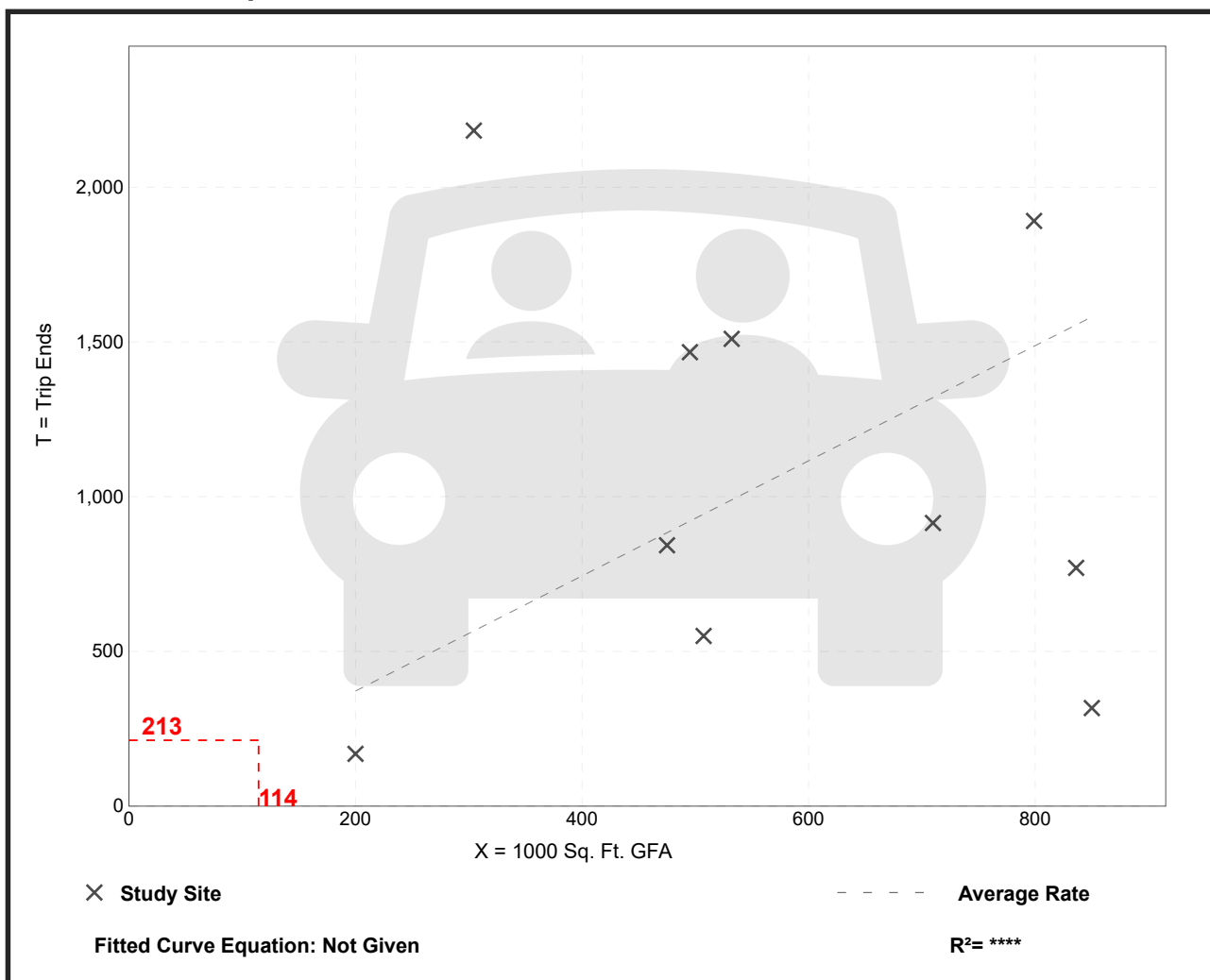
Junior/Community College (540)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 10
 Avg. 1000 Sq. Ft. GFA: 571
 Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.86	0.37 - 7.17	1.61

Data Plot and Equation



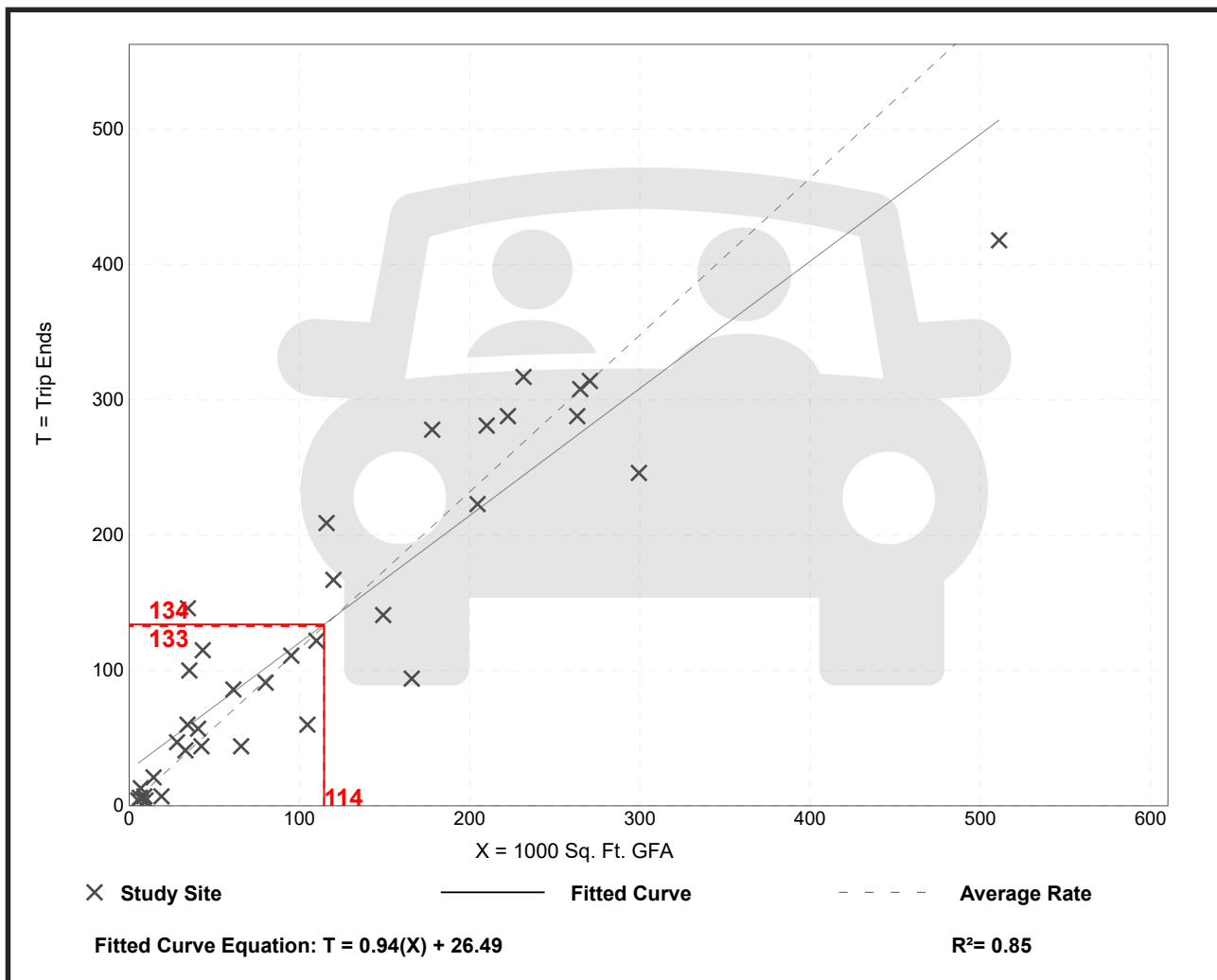
General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 35
 Avg. 1000 Sq. Ft. GFA: 117
 Directional Distribution: 86% entering, 14% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.16	0.37 - 4.23	0.47

Data Plot and Equation



General Office Building (710)

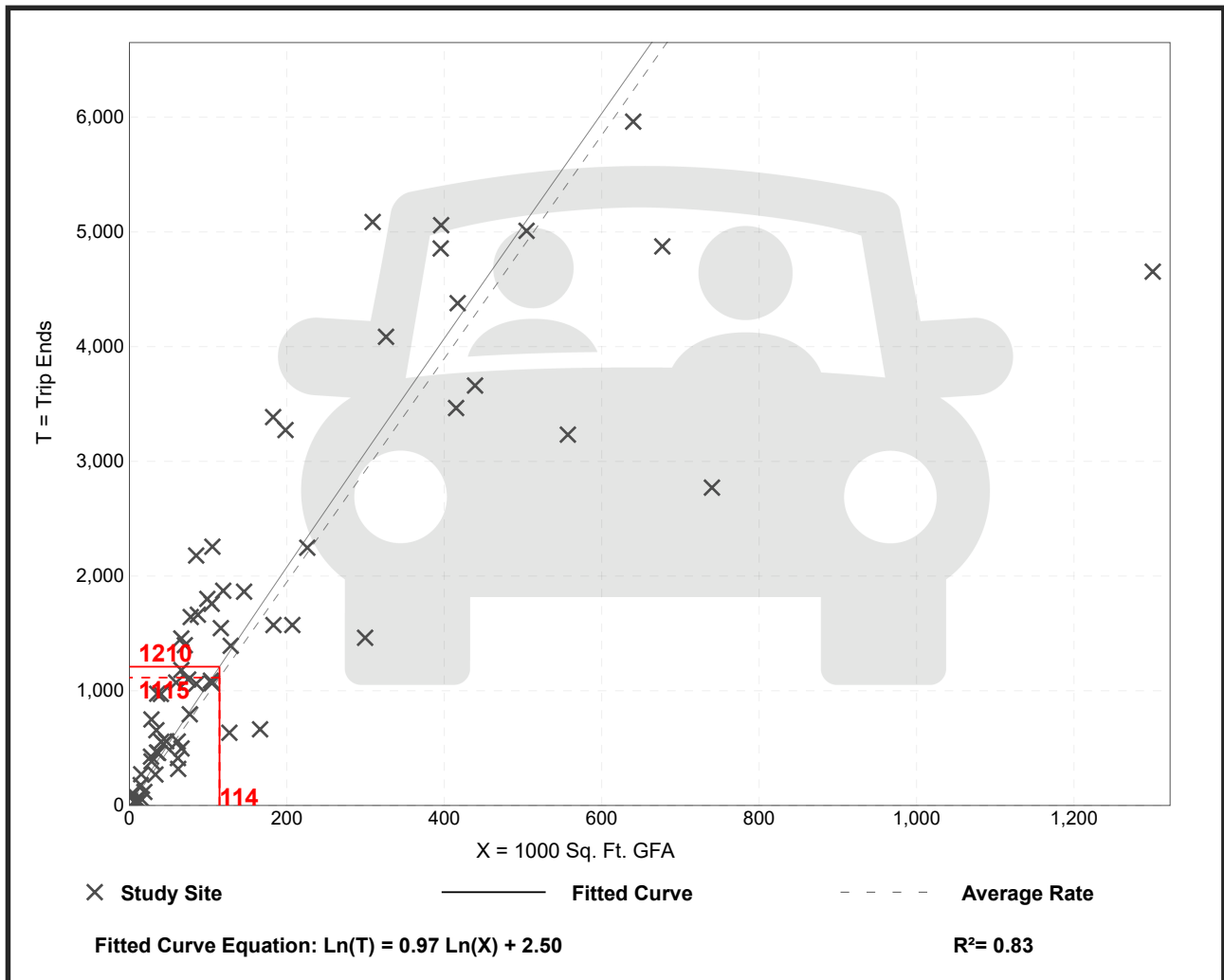
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 66
Avg. 1000 Sq. Ft. GFA: 171
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.74	2.71 - 27.56	5.15

