TEXAS TRIP GENERATION MANUAL

1st Edition-Volume 1: User's Guide

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INTRODUCTION

Purpose

The purpose of this Manual is to provide a summary of Texas trip generation data for various Land Use Codes (LUCs) and time periods, for data obtained from workplace and special generator (WSG) surveys performed as part of the Texas Travel Survey Program (TTSP). Updates to the dataset will be performed periodically as new data become available. New data may became available in the form of new travel survey data, newly analyzed travel survey data, or Texas trip generation study data submitted by other groups, such as students or service organizations. The User's Guide portion of the Manual (Volume 1) provides an overview of the data, as well as recommendations of how to properly use the plots contained in the data portion of the Manual (Volumes 2-4), which contains plots showing the average vehicle trip ends plotted across different independent variables (i.e., employees, 1000 Sq. Feet Gross Floor Area, etc.).

Use of the Manual

The User's Guide is contained within Volume 1 of the Manual, and provides background information on the data and accompanying statistics. The data plots and accompanying rates or equations to be used in estimating trip generation rates, for a given land use and time period, are provided in Volumes 2-4 of this Manual. In some cases, limited data were available, and thus corresponding cautions are provided. Note that Volumes 2-4 do not include recommendations of how the presented data should be applied. Users should refer to the User's Guide provided in Volume 1 prior to using the data presented in Volumes 2-4.

About the Data

The data contained in this version of the Manual are taken from surveys performed in five Texas areas, between the years 2010 and 2013. Data were selected for inclusion based on the following criteria:

- Available vehicle counts for free-standing locations and person counts for non-free standing locations (survey performed during or more recently than 2007 as part of TTSP).
- Available hourly or 15- minute data count data.
- Available complete data from the region (i.e., if not all establishment surveys met the previously specified requirements none of the establishments from that area were included in the Manual).

This screening process led to 1,781 establishments remaining for consideration for inclusion in the Manual. Of these establishments, 938 include vehicle counts (rather than person counts), so they were considered in the next phase of analysis used to determine the sample included in the *Texas Trip Generation Manual* (Larsen, Hard et al. November 27, 2013). Further criteria were considered in finalizing the sample used to create this Manual. Only those establishments where an ITE LUC was able to be assigned and the needed independent variable data were able to be ascertained. All school sites were removed from the sample. The final sample used in the Manual contained 390 establishments, which were classified into one of 34 ITE LUCs.

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DEFINITION OF TERMS

The following definitions were largely taken directly from *Trip Generation* (Institute of Transportation Engineers 2012), with only minor contextual changes being made. It is important that users of the data contained within this Manual understand the definitions of the pertinent terms, to insure that the conclusions drawn from the data are not miscalculated or misinterpreted.

An **acre**, as defined for this Manual, is the *total* area of a development's site. The distinction between total acres and total *developed* acres is not always clearly defined in the reported site acreage. Therefore, caution should be used with this variable. When submitting data, the percentage of developed acreage versus undeveloped acreage should be indicated.

Adjacent street traffic includes all traffic with direct access to a development site. In some cases where the site is serviced by some form of service roadway or roadways, the adjacent street or streets would be those that lead to the service roads and thus may not actually be contiguous to the site.

The **average trip rate** is the weighted average of the number of vehicle trips or trip ends per unit of independent variable (for example, trip ends per occupied dwelling unit or employee) using a site's driveway(s). The weighted average rate is calculated by dividing the sum of all trips or trip ends by the sum of all independent variable units where paired data are available. The weighted average rate is used rather than the average of the individual rates because of the variance within each data set or generating unit. Data sets with a large variance will over-influence the average rate if they are not weighted.

The **average trip rate for the peak hour of the adjacent street traffic** is the one-hour weighted average vehicle trip generation rate at a site between 7:00 a.m. and 9:00 a.m. or between 4:00 p.m. and 6:00 p.m., when the combination of its generated traffic and the traffic on the adjacent street is the highest. If the adjacent street traffic volumes are unknown, the average trip rate for the peak hour of the adjacent street represent the highest hourly vehicle trip ends generated by the site during the traditional commuting peak periods of 7:00 a.m. to 9:00 a.m. or 4:00 p.m. to 6:00 p.m. Recent studies have indicated that these time periods have expanded in some heavily populated areas.

The A.M. and P.M. peak hour of volumes of adjacent street traffic are the highest hourly volumes of traffic on the adjacent streets during the morning and evening, respectively.

The **average trip rate for the peak hour of the generator** is the weighted average vehicle trip generation rate during the hour of highest volume of traffic entering and exiting the site during the A.M. or P.M. hours. It may or may not coincide in time or volume with the trip rate for the peak hour of the adjacent street traffic. The trip rate for the peak hour of the generator is equal to or greater than the trip rate for the peak hour between 7:00 a.m. and 9:00 a.m. or between 4:00 p.m. and 6:00 p.m.

The **average weekday trip rate** is the weighted weekday (Monday through Friday) average vehicle trip generation rate during a 24-hour period.

An **employee** is defined as a full-time or part-time worker. The number of employees refers to the total number of persons employed at a facility, not just those in attendance at the time the

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study is conducted. Caution should be used with this variable because it has not been defined in all previous editions of *Trip Generation* (Institute of Transportation Engineers 2012).

The **gross floor area (GFA)** of a building is the sum (in square feet) of the area of each floor level, including cellars, basements, mezzanines, penthouses, corridors, lobbies, stores and offices that are within the principal outside faces of exterior walls, not including architectural setbacks or projections (Institute of Real Estate Management of the National Association of Realtors 1985). Included are all areas that have floor surfaces with clear standing head room (6 feet, 6 inches minimum), regardless of their use. If a ground-level area or part thereof within the principal outside faces of the exterior walls is not enclosed, this GFA is considered part of the overall square footage of the building. However, unroofed areas and unenclosed roofed-over spaces, except those contained within the principal outside faces of exterior walls, should be excluded from the area calculations. For purposes of trip generation calculation, the GFA of any parking garages within the building should not be included within the GFA of the entire building. The majority of the land uses in this document express trip generation in terms of GFA. In *Trip Generation*, the unit of measurement for office buildings is currently GFA; however, it may be desirable to also obtain data related to gross rentable area and net rentable area. With the exception of buildings containing enclosed malls or atriums, GFA is equal to gross leasable area and gross rentable area.

The **gross leasable area (GLA)** is the total floor area designed for tenant occupancy and exclusive use, including any basements, mezzanines, or upper floors, expressed in square feet and measured from the centerline of point partitions and from outside wall faces. For purposes of trip generation calculations the floor area of any parking garages within the building should not be included within the GLA of the entire building. GLA is the area for which tenants pay rent; it is the area that produces income. In the retail business, GLA lends itself readily to measurement and comparison; thus, it has been adopted by the shopping center industry as its standard for statistical comparison. Accordingly, GLA is used in this manual for shopping centers. For specialty retail centers, strip centers, discount stores and free-standing retail facilities, GLA usually equals GFA.

The **gross rentable area (GRA)** is computed in square feet by measuring the inside finish of permanent outer building walls or from the glass line where at least 50 percent of the outer building wall is glass (Institute of Real Estate Management of the National Association of Realtors 1985). GRA includes the area within the outside building walls, excluding stairs, elevator shafts, flues, pipe shafts, vertical ducts, balconies and air condition rooms.

An **independent variable** is a physical, measurable and predictable unit describing the study site or generator that can be used to predict the value of the dependent variable (in this case, trip ends). Some examples of independent variables used in this book are GFA, employees, fueling stations and acres.

A **student** is defined as a person who is enrolled in an institution such as a school, college, or university on either a full-time or part-time basis. The number of students refers to the total number of persons enrolled at a facility, not just those present at the time the study is conducted. Caution should be used with this variable because it has not been defined in previous editions of this publication.

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A **trip** or **trip end** is a single or one-direction vehicle movement with either the origin or the destination (exiting or entering) inside a study site. For trip generation purposes, the total trip ends for a land use over a given period of time are the total of all trips entering plus all trips exiting a site during a designated time period.

A **vehicle fueling position** is defined by the number of vehicles that can be fueled simultaneously at a service station. For example, if a service station has two fuel dispensing pumps with three hoses and grades of gasoline on each side of the pump, where only one vehicle can be fueled at a time on each side, the number of vehicle fueling positions would be four.

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DESCRIPTION OF DATABASE

The data analyzed in this document were collected as part of the TTSP in the form of workplace or special generator surveys. The source surveys from which data for each land use were taken are provided in Appendix A. The source numbers associated with a given land use are provided on the land use description pages of Volumes 2-4.

Data Collection

The data included in this Manual were collected as part of WSG surveys performed as part of the TTSP. All of the data presented represent **vehicular** trip generation.

Data Analysis and Storage

The statistics included within the Manual were largely generated in Task 4 of the RMC 6760 project. The data were grouped by LUC for use in generating the figures for this Manual. Data for the 34 land uses included within the Manual are classified into 10 major categories, as was done in *Trip Generation* (Institute of Transportation Engineers 2012). There are 172 land uses presented in *Trip Generation*, and future versions of the *Texas Trip Generation Manual* will contain additional LUCs, beyond the current 34 LUCs, as the data become available. Thus, in order to convey a more complete picture of the LUCs—both those contained in this version of the Texas Manual and those that may be added at a future date—a list of all 172 LUCs contained in edition nine of *Trip Generation*, are shown grouped into their 10 major LUCs categories. The 34 LUCs included in this version of the *Texas Trip Generation Manual* are shown in bold. Note that future versions of this Manual may contain LUCs not currently listed, as new data become available, and new LUCs are defined and formed.

Port and Terminal (Land Uses 000-099)

CODE	LAND USE
010	Waterport/Marine Terminal
021	Commercial Airport
022	General Aviation Airport
030	Intermodal Truck Terminal
090	Park-and-Ride Lot with Bus Service

Industrial (Land Uses 100-199)

CODE	LAND USE
110	**General Light Industrial**
120	General Heavy Industrial
130	Industrial Park
140	**Manufacturing**
150	**Warehousing**
151	**Mini-Warehouse**
152	High-Cube Warehouse/Distribution Center
160	Data Center
170	**Utilities**

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Residential (Land Uses 200-299)

CODE	LAND USE
210	Single-Family Detached Housing
220	Apartment
221	Low-Rise Apartment
222	High-Rise Apartment
223	Mid-Rise Apartment
224	Rental Townhouse
230	Residential Condominium/Townhouse
231	Low-Rise Residential Condominium/Townhouse
232	High-Rise Residential Condominium/Townhouse
233	Luxury Condominium/Townhouse
240	Mobile Home Park
251	Senior Adult Housing—Detached
252	Senior Adult Housing—Attached
253	Congregate Care Facility
254	**Assisted Living**
255	Continuing Care Retirement Community
260	Recreational Homes
265	Timeshare
270	Residential Planned Unit Development

Lodging (Land Uses 300-399)

CODE	LAND USE
310	**Hotel**
311	All Suites Hotel
312	Business Hotel
320	Motel
330	Resort Hotel

Recreational (Land Uses 400-499)

CODE	LAND USE
411	City Park
412	County Park
413	State Park
414	Water Slide Park
415	Beach Park
416	Campground/Recreational Vehicle Park
417	Regional Park
418	National Monument
420	Marina
430	Golf Course
431	Miniature Golf Course
432	Golf Driving Range
433	Batting Cages
435	Multipurpose Recreational Facility
437	Bowling Alley

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440	Adult Cabaret
441	Live Theater
443	Movie Theater without Matinee
444	Movie Theater with Matinee
445	Multiplex Movie Theater
452	Horse Racetrack
453	Automobile Racetrack
454	Dog Racetrack
460	Arena
465	Ice Skating Rink
466	Snow Ski Area
473	Casino/Video Lottery Establishment
480	Amusement Park
481	Zoo
488	Soccer Complex
490	Tennis Courts
491	Racquet/Tennis Club
492	Health/Fitness Club
493	Athletic Club
495	Recreational Community Center

Institutional (Land Uses 500-599)

CODE	LAND USE
501	Military Base
520	Elementary School
522	Middle School/Junior High School
530	High School
534	Private School (K-8)
536	Private School (K-12)
540	**Junior/Community College**
550	University/College
560	Church
561	Synagogue
562	Mosque
565	**Day Care Center**
566	Cemetery
571	Prison
580	Museum
590	Library
591	Lodge/Fraternal Organization

Medical (Land Uses 600-699)

CODE	LAND USE
610	**Hospital**
620	**Nursing Home**
630	**Clinic**
640	**Animal Hospital/Veterinary Clinic**

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Office (Land uses 700-799)

CODE	LAND USE
710	General Office Building
714	Corporate Headquarters Building
715	Single Tenant Office Building
720	**Medical-Dental Office Building**
730	Government Office Building
731	State Motor Vehicles Department
732	United States Post Office
733	Government Office Complex
750	Office Park
760	Research and Development Center
770	Business Park

Retail (Land Uses 800-899)

CODE	LAND USE
810	Tractor Supply Store
811	Construction Equipment Rental Store
812	**Building Materials and Lumber Store**
813	Free-Standing Discount Superstore
814	**Variety Store**
815	Free-Standing Discount Superstore
816	**Hardware/Paint Store**
817	Nursery (Garden Center)
818	Nursery (Wholesale)
820	**Shopping Center**
823	Factory Outlet Center
826	Specialty Retail Center
841	**Automobile Sales**
842	**Recreational Vehicles Sales**
843	**Automobile Parts Sales**
848	Tire Store
849	Tire Superstore
850	Supermarket
851	Convenience Market (Open 24 Hours)
852	**Convenience Market (Open 15-16 Hours)**
853	**Convenience Market with Gasoline Pumps**
854	Discount Supermarket
857	Discount Club
860	Wholesale Market
861	Sporting Goods Superstore
862	Home Improvement Superstore
863	Electronics Superstore
864	Toy/Children's Superstore
865	Baby Superstore
866	Pet Supply Superstore
867	Office Supply Superstore

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868	Book Superstore
869	Discount Home Furnishing Superstore
872	Bed and Linen Superstore
875	Department Store
876	Apparel Store
879	Arts and Crafts Store
880	Pharmacy/Drugstore without Drive-Through Window
881	**Pharmacy/Drugstore with Drive-Through Window**
890	**Furniture Store**
896	DVD/Video Rental Store
897	Medical Equipment Store

Services (Land Uses 900-999)

CODE	LAND USE
911	Walk-in Bank
912	**Drive-in Bank**
918	Hair Salon
920	Copy, Print and Express Ship Store
925	Drinking Place
931	Quality Restaurant
932	**High-Turnover (Sit-Down) Restaurant**
933	**Fast-Food Restaurant with Drive-Through Window**
934	**Fast-Food Restaurant with Drive-Through Window**
935	**Fast-Food Restaurant with Drive-Through Window and No Indoor Seating**
936	Coffee/Donut Shop without Drive-Through Window
937	Coffee/Donut Shop with Drive-Through Window
938	Coffee/Donut Shop with Drive-Through Window and No Indoor Seating
939	Bread/Donut/Bagel Shop without Drive-Through Window
940	Bread/Donut/Bagel Shop with Drive-Through Window
941	Quick Lubrication Vehicle Shop
942	Automobile Care Center
943	**Automobile Parts and Service Center**
944	**Gasoline /Service Station**
945	**Gasoline/Service Station with Convenience Market**
946	**Gasoline/Service Station with Convenience Market and Car Wash**
947	Self-Service Car Wash
948	Automated Car Wash
950	Truck Stop

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Data Age

As mentioned previously, this version of the *Texas Trip Generation Manual* only contains data pulled from surveys performed in five Texas regions between 2010 and 2013. Thus, there is little reason to be concerned about issues caused by temporal differences in when the data were collected, in terms of trip rates across surveys. However, as additional data are added to the Manual's database, differences in trip rates resulting from differences in data age will be monitored, and the data adjusted accordingly.

Variations in the Statistics

Variation exists within the data contained within this Manual. Some of the key statistics used to describe the variation in data for a given time period and LUC category include the range of rates, the standard deviation and the coefficient of determination (R^2) value. A number of factors may contribute to variation in the data. As stated in *Trip Generation*, these factors may include, "small sample size, individual marketing of the site, economic conditions of the business market, geographic location of the sites studied or unique characteristics of the specific site" (Institute of Transportation Engineers, p. 12). Additionally, daily and seasonal variation may exist. Thus, engineering judgment should be used when citing these statistics.

Limitations of the Data Plots

Caution should be used in making inferences beyond the range of data that are included within the dataset. Likewise, caution should be exemplified in the rare instances (linked to small sample sizes and/or large variation in the data) when the trip generation estimate for the peak hour of the adjacent street traffic exceeds the trip generation estimate of the peak hour of the generator. Given that this is not practically possible, details related to the project site in question, as well as engineering judgment, should be used in generating a reasonable trip generation rate to use in such instances.

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DESCRIPTION OF DATA PLOTS AND REPORTED STATISTICS

Data Plots

An example and explanation of the plots and descriptive data available for each time period/LUC combination is shown in Figure 1. The data plots provide a visual representation of variance across sites for a time period/LUC combination. Note that each plotted point represents the number of trips generated for a given size of the independent variable.

If five or fewer sites are included within the Manual, the statement, "Caution—Use Carefully—Small Sample Size" is included above the plot. Within this Manual, only those time period/LUC combinations with three or more sites were chosen for inclusion in the manual.

Reported Statistics

Average Trip Rate

The displayed average trip rates are **weighted**. By using the weighted average trip rate, those sites with a high variance do not unduly affect the mean.

Standard Deviation for the Weighted Average Trip Rate

The standard deviation is a reflection of how much the data vary relative to the calculated mean. Less variation (indicated by a small standard deviation) means less dispersion and that the model fits the data better. However, note that the standard deviations contained within this Manual are calculated using the weighted average rate (rather than the arithmetic average rate). This method of calculating the standard deviation leads to a result that is not quite statistically correct.

Regression Analysis

Excel was used in the creation of a regression curve, a regression equation and a coefficient of determination (R^2) for each time period/LUC combination. The R^2 represents the percentage of the variation in trips generated that is explained by the variance of the independent variable size. For example, an R^2 value of 0.85 means that 85 percent of the variation in number of trips can be accounted for by the variance in the size of the independent variable. The R^2 value can range between 0 and 1.0, with values closer to 1.0 indicating a better fit.

As in *Trip Generation*, the regression equations used in this Manual take one of the following two forms:

$T=aX+b$ (linear)

$Ln(T)=aLn(X)+b$ (logarithmic)

Creating these types of equations demonstrates the relationship between the independent variable (X) and the dependent variable (T, number of trips), and provides an estimate of the parameter values (a and b). The equation (either linear or logarithmic) with the higher R^2 value is selected for inclusion in the manual. However, as is the case in *Trip Generation*, the following three criteria must be met in order for the regression equation to be displayed:

1. The R^2 value is greater than or equal to 0.50.
2. The sample size is greater than or equal to 4.
3. The number of trips increases as the size of the independent variable increases.

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In cases where all of these criteria are not met, the weighted average rate line is displayed with the data plot, but the regression line, equation, and R^2 value are not displayed.

In cases where there is a large y-intercept value associated with a regression equation, use of the equation may result in unrealistic trip rate estimates for small values that are far from the average-sized value. In such cases, refer to Chapter 3, "Guidelines for Estimating Trip Generation", of the ITE *Trip Generation Handbook*, Second Edition (Institute of Transportation Engineers 2004) to get an appropriate trip generation rate estimate.

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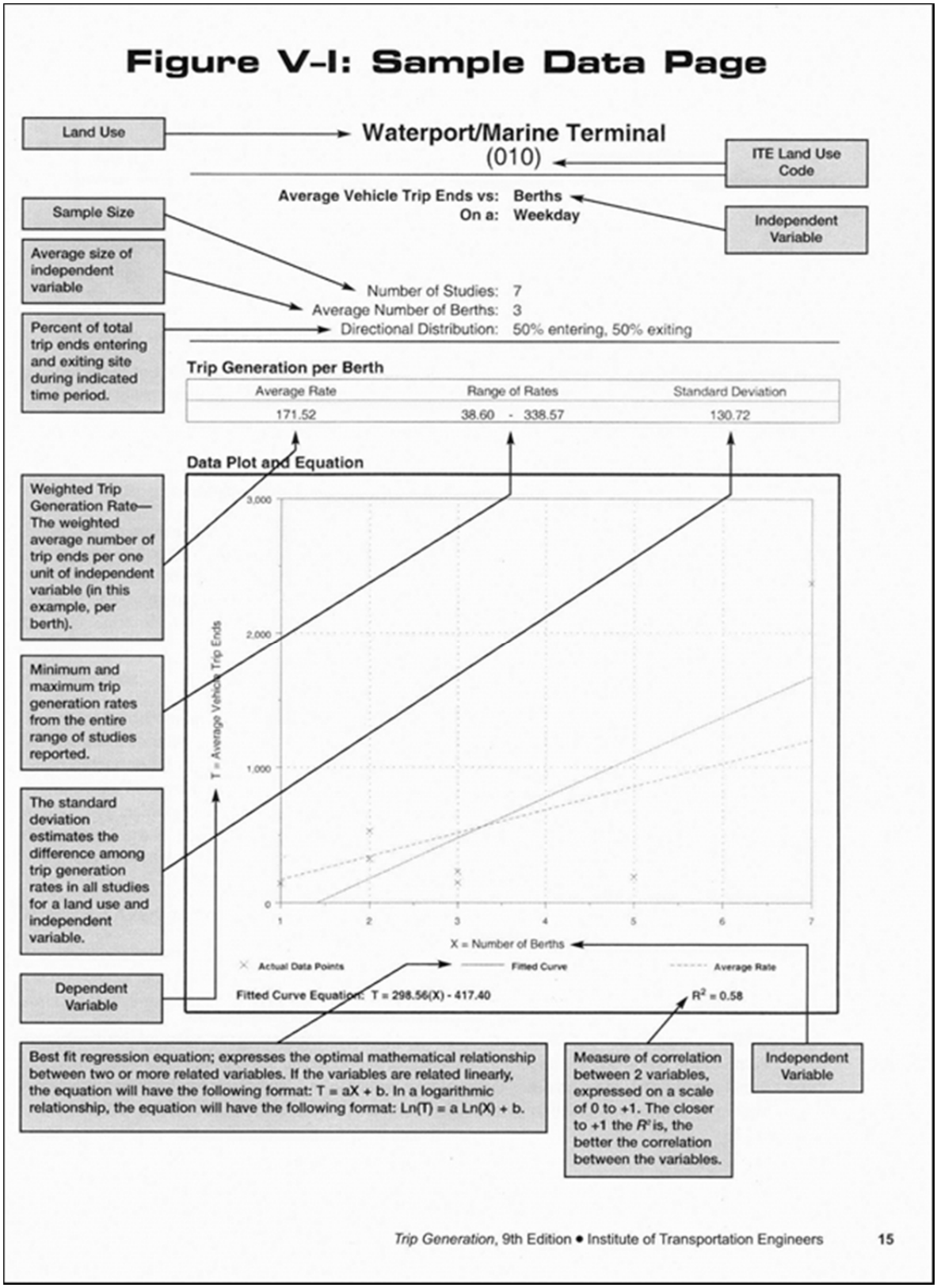

Figure 1. Example and explanation of the plots and descriptive data.

INSTRUCTIONS

As with *Trip Generation*, there are three potential methods that may be used in estimating trip generation, using the relationship between number of trips generated and an independent variable:

1. A graphical representation using a plot of the data;
2. The weighted average trip generation rate; and
3. A regression equation.

Understanding the Methodologies

The following sections provide a brief overview of each method, and more specific details about selecting the appropriate method are provided in Section 2.5.4 of this User's Guide. This information, coupled with engineering judgment, should be used in the method selection process.

Graphic Plot

This includes a plot of the total trip ends versus an independent variable. Where sufficient data points are available it may be a useful method of trip generation estimation. However, interpolating data, and discarding data that does not seem to fit, may make it difficult to draw meaningful conclusions from the data.

Weighted Average Trip Rate

The weighted average rate provides an estimate of the number of trips generated per unit of independent variable. Thus, in order to estimate the number of trips generated for a given site, the size of the independent variable is multiplied by the weighted average trip rate. This method assumes a linear relationship and forces the intercept to pass through the origin. The smaller the associated standard deviation, the better the fit of the weighted average trip rate.

Regression Equation

Regression equations provide an estimate of the "best fit" equation for the data points. Unlike the weighted average trip rate, the regression equation is not forced to pass through the origin. A linear or a logarithmic relationship can be established. Within Volumes 2-4 of the *Texas Trip Generation Manual*, if both a linear and logarithmic regression equation exist, only the one with the higher coefficient of determination (R^2) value is selected (i.e., linear or logarithmic) for inclusion in the Manual. Recall, the regression equation and its associated plot are only provided if the three criteria described in Section 2.4.2.3 are met.

Sample Problem

As a sample problem, consider Land Use 110-General Light Industrial with 20 employees. The equations related to the weighted average rate and the regression equation are shown below:

Rate: T=3.86 employees

Equation: T=2.50(X)+32.36

In order to estimate the number of trip ends using the weighted average rate, do the following calculation:

T=3.86x20=77 vehicle trip ends

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Likewise, in order to estimate the number of trip ends using the regression equation, do the following calculation:

T=2.50(20)+32.36=82 vehicle trip ends

Note that the two methods result in trip end estimates that are comparable to each other (77 vehicle trips ends vs. 82 vehicles trip ends).

Selecting an Appropriate Method for Estimating Trips

As mentioned, the best method to select in estimating trips generated requires some engineering judgment. While some jurisdictions may dictate a specific methodology, the following guidelines (taken from *Trip Generation* (Institute of Transportation Engineers 2012)), are recommended for use when differing local practices are not in place.

A data plot is provided for each LUC/time period combination, which provides some visual insights, given the requirement that at least three data points exist for each plot. Likewise, each data page includes the standard deviation. A fitted curve equation is provided when the R^2 value is greater than or equal to 0.5, there are four or more data points, and the number of trips increases as the independent variable increases (see Section 2.4.2.3). As previously mentioned, when five or fewer data points exist, the statement, "Caution—Use Carefully—Small Sample Size" is included above the plot.

Note that different specifications exist for whether to include a certain element within the Manual, and which method is recommended for use in estimating trip generation. The guidelines shown in Figure 2, taken from the draft version of the ITE *Trip Generation Handbook* (Institute of Transportation Engineers 2014, p. 28) clearly outline the recommended practice adopted for the *Texas Trip Generation Manual* in determining which trip generation estimation method to use.

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Use Fitted Curve Equation when:

- a fitted curve equation is provided and the data plot has at least 20 data points

  OR
- a fitted curve equation is provided, the curve has an R^2 of at least 0.75, the fitted curve falls within data cluster, and the weighted standard deviation is more than 55 percent of the weighted average rate.

Collect Local Data when:

- the data plot has at least three data points (and preferably, six or more);
- the R^2 value for the fitted curve is less than 0.75 or no fitted curve equation is provided;
- the weighted standard deviation for the average rate is less than 55 percent of the weighted average rate; and
- the weighted average rate is within data cluster in plot.

Collect Local Data when:

- study site is not compatible with ITE land use code definition,
- data plot has only one or two data points (and preferably, when five or fewer),
- independent variable value is not within range of data, or
- neither weighted average rate line nor fitted curve is within data cluster at size of study site.

Figure 2. Process for selecting average rate or equation in *Texas Trip Generation Manual* data.

The reasoning behind the guidelines shown in Figure 2 can be summarized in the following steps taken directly from the draft version of the ITE *Trip Generation Handbook* (Institute of Transportation Engineers 2014, p. 29-31) and modified only slightly to meet the needs of the *Texas Trip Generation Manual*.

Step 1: Determine if the study site is consistent with the description of a land use code in the *Texas Trip Generation Manual* and with the described or presumed characteristics of development sites for which data points are provided.

- If the answer is **yes**, proceed to Step 2.
- If the answer is **no**, collect local data for the land use being analyzed and establish a local or consolidated rate.

Step 2: Determine if the size of the study site (in terms of the unit of measurement of the independent variable) is within the range of the data shown in the data plot.

- If the answer is **yes**, proceed to Step 3.
- If the answer is **no**, either (1) consider the use of a different independent variable and its associated data pages or (2) collect local data and establish a local or consolidated rate.

Step 3: Determine how many data points comprise the sample reported in the *Texas Trip Generation Manual*.

- If the number of data points is **three**, **four**, **or five**, the analyst is encouraged to collect local data and establish a local or consolidated rate (see Chapter 9 of ITE *Trip Generation Handbook* (Institute of Transportation Engineers 2014)), but can otherwise proceed to Step 4.
- If the number of data points is six or more, proceed to Step 4.

Step 4: Determine if a fitted curve equation is provided.

- If the answer is **yes**, proceed to Step 7.
- If the answer is **no**, proceed to Step 5.

Step 5: Determine if the weighted standard deviation is less than or equal to 55 percent of the weighted average rate (calculation: the weighted standard deviation divided by weighted average rate is less than or equal to 0.55).

- If the answer is **yes**, proceed to Step 6.
- If the answer is **no**, either (1) consider the use of a different independent variable and its associated data pages or (2) collect local data and establish a local or consolidated rate. Refer to Chapter 9 of the ITE *Trip Generation Handbook* for guidance (Institute of Transportation Engineers 2014).

Step 6: Determine if the line that corresponds to the weighted average rate is within a cluster of data points near the size of the study site.

- If the answer is **yes**, **USE THE WEIGHTED AVERAGE RATE**.
- If the answer is **no**, either (1) consider the use of a different independent variable and its associated data pages or (2) collect local data and establish a local or consolidated rate. Refer to Chapter 9 of the ITE *Trip Generation Handbook* for guidance (Institute of Transportation Engineers 2014).
- If there are no data points near the site size, but there are good matches at somewhat smaller and larger sizes, assume the answer is **yes**.

Step 7: Determine if there are at least 20 data points distributed over the range of values typically found for the independent variable. Determine if the line corresponding to the fitted curve equation is within the cluster of data points near the size of the study site.

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- If both answers are **yes**, **USE THE FITTED CURVE EQUATION**.
- If at least one answer is **no**, proceed to Step 8.

Step 8: Determine the answers to Questions 8A and 8B.

Question 8A: Is the R^2 for the fitted curve equation greater than or equal to 0.75? And, is the line corresponding to the fitted curve equation within the cluster of data points at the size of the study site? Note: If there are no data points near the site size, but there are good matches at somewhat smaller and larger sizes, the analyst may assume the answer is yes.

Question 8B: Is the weighted standard deviation for the weighted average rate less than or equal to 55 percent of the weighted average rate? And, is the line corresponding to the weighted average rate within the cluster of data points at the size of the study site? Note: If there are no data points near the site size, but there are good matches at somewhat smaller and larger sizes, the analyst may assume the answer is **yes**.

If Question 8A and 8B are both answered **yes**, then choose whichever line (representing either the fitted curve equation or the weighted average rate) best fits the data points at the value of the independent variable for the study site. This decision could be different for different points in the chart.

If the answer to Question 8A is **yes** and to Question 8B is **no**, then **USE THE FITTED CURVE EQUATION**.

If the answer to Question 8A is **no** and to Question 8B is **yes**, then **USE THE WEIGHTED AVERAGE RATE**.

If the answer to Question 8A and 8B are both **no**, then **COLLECT LOCAL DATA**. Refer to Chapter 9 of the ITE *Trip Generation Handbook* for guidance (Institute of Transportation Engineers 2014).

An acceptable exception to the "collect local data" recommendation occurs if the rate or equation line passes through the cluster of data at the value of the independent variable for the study site. If such is the case, the analyst may use either the weighted average rate or the fitted curve equation (whichever line is appropriate).

Examples of Recommended Process

This section provides some examples of how the previously outlined steps can be applied in selecting the appropriate method for estimating trip generation. The examples are pulled from data contained in the *Texas Trip Generation Manual*. For these examples, assume that the answer to Step 1 is yes.

Example 1: Estimate trip generation for Land Use Code 110 (General Light Industrial) on a Weekday as a function of Employees. Assume the site will have 25 employees.
Step 2: Size of site is within the range of data
Step 3: Sufficient number of data points (30)
Step 4: Fitted curve equation provided
Step 7: More than 20 data points; and line corresponding to fitted curve equation within cluster of data points near size of study site

Use Fitted Curve Equation

Example 2: Estimate trip generation for Land Use Code 140 (Manufacturing) on a Weekday as a function of Employees. Assume the site will have 100 employees.
Step 2: Size of site is within the range of data
Step 3: Sufficient number of data points (17)
Step 4: Fitted curve equation provided
Step 7: **NOT** at least 20 data points (only 17) distributed over typical range for independent variable; but line corresponding to fitted curve equation within cluster of data points near size of study site
Question 8A: R^2 value for fitted curve equation greater than or equal to 0.75 (0.97), and fitted curve equation line within cluster of data points at study site size
Question 8B: Weighted standard deviation for the weighted average rate (0.92) less than or equal to 55 percent of the weighted average rate (0.55*2.45=1.35), and line corresponding to weighted average rate within cluster of data points for study site size
Step 8: Answers to Questions 8A and 8B both yes; choose whichever line (representing either the fitted curve equation or the weighted average rate) that best fits data points at value of independent variable for study site
Based on the data plot, **Use the Weighted Average Rate**

Example 3: Estimate trip generation for Land Use Code 150 (Warehousing) on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. as a function of Employees. Assume the site will have 25 employees.
Step 2: Size of site is within the range of data
Step 3: Sufficient number of data points (9)
Step 4: Fitted curve equation provided
Step 7: **NOT** at least 20 data points (only 9) distributed over the typical range of independent variable; but line corresponding to fitted curve equation within the cluster of data points near size of study site
Question 8A: R^2 value for fitted curve equation (0.79) greater than or equal to 0.75; and, as mentioned earlier, line corresponding to fitted curve equation within cluster of data points at study site size
Question 8B: Weighted standard deviation (0.40) **NOT** less than or equal to 55 percent of weighted average rate (0.55*0.63=0.35); and line corresponding to weighted average rate seems to be lower than cluster of data points at size of study site
Step 8: Answers to Question 8A is yes Question 8B is no
Use the Fitted Curve Equation

Example 4: Estimate trip generation for Land Use Code 151(Mini-Warehouse) on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. as a function of 1000 Sq. Feet Gross Floor Area. Assume the site will have a gross floor area of 60,000 square feet.
Step 2: Size of site is within the range of data
Step 3: Sufficient number of data points (6)
Step 4: Fitted curve equation provided

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Step 7: **NOT** at least 20 data points (only 6) distributed over typical range for independent variable; but line corresponding to fitted curve equation within cluster of data points near size of study site (or at least somewhat close for smaller and larger values)
Question 8A: R^2 value for fitted curve equation **NOT** greater than or equal to 0.75 (0.55); but fitted curve equation line within cluster of data points at study site size (or at least somewhat close for smaller and larger values)
Question 8B: Weighted standard deviation for the weighted rate (0.04) less than or equal to 55 percent of the weighted average rate (0.55*0.08=0.044); and line corresponding to weighted average rate within cluster of data points for study site size (or at least somewhat close for smaller and larger values)
Step 8: Answers to Question 8A is no and to Question 8B is yes
Use Weighted Average Rate

Example 5: Estimate trip generation for Land Use Code 620 (Nursing Home) on a Weekday, A.M. Peak Hour of Generator as a function of 1000 Sq. Feet Gross Floor Area. Assume the site will have a gross floor area of 50,000 square feet.
Step 2: Size of site is within the range of data
Step 3: Analyst encouraged to collect local data and establish local or consolidated rate (only four data points—see Chapter 9 of ITE Trip Generation Handbook), but can otherwise proceed to Step 4
Step 4: Fitted curve equation **NOT** provided
Step 5: Weighted standard deviation (0.66) **NOT** less than or equal to 55 percent of weighted average rate (0.55x0.69=0.38)
Collect Local Data (or consider the use of a different independent variable and its associated data pages)

Example 6: Estimate trip generation for Land Use Code 853 (Convenience Market with Gasoline Pumps) on a Weekday as a function of 1000 Sq. Feet Gross Floor Area. Assume the site will have a gross floor area of 3,000 square feet
Step 2: Size of site is within the range of data
Step 3: Sufficient number of data points (26)
Step 4: Fitted curve equation **NOT** provided
Step 5: Weighted standard deviation (251.82) less than or equal to 55 percent of the weighted average rate (0.55x491.80=270.49)
Step 6: Line corresponding to the weighted average rate within a cluster of data points near study site size
Use the Weighted Average Rate

Example 7: Estimate trip generation for Land Use Code 944 (Gasoline/Service Station) on a Weekday as a function of Employees. Assume the site will have 10 employees.
Step 2: Size of site NOT within the range of data
Collect Local Data (or consider the use of a different independent variable and its associated data pages)

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Choice of Day and Time Period

The time period of most interest in evaluating the impacts of a potential development is the time period (and associated day) with the peak traffic flow of the site and adjacent street combined. While the site and adjacent street often peak at the same time (often the commute peak period), this is not always the case. Data collection and some assessment may be necessary to determine when a site generates its maximum traffic impact.