Data Plot and Equation



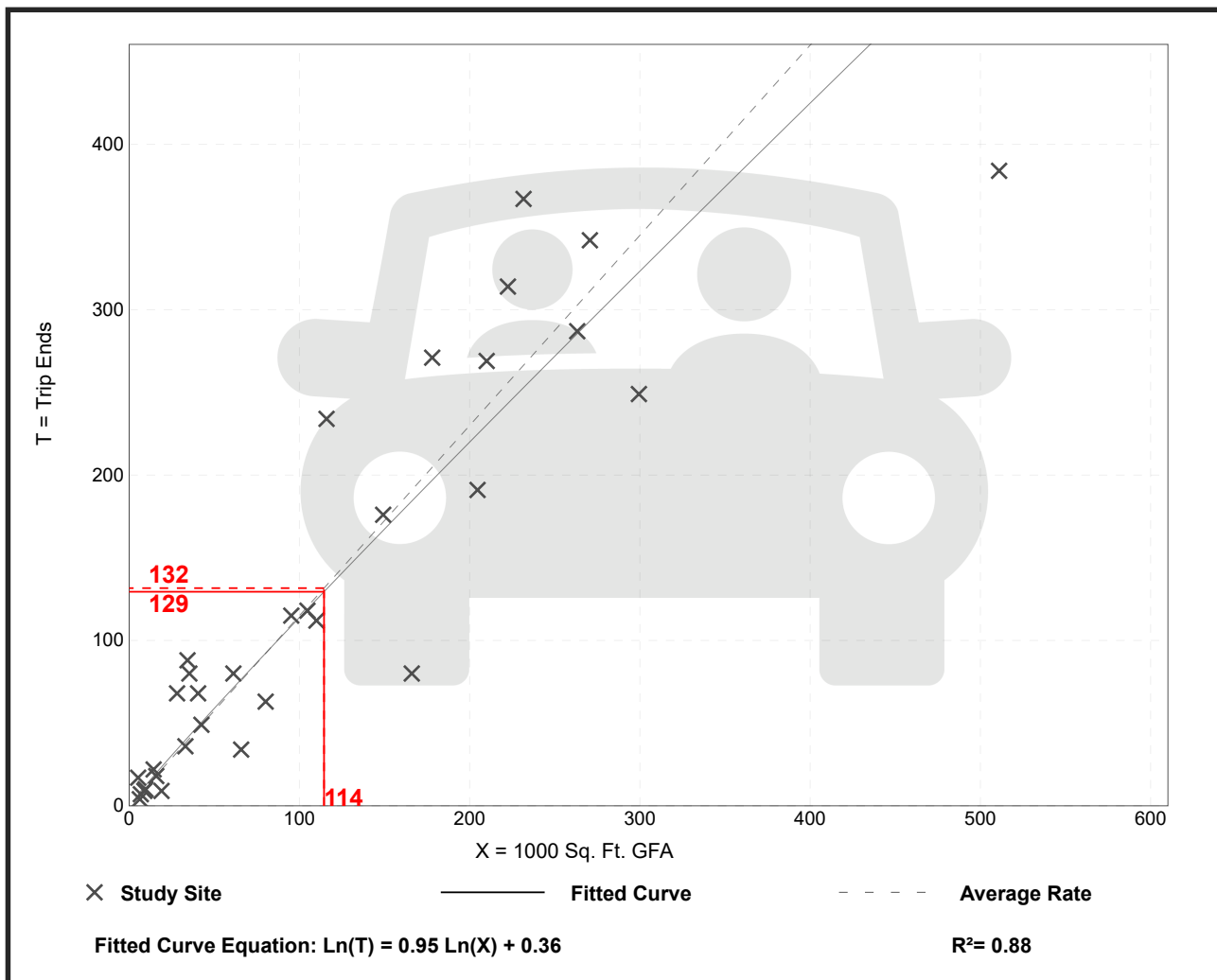
General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 32
 Avg. 1000 Sq. Ft. GFA: 114
 Directional Distribution: 16% entering, 84% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.15	0.47 - 3.23	0.42

Data Plot and Equation



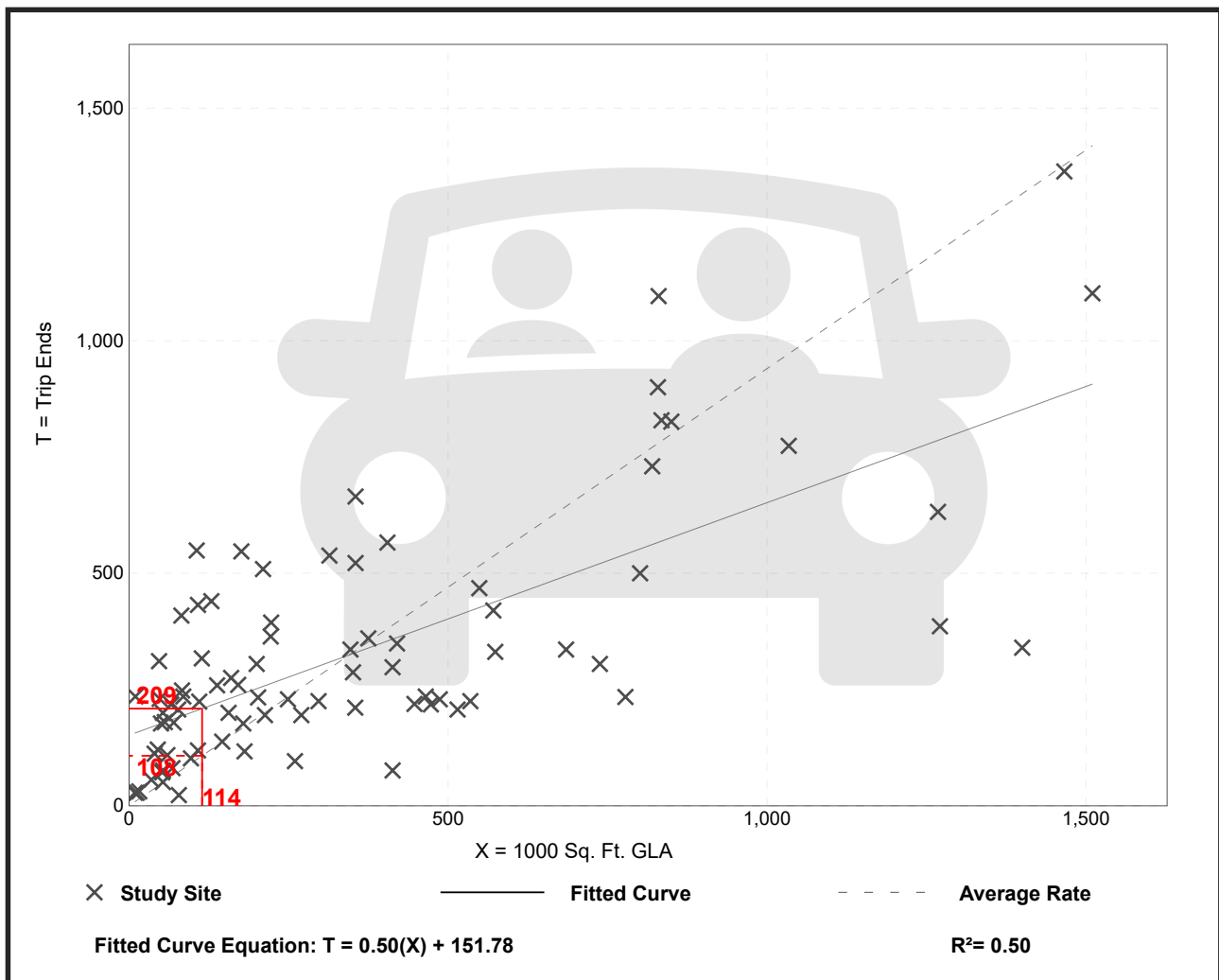
Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 84
 Avg. 1000 Sq. Ft. GLA: 351
 Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.94	0.18 - 23.74	0.87

Data Plot and Equation



Shopping Center (820)