UPDATE PROCEDURE

The Texas A&M Transportation Institute (TTI) has assembled the data used in this original version of the *Texas Trip Generation Manual*. The data were taken from WSG surveys performed as part of the TTSP. As mentioned previously, it is anticipated that additional data will be added to the database as they become available.

The analyses associated with the generation of this Manual were performed using functions within Excel, and some automation has been created to help facilitate the updating process. The updating process—largely the transfer of data plots from Excel to a Word document –will require some time, but will be performed on a periodic basis. The updated results will be made available electronically.

Regardless of data collected from any additional outside sources, TTI will continue to add to the Manual using data obtained through the TTSP. TTI welcomes the collection of additional data that may be used within the *Texas Trip Generation Manual*. Forms related to data collection and comments (largely taken from the ITE forms) are provided in Appendix B. Completed forms should be returned to TTI at the following address:

Transportation Planning-Gilchrist, Room 380
Teas A&M Transportation Institute
Texas A&M University System
3135 TAMU
College Station, TX 77843-3135

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APPENDIX A. SOURCES

1. Bryan/College Station (2013)
2. El Paso (2010-2011)
3. Killeen-Temple (2010)
4. Sherman-Denison (2011-2012)
5. Waco (2010)

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APPENDIX B. DATA COLLECTION AND COMMENT FORMS

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Trip Generation Data Form (Part 1)

Land Use/Building Type:[1]			ITE Land Use Code:		
Source:			Source No. (*ITE use only*):		
Name of Development:			Day of the Week:		
City:	State/Province:	Zip/Postal Code:	Day:	Month:	Year:
Country:			Metropolitan Area:		

1. **For fast-food land use, please specify if hamburger- or nonhamburger-based.**

Location Within Area:

- ☐ (1) CBD
- ☐ (2) Urban (Non-CBD)
- ☐ (3) Suburban (Non-CBD)
- ☐ (4) Suburban CBD
- ☐ (5) Rural
- ☐ (6) Freeway Interchange Area (Rural)
- ☐ (7) Not Given

Detailed Description of Development:[3]

Independent Variable: (include data for as many as possible) [2]	Actual	Estimated		Actual	Estimated
_____ (1) Employees (#)	☐	☐	_____(9) Parking Spaces (% occupied:_____)	☐	☐
_____ (2) Persons (#)	☐	☐	_____(10) Beds (% occupied:_____)	☐	☐
_____ (3) Total Units (#) (indicate unit:_____)	☐	☐	_____(11) Seats (#)	☐	☐
_____ (4) Occupied Units (#) (indicate unit:_____)	☐	☐	_____(12) Servicing Positions/Vehicle Fueling Positions	☐	☐
_____ (5) Gross Floor Area (gross sq. ft.) (% of development occupied_____)	☐	☐	_____(13) Shopping Center % Out-parcels/pads	☐	☐
_____ (6) Net Rentable Area (sq. ft.)	☐	☐	_____(14) A.M. Peak Hour Volume of Adjacent Street Traffic	☐	☐
_____ (7) Gross Leasable Area (sq. ft.) (% of development occupied_____)	☐	☐	_____(15) P.M. Peak Hour Volume of Adjacent Street Traffic	☐	☐
			_____(16) Other _____	☐	☐
_____ (8) Total Acres (% developed:_____)	☐	☐	_____(17) Other _____	☐	☐

2. Definitions for several independent variables can be found in the *Trip Generation*, Second Edition, *User's Guide* Glossary.
3. Please provide all pertinent information to describe the subject project, including the presence of bicycle/pedestrian facilities. To report bicycle/pedestrian volumes, please refer to Part 4 of this data form.

Other Data:

Vehicle Occupancy (#):
_____A.M._____P.M. _____24-hour %

Percent by Transit:
_____A.M. %_____P.M. % _____24-hour %

Percent by Carpool/Vanpool:
_____A.M. %_____P.M. % _____24-hour %

Employees by Shift:

	Start Time	End Time	Employees (#)
First Shift:	_____	_____	_____
Second Shift:	_____	_____	_____
Third Shift:	_____	_____	_____

Parking Cost on Site: Hourly _____ Daily _____

Transportation Demand Management (TDM) Information:

At the time of this study, was there a TDM program (that may have impacted the trip generation characteristics of this site) underway?

- ☐ No
- ☐ Yes (If yes, please check appropriate box/boxes, describe the nature of the TDM program(s) and provide a source for any studies that may help quantify this impact. Attach additional sheets if necessary)

- ☐ (1) Transit Service
- ☐ (2) Carpool Programs
- ☐ (3) Vanpool Programs
- ☐ (4) Bicycle/Pedestrian Facilities and Site Improvements
- ☐ (5) Employer Support Measures
- ☐ (6) Preferential HOV Treatments
- ☐ (7) Transit and Ridesharing Incentives
- ☐ (8) Parking Supply and Pricing Management
- ☐ (9) Tolls and Congestion Pricing
- ☐ (10) Variable Work Hours/Compressed Work Weeks
- ☐ (11) Telecommuting
- ☐ (12) Other _____

Please Complete Form on Other Side

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Trip Generation Data Form (Part 2)

Summary of Driveway Volumes (All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)

	Average Weekday (M-F)						Saturday						Sunday					
	Enter		Exit		Total		Enter		Exit		Total		Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks
24-Hour Volume																		
A.M. Peak Hour of Adjacent Street Traffic (7 – 9) Time (ex.: 7:15 - 8:15):																		
P.M. Peak Hour of Adjacent Street Traffic (4 – 6) Time:																		
A.M. Peak Hour Generator[1] Time:																		
P.M. Peak Hour Generator[2] Time:																		
Peak Hour Generator[3] Time (Weekend):																		

[1] Highest hourly volume between 7 a.m. and 9 a.m. (4 p.m. and 6 p.m.). Please specify the peak hour.
[2] Highest hourly volume during the a.m. or p.m. period. Please specify the peak hour.
[3] Highest hourly volume during the entire day. Please specify the peak hour.
Please refer to the *Trip Generation User's Guide* for full definition of terms.

Hourly Driveway Volumes- Average Weekday (M-F)

A.M. Period	Enter		Exit		Total		Mid-Day Period	Enter		Exit		Total		P.M. Period	Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks
6:00-7:00							11:00-12:00							3:00-4:00						
6:15-7:15							11:15-12:15							3:15-4:15						
6:30-7:30							11:30-12:30							3:30-4:30						
6:45-7:45							11:45-12:45							3:45-4:45						
7:00-8:00							12:00-1:00							4:00-5:00						
7:15-8:15							12:15-1:15							4:15-5:15						
7:30-8:30							12:30-1:30							4:30-5:30						
7:45-8:45							12:45-1:45							4:45-5:45						
8:00-9:00							1:00-2:00							5:00-6:00						

gCheck if Part 3, 4 and/or additional information is attached.

Survey conducted by: Name: _

Organization: _____

Address: _____

City/State/Zip: _____

Telephone #: _____ Fax #: _____ E-mail: _____

Please return to:
Transportation Planning-Gilchrist, Room 380
Texas A&M Transportation Institute
Texas A&M University System
3135 TAMU
College Station, TX 77843-3135
Telephone: +1 979-845-8539

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Institute of Transportation Engineers

Trip Generation Data Form (Part 3)

Name/Organization:_____

_____**City/State:** ___

Telephone Number: _____

Detailed Driveway Volumes: Attach this sheet to Parts 1 and 2 if you are providing additional information.

Day of the week:_____ ***(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)***

A.M. Period	*Enter*		*Exit*		*Total*		***P.M. Period***	*Enter*		*Exit*		*Total*	
	All	***Trucks***	***All***	***Trucks***	***All***	***Trucks***		***All***	***Trucks***	***All***	***Trucks***	***All***	***Trucks***
12:00-12:15							12:00-12:15						
12:15-12:30							12:15-12:30						
12:30-12:45							12:30-12:45						
12:45-1:00							12:45-1:00						
1:00-1:15							1:00-1:15						
1:15-1:30							1:15-1:30						
1:30-1:45							1:30-1:45						
1:45-2:00							1:45-2:00						
2:00-2:15							2:00-2:15						
2:15-2:30							2:15-2:30						
2:30-2:45							2:30-2:45						
2:45-3:00							2:45-3:00						
3:00-3:15							3:00-3:15						
3:15-3:30							3:15-3:30						
3:30-3:45							3:30-3:45						
3:45-4:00							3:45-4:00						
4:00-4:15							4:00-4:15						
4:15-4:30							4:15-4:30						
4:30-4:45							4:30-4:45						
4:45-5:00							4:45-5:00						
5:00-5:15							5:00-5:15						
5:15-5:30							5:15-5:30						
5:30-5:45							5:30-5:45						
5:45-6:00							5:45-6:00						
6:00-6:15							6:00-6:15						
6:15-6:30							6:15-6:30						
6:30-6:45							6:30-6:45						
6:45-7:00							6:45-7:00						
7:00-7:15							7:00-7:15						
7:15-7:30							7:15-7:30						
7:30-7:45							7:30-7:45						
7:45-8:00							7:45-8:00						
8:00-8:15							8:00-8:15						
8:15-8:30							8:15-8:30						
8:30-8:45							8:30-8:45						
8:45-9:00							8:45-9:00						
9:00-9:15							9:00-9:15						
9:15-9:30							9:15-9:30						
9:30-9:45							9:30-9:45						
9:45-10:00							9:45-10:00						
10:00-10:15							10:00-10:15						
10:15-10:30							10:15-10:30						
10:30-10:45							10:30-10:45						
10:45-11:00							10:45-11:00						
11:00-11:15							11:00-11:15						
11:15-11:30							11:15-11:30						
11:30-11:45							11:30-11:45						
11:45-12:00							11:45-12:00						

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Trip Generation Data Form (Part 4)

Summary of Bicycle Volumes

	Average Weekday (M-F)			Saturday			Sunday		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
24-Hour Volume									
A.M. Peak Hour of Adjacent Street Traffic (7 – 9) Time (ex.: 7:15 - 8:15):									
P.M. Peak Hour of Adjacent Street Traffic (4 – 6) Time:									
A.M. Peak Hour Generator [1] Time:									
P.M. Peak Hour Generator [2] Time:									
Peak Hour Generator [3] Time (Weekend):									

[1] Highest hourly volume between 7 a.m. and 9 a.m. (4 p.m. and 6 p.m.) as defined in Trip Generation Data Form (Part 2). Please specify the peak hour.
[2] Highest hourly volume during the a.m. or p.m. period. Please specify the peak hour.
[3] Highest hourly volume during the entire day. Please specify the peak hour. Please attach supplemental hourly volumes.
Please refer to the *Trip Generation User's Guide* for full definition of terms.

Summary of Pedestrian Volumes

	Average Weekday (M-F)			Saturday			Sunday		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
24-Hour Volume									
A.M. Peak Hour of Adjacent Street Traffic (7 – 9) Time (ex.: 7:15 - 8:15):									
P.M. Peak Hour of Adjacent Street Traffic (4 – 6) Time:									
A.M. Peak Hour Generator [1] Time:									
P.M. Peak Hour Generator [2] Time:									
Peak Hour Generator [3] Time (Weekend):									

Survey conducted by: Name: _____

Organization: _____

Address: _____

City/State/Zip: _____

Telephone #: _____ Fax #: _____ E-mail: _____

Please return to:
Transportation Planning-Gilchrist, Room 380
Texas A&M Transportation Institute
Texas A&M University System
3135 TAMU
College Station, TX 77843-3135
Telephone: +1 979-845-8539

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Generation Manual, 1st Edition

The Texas Department of Transportation (TxDOT) would like to know what you think about the Texas Trip Generation Manual, 1st Edition. Please fill out the following questionnaire after you have had ample opportunity to use the new document. Your comments will help improve future editions of the Manual.

1. Please describe any errors or inconsistence you have noted in this document. Please note page numbers and, if possible, attach a copy of the page(s) containing the error. Attach additional sheets if needed.
Description and page(s):

_____
_____
_____
_____
_____

2. How easy to use and understand is the first edition of the Texas Trip Generation Manual?
- *Very easy*
- *Fairly easy*
- *Somewhat difficult*
- *Very difficult*

3. Please provide us with your comments, positive or negative, on the first edition of the Texas Trip Generation Manual.

_____
_____
_____
_____
_____

4. Are there any specific enhancements or modifications that you would like to see in future editions the Texas Trip Generation Manual?

_____
_____
_____
_____
_____

5. For which additional land uses should TxDOT collect trip generation data?

_____
_____
_____
_____
_____

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6. For specific land uses, which independent variables would you like to see added? Please specify the land use and the desired variable(s).

_____
_____
_____
_____
_____

The following information is optional:

Name:
Title:
Agency or Firm:
Address:
City:
State/Province:
Postal Code
Country:
Telephone:
Fax:
E-mail:

Thank you! Please return this form to:

Transportation Planning-Gilchrist, Room 380
Texas A&M Transportation Institute
Texas A&M University System
3135 TAMU
College Station, TX 77843-3135
Telephone: +1 979-845-8539

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REFERENCES

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Institute of Transportation Engineers (2014). Trip Generation Handbook, a Proposed Recommended Practice. Washington, DC.

Larsen, L., et al. (November 27, 2013). RMC 0-6760-Task 4: Conduct Analysis to Develop Trip Generation Rates for Land Development, Texas A&M Transportation Institute.

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VOLUME 2-TRIP GENERATION RATES, PLOTS AND EQUATIONS

General Light Industrial 3
Manufacturing 19
Warehousing 35
Mini-Warehouse 51
Utilities 67
Assisted Living 79
Hotel 91
Junior/Community College 107
Day Care Center 123
Hospital 135
Nursing Home 147
Clinic 159
Animal Hospital/Vet Clinic 171

Land Use: 110
General Light Industrial

Description

Light industrial facilities are free-standing facilities devoted to a single use. The facilities have an emphasis on activities other than manufacturing and typically have minimal office space. Typical light industrial activities include printing, material testing and assembly of data processing equipment. General heavy industrial (Land Use 120), industrial park (Land Use 130) and manufacturing (Land Use 140) are related uses.

Source Numbers

1, 2, 3, 4, 5

General Light Industrial
(110)

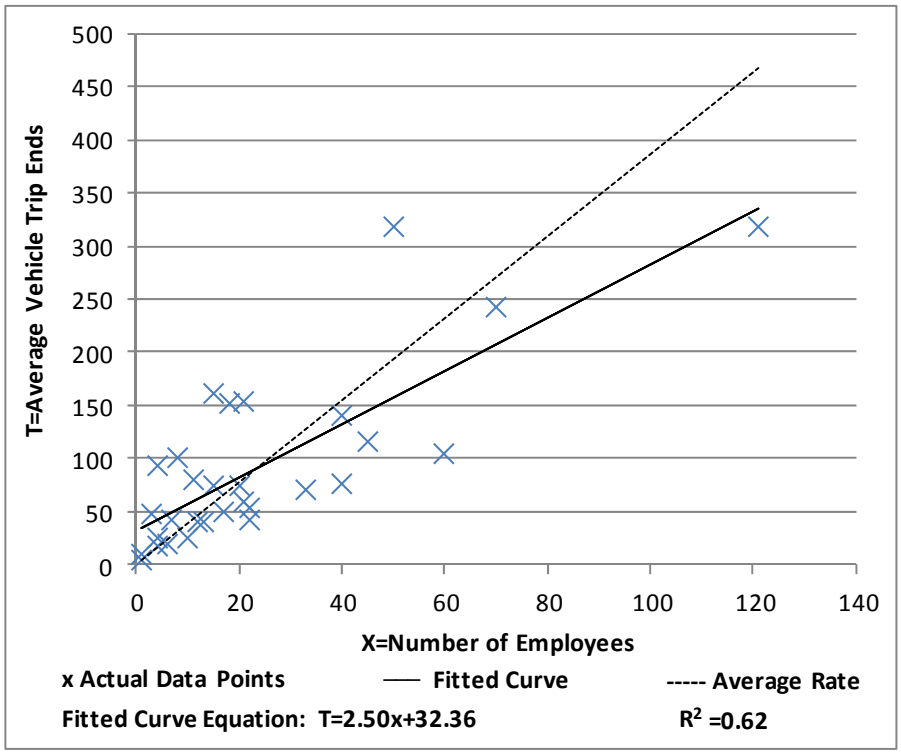
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	30
Average Number of Employees:	24
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.86	1.73-23.50	2.87

Data Plot and Equation



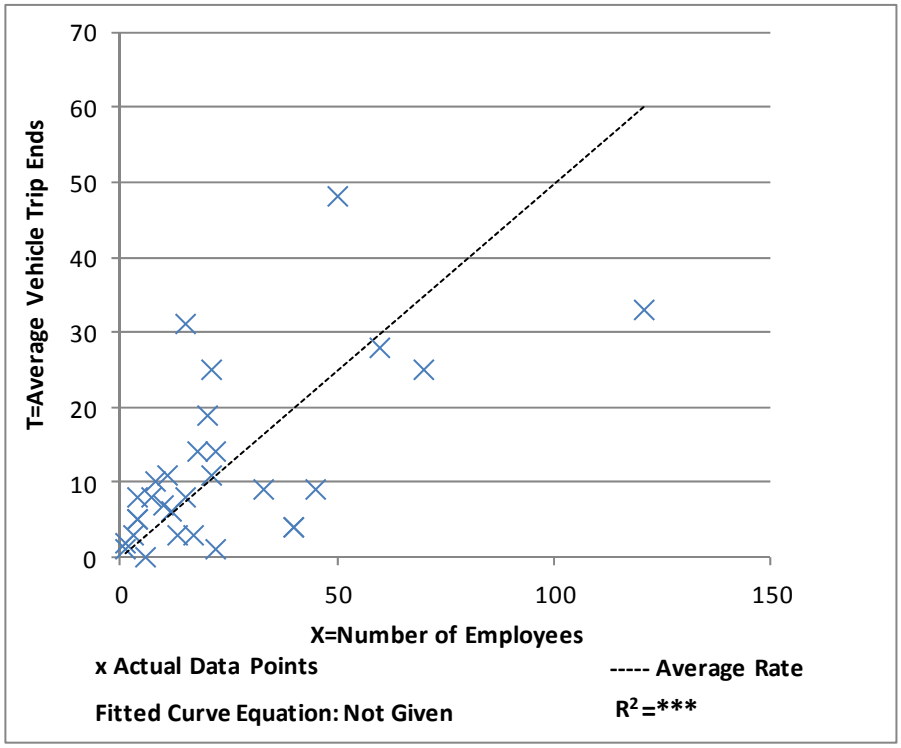
General Light Industrial
(110)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	30
Average Number of Employees:	24
Directional Distribution:	90% entering, 10% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.50	0.00-2.07	0.44

Data Plot and Equation



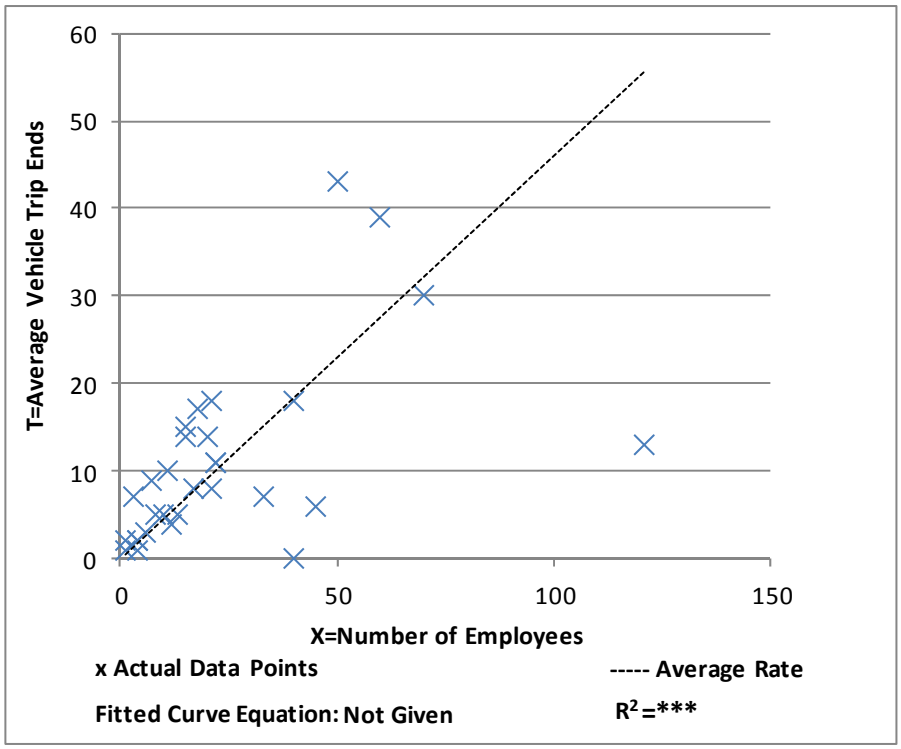
General Light Industrial
(110)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	30
Average Number of Employees:	24
Directional Distribution:	13% entering, 87% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.46	0.00-2.33	0.34

Data Plot and Equation



General Light Industrial
(110)

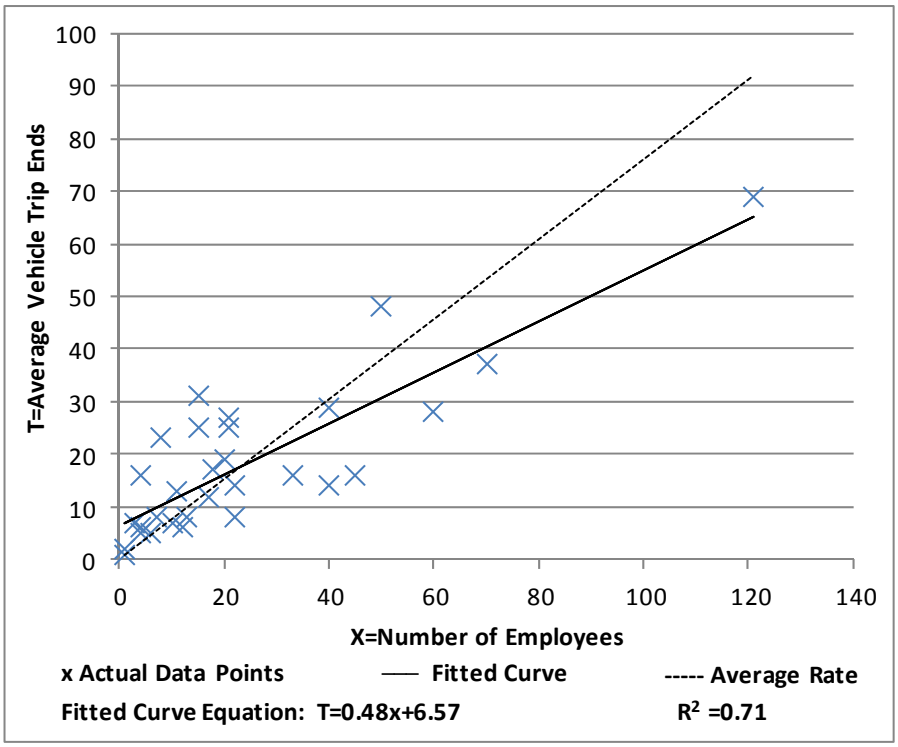
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	30
Average Number of Employees:	24
Directional Distribution:	77% entering, 23% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.76	0.35-4.00	0.52

Data Plot and Equation



General Light Industrial
(110)

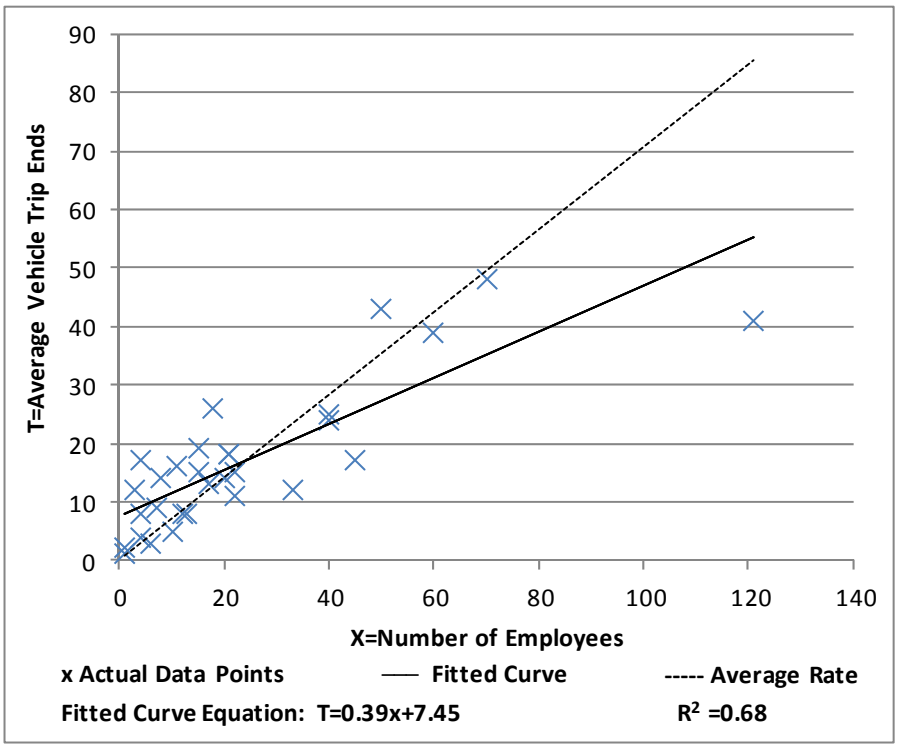
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	30
Average Number of Employees:	24
Directional Distribution:	26% entering, 74% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.71	0.34-4.25	0.48

Data Plot and Equation



General Light Industrial
(110)

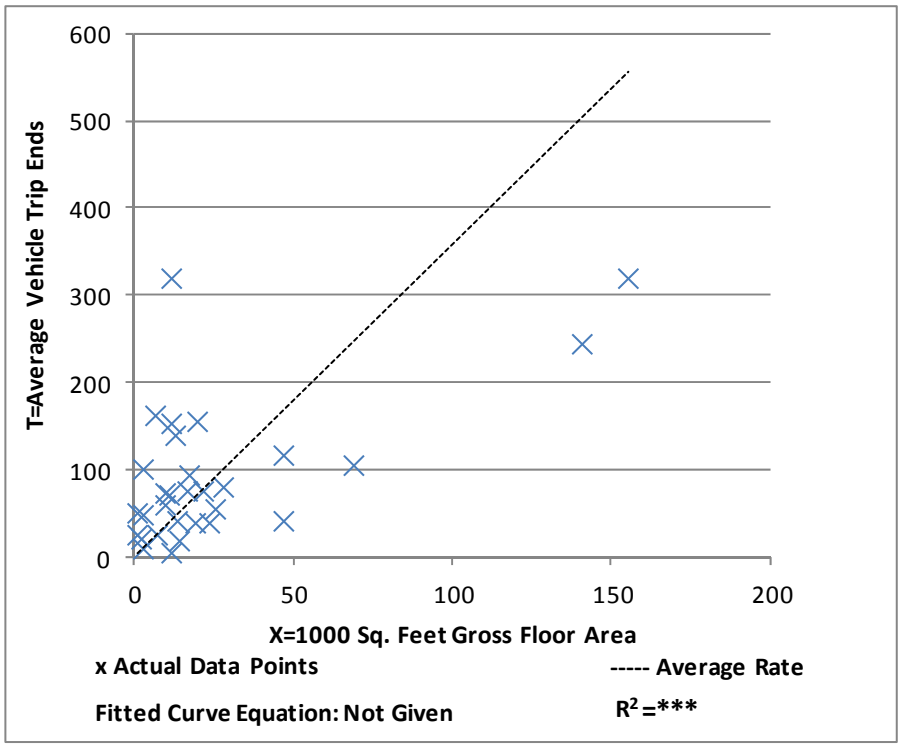
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	30
Average Number of 1000 Sq. Feet Gross Floor Area:	26
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.58	0.34-43.86	5.17

Data Plot and Equation



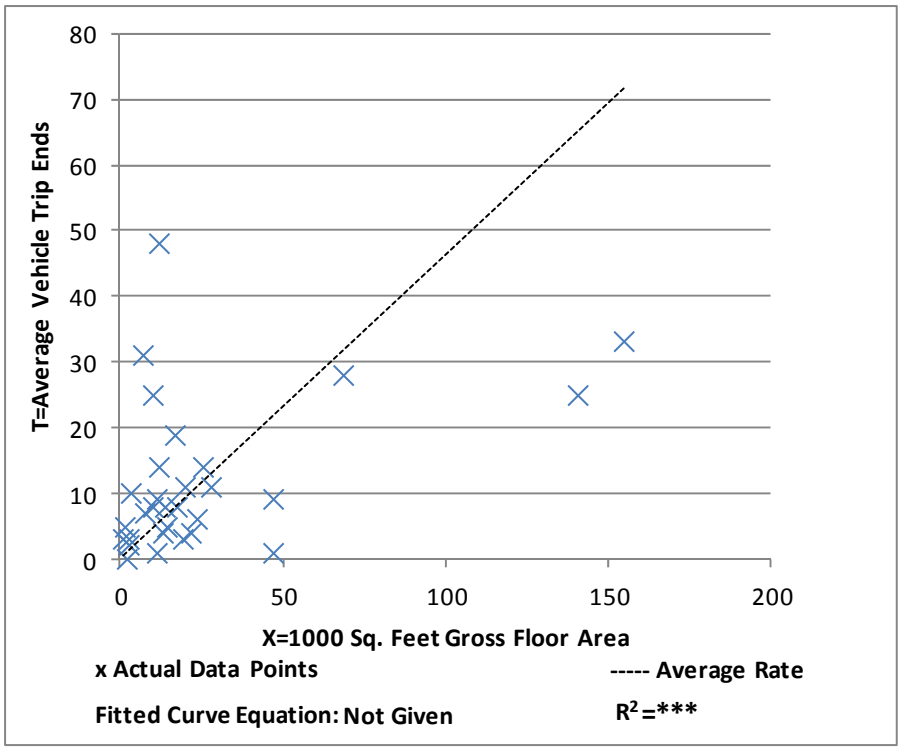
General Light Industrial
(110)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	30
Average Number of 1000 Sq. Feet Gross Floor Area:	26
Directional Distribution:	92% entering, 8% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.46	0.00-4.46	0.77

Data Plot and Equation



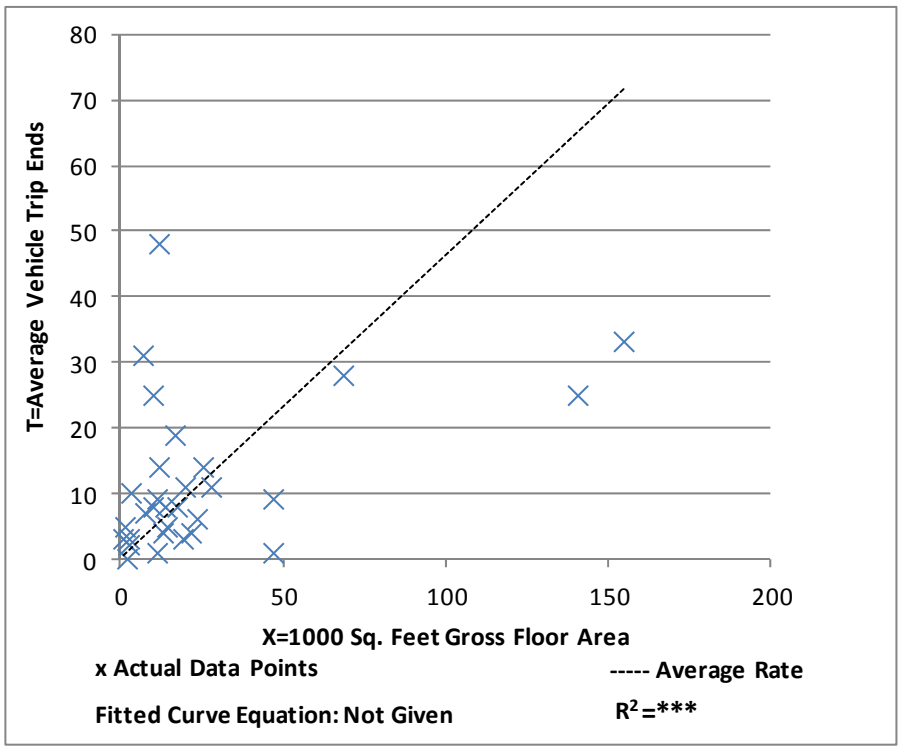
General Light Industrial
(110)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	30
Average Number of 1000 Sq. Feet Gross Floor Area:	26
Directional Distribution:	11% entering, 89% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.43	0.00-7.02	0.67