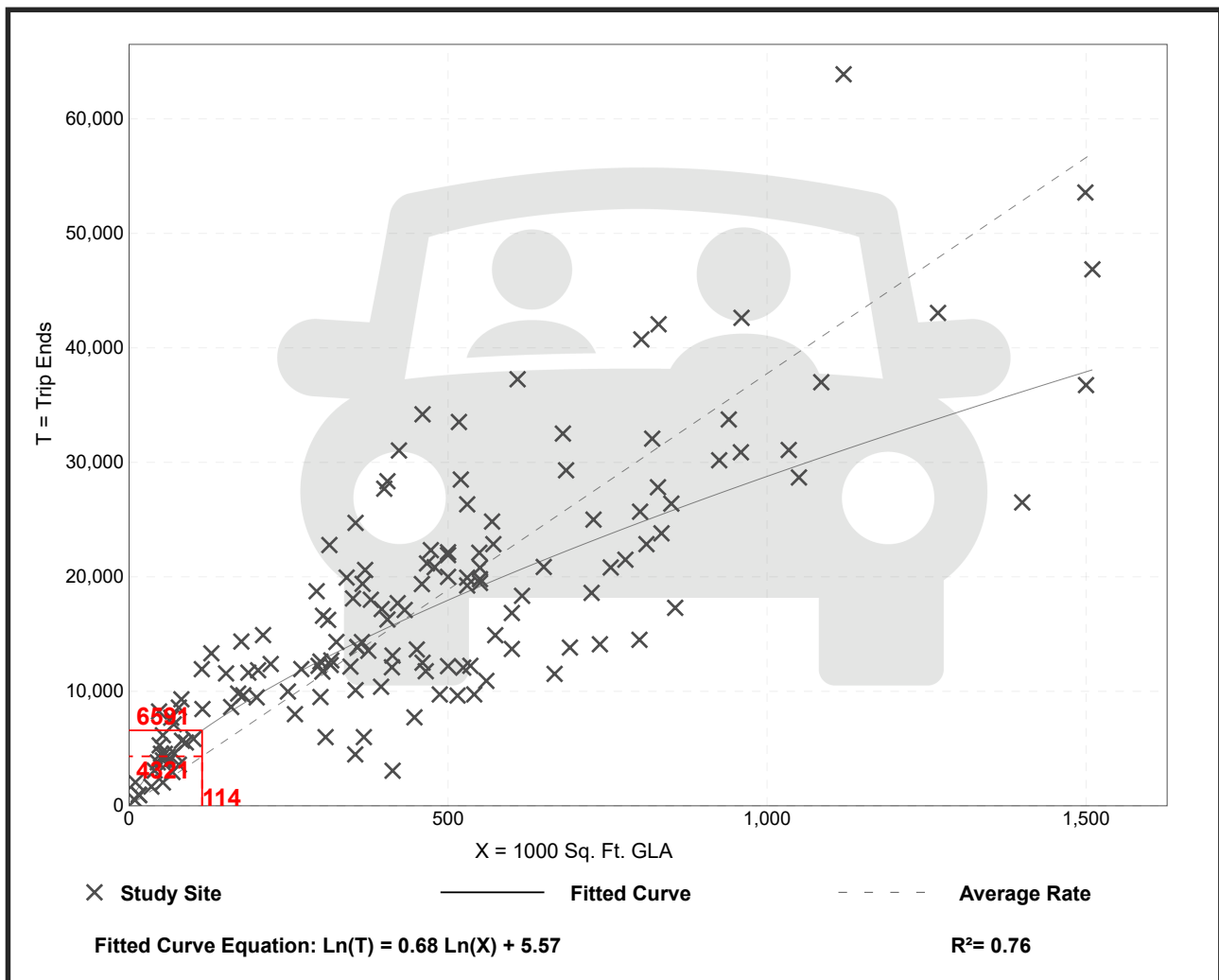
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 147
Avg. 1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.75	7.42 - 207.98	16.41

Data Plot and Equation



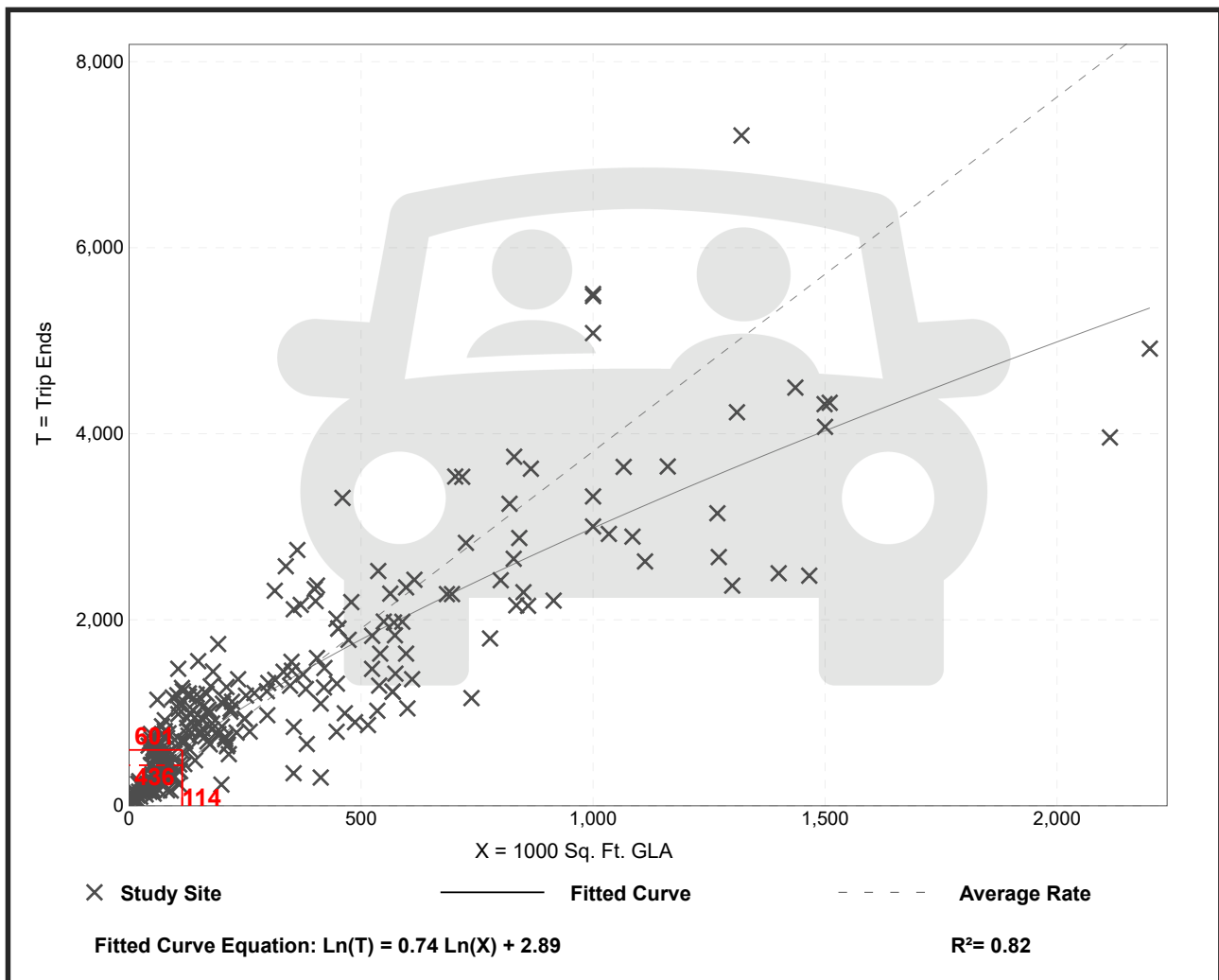
Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 261
 Avg. 1000 Sq. Ft. GLA: 327
 Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

Data Plot and Equation



Hair Salon (918)

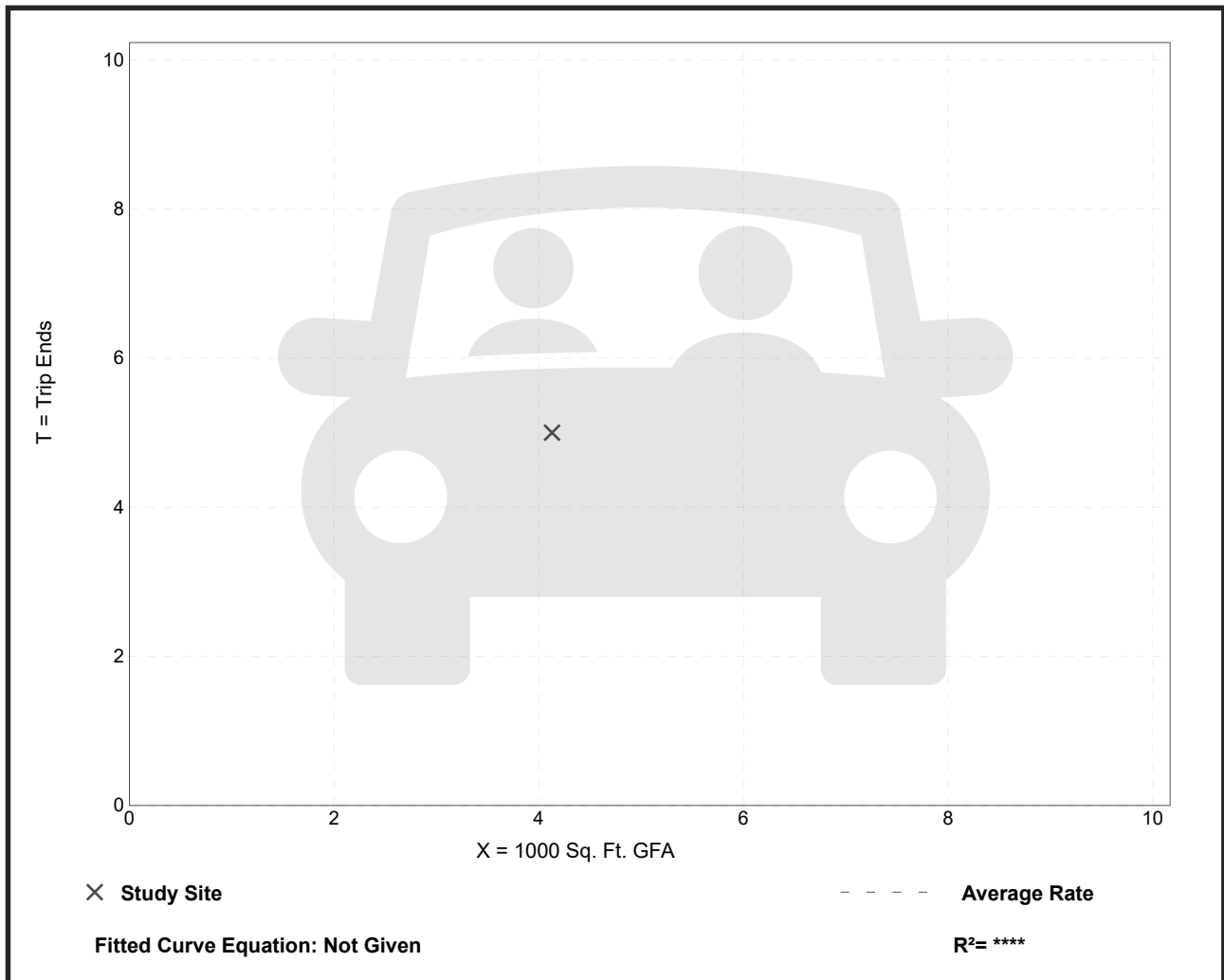
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 1
 Avg. 1000 Sq. Ft. GFA: 4
 Directional Distribution: Not Available