Data Plot and Equation



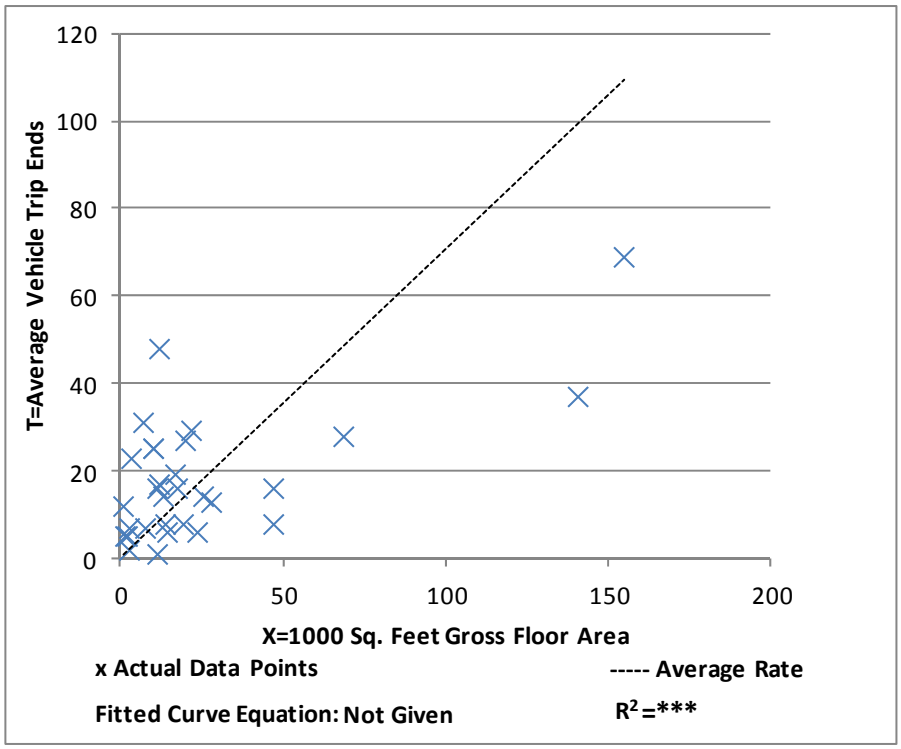
General Light Industrial
(110)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	30
Average Number of 1000 Sq. Feet Gross Floor Area:	26
Directional Distribution:	77% entering, 23% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.70	0.09-10.53	0.99

Data Plot and Equation



General Light Industrial
(110)

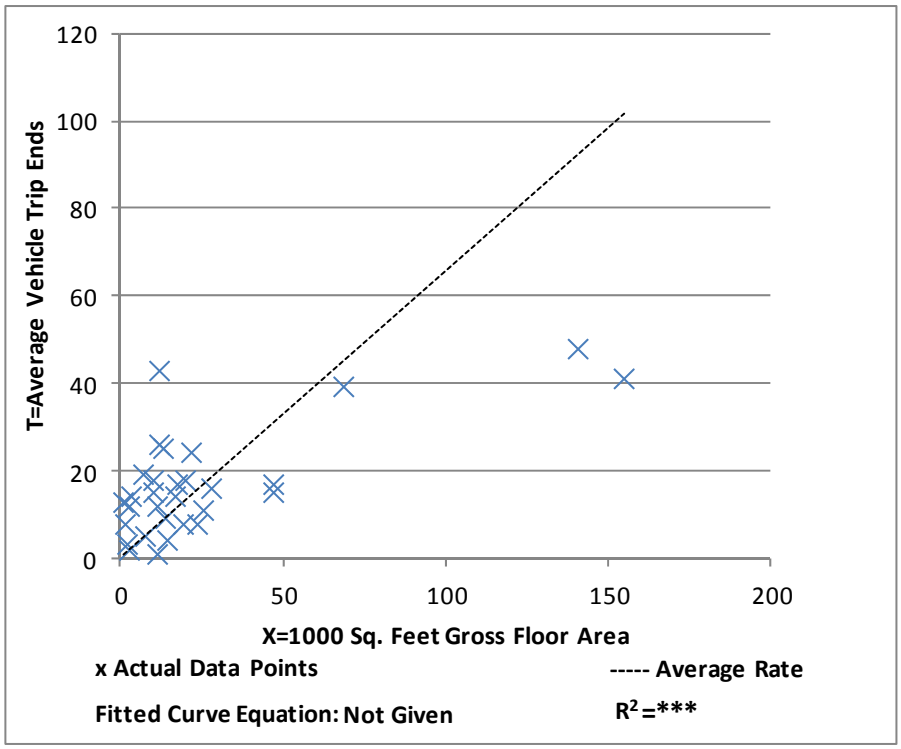
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	30
Average Number of 1000 Sq. Feet Gross Floor Area:	26
Directional Distribution:	25% entering, 75% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.66	0.09-11.40	0.87

Data Plot and Equation



General Light Industrial
(110)

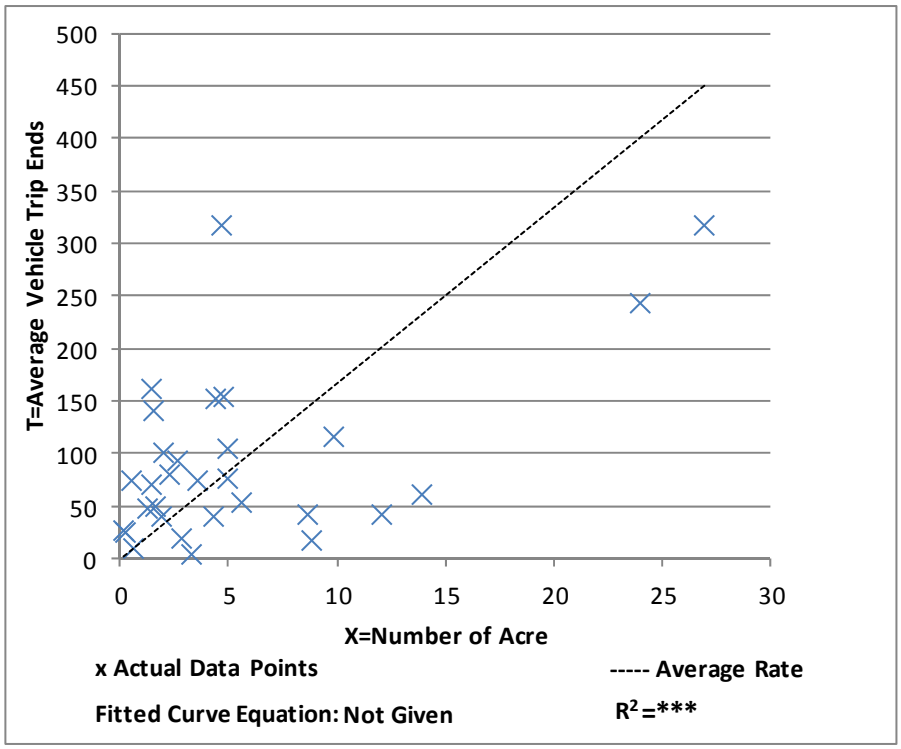
Average Vehicle Trip Ends vs: Acres
On a: Weekday

Number of Studies: 30
Average Number of Acres: 6
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
16.65	1.21-185.71	21.15

Data Plot and Equation



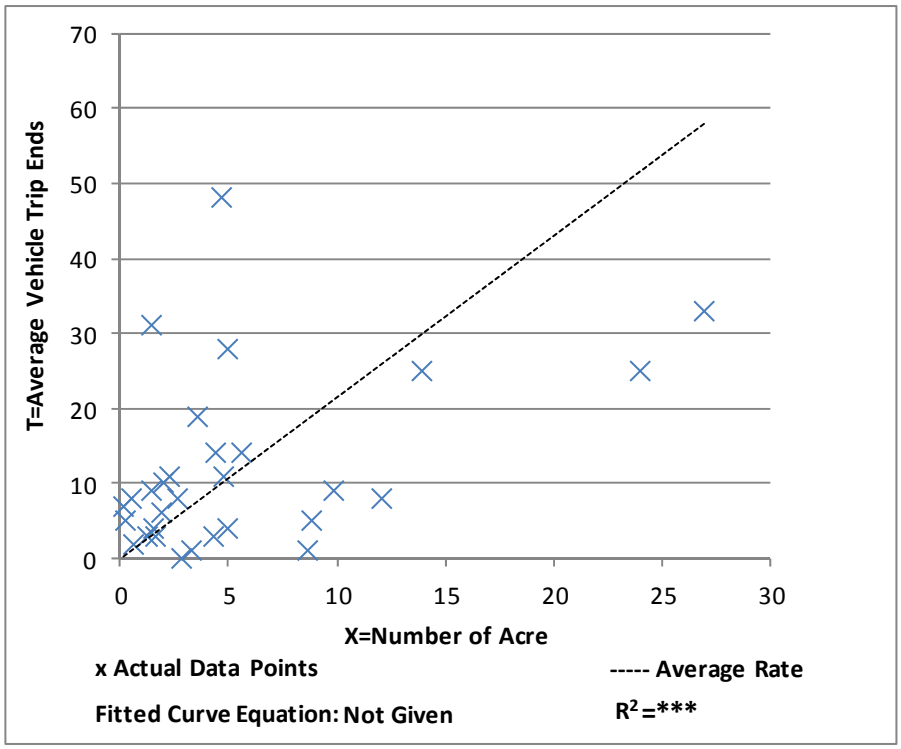
General Light Industrial
(110)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	30
Average Number of Acres:	6
Directional Distribution:	91% entering, 9% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
2.15	0.00-50.00	3.35

Data Plot and Equation



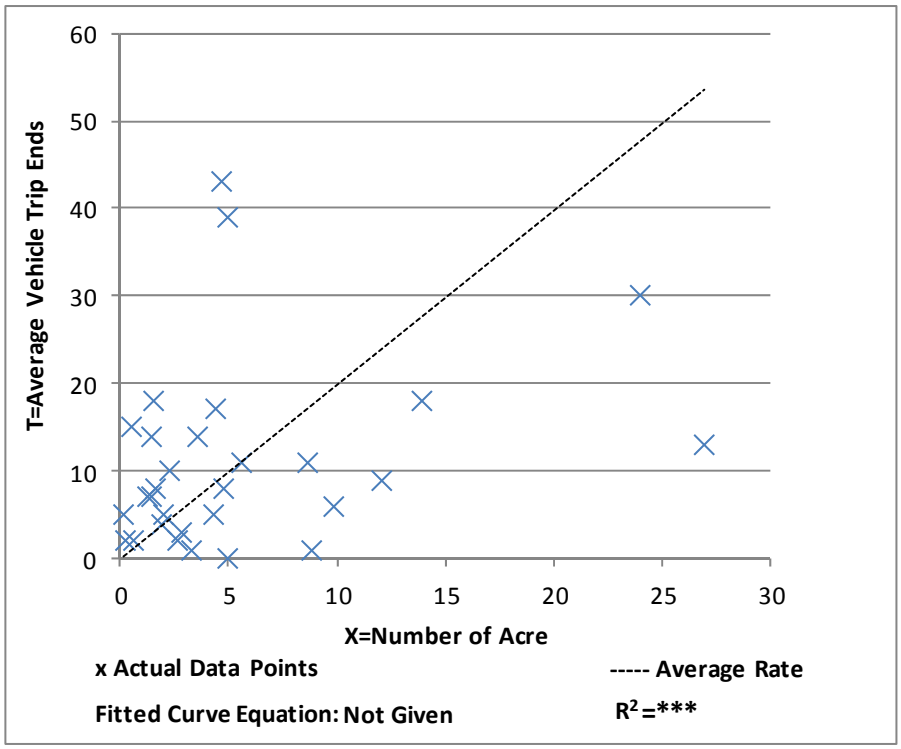
General Light Industrial
(110)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	30
Average Number of Acres:	6
Directional Distribution:	9% entering, 91% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
1.98	0.00-35.71	3.09

Data Plot and Equation



General Light Industrial
(110)

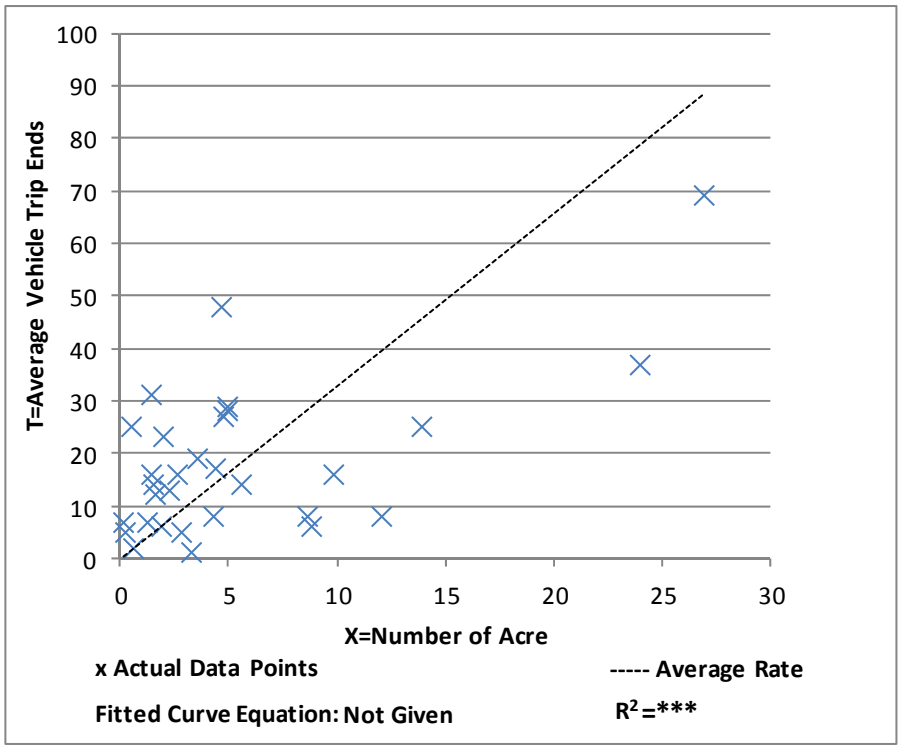
Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	30
Average Number of Acres:	6
Directional Distribution:	74% entering, 26% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
3.28	0.30-50.00	4.38

Data Plot and Equation



General Light Industrial
(110)

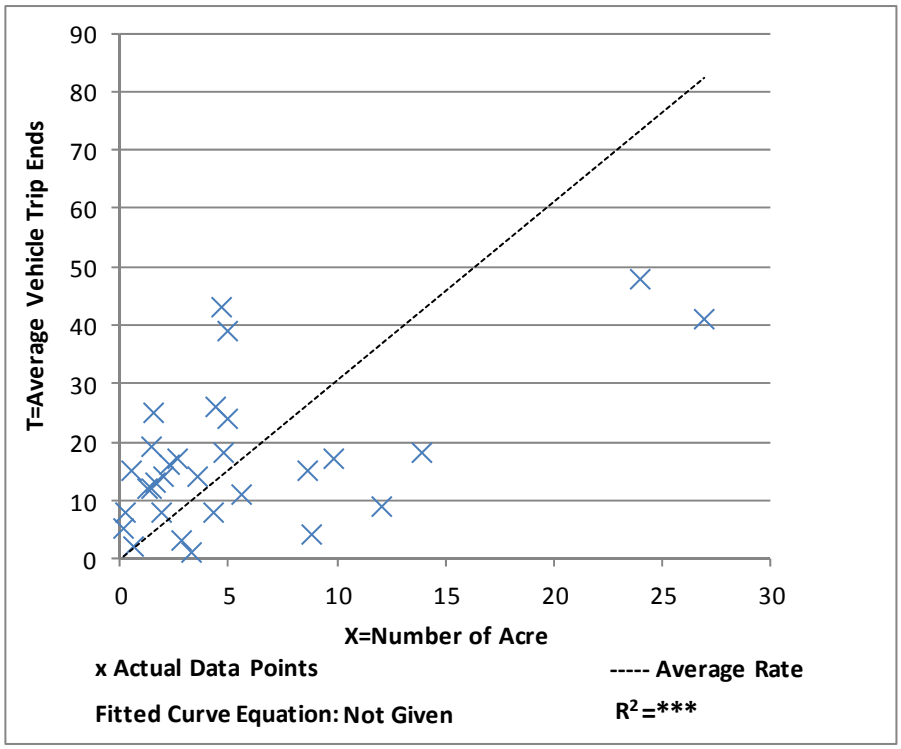
Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	30
Average Number of Acres:	6
Directional Distribution:	22% entering, 78% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
3.05	0.30-35.71	3.66

Data Plot and Equation



Land Use: 140
Manufacturing

Description

Manufacturing facilities are areas where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to the actual production of goods, manufacturing facilities generally also have office, warehouse, research and associated functions. General light industrial (Land Use 110), general heavy industrial (Land Use 120), industrial park (Land Use 130) and high-cube warehouse/distribution center (Land Use 152) are related uses.

Source Numbers

1, 2, 3, 4, 5

Manufacturing
(140)

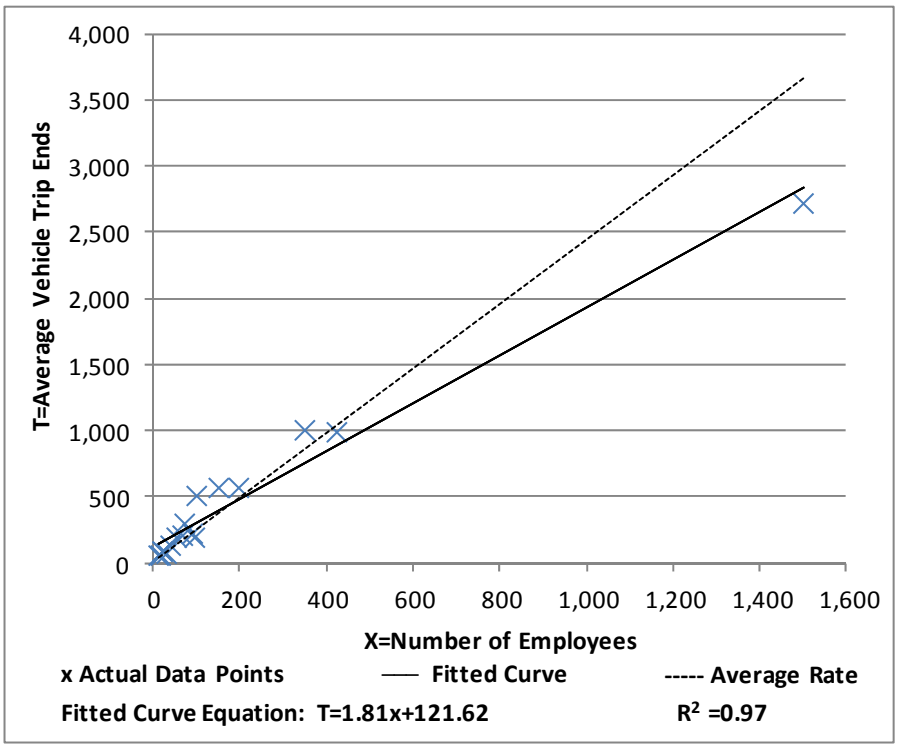
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	17
Average Number of Employees:	192
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.44	1.82-5.10	0.92

Data Plot and Equation



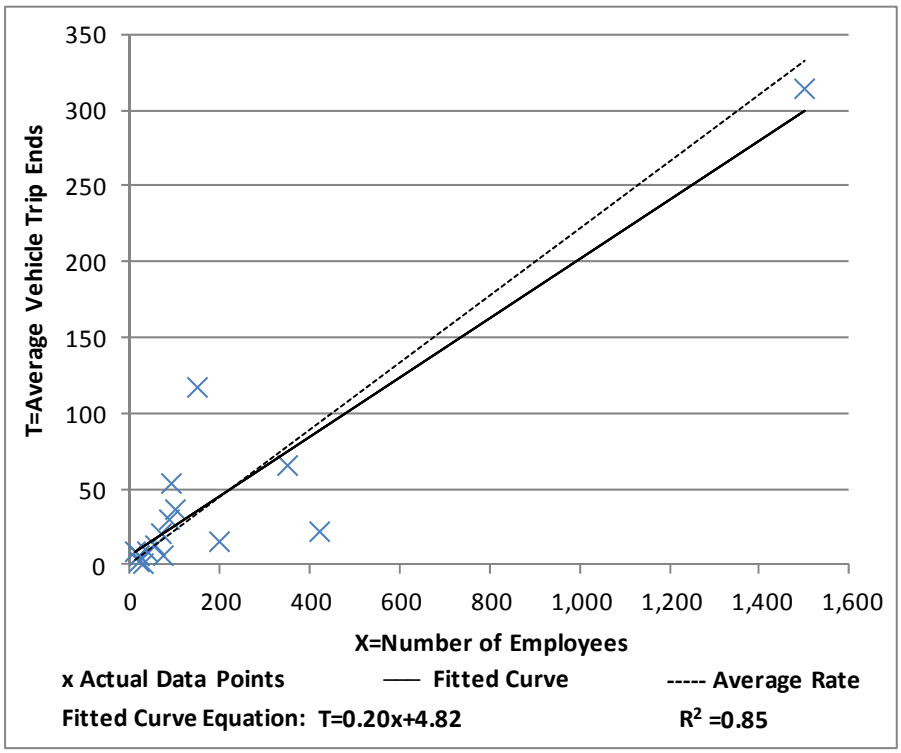
Manufacturing
(140)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	17
Average Number of Employees:	192
Directional Distribution:	78% entering, 22% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.22	0.03-0.78	0.18

Data Plot and Equation



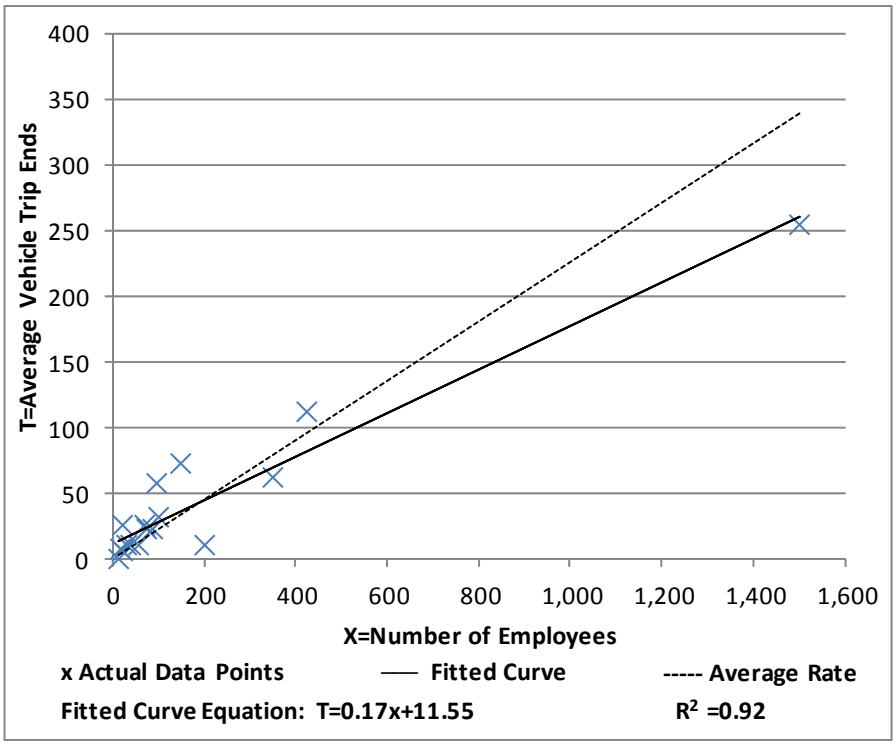
Manufacturing
(140)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	17
Average Number of Employees:	192
Directional Distribution:	24% entering, 76% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.23	0.00-1.18	0.16

Data Plot and Equation



Manufacturing
(140)

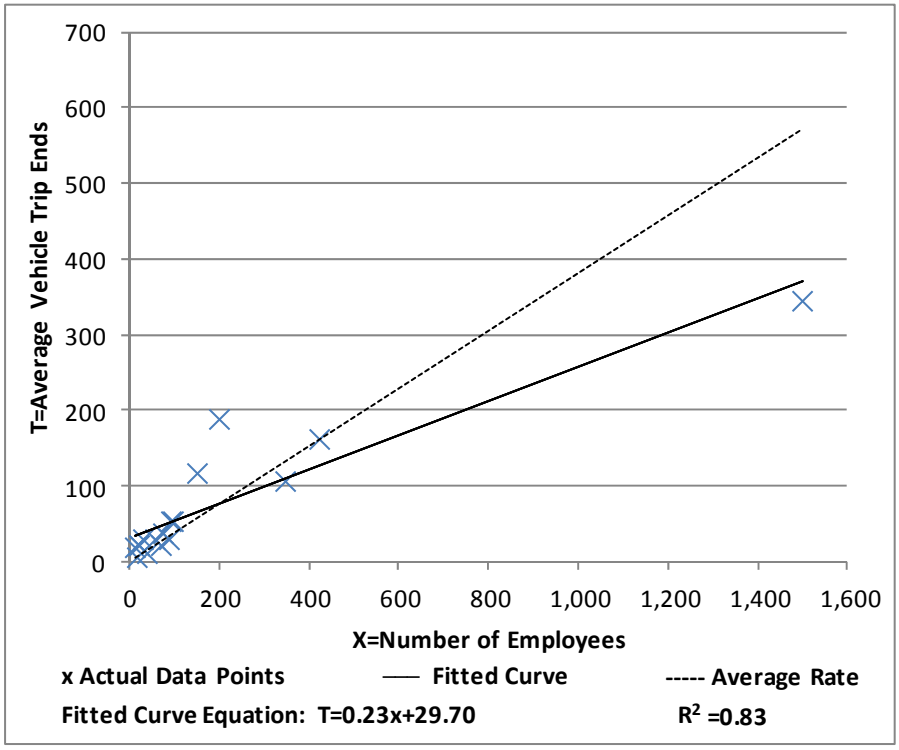
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	17
Average Number of Employees:	192
Directional Distribution:	83% entering, 17% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.38	0.23-1.27	0.26

Data Plot and Equation



Manufacturing
(140)

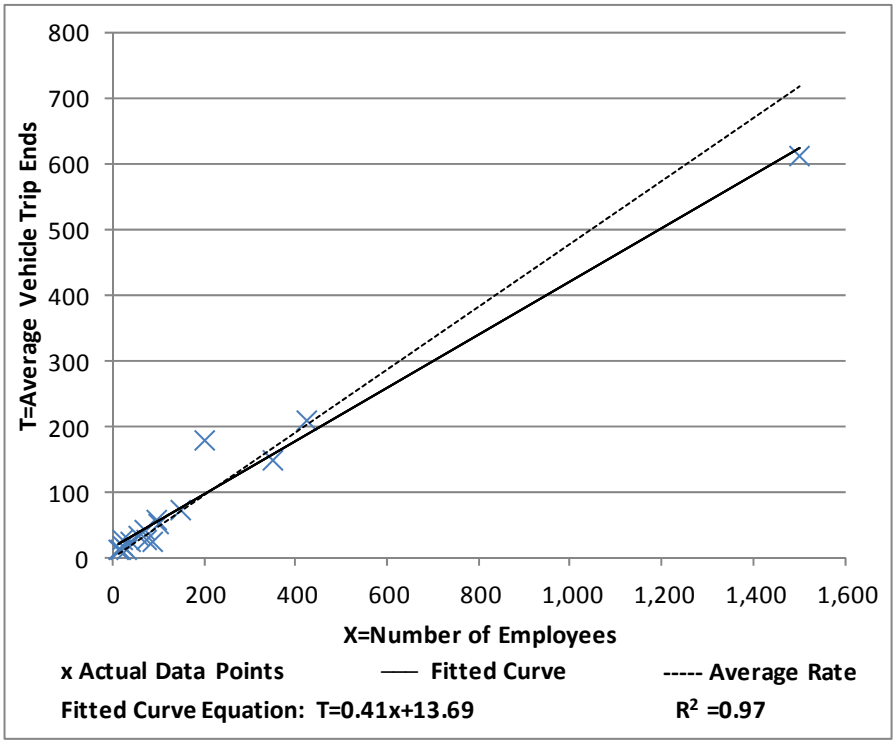
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	17
Average Number of Employees:	192
Directional Distribution:	36% entering, 64% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.48	0.28-1.18	0.16

Data Plot and Equation



Manufacturing
(140)

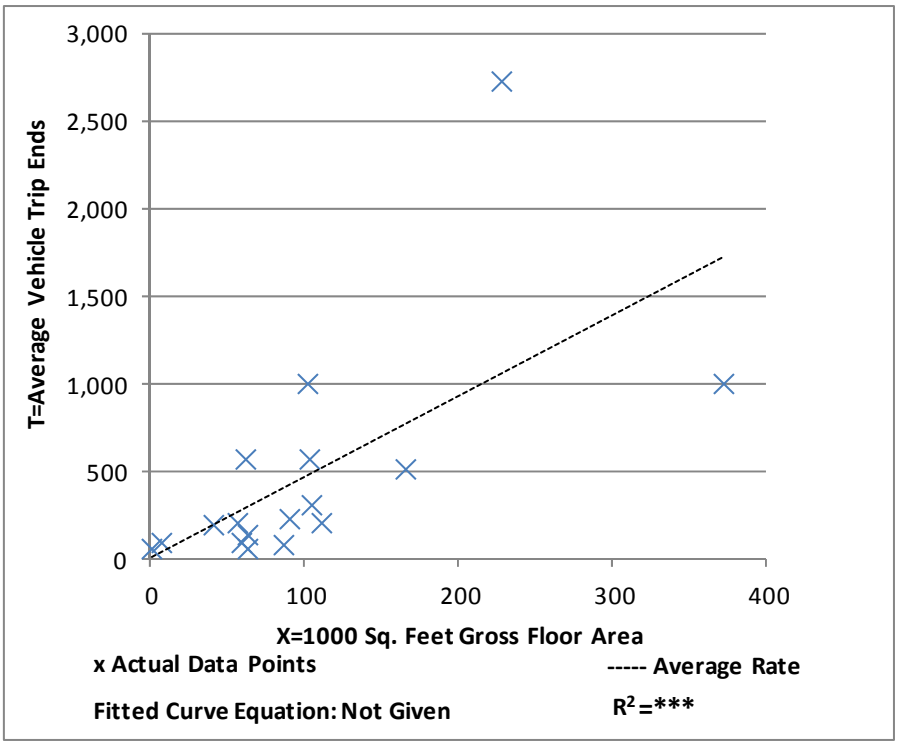
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	17
Average Number of 1000 Sq. Feet Gross Floor Area:	101
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.64	0.83-49.50	4.06

Data Plot and Equation



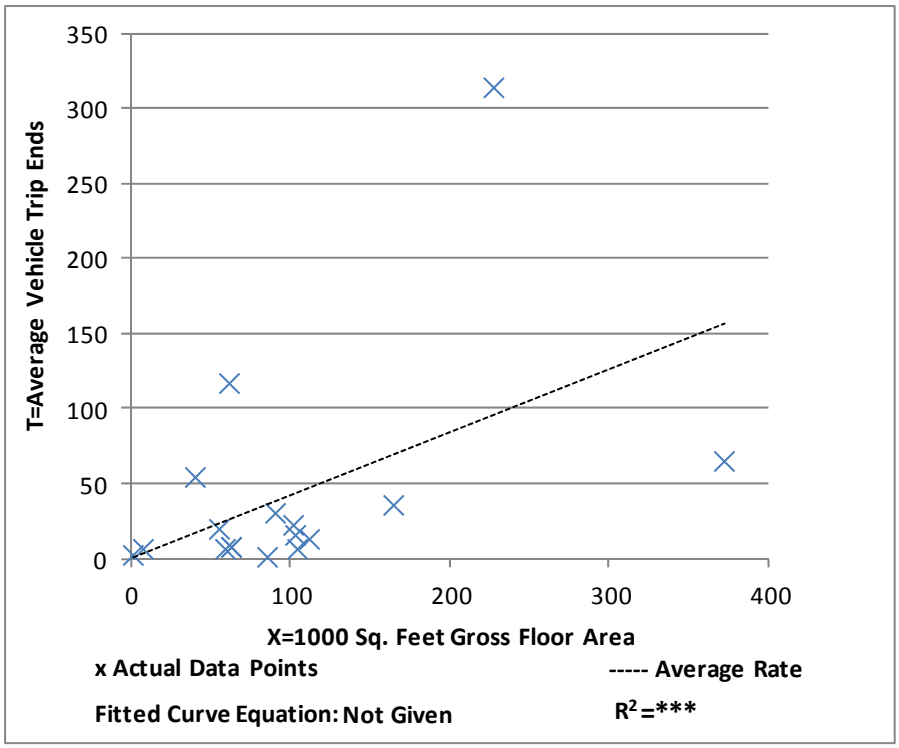
Manufacturing
(140)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	17
Average Number of 1000 Sq. Feet Gross Floor Area:	101
Directional Distribution:	72% entering, 28% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.42	0.01-1.90	0.56

Data Plot and Equation



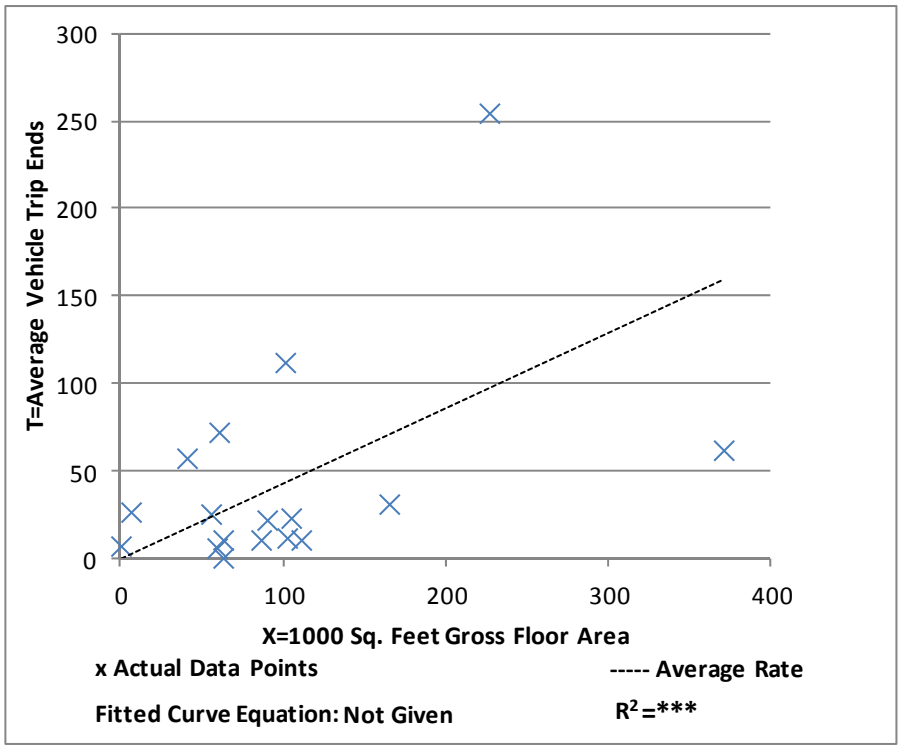
Manufacturing
(140)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	17
Average Number of 1000 Sq. Feet Gross Floor Area:	101
Directional Distribution:	16% entering, 84% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.43	0.00-6.42	0.53