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.21	1.21 - 1.21	*

Data Plot and Equation

Caution – Small Sample Size



Hair Salon (918)

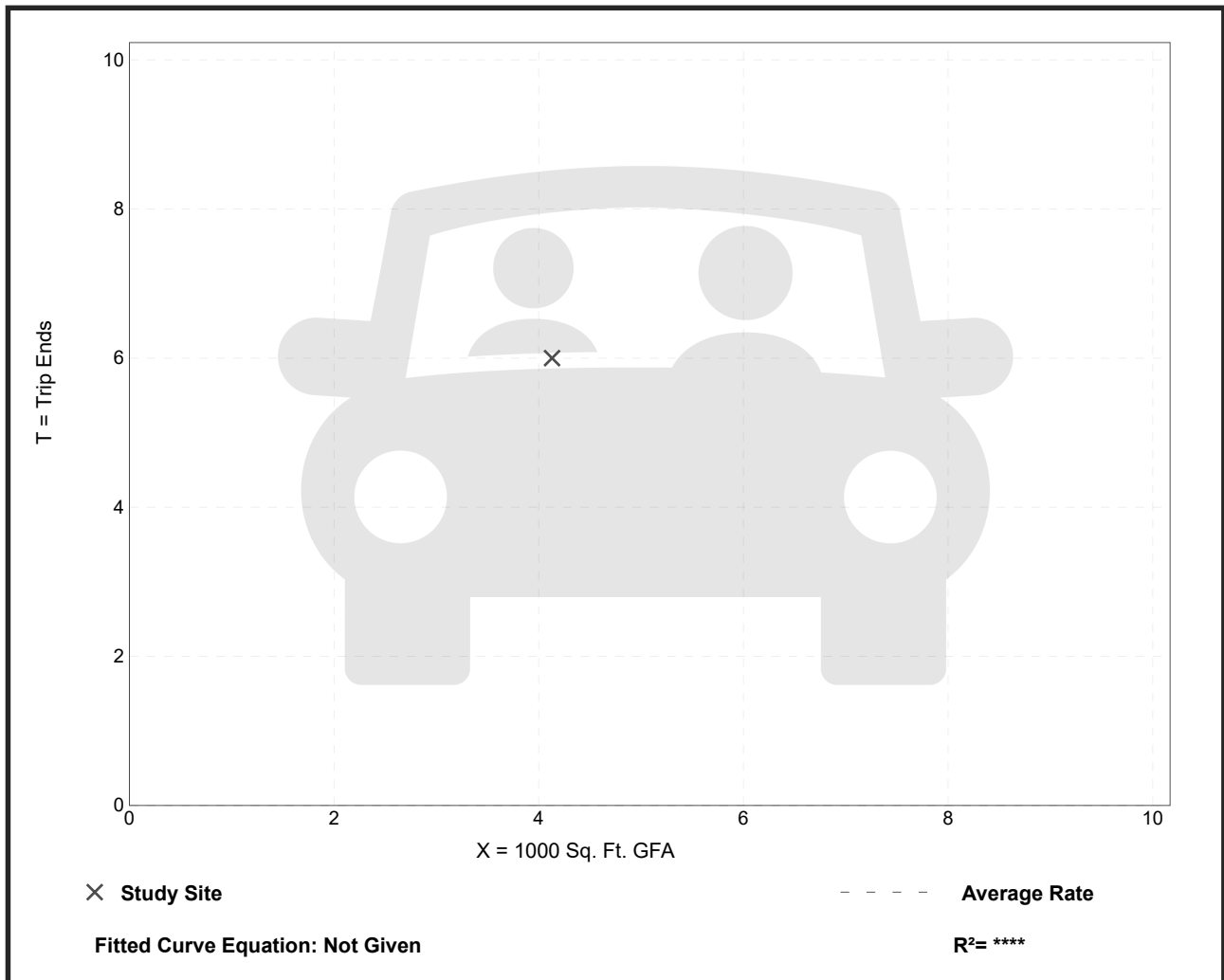
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 1
 Avg. 1000 Sq. Ft. GFA: 4
 Directional Distribution: 17% entering, 83% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.45	1.45 - 1.45	*

Data Plot and Equation

Caution – Small Sample Size



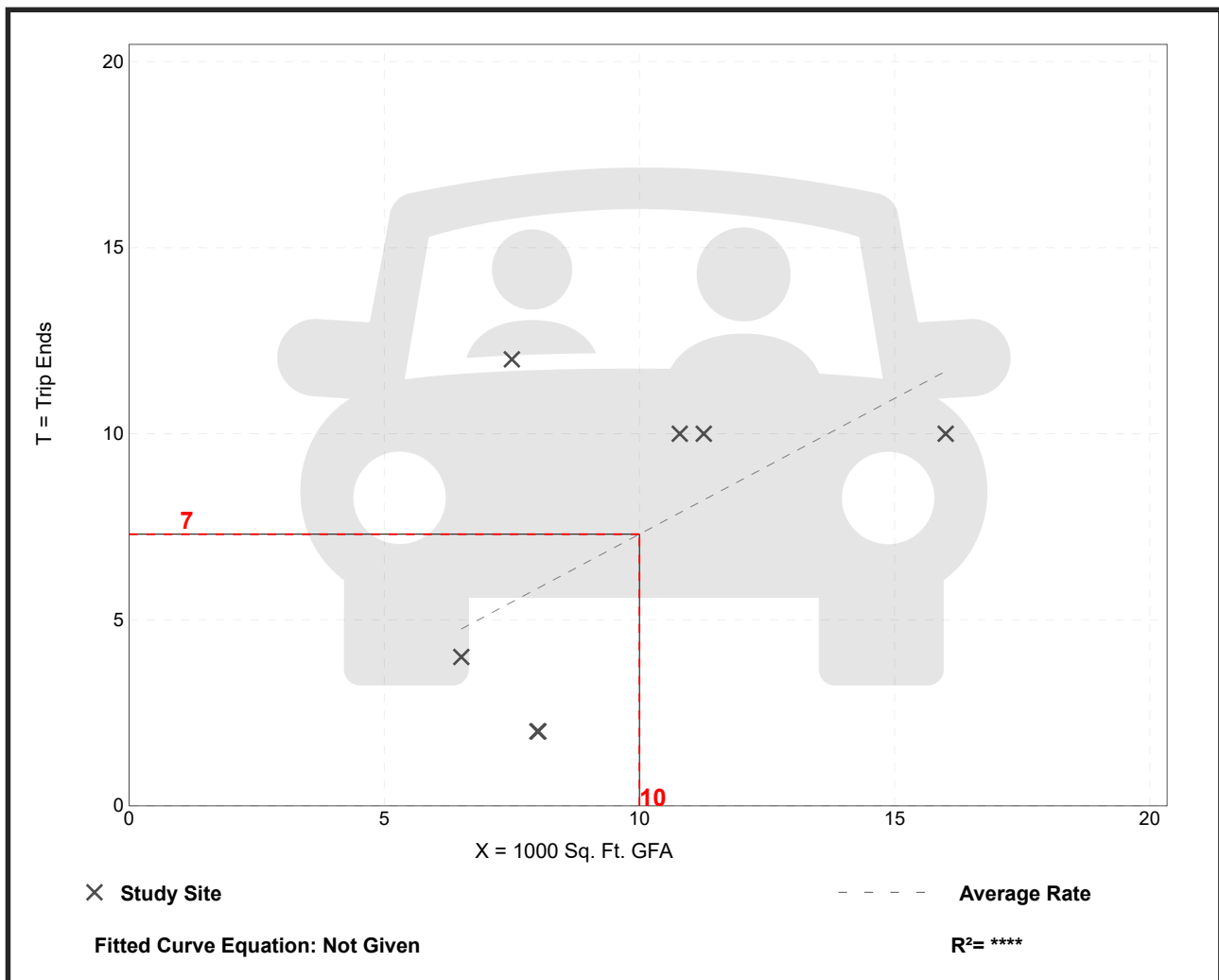
Quality Restaurant (931)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 7
 Avg. 1000 Sq. Ft. GFA: 10
 Directional Distribution: Not Available

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.73	0.25 - 1.60	0.42

Data Plot and Equation



Quality Restaurant (931)

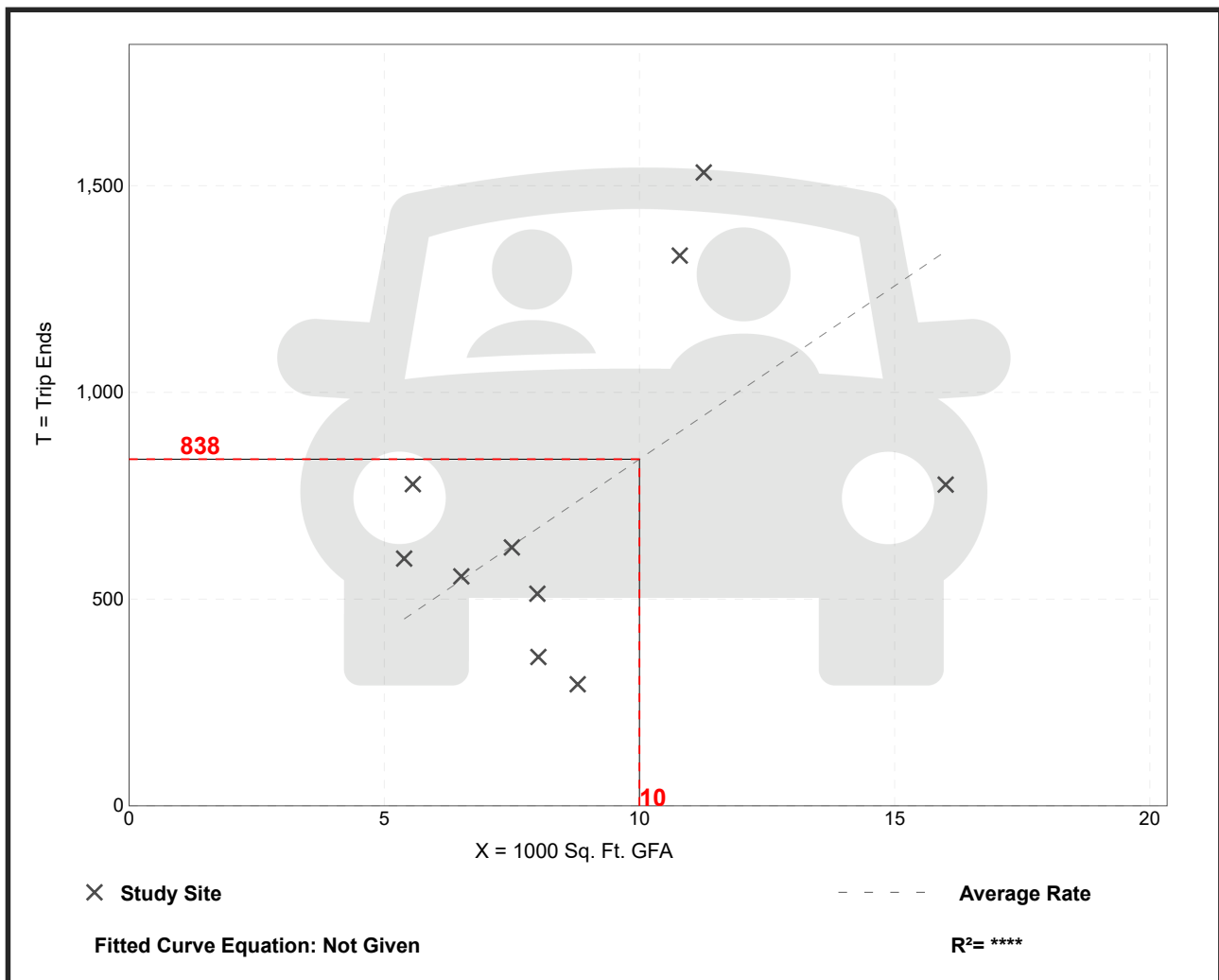
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 10
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
83.84	33.45 - 139.93	40.01

Data Plot and Equation



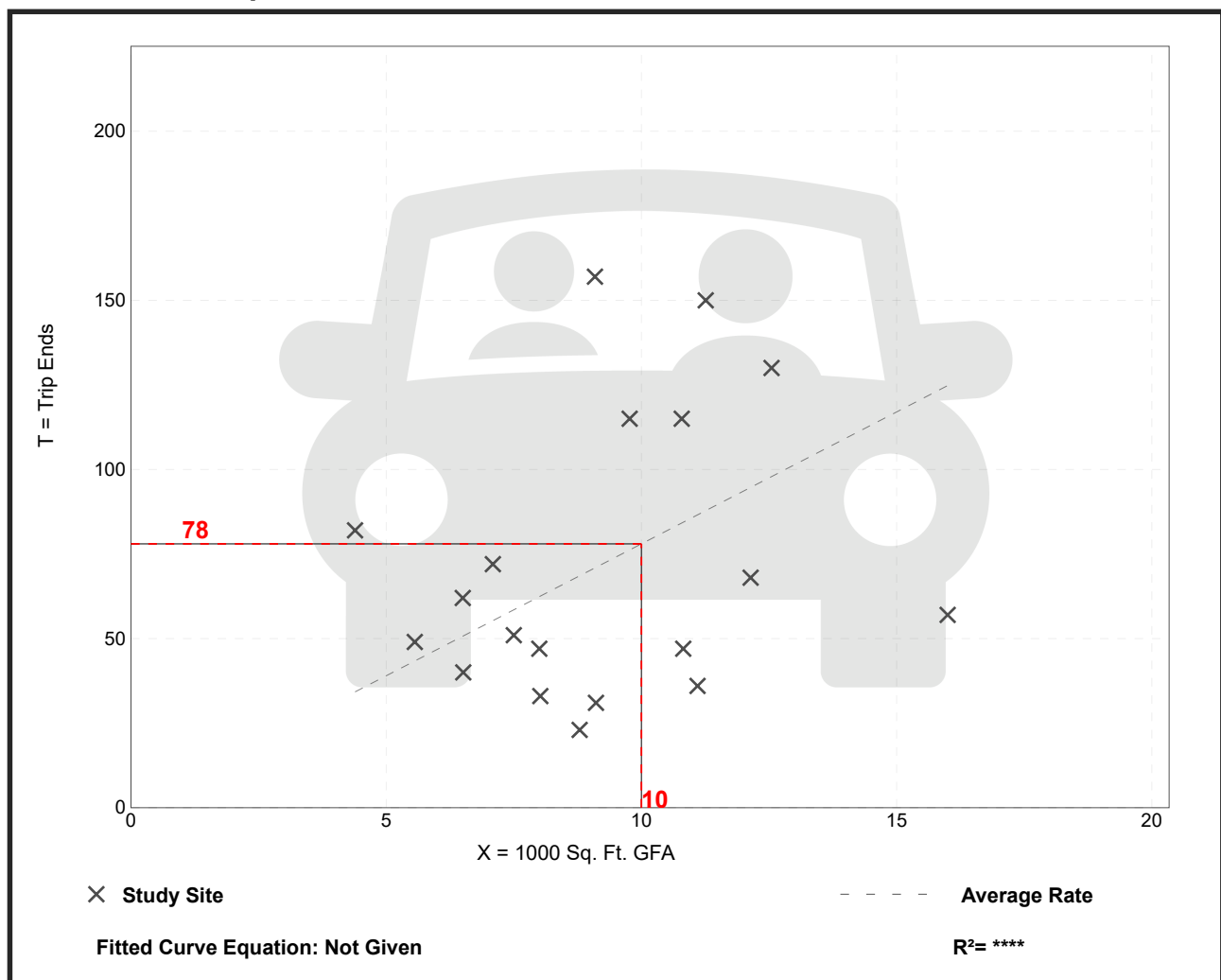
Quality Restaurant (931)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 19
 Avg. 1000 Sq. Ft. GFA: 9
 Directional Distribution: 67% entering, 33% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.80	2.62 - 18.68	4.49

Data Plot and Equation



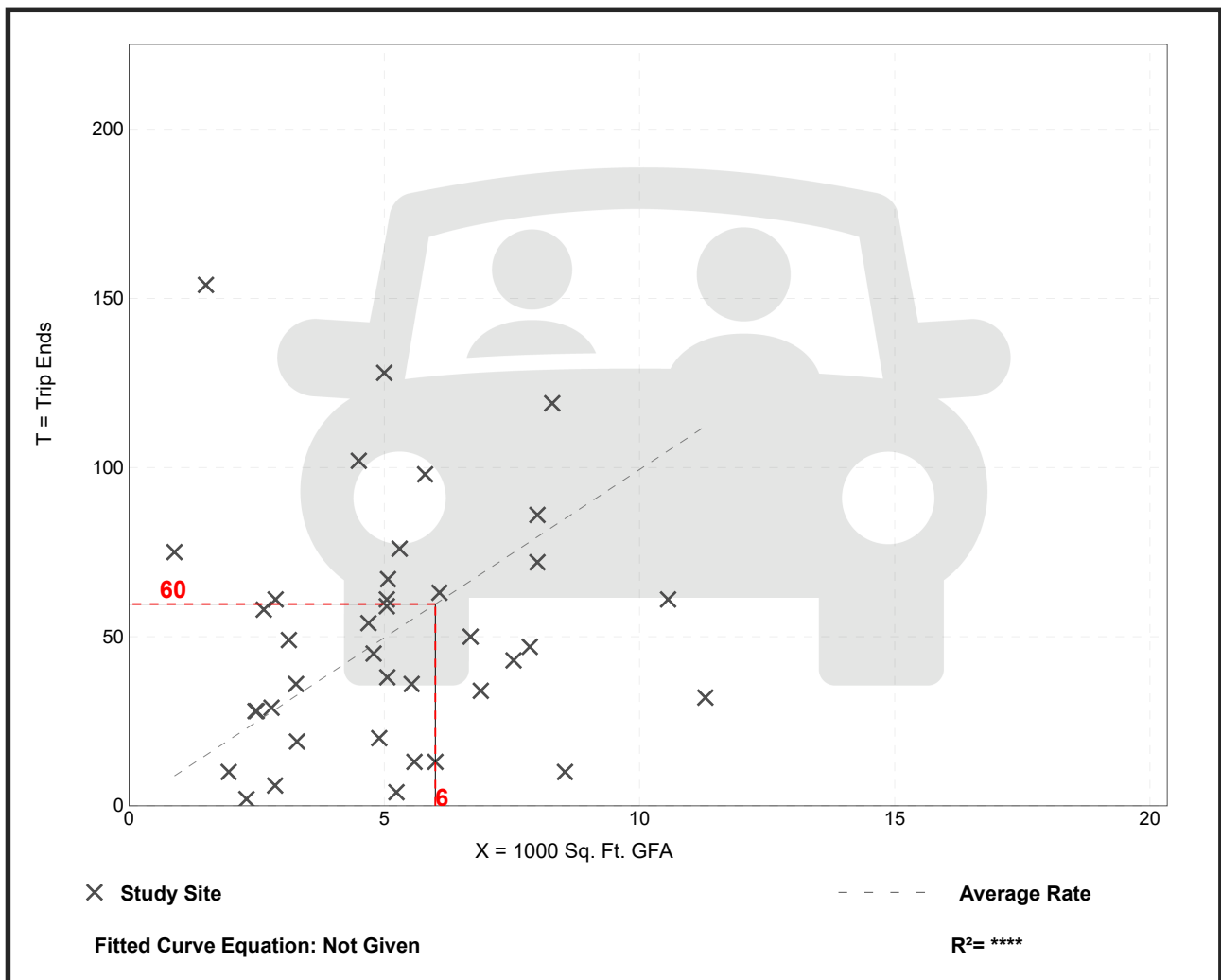
High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 39
 Avg. 1000 Sq. Ft. GFA: 5
 Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.94	0.76 - 102.39	11.33