Data Plot and Equation



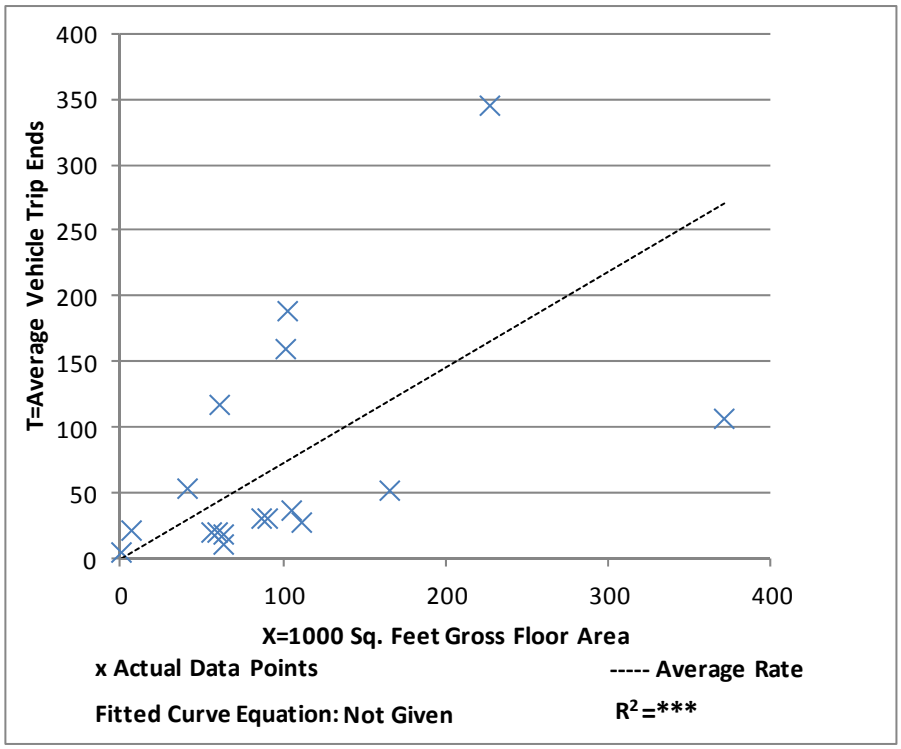
Manufacturing
(140)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	17
Average Number of 1000 Sq. Feet Gross Floor Area:	101
Directional Distribution:	83% entering, 17% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.72	0.17-4.58	0.67

Data Plot and Equation



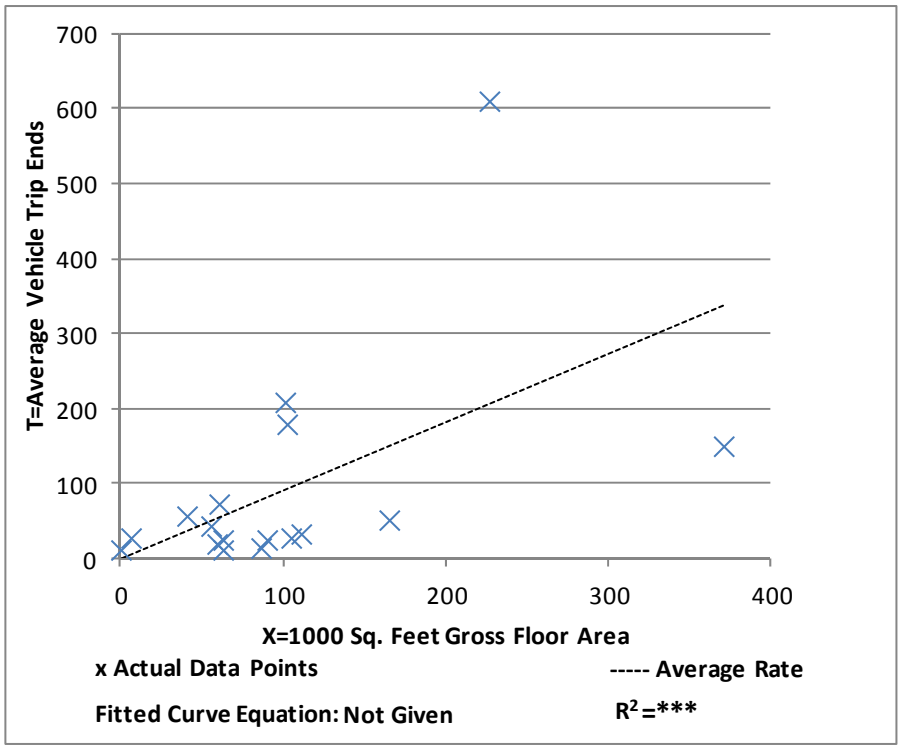
Manufacturing
(140)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	17
Average Number of 1000 Sq. Feet Gross Floor Area:	101
Directional Distribution:	31% entering, 69% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.91	0.15-10.08	0.98

Data Plot and Equation



Manufacturing
(140)

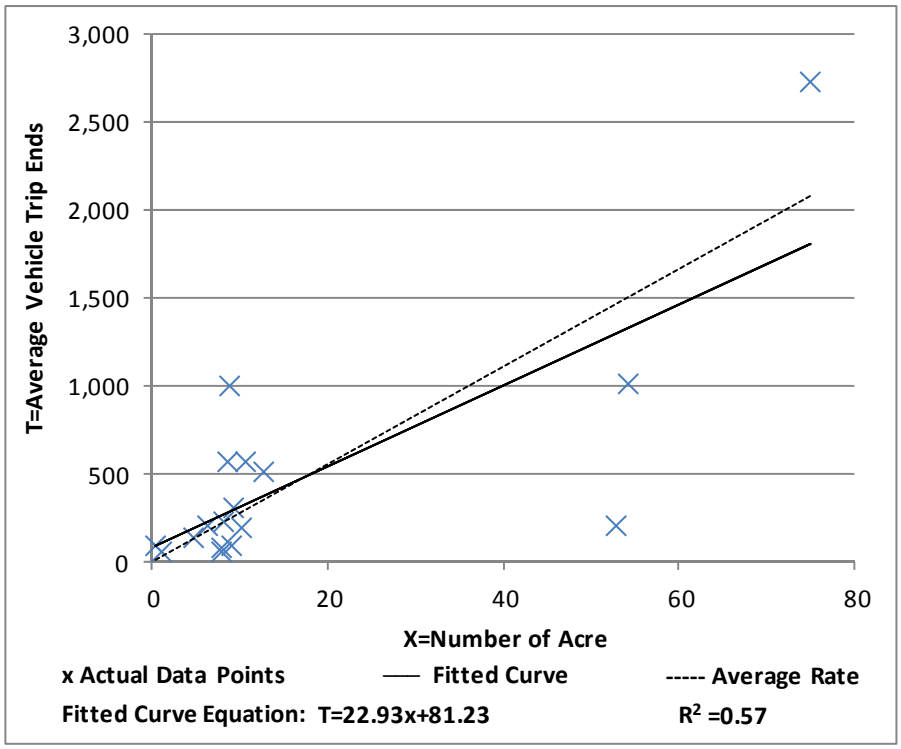
Average Vehicle Trip Ends vs: Acres
On a: Weekday

Number of Studies: 17
Average Number of Acres: 17
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
27.74	3.72-222.50	24.84

Data Plot and Equation



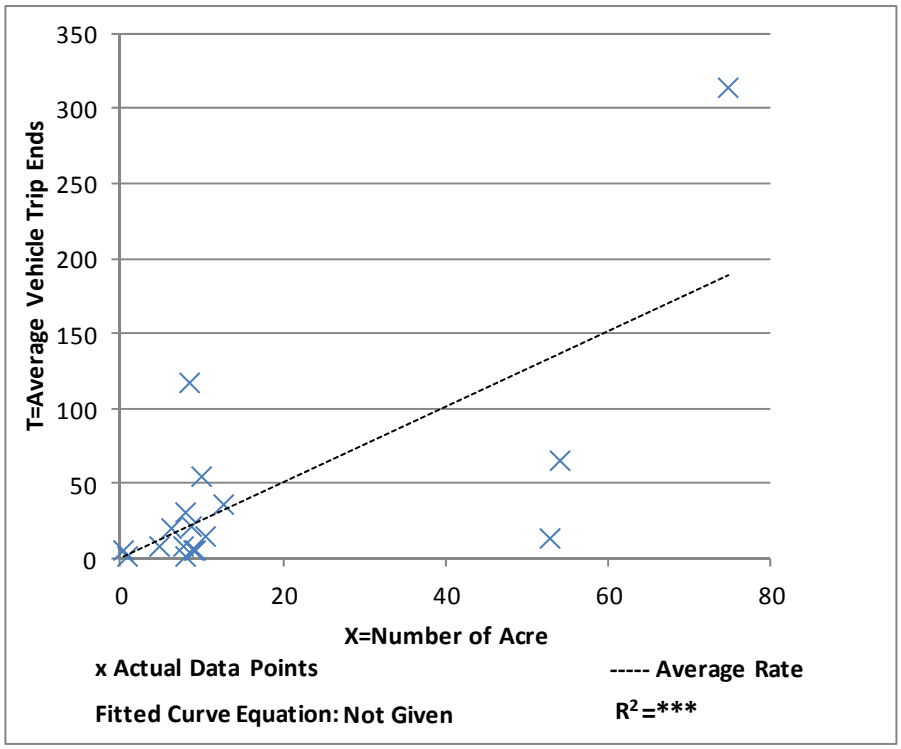
Manufacturing
(140)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	17
Average Number of Acres:	17
Directional Distribution:	66% entering, 34% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
2.52	0.13-15.00	2.82

Data Plot and Equation



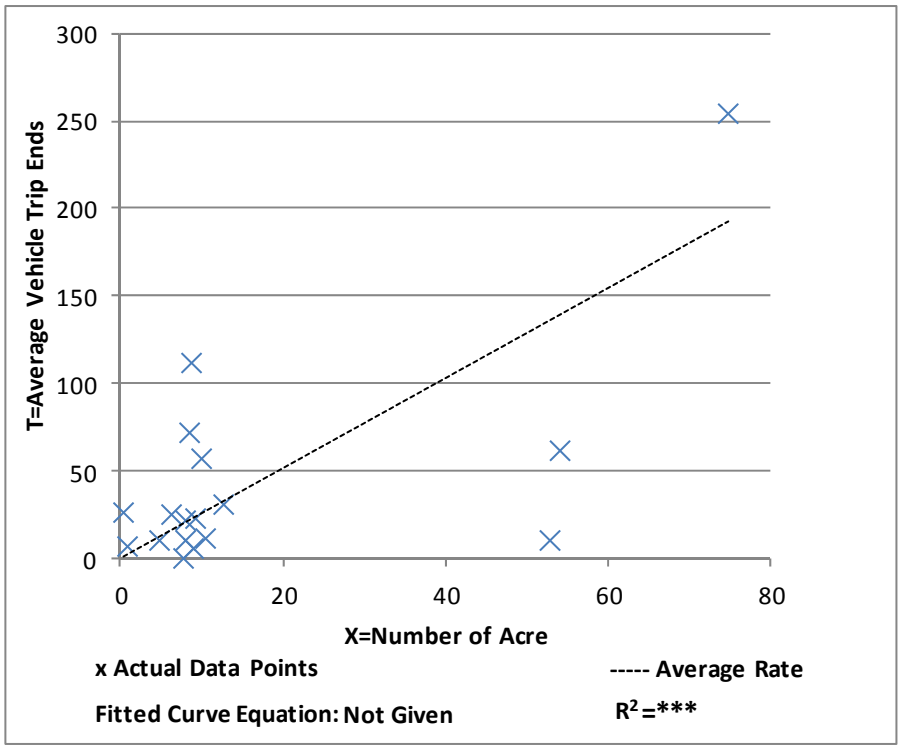
Manufacturing
(140)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	17
Average Number of Acres:	17
Directional Distribution:	18% entering, 82% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
2.57	0.00-65.00	3.76

Data Plot and Equation



Manufacturing
(140)

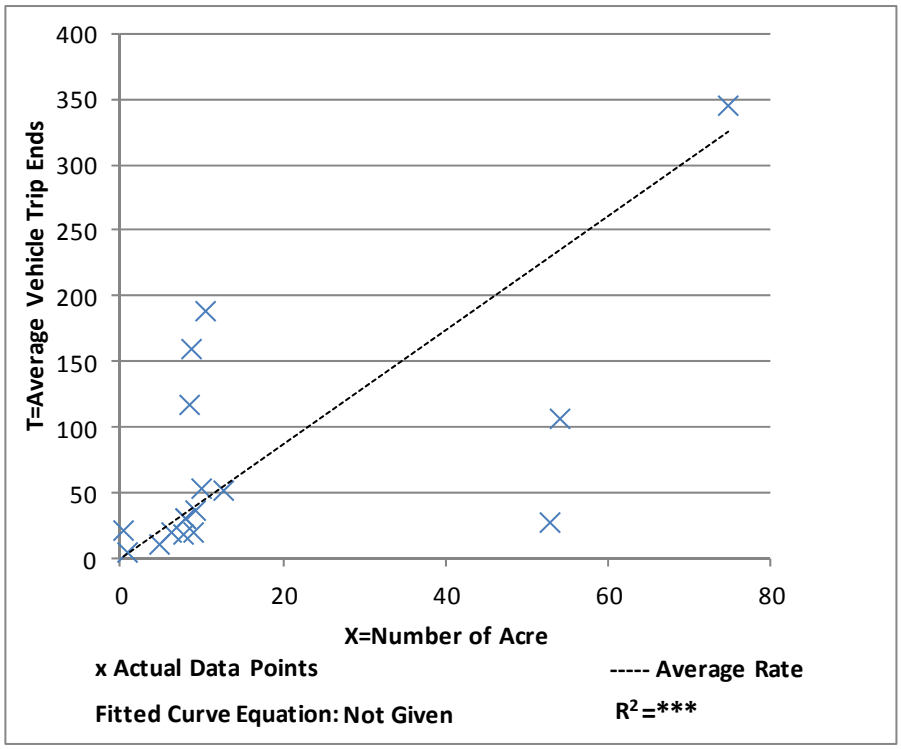
Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	17
Average Number of Acres:	17
Directional Distribution:	80% entering, 20% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
4.33	0.53-52.50	5.13

Data Plot and Equation



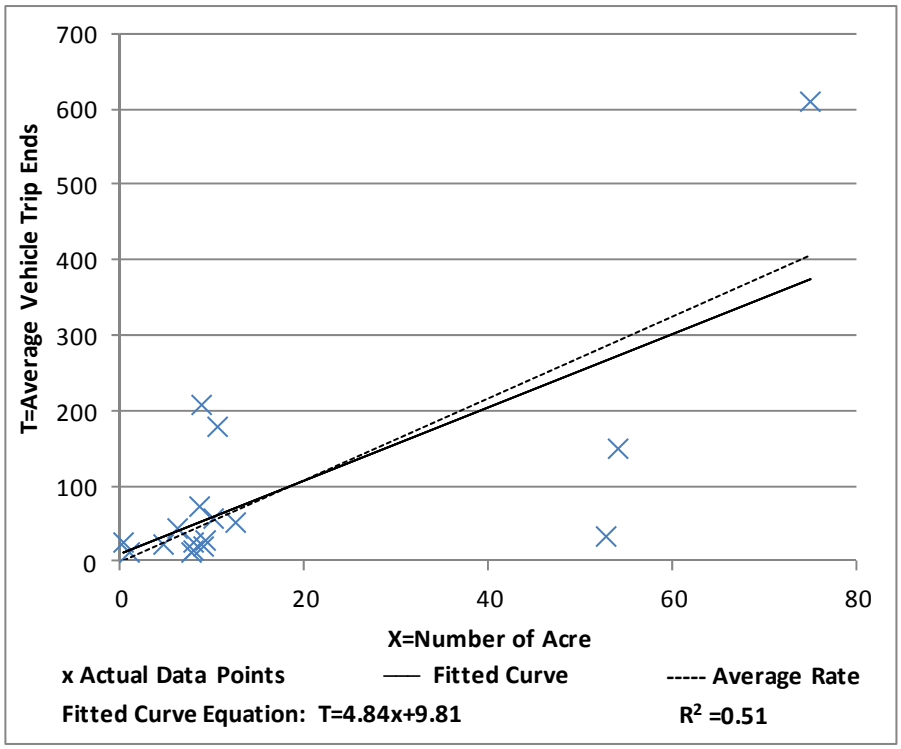
Manufacturing
(140)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	17
Average Number of Acres:	17
Directional Distribution:	37% entering, 63% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
5.42	0.62-65.00	5.87

Data Plot and Equation



Land Use: 150
Warehousing

Description

Warehouses are primarily devoted to the storage of materials, but they may also include office and maintenance areas. High-cube warehouse/distribution center (Land Use 152) and business park (Land Use 770) are related uses.

Source Numbers

1, 2, 3, 4, 5

Warehousing
(150)

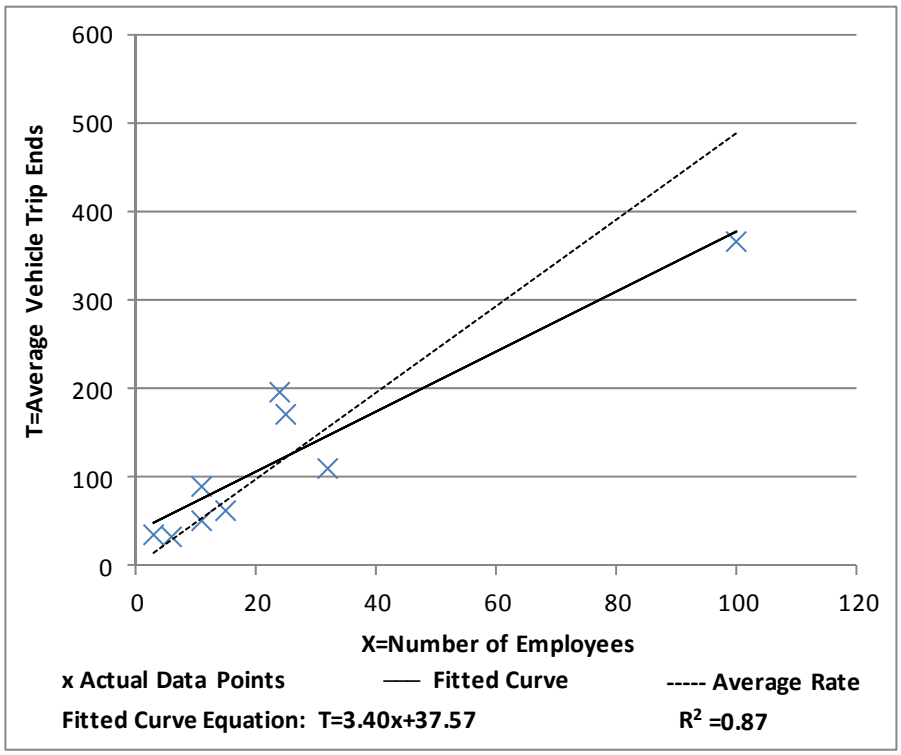
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 9
Average Number of Employees: 25
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.89	3.44-11.33	2.19

Data Plot and Equation



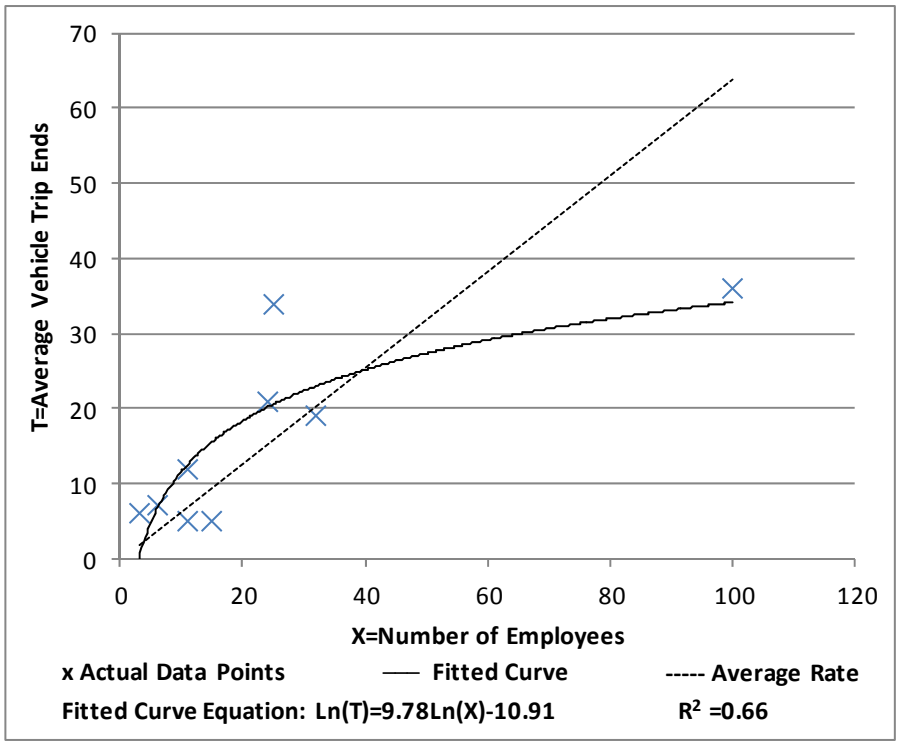
Warehousing
(150)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	9
Average Number of Employees:	25
Directional Distribution:	66% entering, 34% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.64	0.33-2.00	0.44

Data Plot and Equation



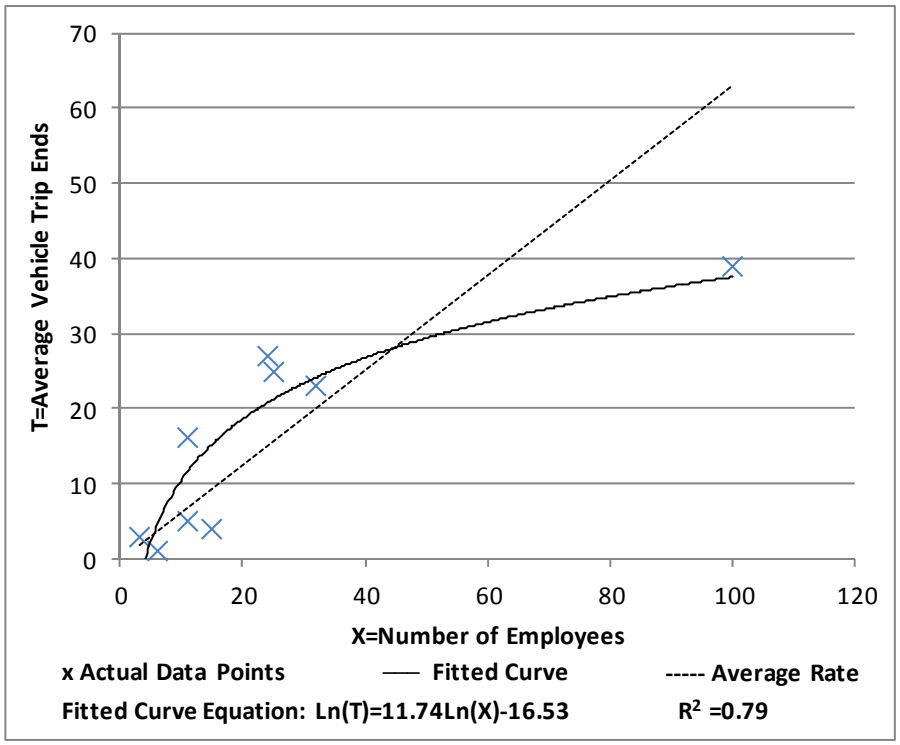
Warehousing
(150)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	9
Average Number of Employees:	25
Directional Distribution:	32% entering, 68% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.63	0.17-1.45	0.40

Data Plot and Equation



Warehousing
(150)

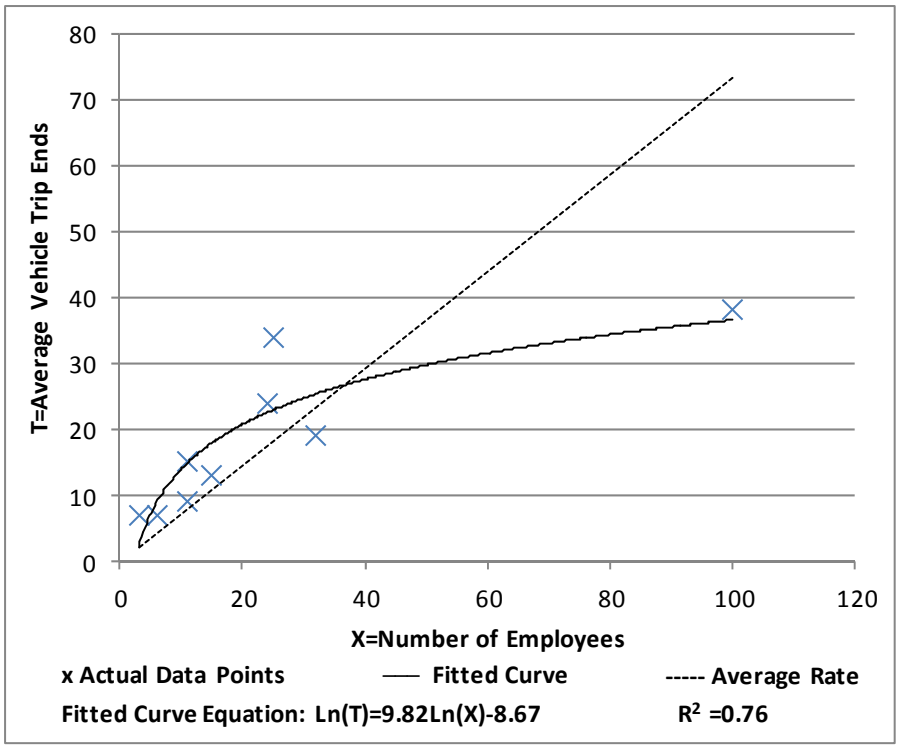
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	9
Average Number of Employees:	25
Directional Distribution:	59% entering, 41% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.73	0.38-2.33	0.47

Data Plot and Equation



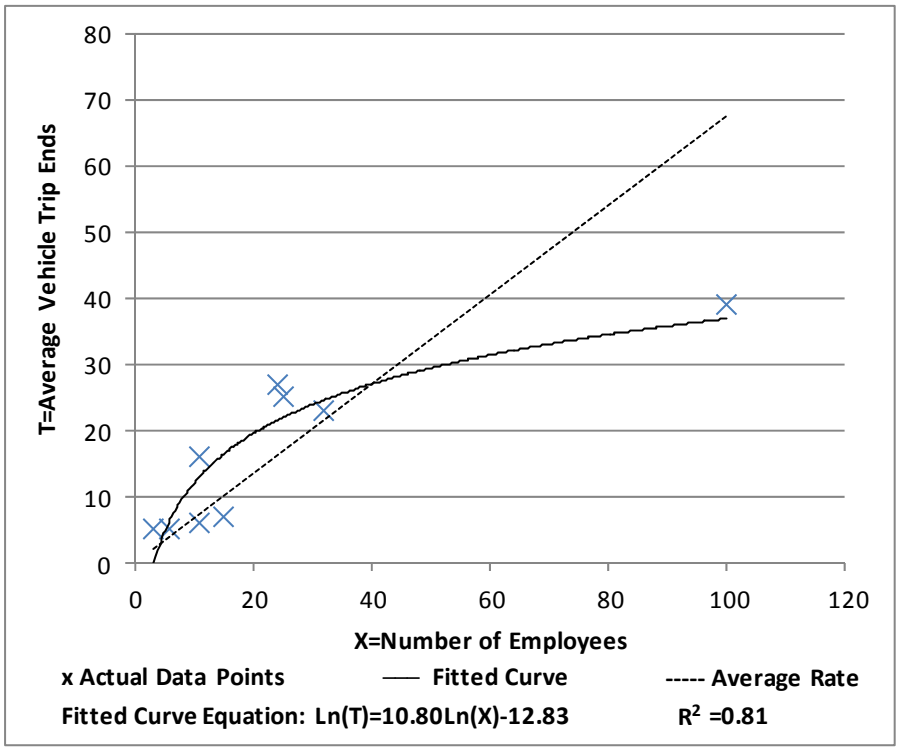
Warehousing
(150)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	9
Average Number of Employees:	25
Directional Distribution:	44% entering, 56% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.67	0.39-1.67	0.39

Data Plot and Equation



Warehousing
(150)

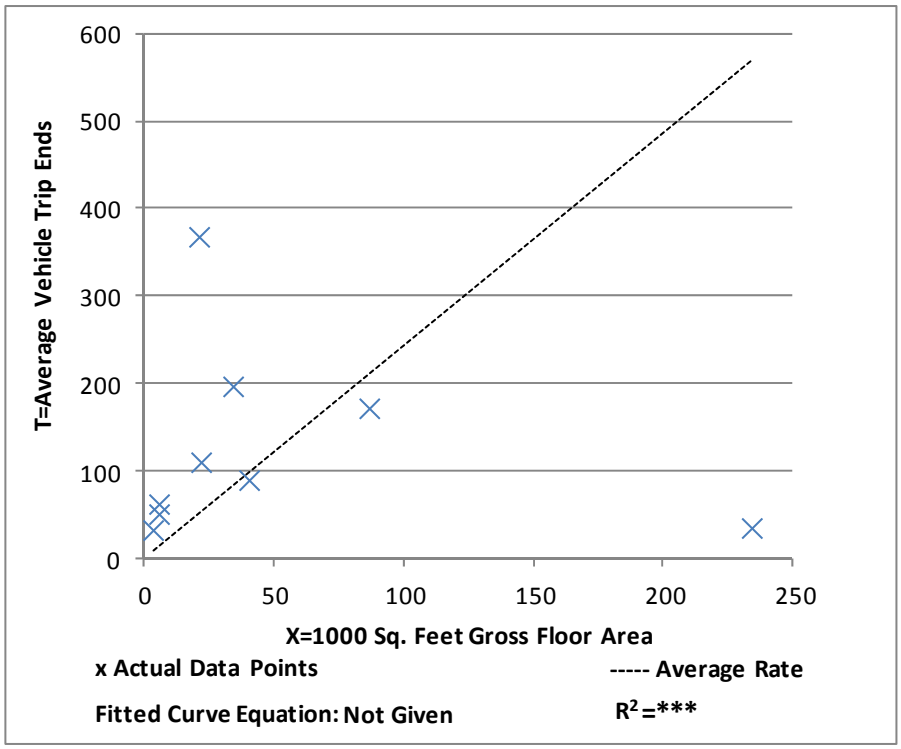
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	51
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.43	0.15-16.93	4.75

Data Plot and Equation



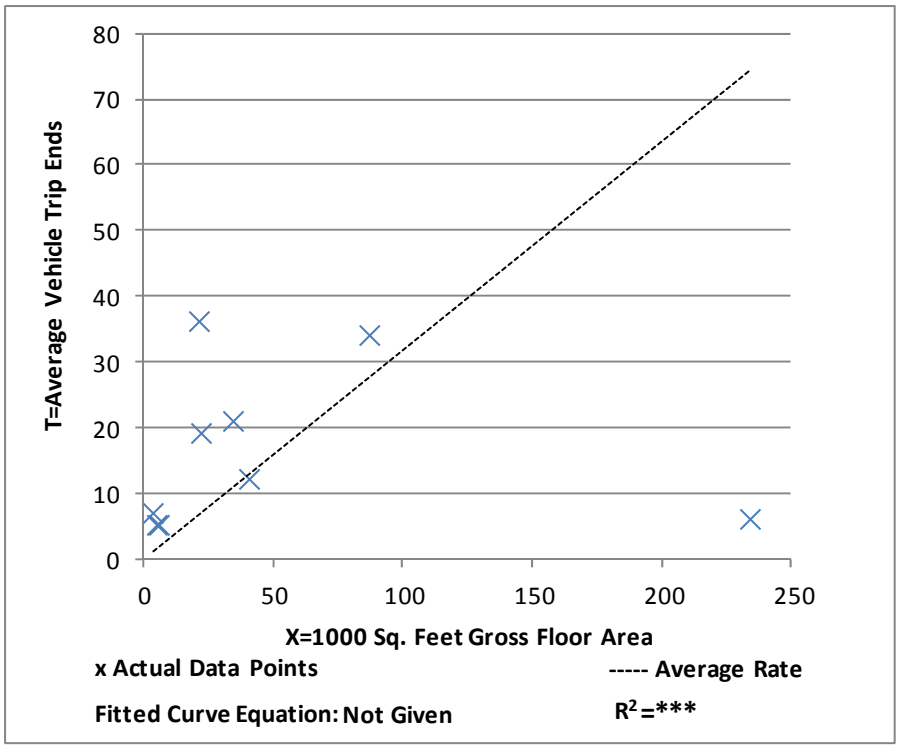
Warehousing
(150)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	51
Directional Distribution:	80% entering, 20% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.32	0.03-1.80	0.51

Data Plot and Equation



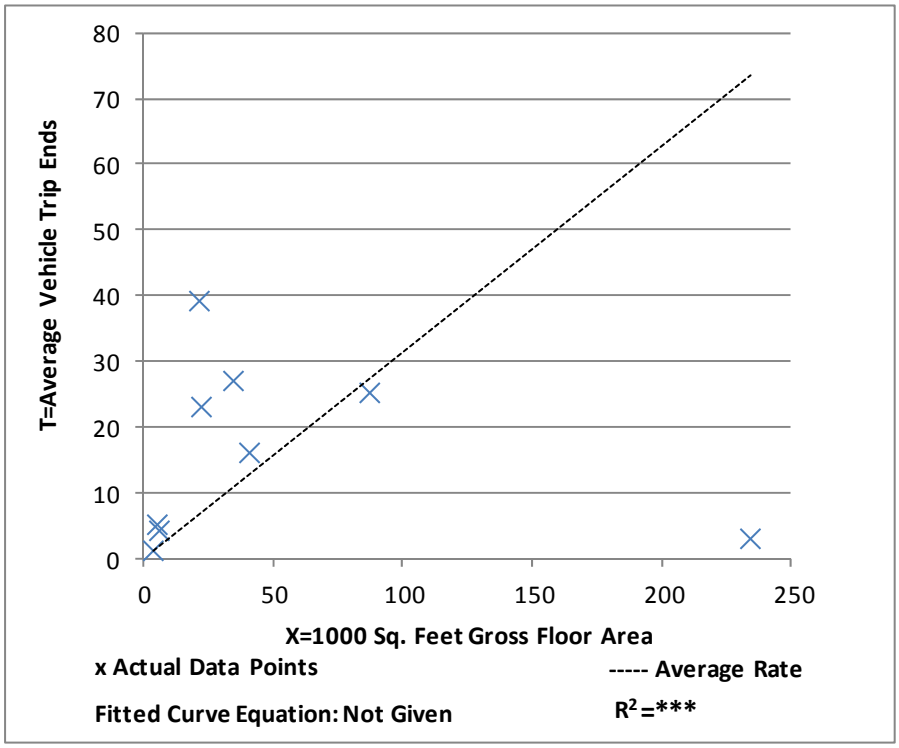
Warehousing
(150)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	51
Directional Distribution:	13% entering, 87% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.31	0.01-1.80	0.54