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant (932)

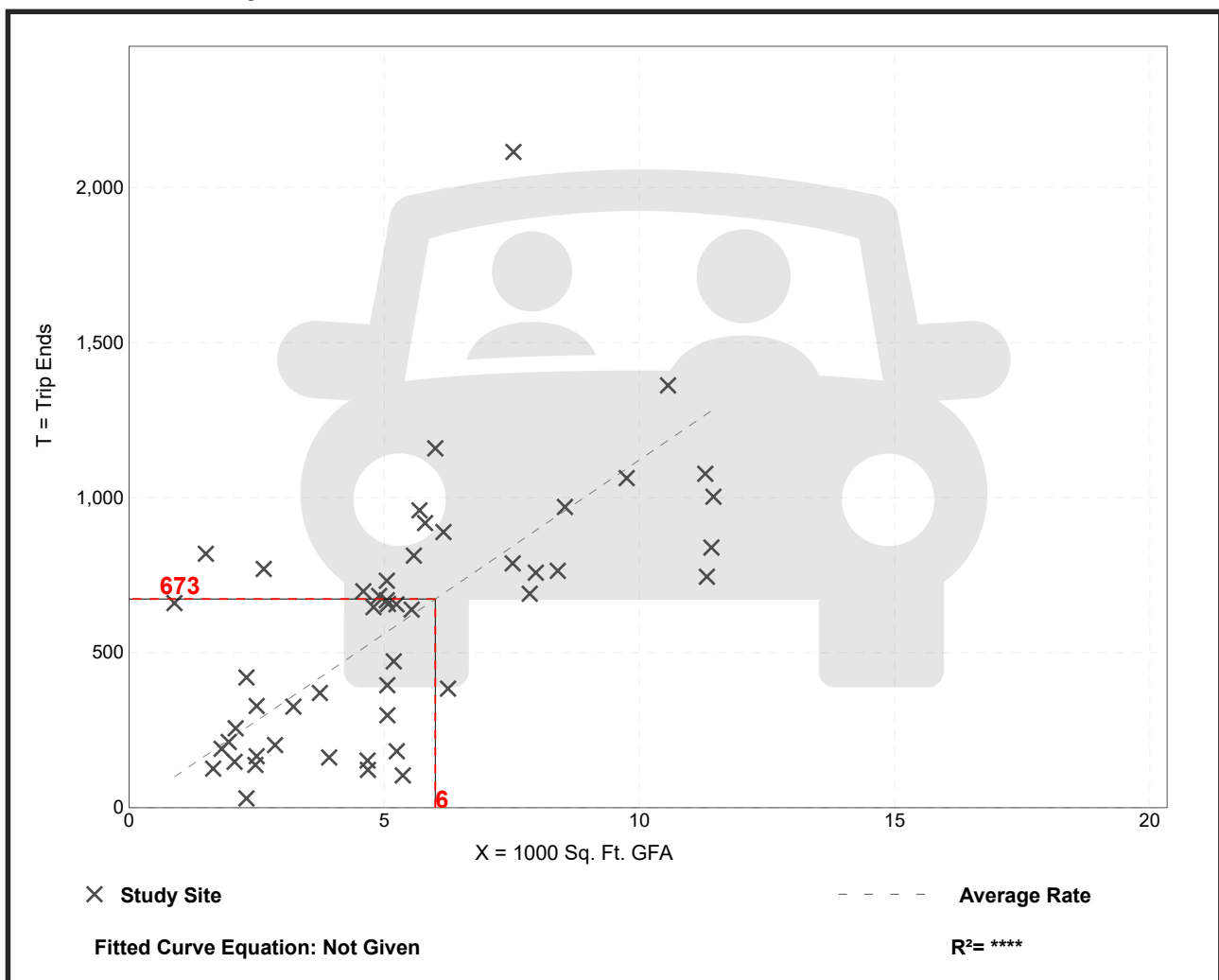
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 50
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
112.18	13.04 - 742.41	72.51

Data Plot and Equation



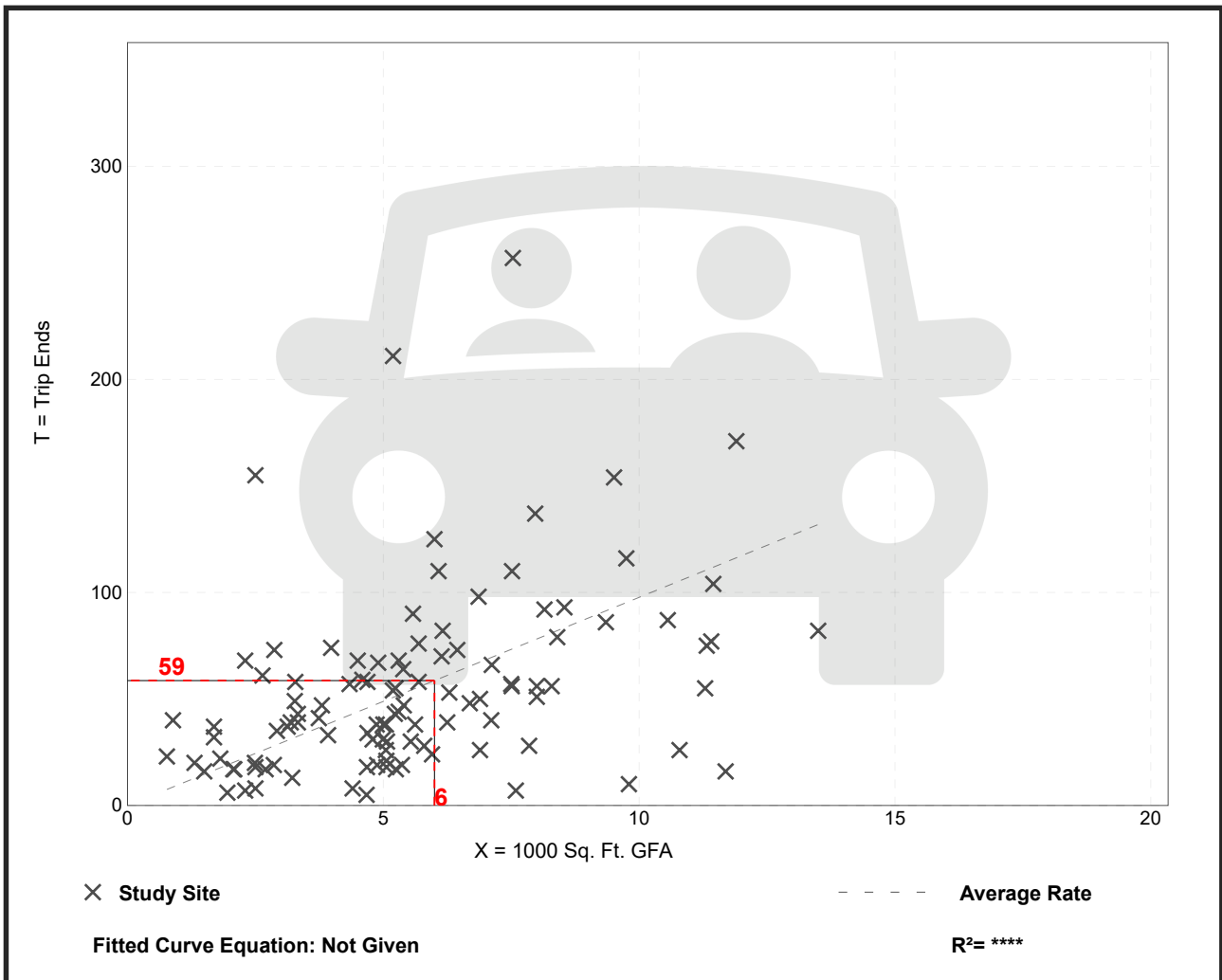
High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 107
 Avg. 1000 Sq. Ft. GFA: 6
 Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.77	0.92 - 62.00	7.37

Data Plot and Equation



Fast-Food Restaurant without Drive-Through Window (933)

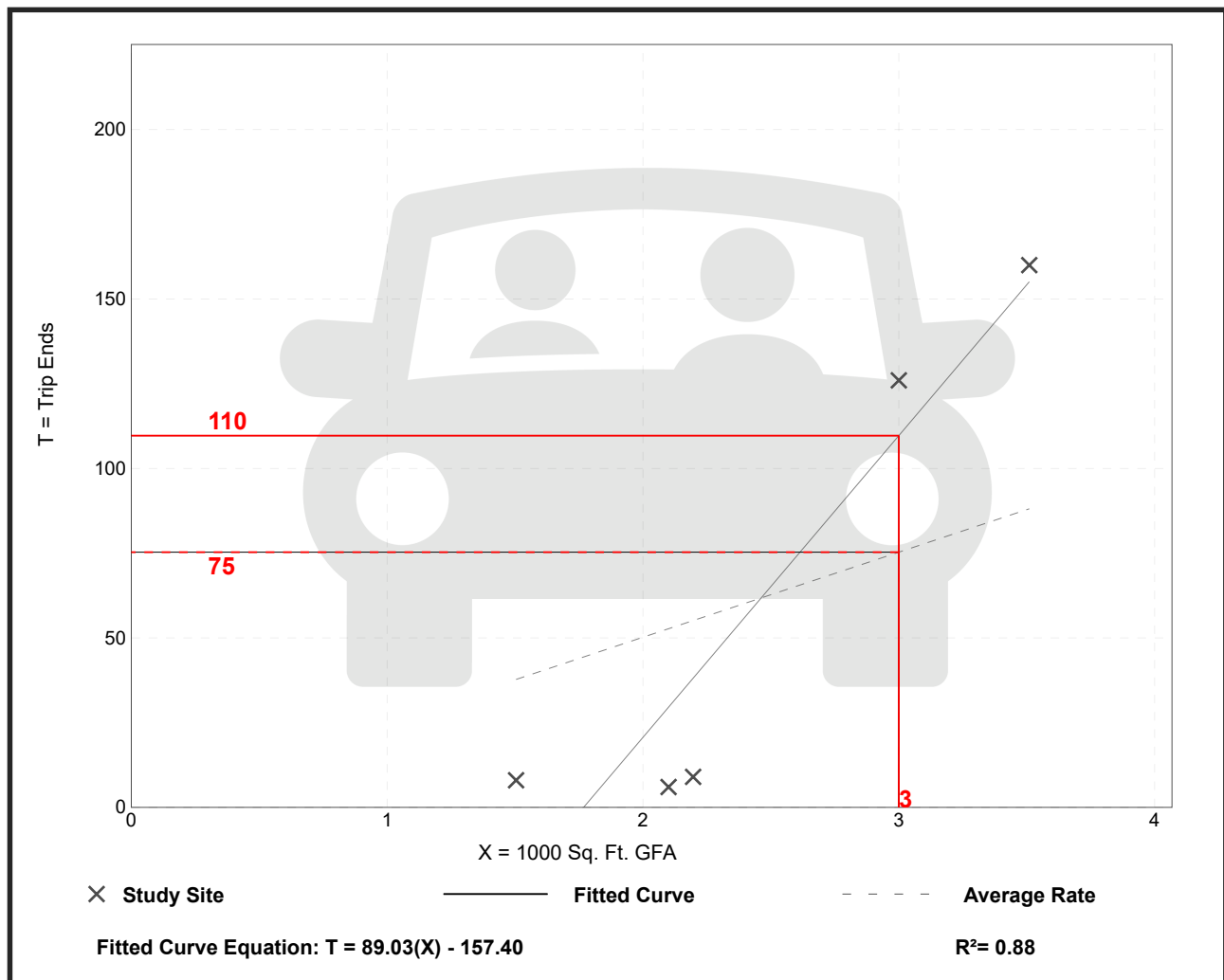
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 5
 Avg. 1000 Sq. Ft. GFA: 2
 Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
25.10	2.86 - 45.58	22.36

Data Plot and Equation

Caution – Small Sample Size



Fast-Food Restaurant without Drive-Through Window (933)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

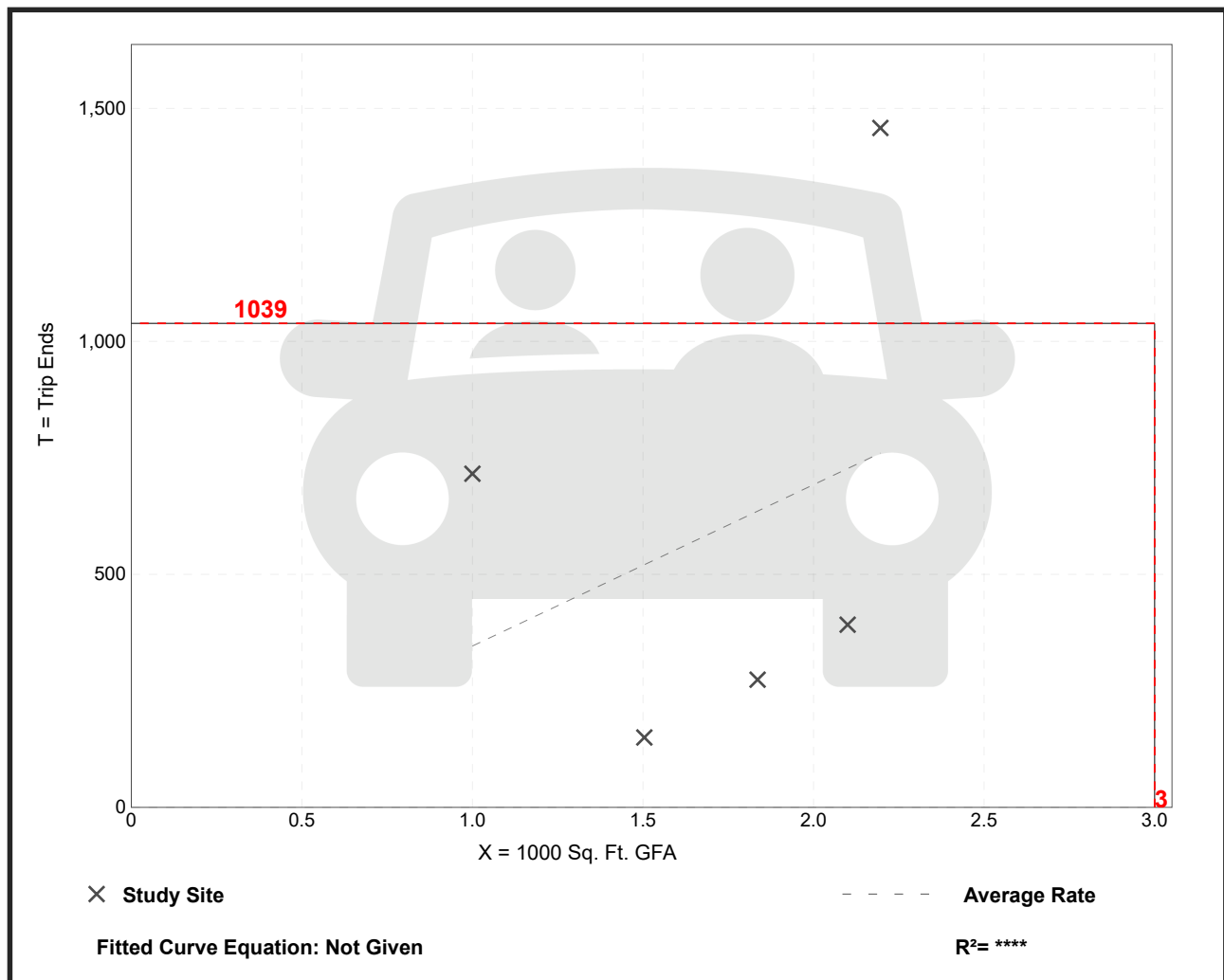
Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
346.23	99.73 - 716.00	288.36

Data Plot and Equation

Caution – Small Sample Size



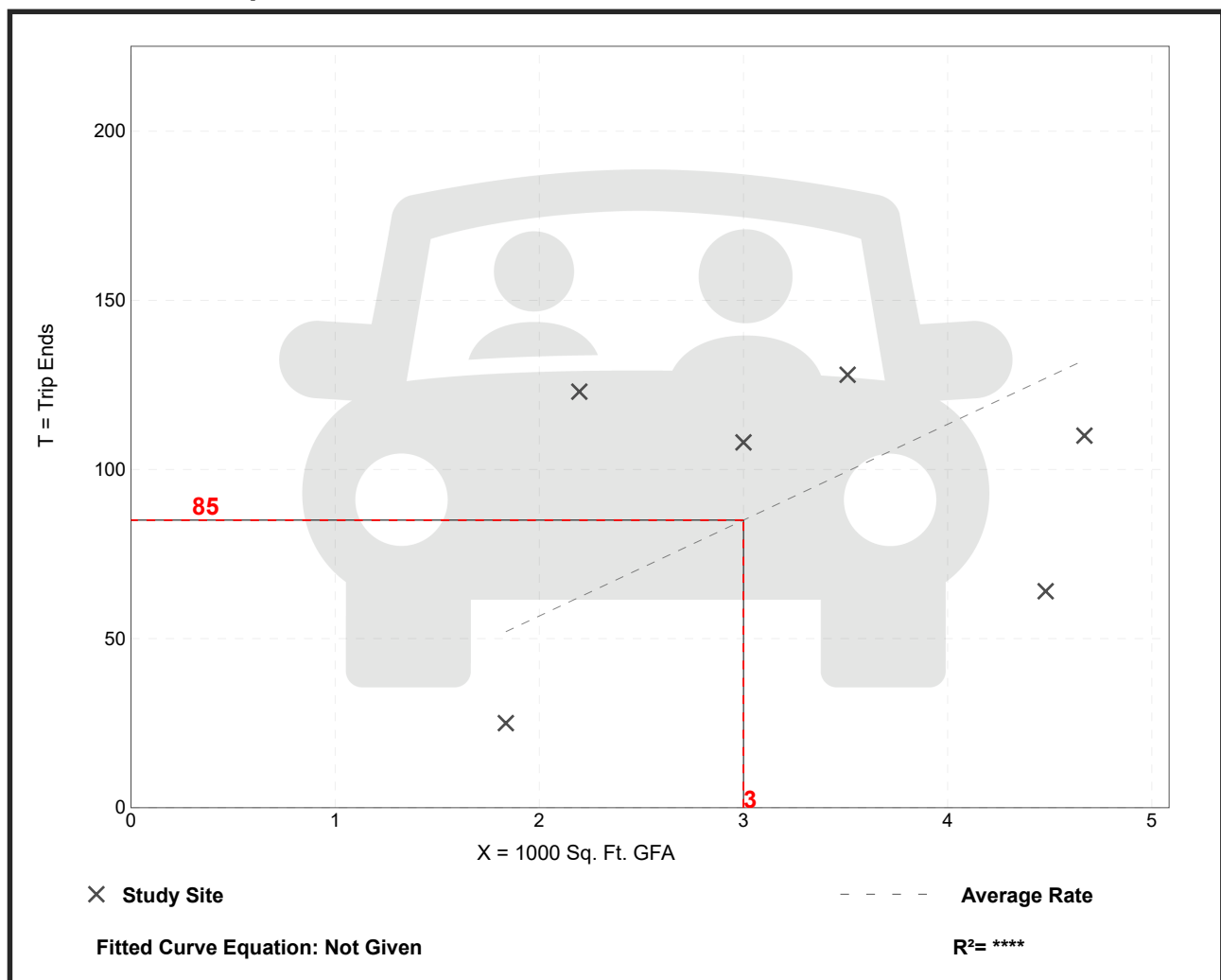
Fast-Food Restaurant without Drive-Through Window (933)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 6
 Avg. 1000 Sq. Ft. GFA: 3
 Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
28.34	13.62 - 56.01	14.56