Data Plot and Equation



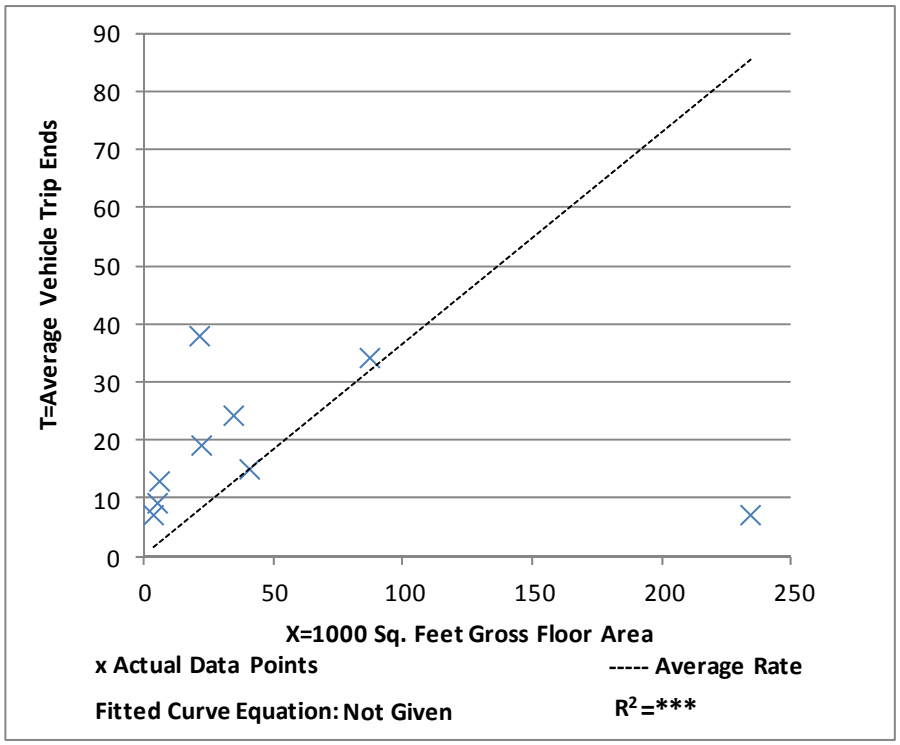
Warehousing
(150)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	51
Directional Distribution:	59% entering, 41% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.36	0.03-2.08	0.60

Data Plot and Equation



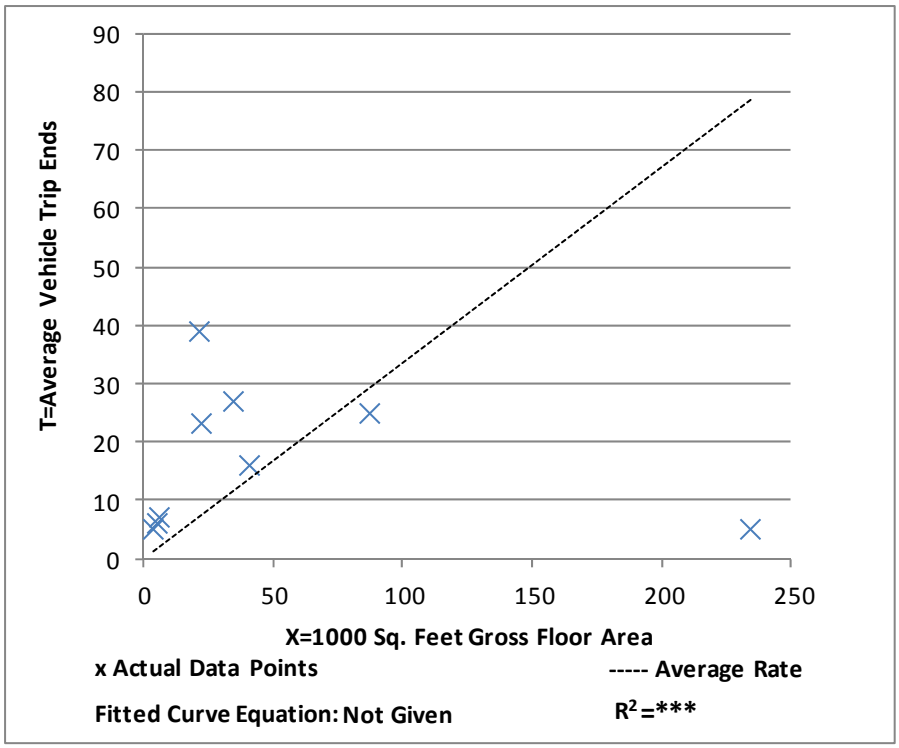
Warehousing
(150)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	51
Directional Distribution:	39% entering, 61% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.34	0.02-1.80	0.56

Data Plot and Equation



Warehousing
(150)

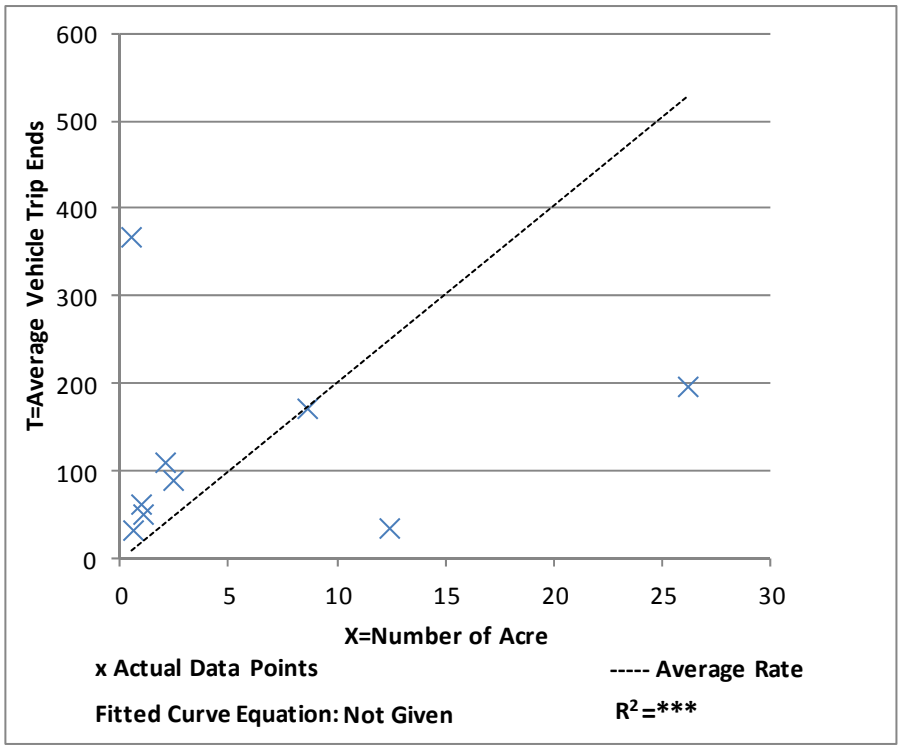
Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday**

Number of Studies:	9
Average Number of Acres:	6
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
20.16	2.73-746.94	84.66

Data Plot and Equation



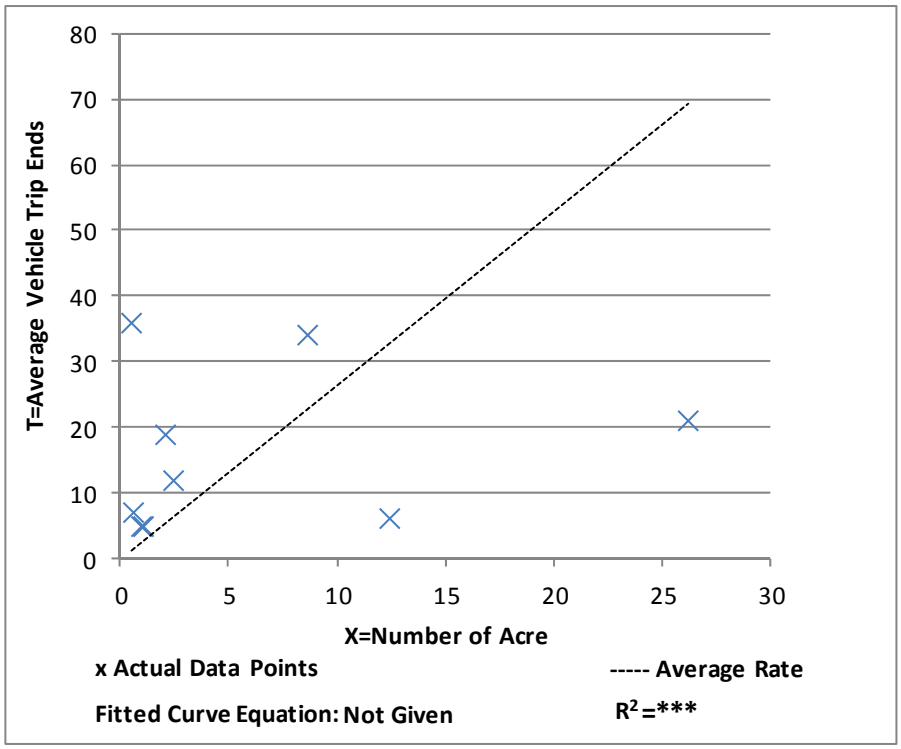
Warehousing
(150)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	9
Average Number of Acres:	6
Directional Distribution:	78% entering, 22% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
2.63	0.48-73.47	8.55

Data Plot and Equation



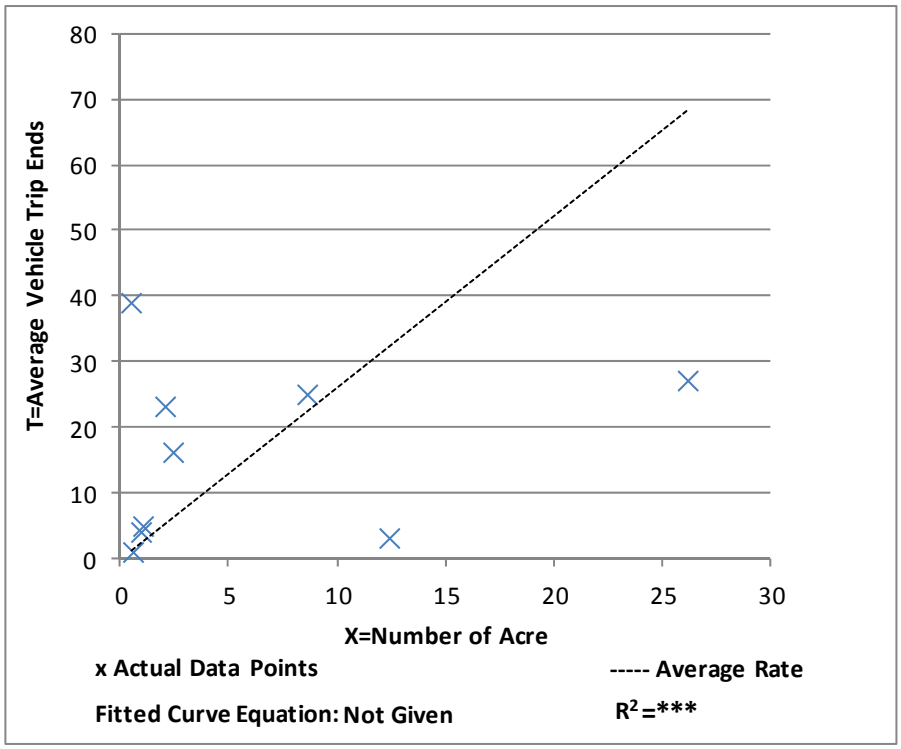
Warehousing
(150)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	9
Average Number of Acres:	6
Directional Distribution:	33% entering, 67% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
2.60	0.24-79.59	9.21

Data Plot and Equation



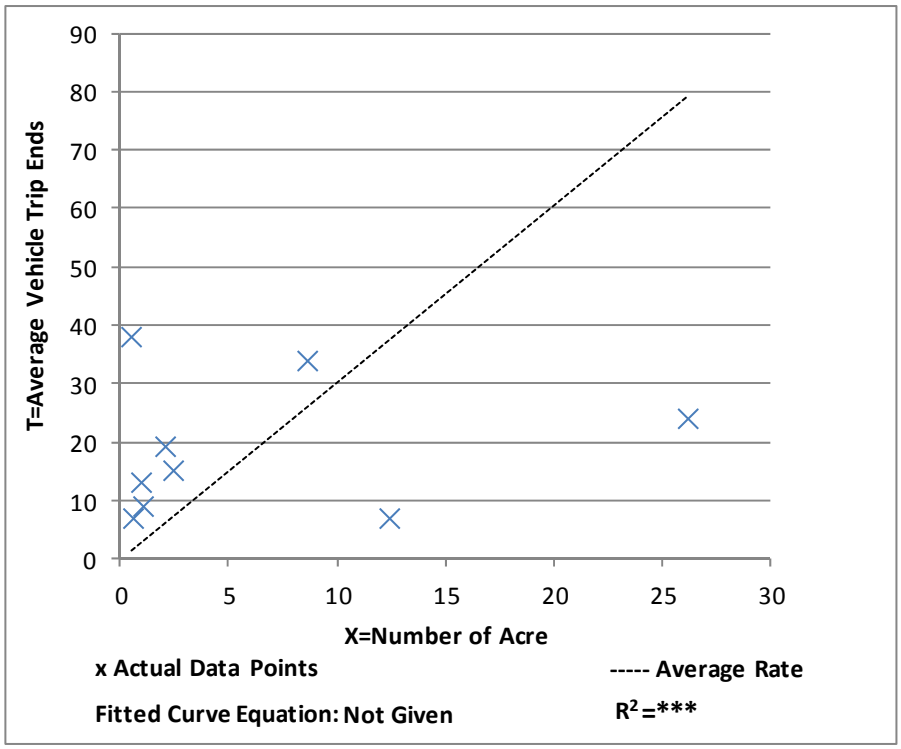
Warehousing
(150)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	9
Average Number of Acres:	6
Directional Distribution:	42% entering, 58% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
3.01	0.56-77.55	9.17

Data Plot and Equation



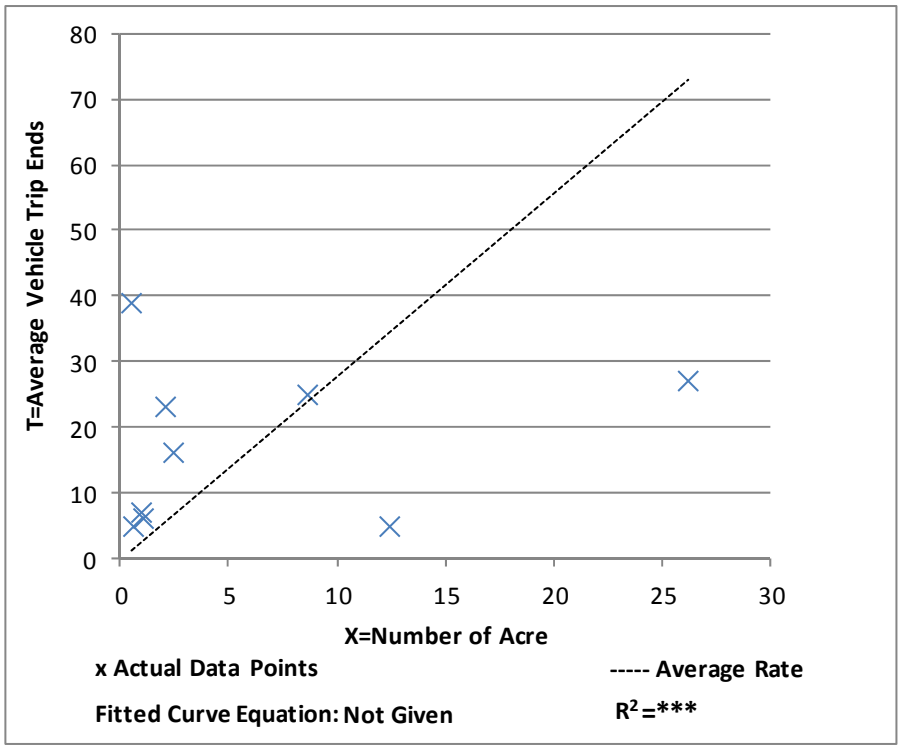
Warehousing
(150)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	9
Average Number of Acres:	6
Directional Distribution:	47% entering, 53% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
2.78	0.40-79.59	9.26

Data Plot and Equation



Land Use: 151
Mini-Warehouse

Description

Mini-warehouses are buildings in which a number of storage units or vaults are rented for the storage of goods. They are typically referred to as “self-storage” facilities. Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point.

Source Numbers

1, 3, 4

Mini-Warehouse
(151)

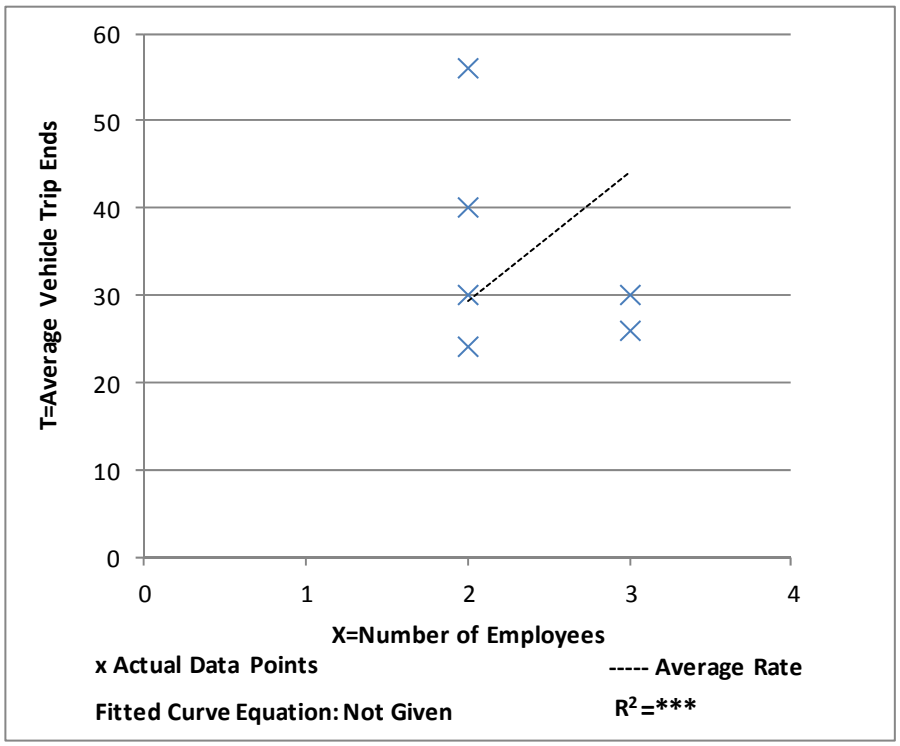
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 6
Average Number of Employees: 2
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
14.71	8.67-28.00	7.20

Data Plot and Equation



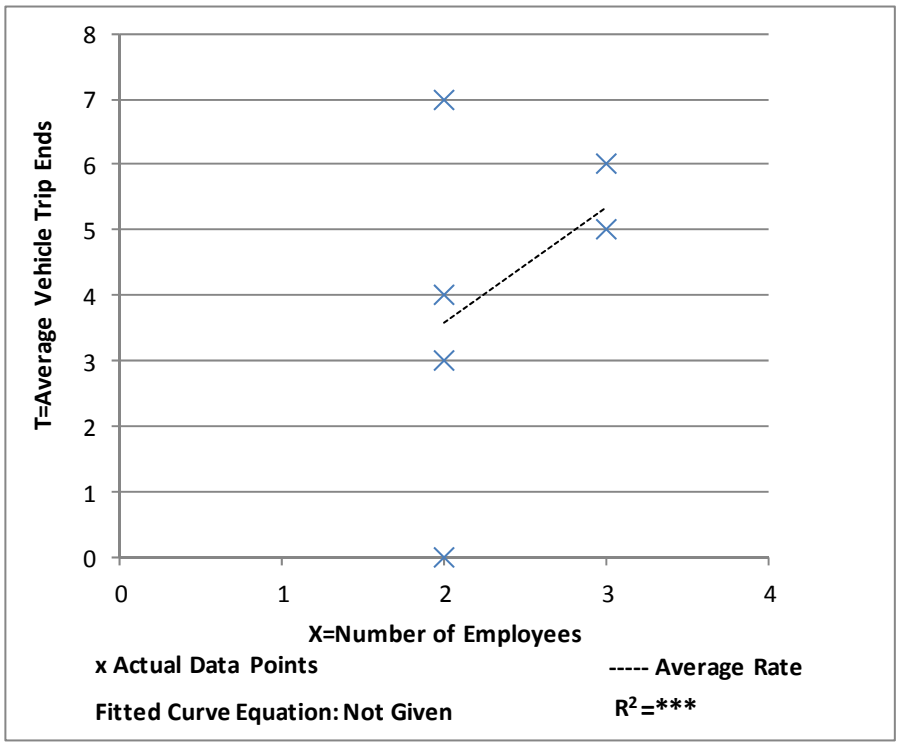
Mini-Warehouse
(151)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	6
Average Number of Employees:	2
Directional Distribution:	59% entering, 41% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.79	0.00-3.50	1.05

Data Plot and Equation



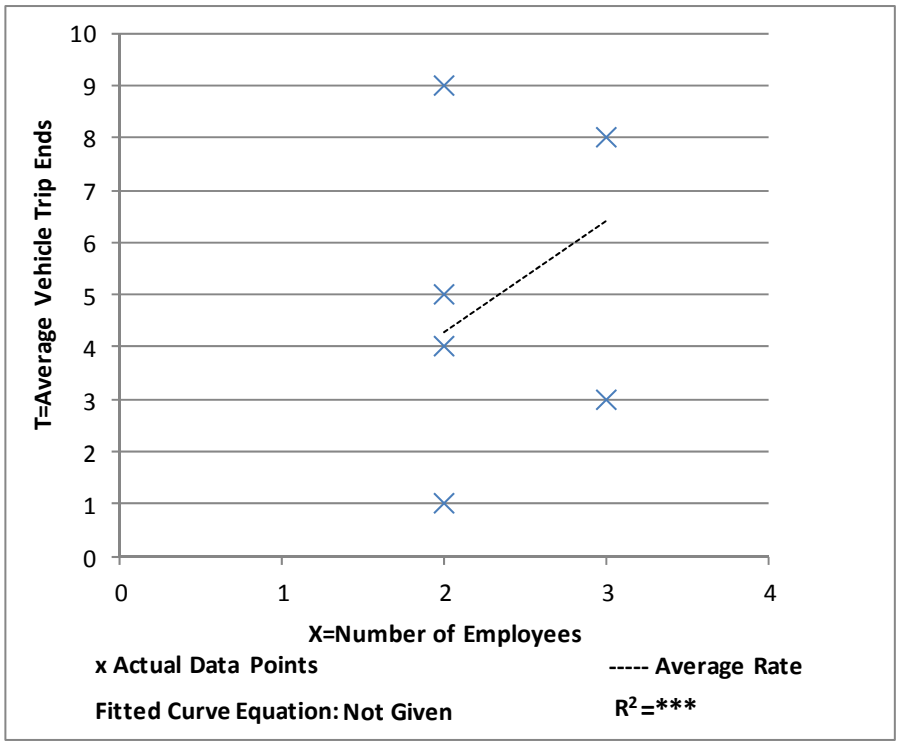
Mini-Warehouse
(151)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	6
Average Number of Employees:	2
Directional Distribution:	22% entering, 78% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.14	0.50-4.50	1.36

Data Plot and Equation



Mini-Warehouse
(151)

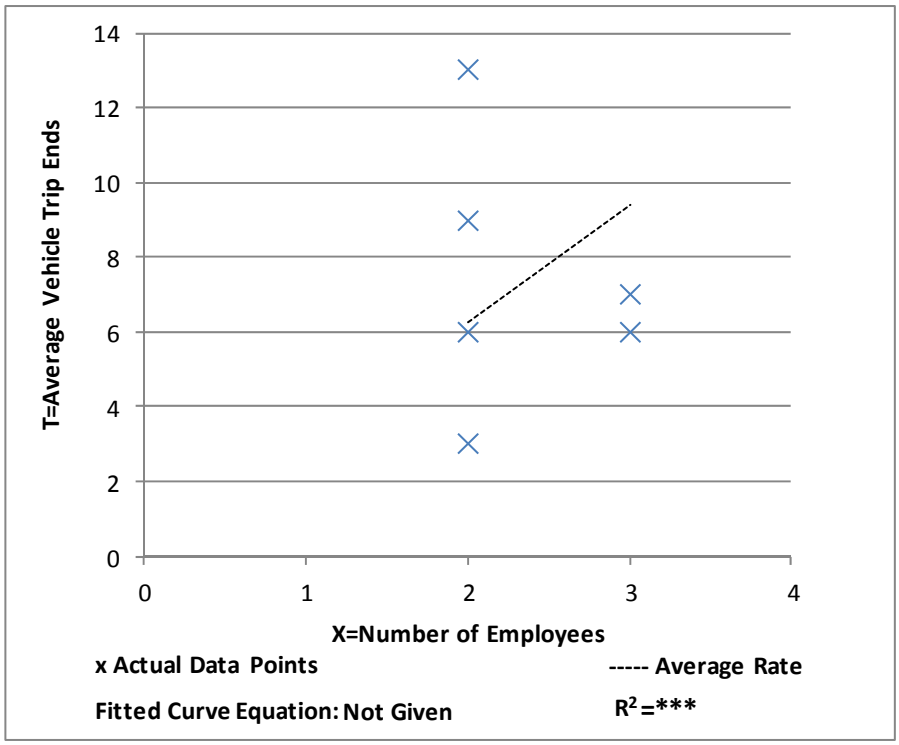
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	6
Average Number of Employees:	2
Directional Distribution:	61% entering, 39% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.14	1.50-6.50	1.80

Data Plot and Equation



Mini-Warehouse
(151)

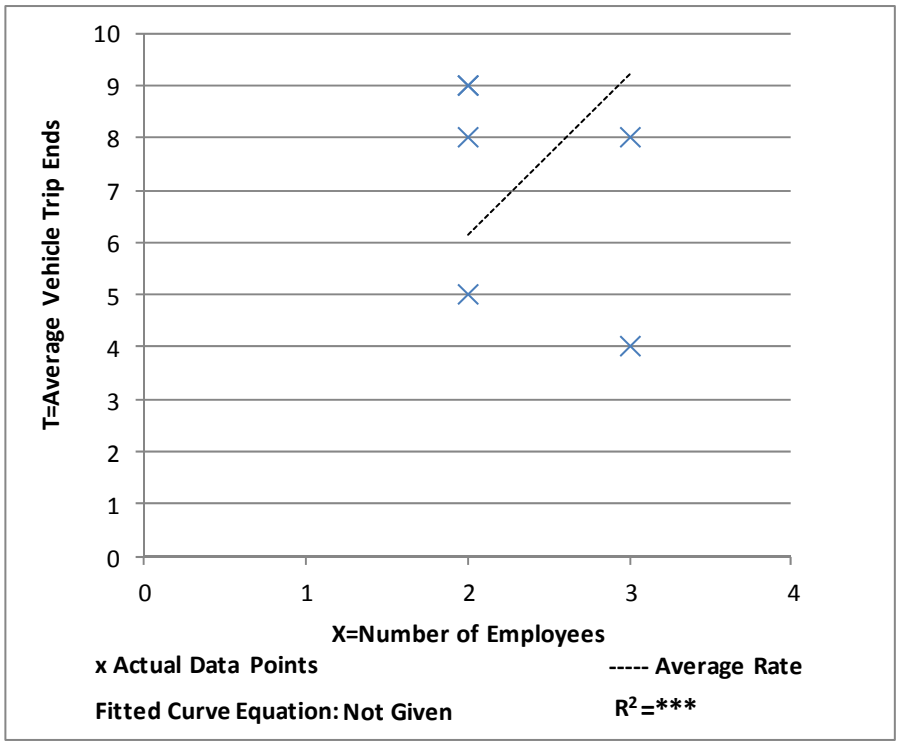
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	6
Average Number of Employees:	2
Directional Distribution:	58% entering, 42% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.07	1.33-4.50	1.32

Data Plot and Equation



Mini-Warehouse
(151)

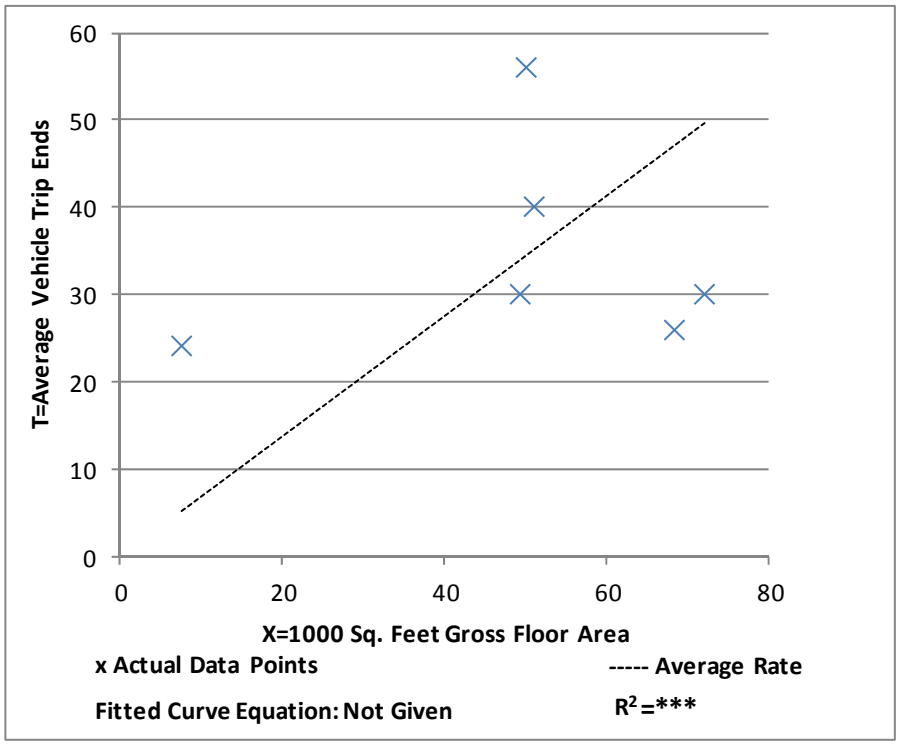
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	50
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.69	0.38-3.16	0.53

Data Plot and Equation



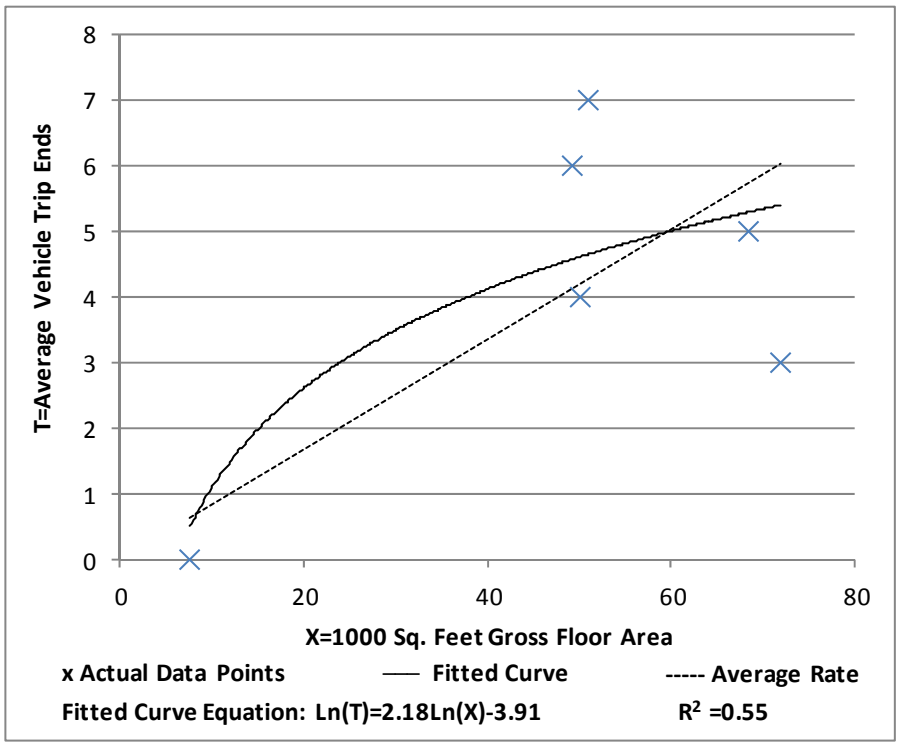
Mini-Warehouse
(151)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	50
Directional Distribution:	69% entering, 31% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.08	0.00-0.14	0.04

Data Plot and Equation



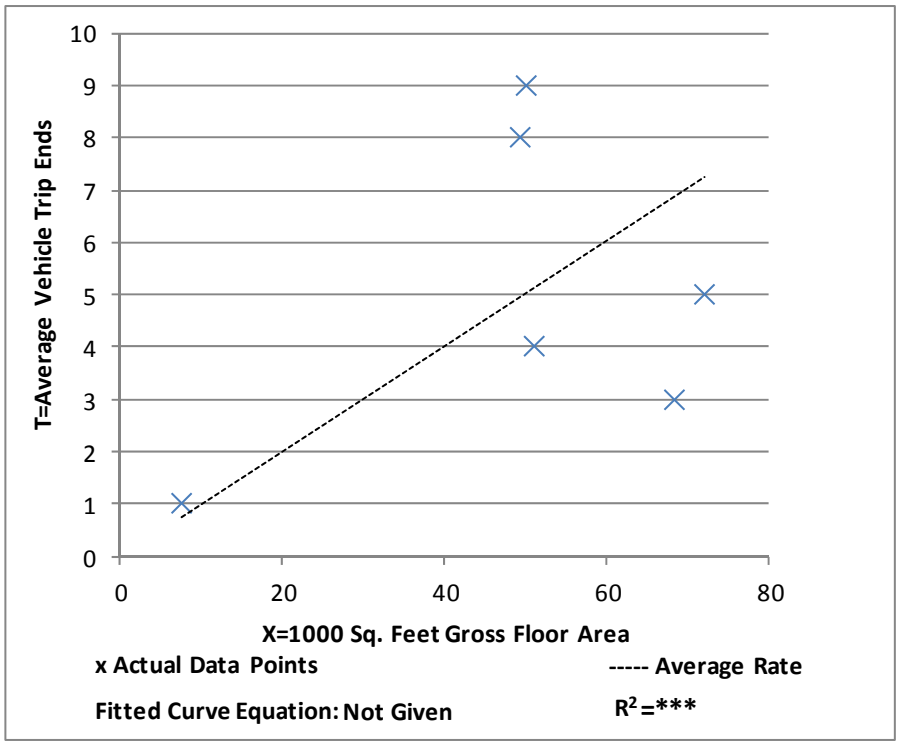
Mini-Warehouse
(151)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	50
Directional Distribution:	23% entering, 77% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.10	0.04-0.18	0.06

Data Plot and Equation



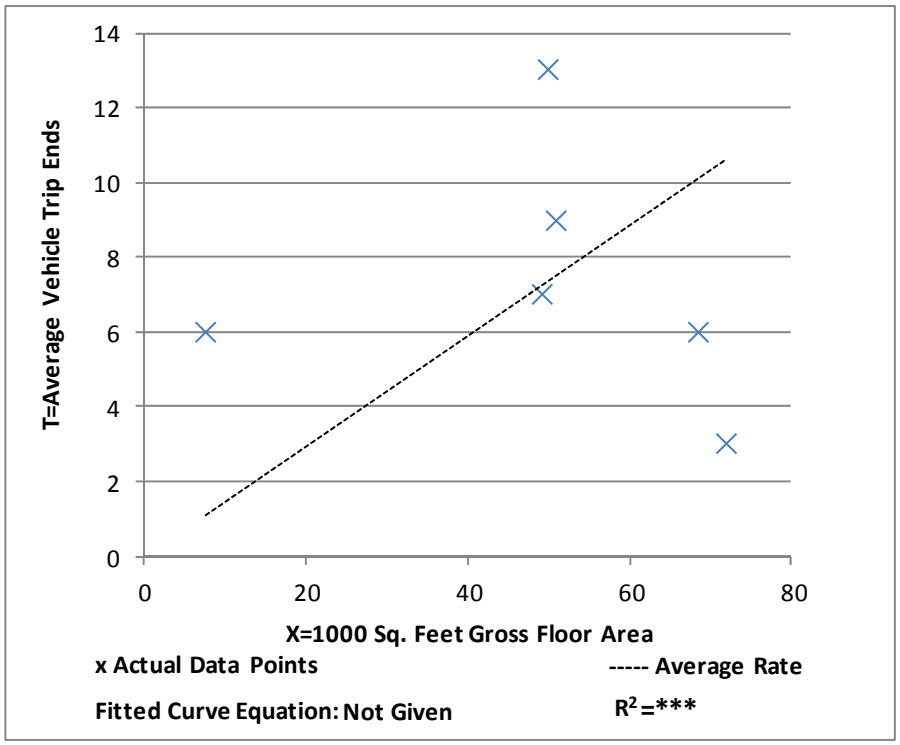
Mini-Warehouse
(151)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	50
Directional Distribution:	61% entering, 39% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.15	0.04-0.79	0.14

Data Plot and Equation



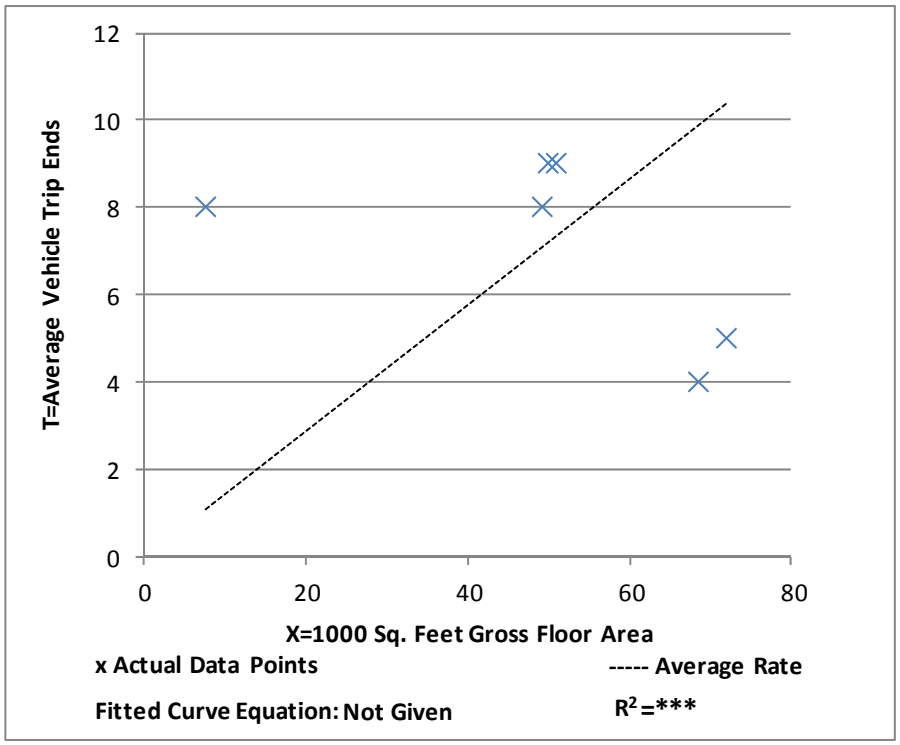
Mini-Warehouse
(151)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	50
Directional Distribution:	59% entering, 41% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.14	0.06-1.05	0.17

Data Plot and Equation



Mini-Warehouse
(151)

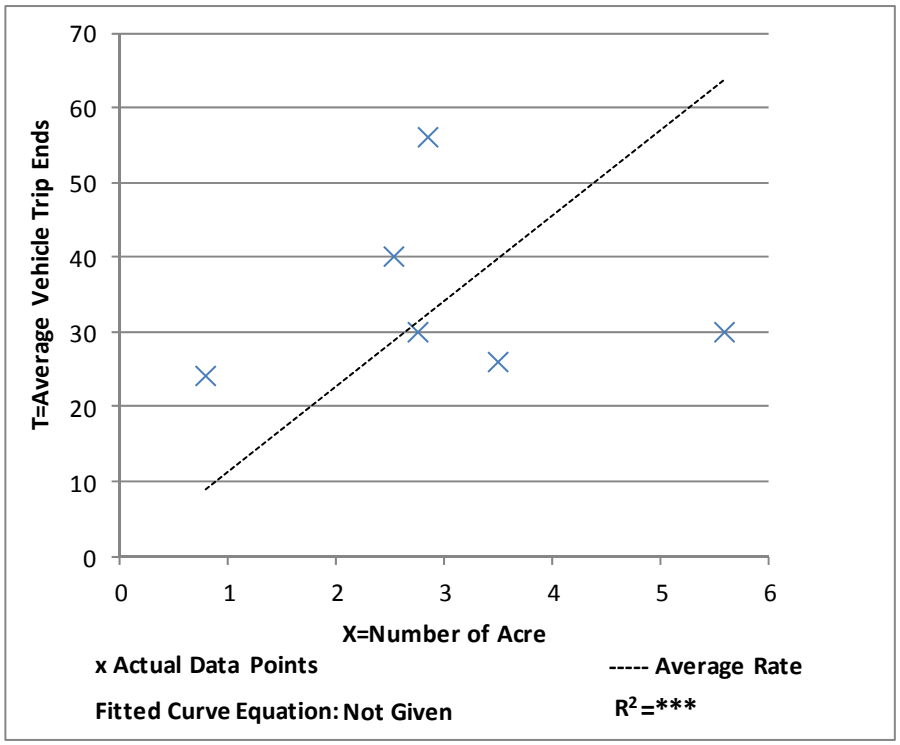
Average Vehicle Trip Ends vs: Acres
On a: Weekday

Number of Studies:	6
Average Number of Acres:	3
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
11.43	5.37-30.38	7.40

Data Plot and Equation



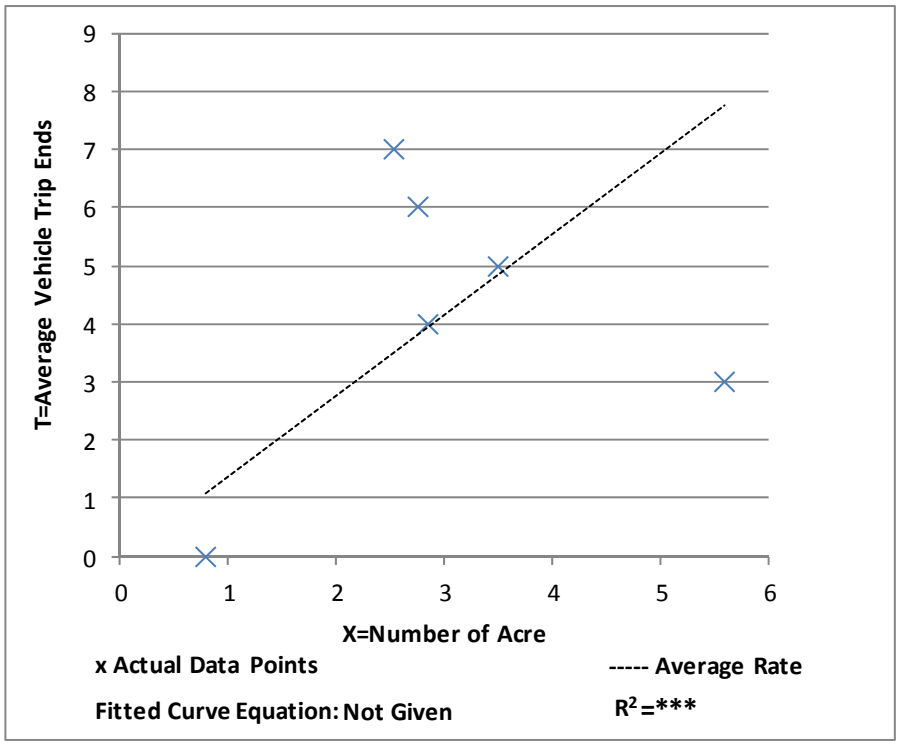
Mini-Warehouse
(151)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	6
Average Number of Acres:	3
Directional Distribution:	71% entering, 29% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
1.39	0.00-2.76	0.92

Data Plot and Equation



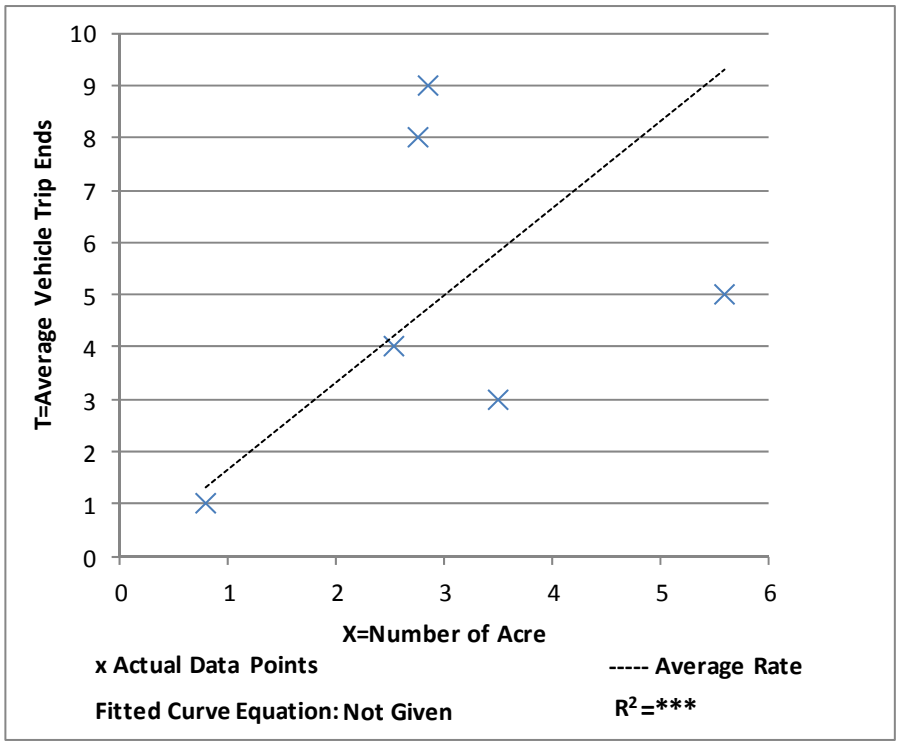
Mini-Warehouse
(151)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	6
Average Number of Acres:	3
Directional Distribution:	21% entering, 79% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
1.66	0.86-3.16	1.07

Data Plot and Equation



Mini-Warehouse
(151)

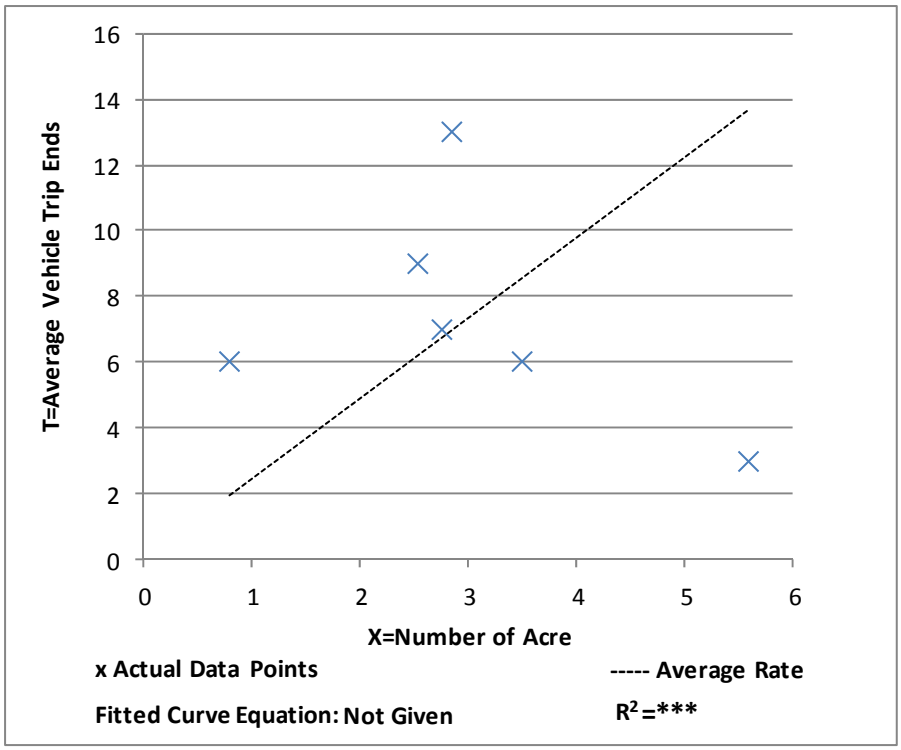
Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	6
Average Number of Acres:	3
Directional Distribution:	69% entering, 31% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
2.44	0.54-7.59	2.03

Data Plot and Equation



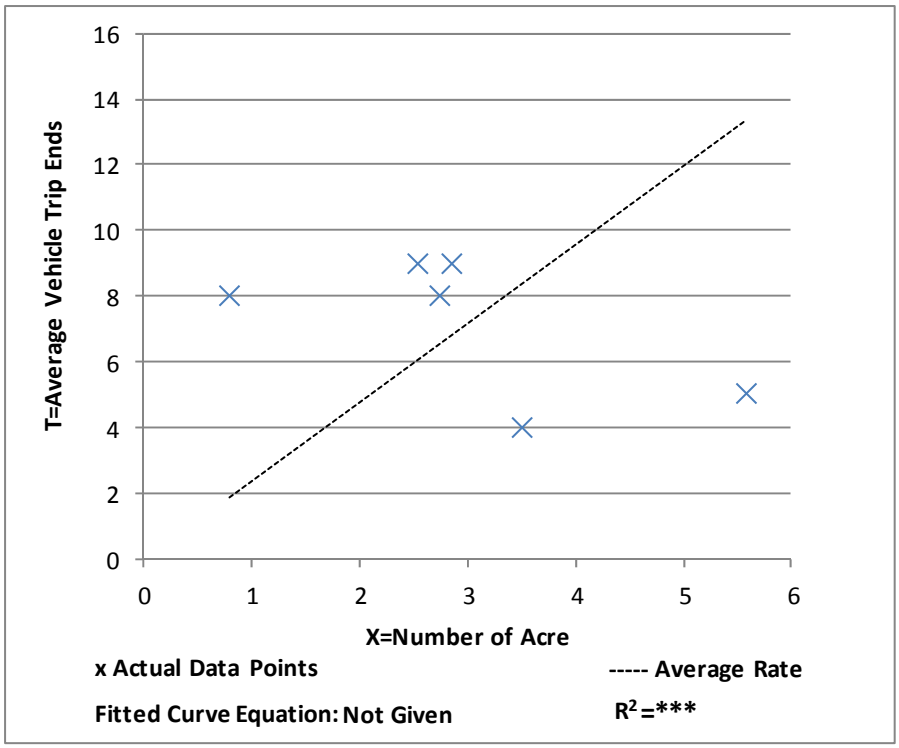
Mini-Warehouse
(151)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	6
Average Number of Acres:	3
Directional Distribution:	57% entering, 43% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
2.39	0.89-10.13	2.23

Data Plot and Equation



Land Use: 170
Utilities

Description

Utilities are free-standing buildings that contain electromechanical or industrial space/equipment. These facilities may also have storage areas and office space.

Source Numbers

1, 2, 3, 4, 5

Utilities
(170)

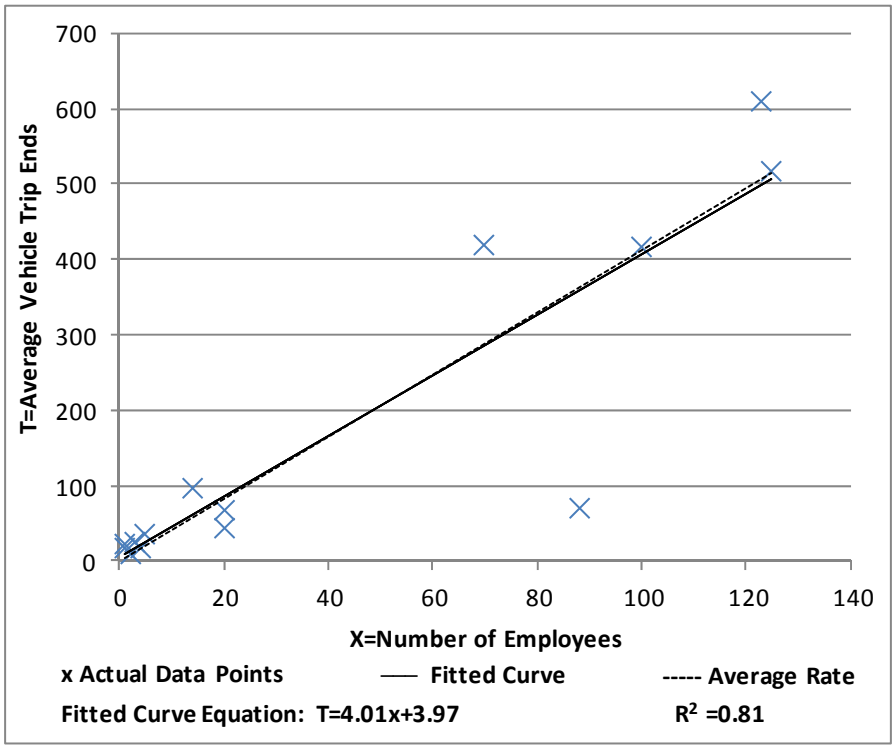
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday**

Number of Studies:	14
Average Number of Employees:	41
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.11	0.80-22.00	2.10

Data Plot and Equation



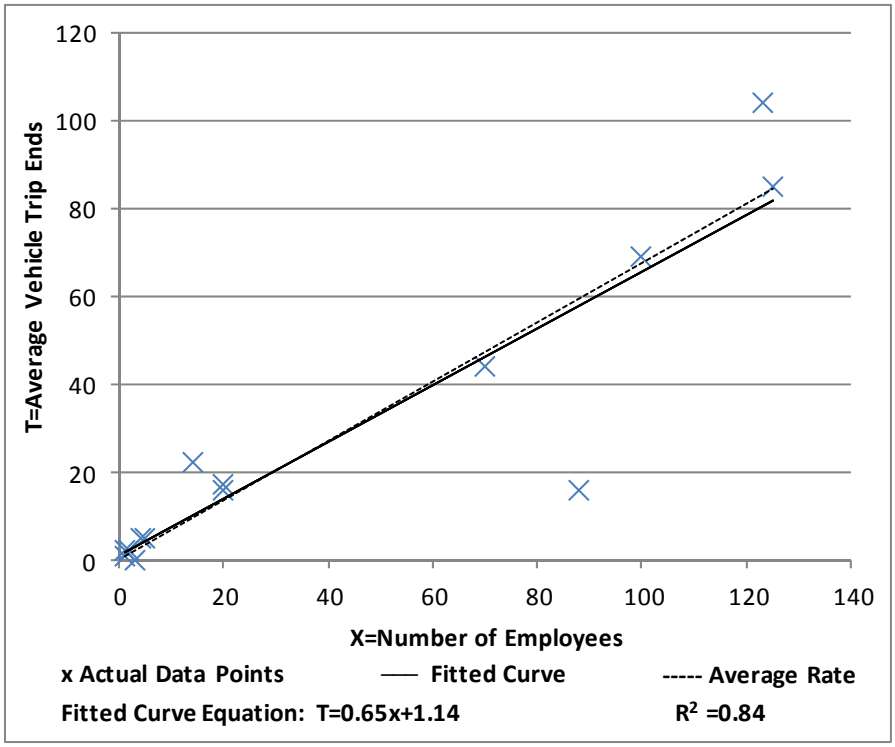
Utilities
(170)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	14
Average Number of Employees:	41
Directional Distribution:	79% entering, 21% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.67	0.00-2.00	0.30

Data Plot and Equation

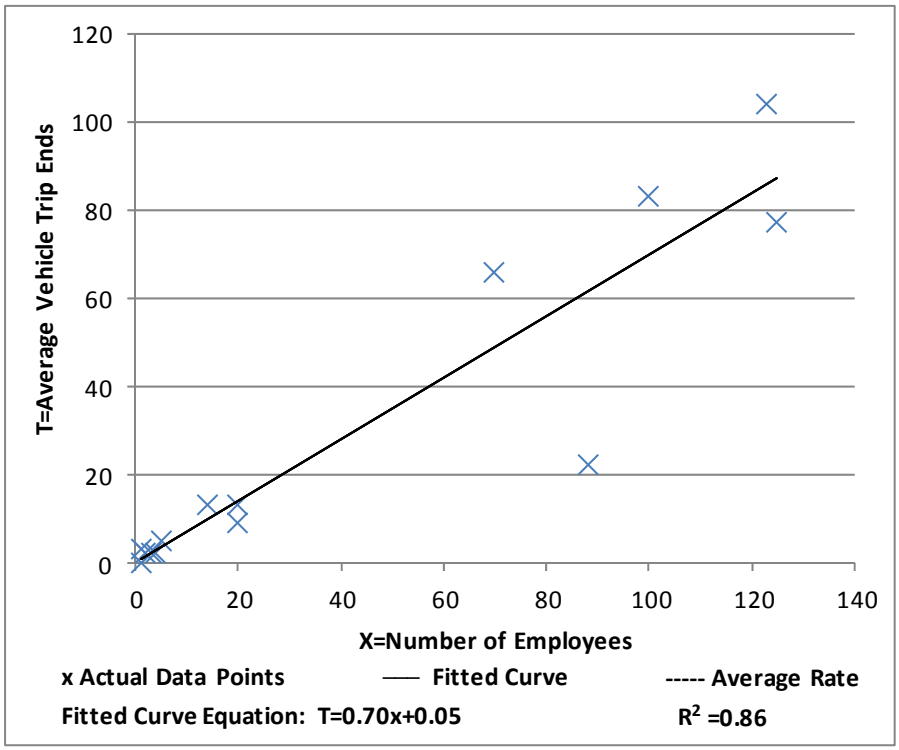


	Utilities (170)
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.**
Number of Studies:	14
Average Number of Employees:	41
Directional Distribution:	16% entering, 84% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.70	0.00-3.00	0.27

Data Plot and Equation



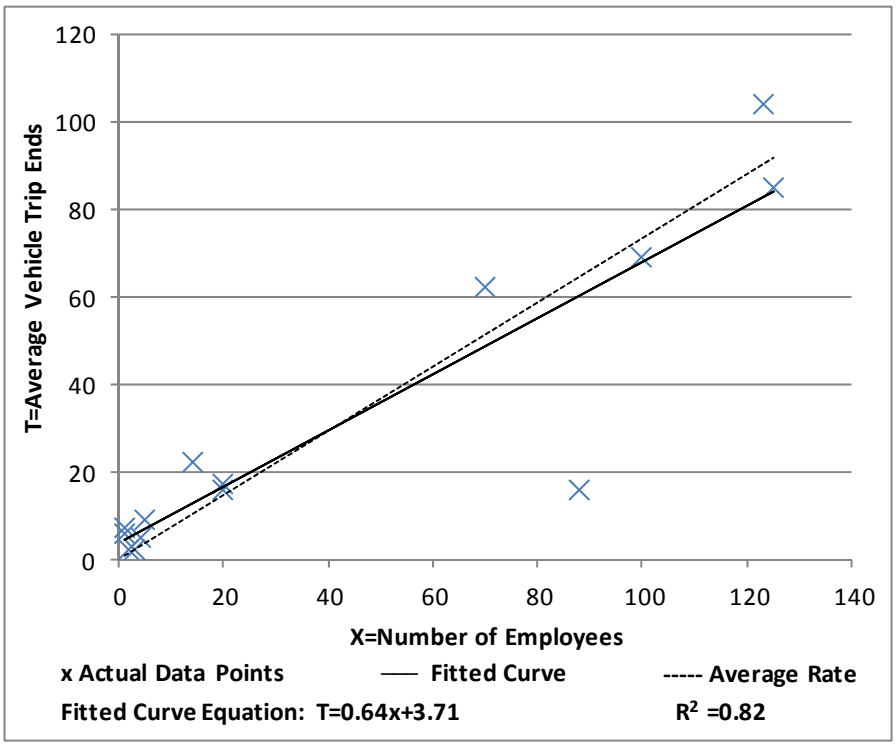
Utilities
(170)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	14
Average Number of Employees:	41
Directional Distribution:	84% entering, 16% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.73	0.18-7.00	0.49

Data Plot and Equation



Utilities
(170)

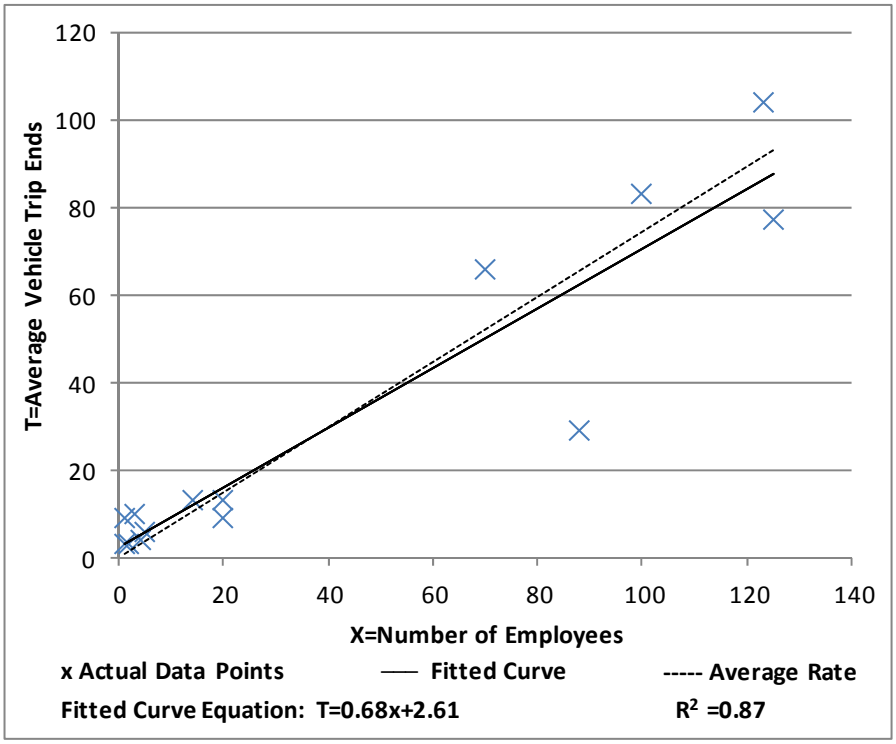
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	14
Average Number of Employees:	41
Directional Distribution:	20% entering, 80% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.74	0.33-9.00	0.50

Data Plot and Equation



Utilities
(170)

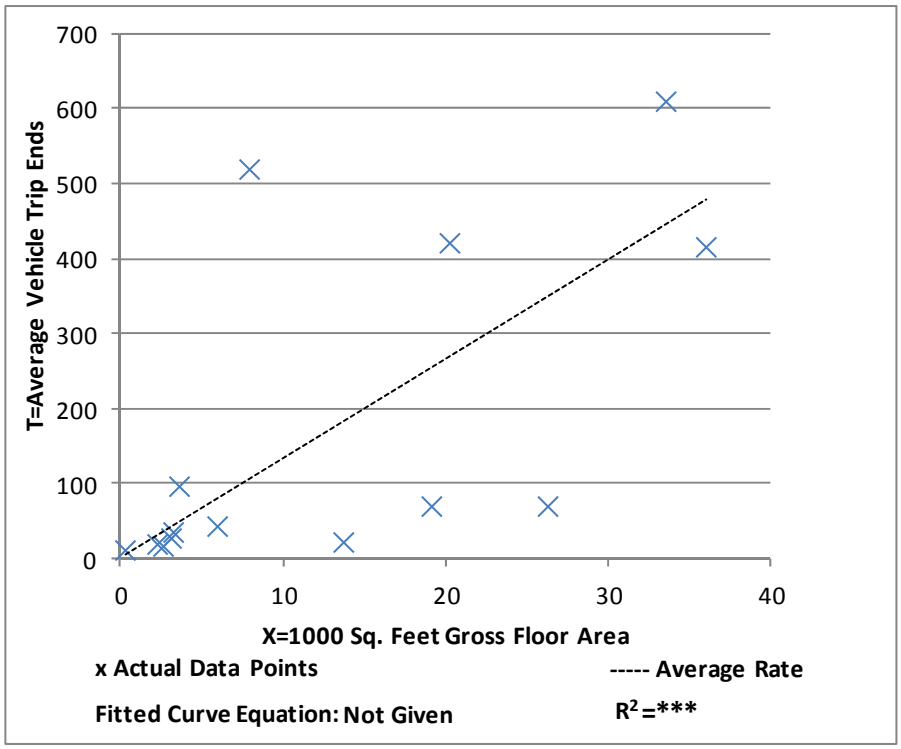
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	14
Average Number of 1000 Sq. Feet Gross Floor Area:	13
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
13.24	1.60-65.03	14.20

Data Plot and Equation



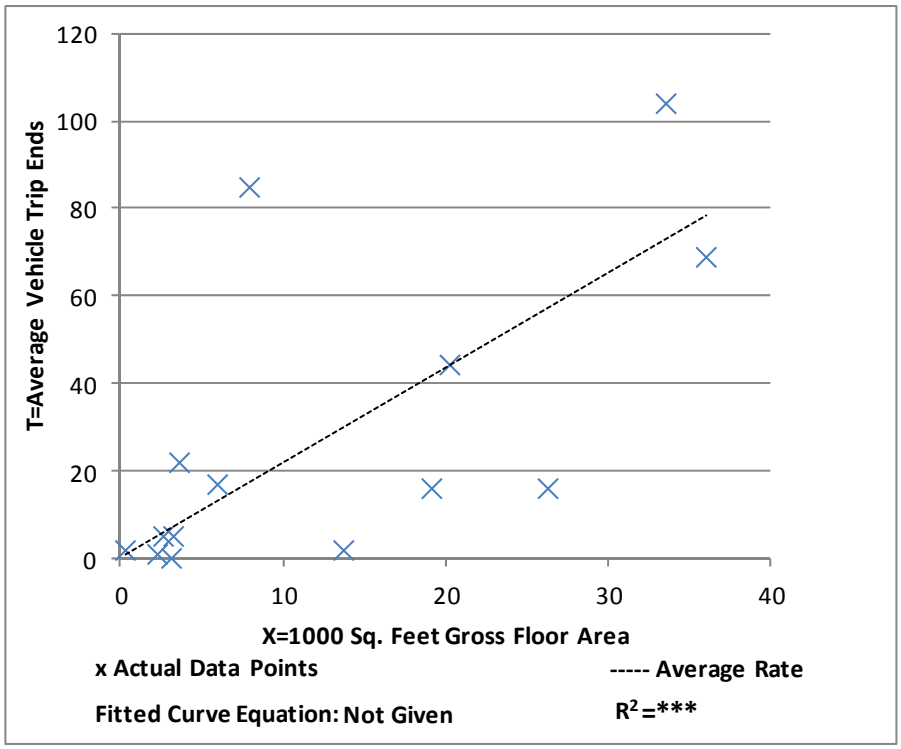
Utilities
(170)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	14
Average Number of 1000 Sq. Feet Gross Floor Area:	13
Directional Distribution:	74% entering, 26% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.17	0.00-10.67	2.34

Data Plot and Equation



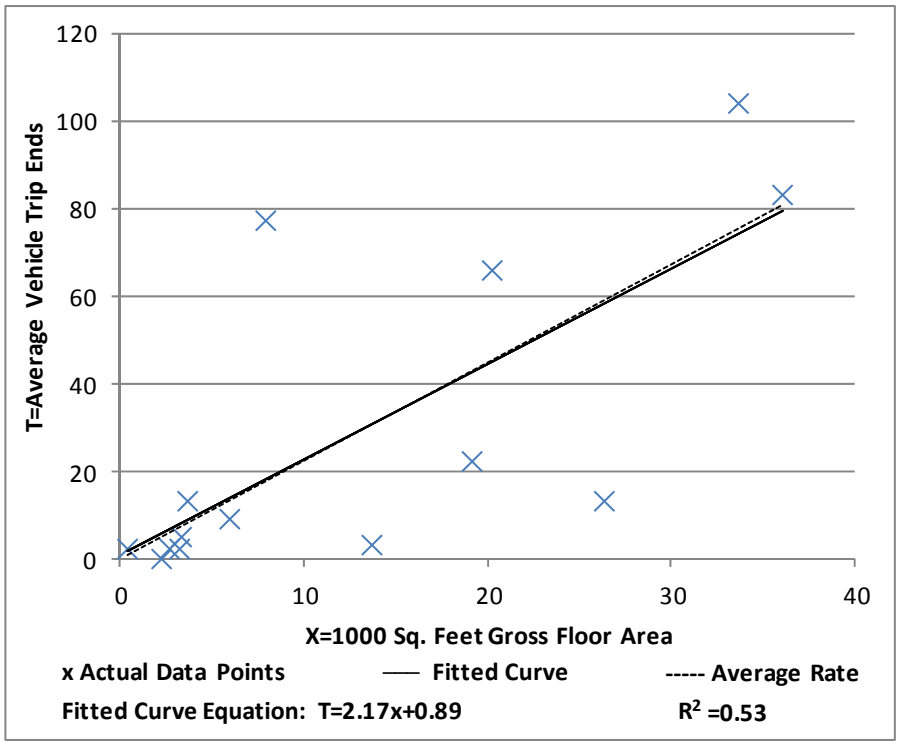
Utilities
(170)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	14
Average Number of 1000 Sq. Feet Gross Floor Area:	13
Directional Distribution:	18% entering, 82% exiting