Data Plot and Equation



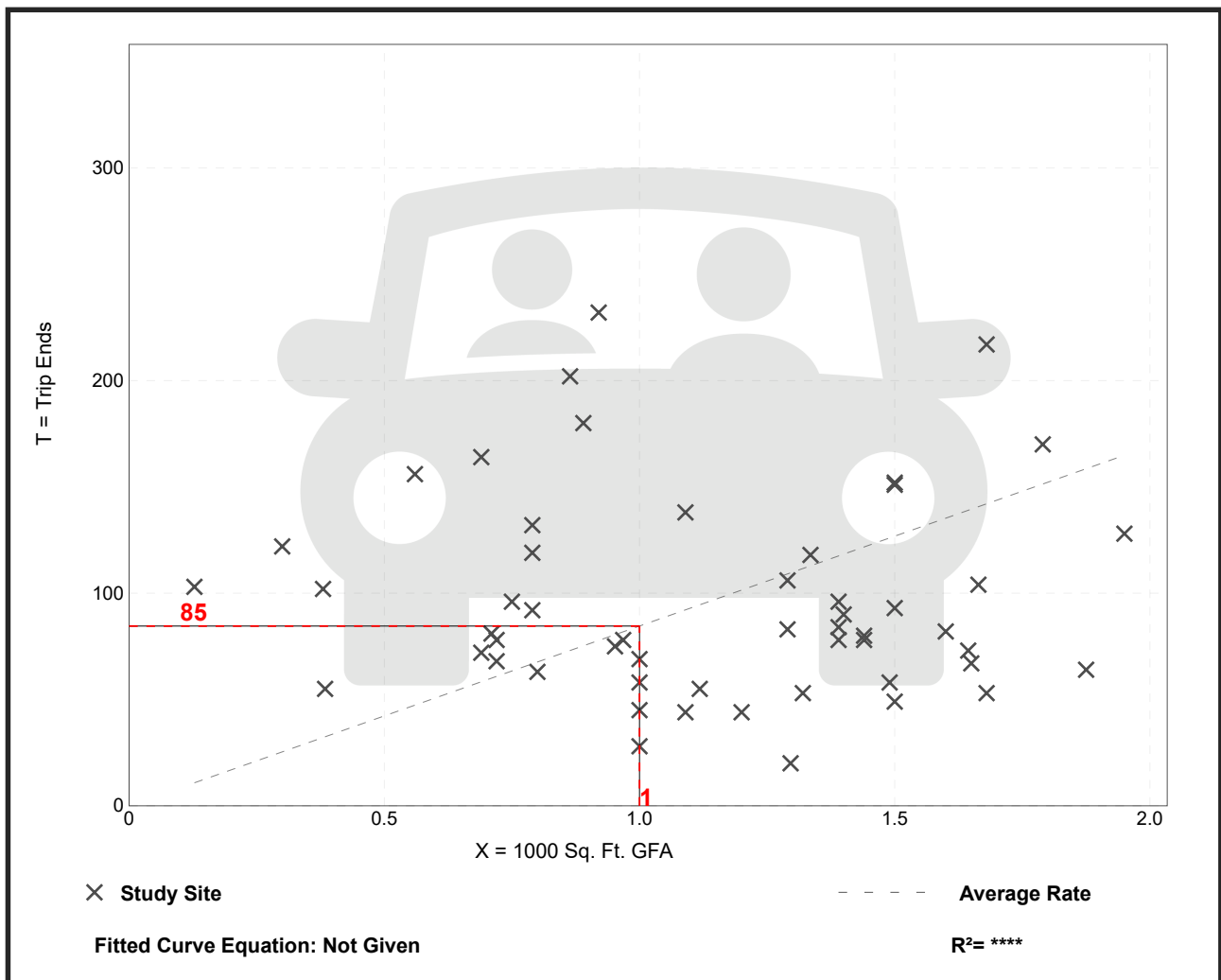
Gasoline/Service Station (944)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 53
 Avg. 1000 Sq. Ft. GFA: 1
 Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
84.55	15.43 - 804.69	68.59

Data Plot and Equation



Gasoline/Service Station (944)

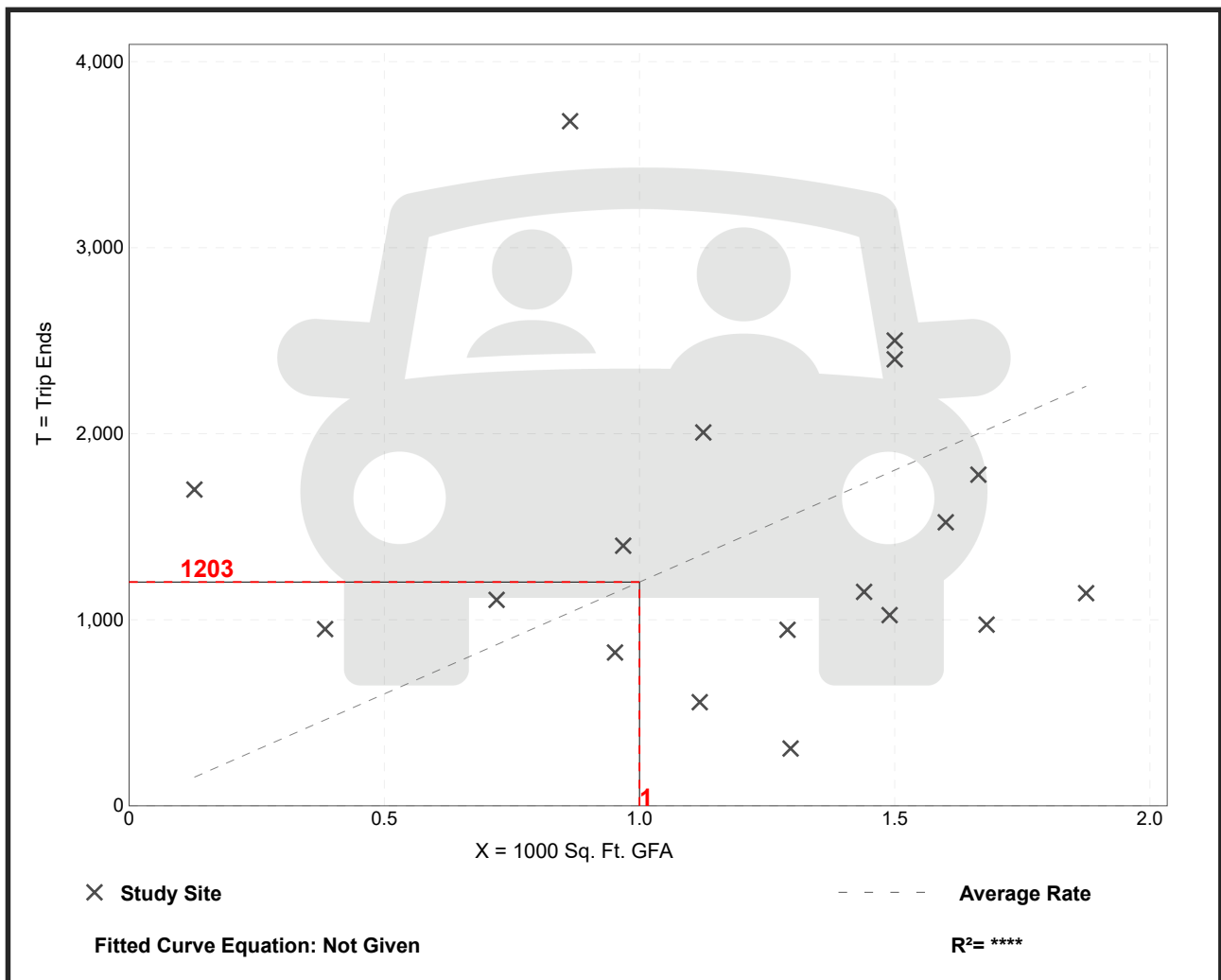
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 18
Avg. 1000 Sq. Ft. GFA: 1
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1202.83	237.65 - 13281.25	1265.67

Data Plot and Equation



Gasoline/Service Station (944)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 65
 Avg. 1000 Sq. Ft. GFA: 1
 Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
109.27	17.75 - 1109.38	84.01

Data Plot and Equation