Data Plot and Equation

Average Rate	Range of Rates	Standard Deviation
2.24	0.00-9.67	2.10

Data Plot and Equation



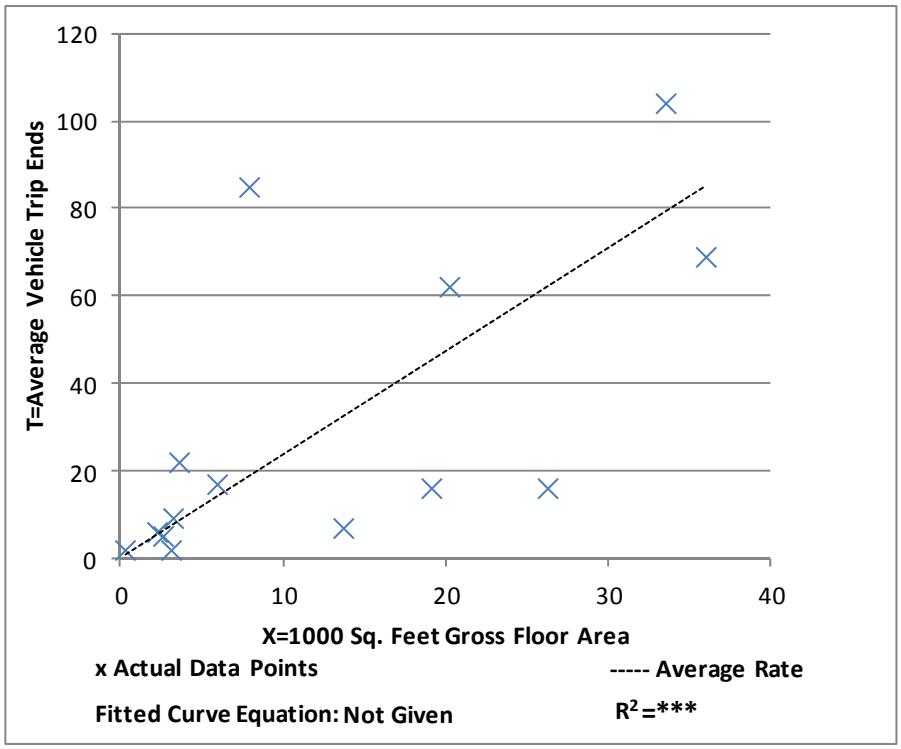
Utilities
(170)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	14
Average Number of 1000 Sq. Feet Gross Floor Area:	13
Directional Distribution:	84% entering, 16% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.36	0.51-10.67	2.30

Data Plot and Equation



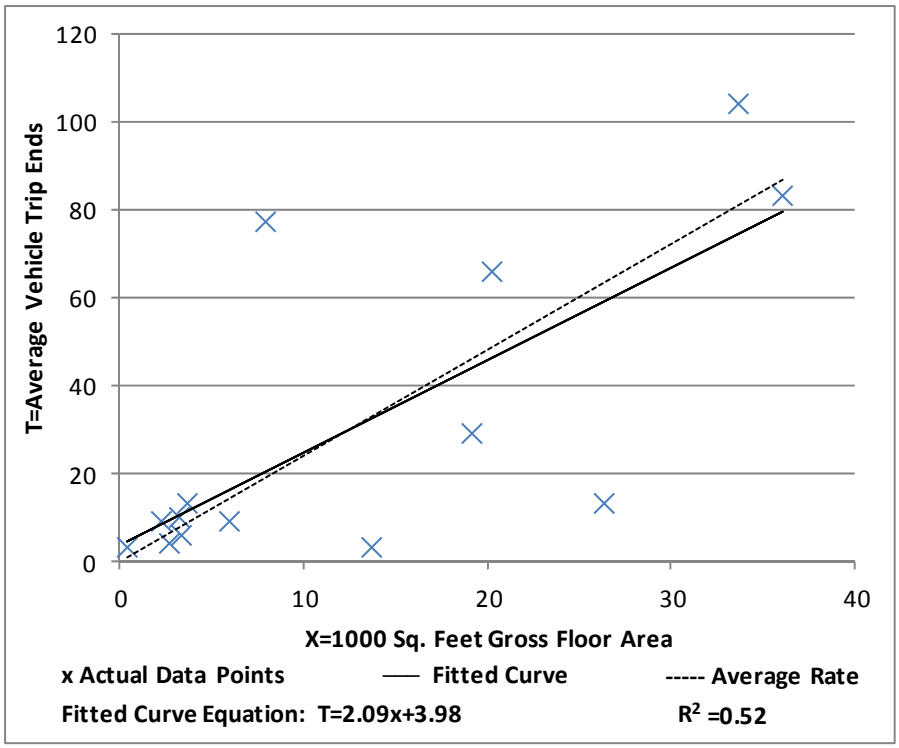
Utilities
(170)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	14
Average Number of 1000 Sq. Feet Gross Floor Area:	13
Directional Distribution:	25% entering, 75% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.40	0.22-9.67	2.07

Data Plot and Equation



Land Use: 254
Assisted Living

Description

Assisted living complexes are residential settings that provide either routine general protective oversight or assistance with activities necessary for independent living to mentally or physically limited persons. They commonly have separate living quarter for residents, and services include dining, housekeeping, social and physical activities, medication administration and transportation. Alzheimer's and ALS care are commonly offered by these facilities, though the living quarters for these patients may be located separately from the other residents. Assisted care commonly bridges the gap between independent living and nursing homes. In some areas of the country, assisted living residences may be called personal care, residential care, or domiciliary care. Staff may be available at an assisted care facility 24 hours a day, but skilled medical care—which is limited in nature—is not required. Continuing care retirement community (Land Use 255) and nursing home (Land Use 620) are related uses.

Source Numbers

1, 4, 5

Assisted Living
(254)

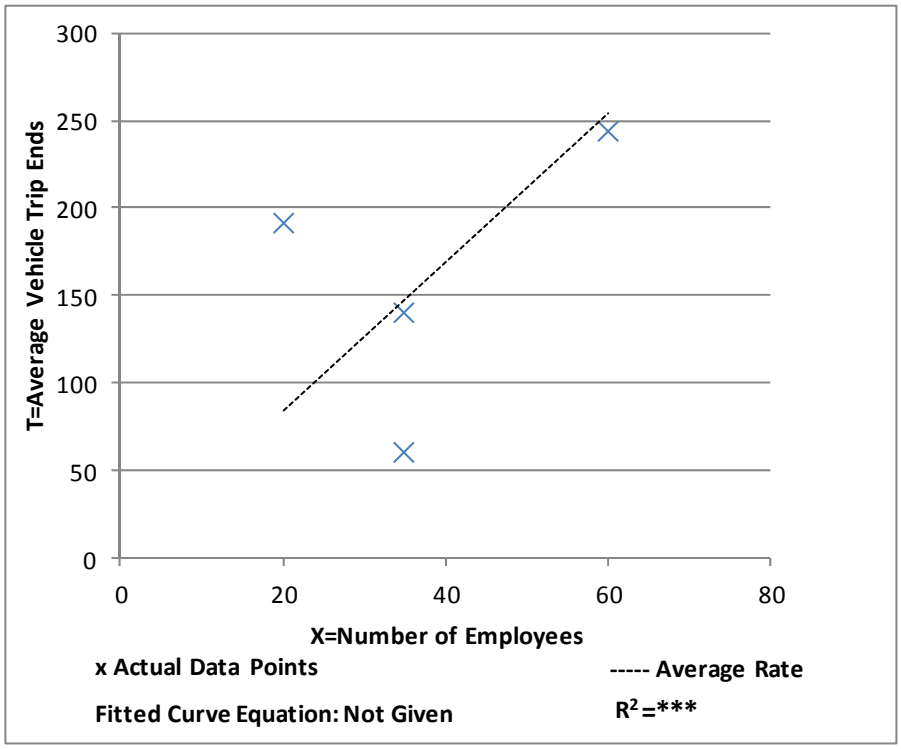
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday**

Number of Studies:	4
Average Number of Employees:	38
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.24	1.71-9.60	2.74

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



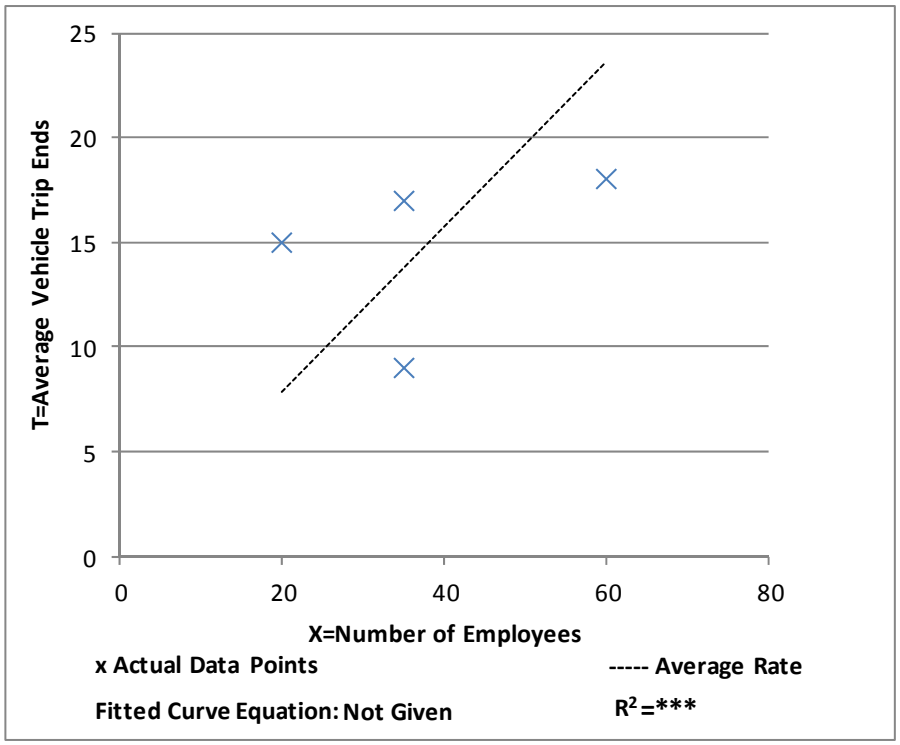
Assisted Living
(254)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	4
Average Number of Employees:	38
Directional Distribution:	80% entering, 20% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.39	0.26-0.75	0.19

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



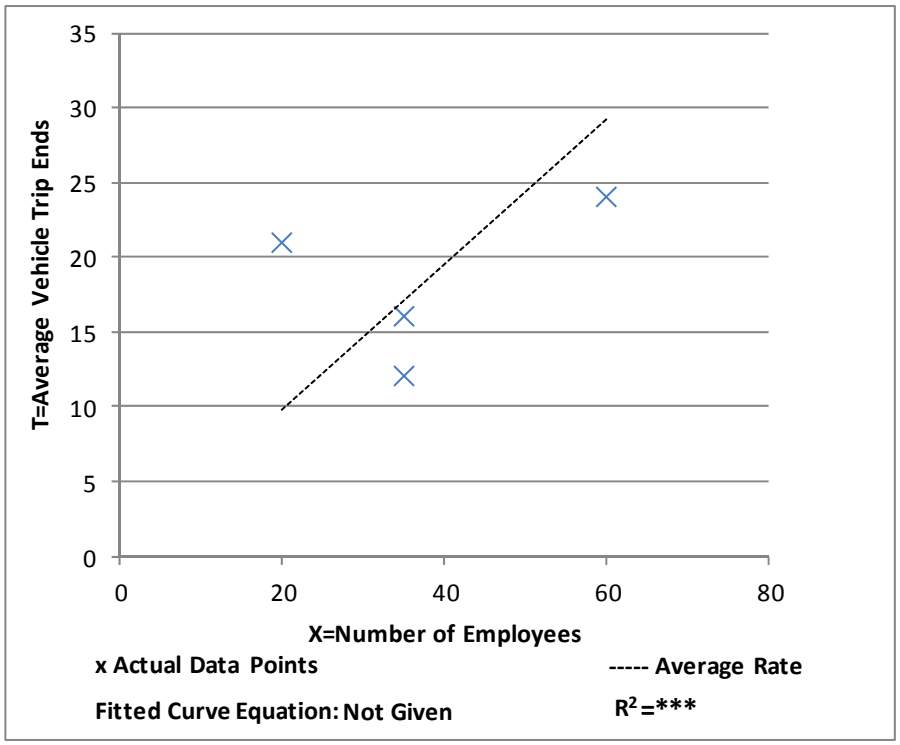
Assisted Living
(254)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	4
Average Number of Employees:	38
Directional Distribution:	31% entering, 69% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.49	0.34-1.05	0.27

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Assisted Living
(254)

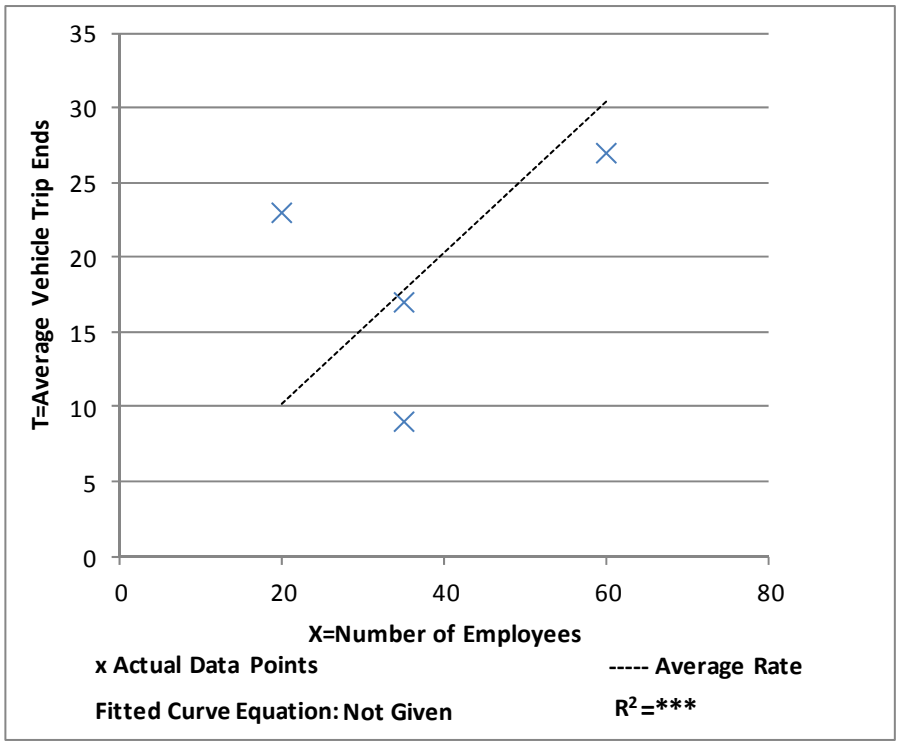
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	4
Average Number of Employees:	38
Directional Distribution:	81% entering, 19% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.51	0.26-1.15	0.32

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



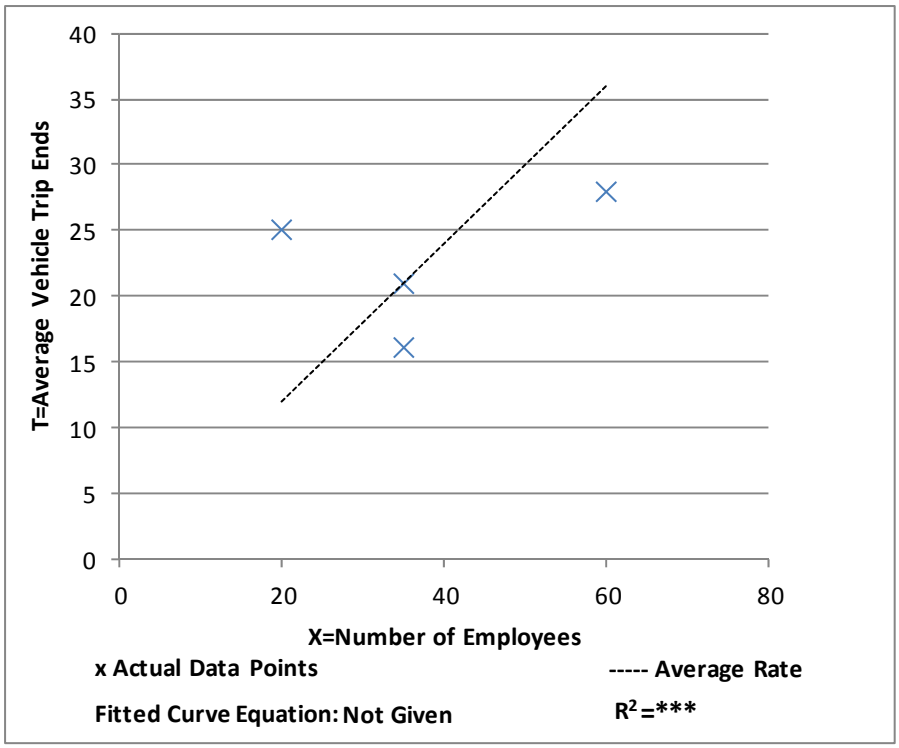
Assisted Living
(254)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	4
Average Number of Employees:	38
Directional Distribution:	37% entering, 63% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.60	0.46-1.25	0.31

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Assisted Living
(254)

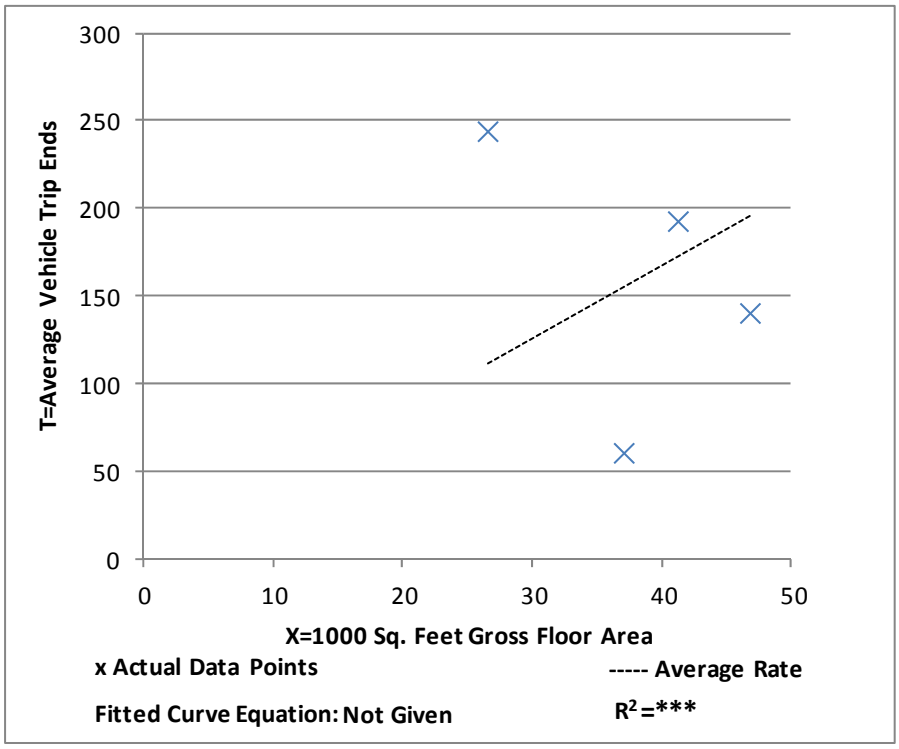
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	38
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.19	1.61-9.17	2.96

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



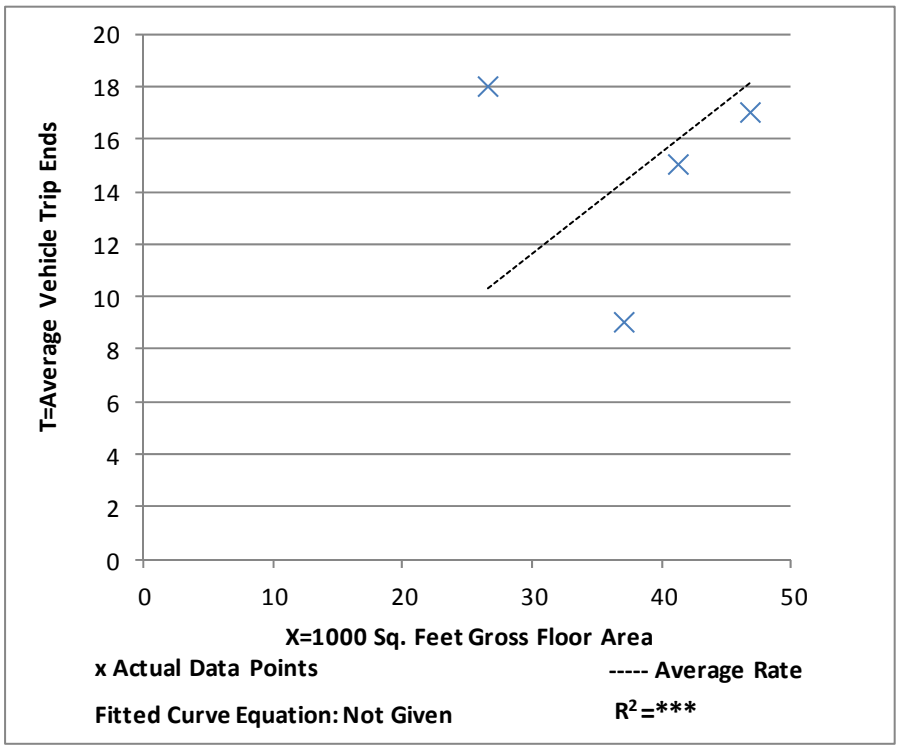
Assisted Living
(254)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	38
Directional Distribution:	81% entering, 19% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.39	0.24-0.68	0.16

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



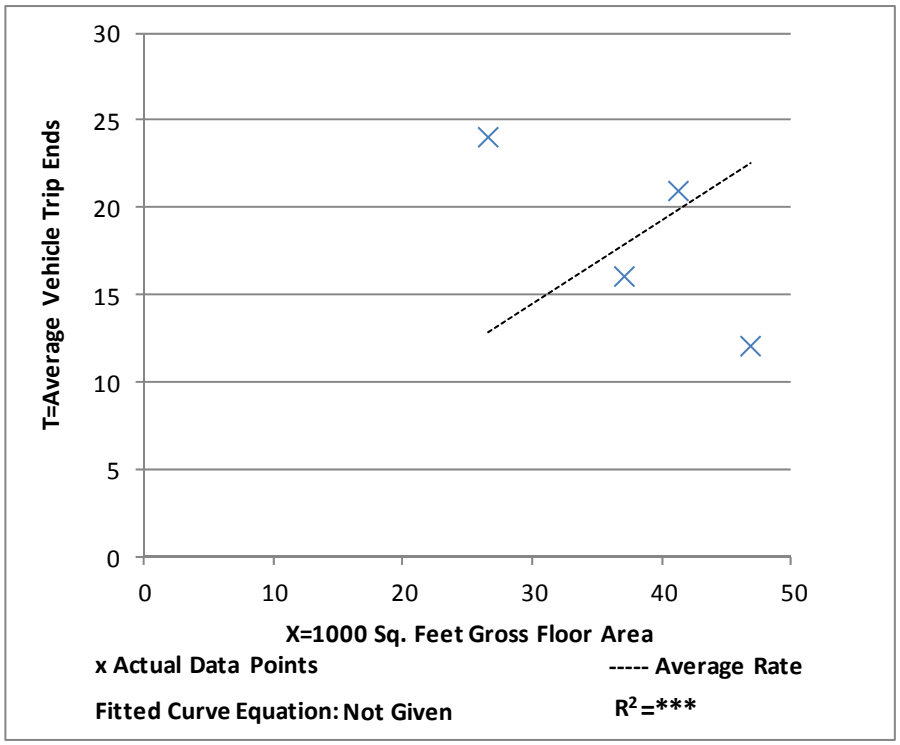
Assisted Living
(254)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	38
Directional Distribution:	33% entering, 67% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.48	0.26-0.90	0.25

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



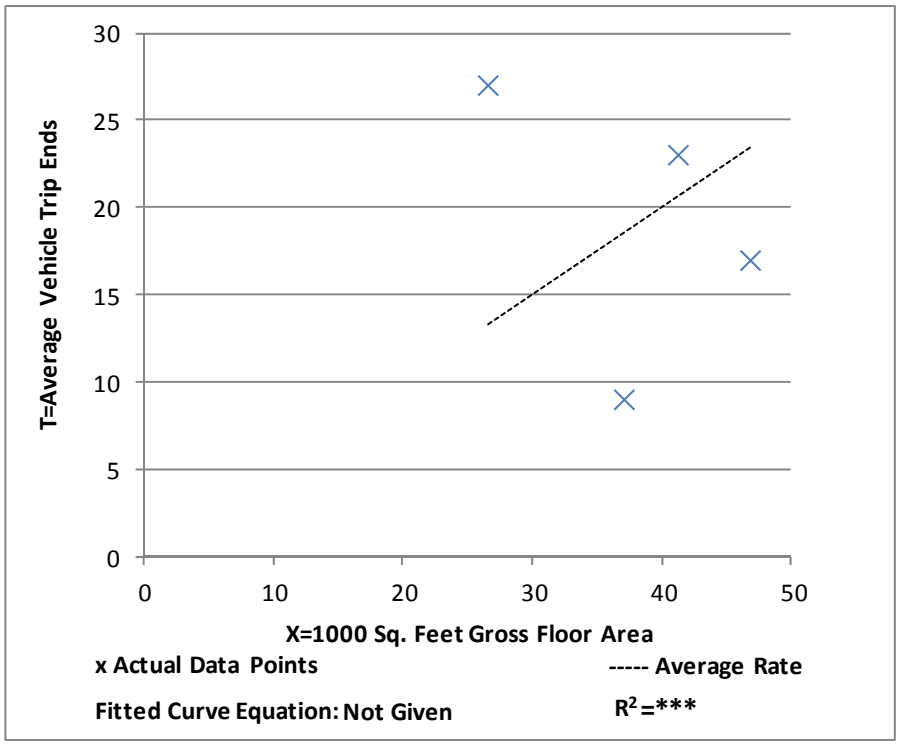
Assisted Living
(254)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	38
Directional Distribution:	81% entering, 19% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.50	0.24-1.01	0.31

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



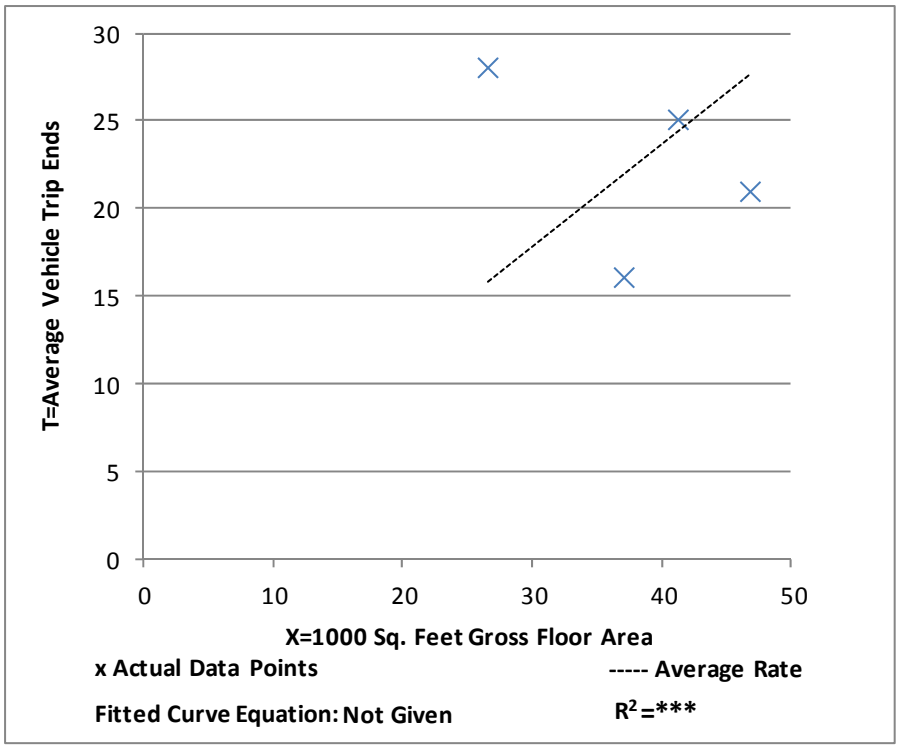
Assisted Living
(254)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	38
Directional Distribution:	33% entering, 67% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.59	0.43-1.05	0.26

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Land Use: 310
Hotel

Description

Hotels are places of lodging that provide sleeping accommodations and supporting facilities such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited creational facilities (pool, fitness room), and /or other retail and service shops. Some of the sites included in this land use category are actually large motels providing the hotel facilities noted above. All suites hotel (Land Use 311), business hotel (Land Use 312), motel (Land Use 320) and resort hotel (Land Use 330) are related uses.

Source Numbers

3, 5

Hotel
(310)

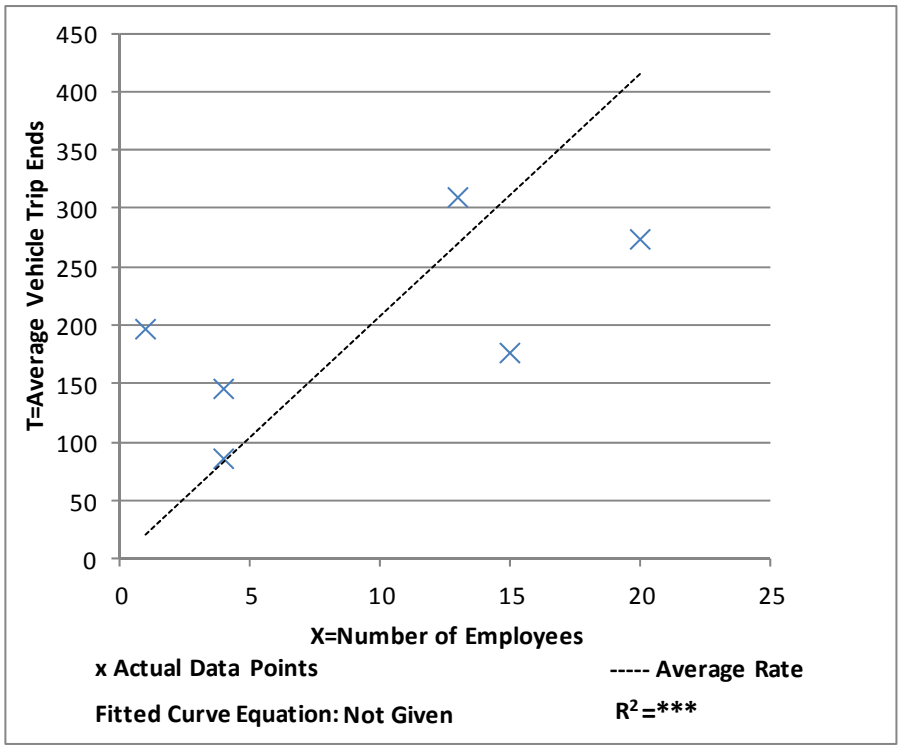
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday**

Number of Studies:	6
Average Number of Employees:	10
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
20.81	11.73-197.00	28.44

Data Plot and Equation

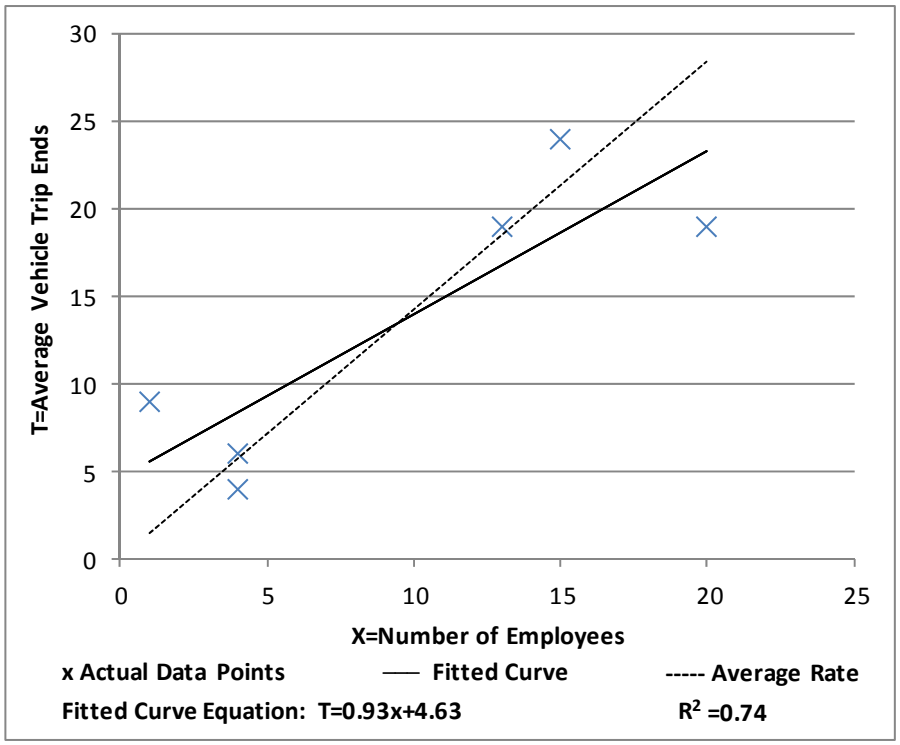


	Hotel
	(310)
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	6
Average Number of Employees:	10
Directional Distribution:	53% entering, 47% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.42	0.95-9.00	1.22

Data Plot and Equation

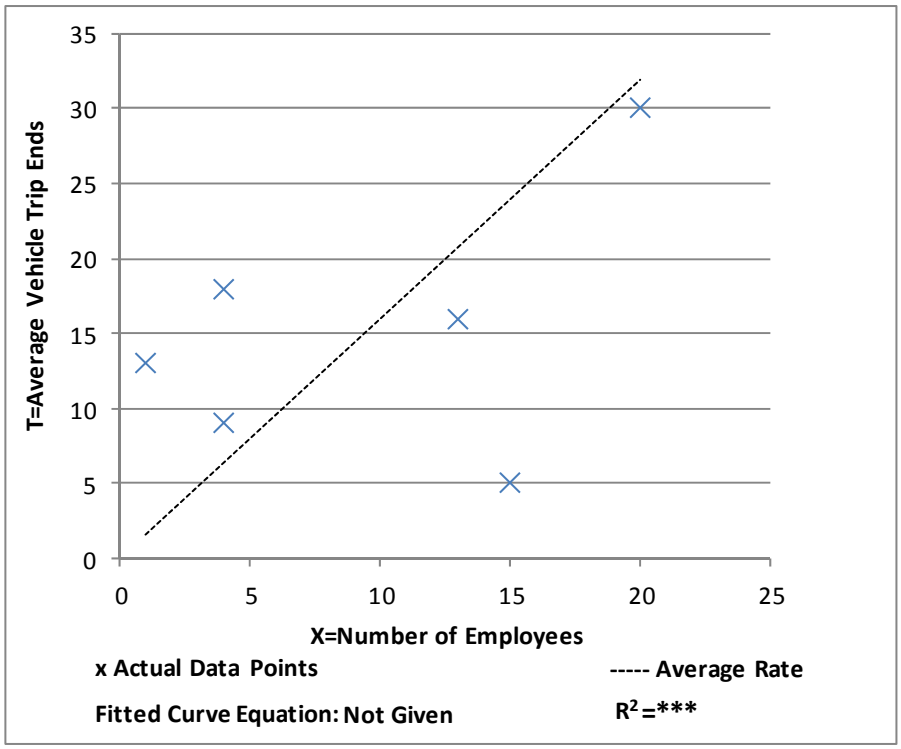


	Hotel
	(310)
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	6
Average Number of Employees:	10
Directional Distribution:	42% entering, 58% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.60	0.33-13.00	2.12

Data Plot and Equation



Hotel
(310)

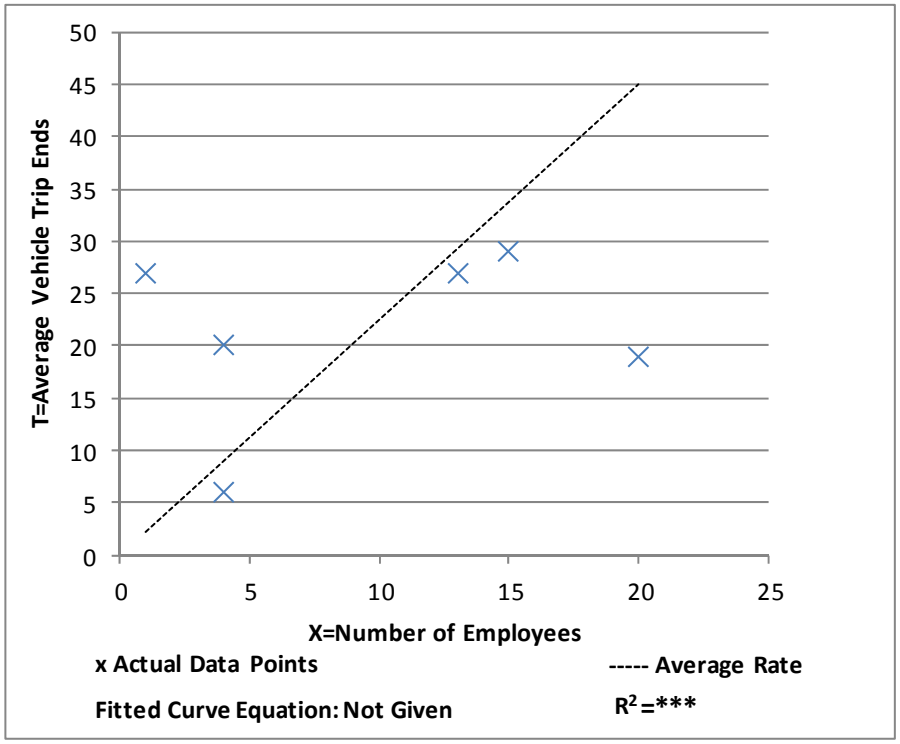
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	6
Average Number of Employees:	10
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.25	0.95-27.00	4.00

Data Plot and Equation



Hotel
(310)

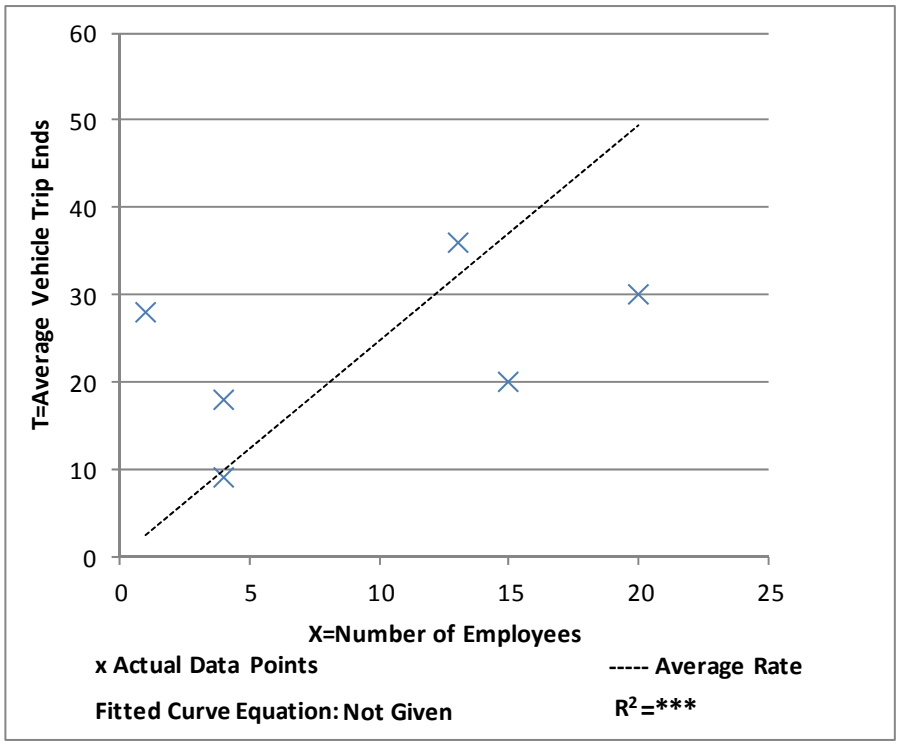
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	6
Average Number of Employees:	10
Directional Distribution:	67% entering, 33% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.47	1.33-28.00	4.08

Data Plot and Equation



Hotel
(310)

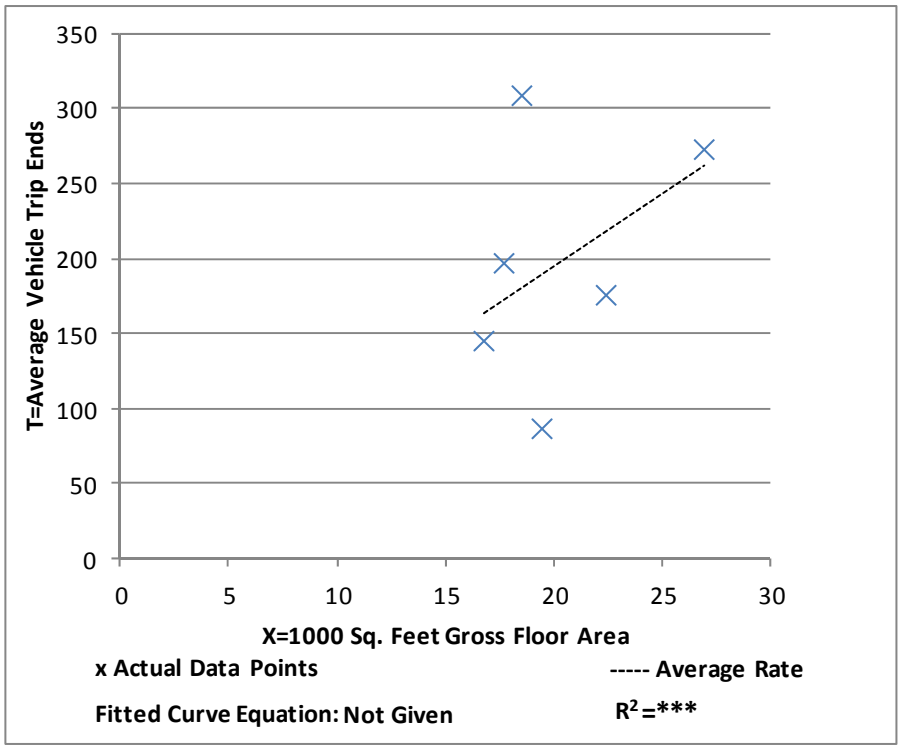
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	20
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
9.72	4.40-16.68	3.96

Data Plot and Equation



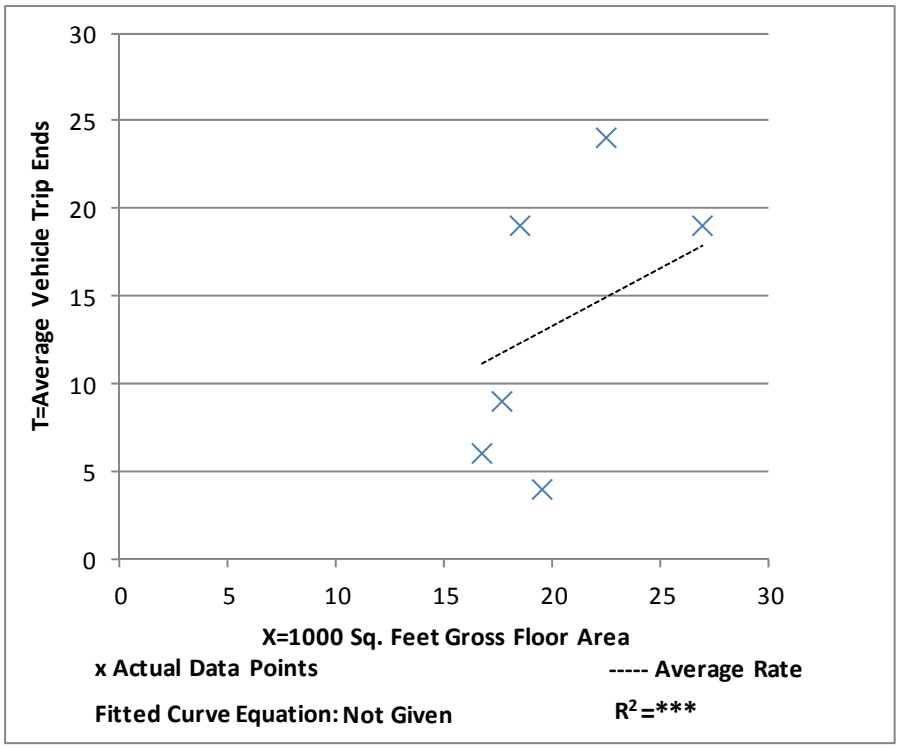
Hotel
(310)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	20
Directional Distribution:	53% entering, 47% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.66	0.20-1.07	0.35

Data Plot and Equation



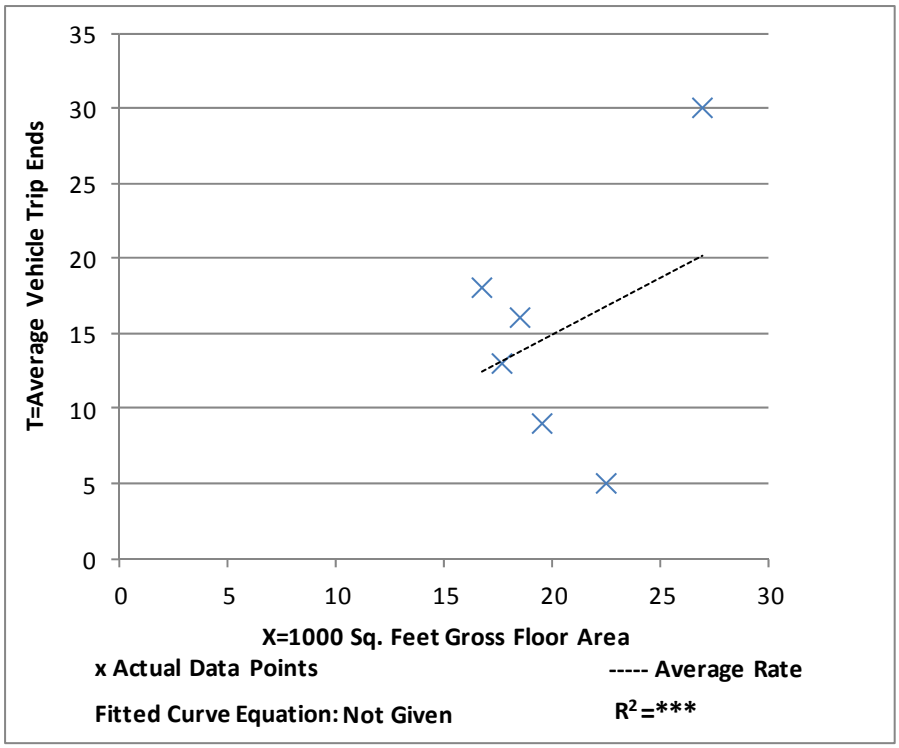
Hotel
(310)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	20
Directional Distribution:	46% entering, 54% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.75	0.22-1.11	0.36

Data Plot and Equation



Hotel
(310)

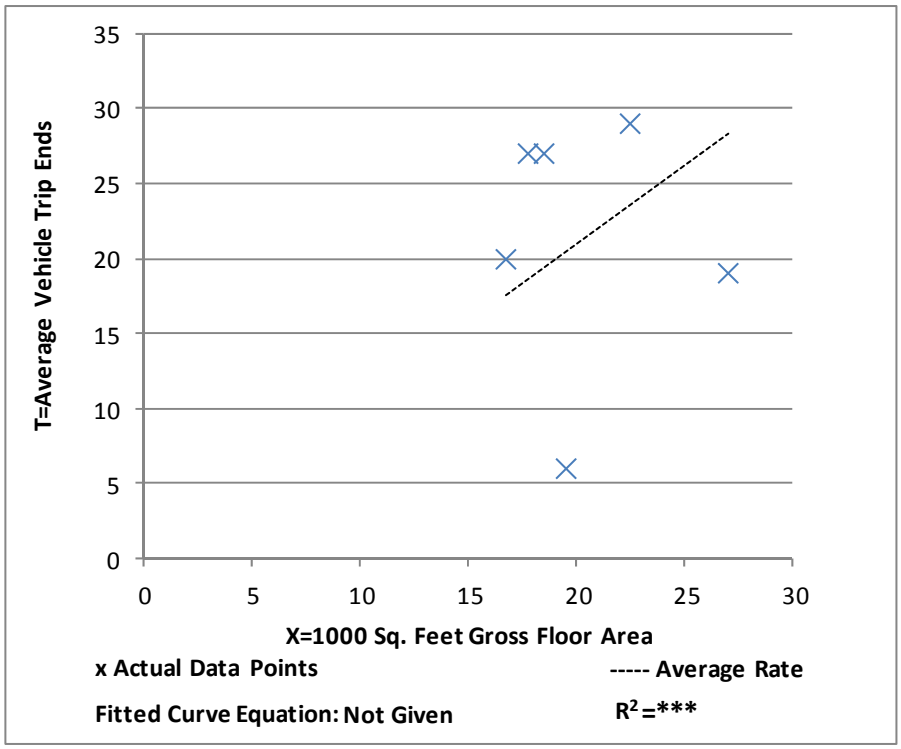
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	20
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.05	0.31-1.52	0.47

Data Plot and Equation



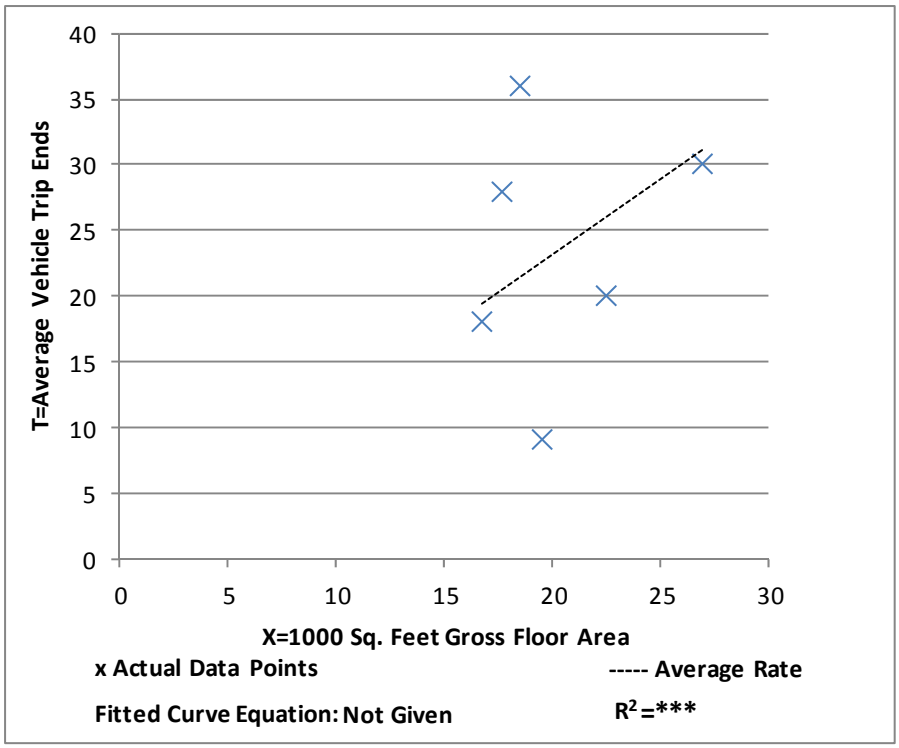
Hotel
(310)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	20
Directional Distribution:	64% entering, 36% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.16	0.46-1.94	0.51

Data Plot and Equation



Hotel
(310)

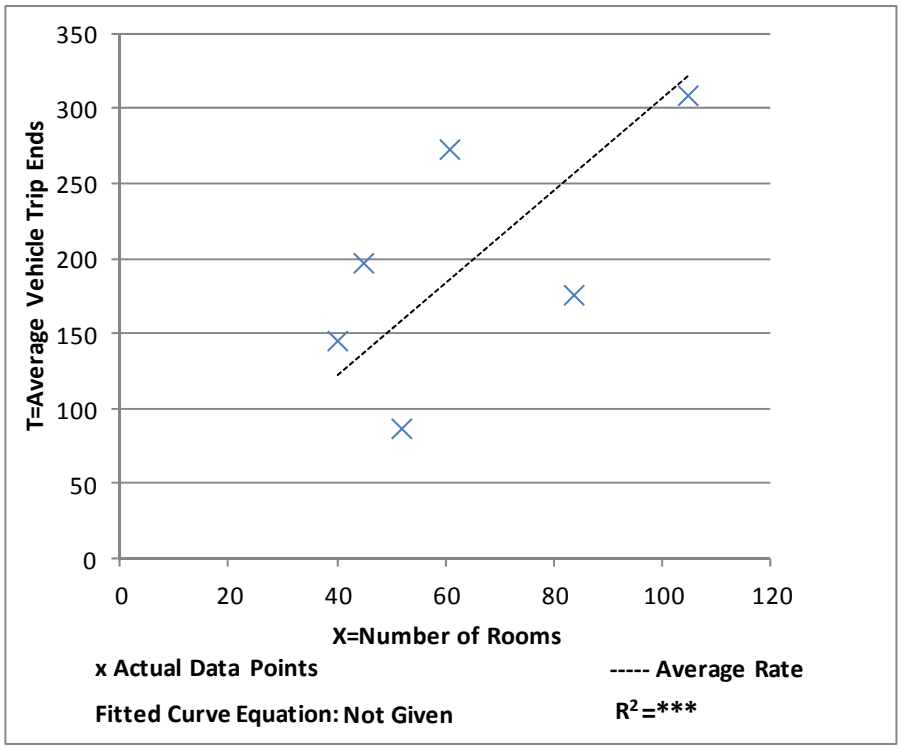
Average Vehicle Trip Ends vs:	**Rooms**
On a:	**Weekday**

Number of Studies:	6
Average Number of Rooms:	65
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Rooms

Average Rate	Range of Rates	Standard Deviation
3.06	1.65-4.48	1.12

Data Plot and Equation

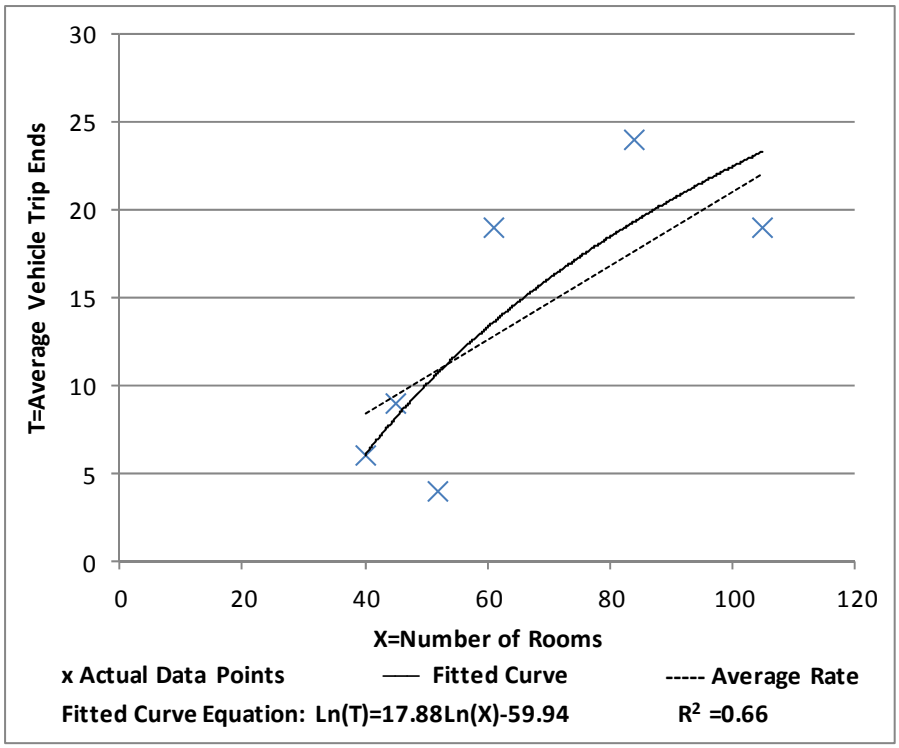


	Hotel
	(310)
Average Vehicle Trip Ends vs:	**Rooms**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	6
Average Number of Rooms:	65
Directional Distribution:	58% entering, 42% exiting

Trip Generation per Rooms

Average Rate	Range of Rates	Standard Deviation
0.21	0.08-0.31	0.08

Data Plot and Equation

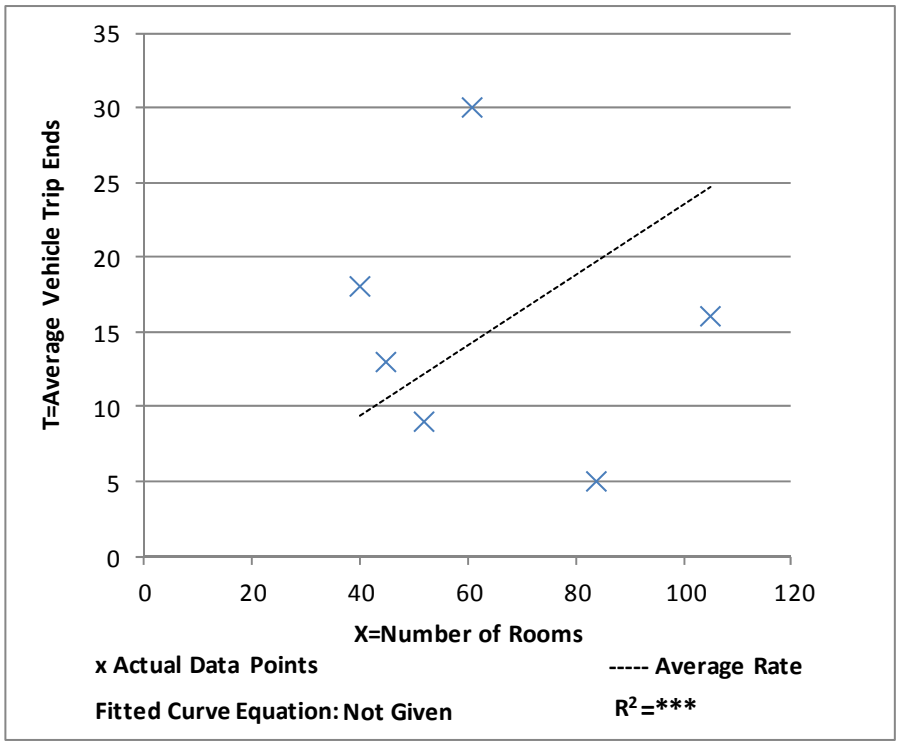


	Hotel (310)
Average Vehicle Trip Ends vs:	**Rooms**
On a:	**Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.**
Number of Studies:	6
Average Number of Rooms:	65
Directional Distribution:	41% entering, 59% exiting

Trip Generation per Rooms

Average Rate	Range of Rates	Standard Deviation
0.24	0.06-0.49	0.17

Data Plot and Equation



Hotel
(310)

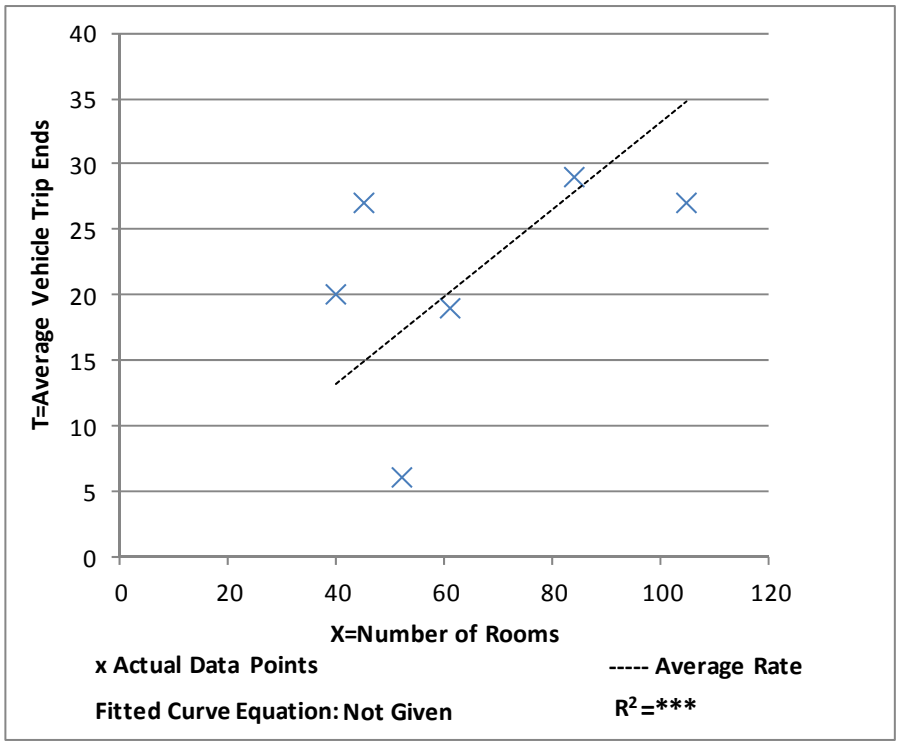
Average Vehicle Trip Ends vs:	**Rooms**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	6
Average Number of Rooms:	65
Directional Distribution:	52% entering, 48% exiting

Trip Generation per Rooms

Average Rate	Range of Rates	Standard Deviation
0.33	0.12-0.60	0.15

Data Plot and Equation



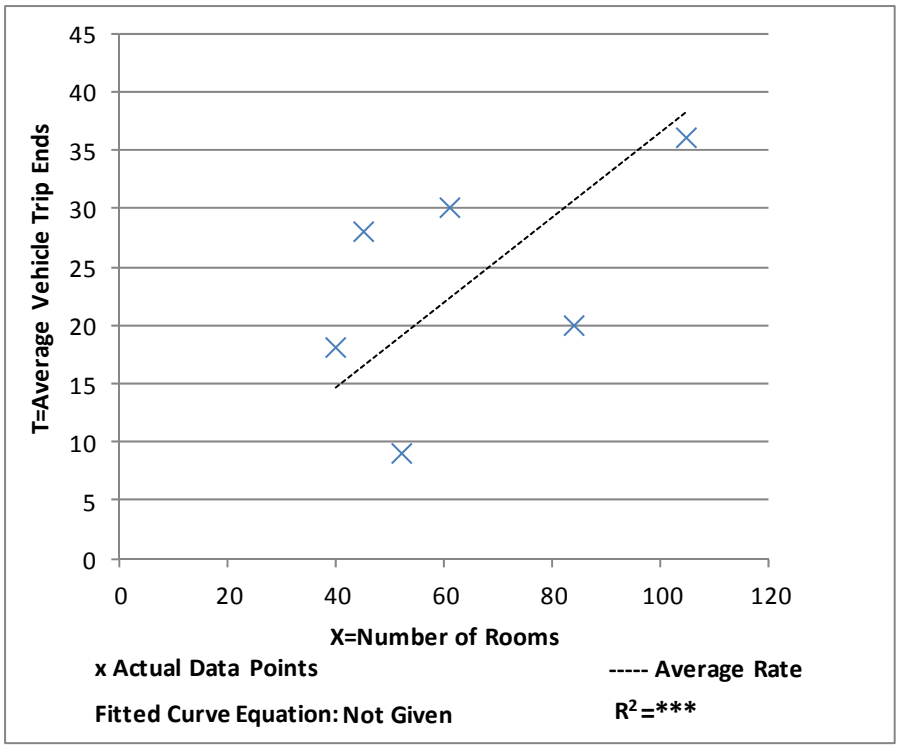
Hotel
(310)

Average Vehicle Trip Ends vs:	**Rooms**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	6
Average Number of Rooms:	65
Directional Distribution:	64% entering, 36% exiting

Trip Generation per Rooms

Average Rate	Range of Rates	Standard Deviation
0.36	0.17-0.62	0.16

Data Plot and Equation



Land Use: 540
Junior/Community College

Description

This land use includes two-year junior, community, or technical colleges. Four-year (or more) colleges or universities are described in university/college (Land Use 550). A number of two-year institutions have sizable evening programs.

Source Numbers

1, 2, 3, 5

Junior/Community College
(540)

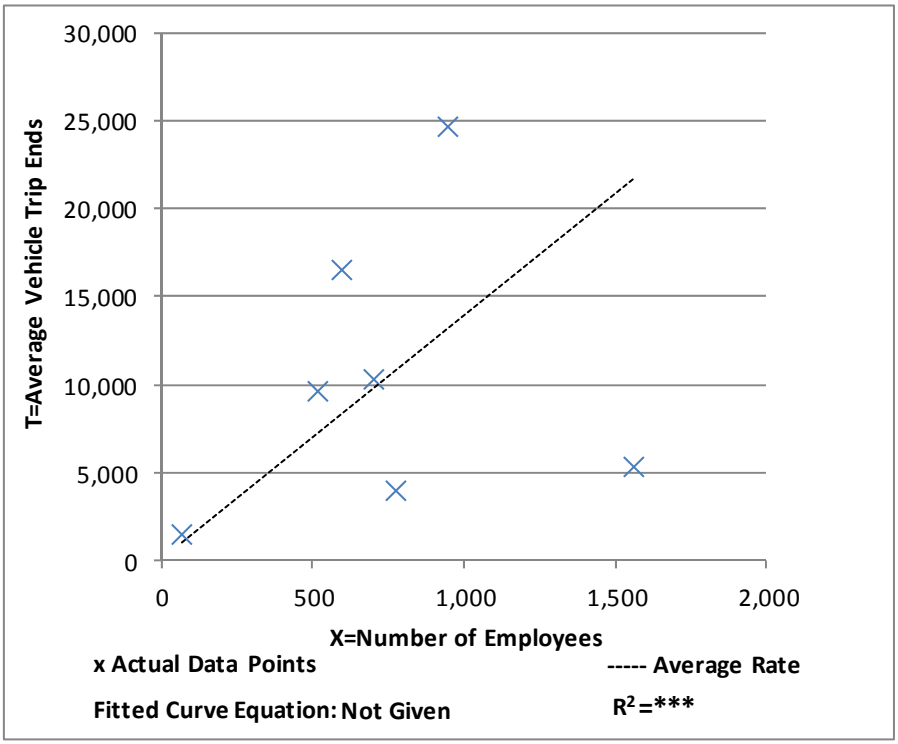
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	7
Average Number of Employees:	740
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
13.87	3.39-27.59	10.91

Data Plot and Equation



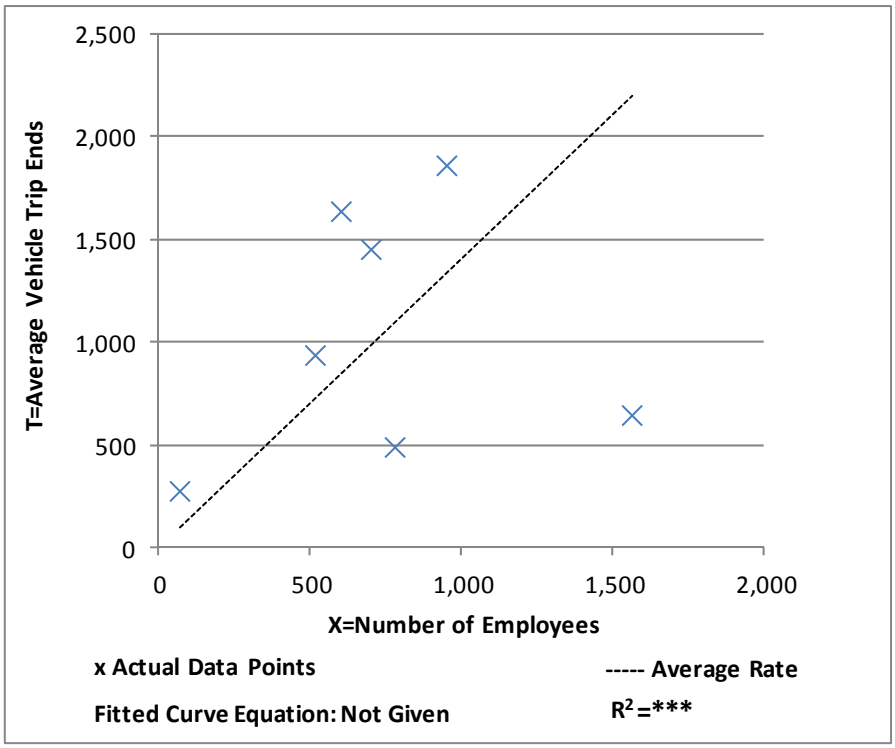
Junior/Community College
(540)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of Employees:	740
Directional Distribution:	78% entering, 22% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.40	0.41-3.93	1.00

Data Plot and Equation



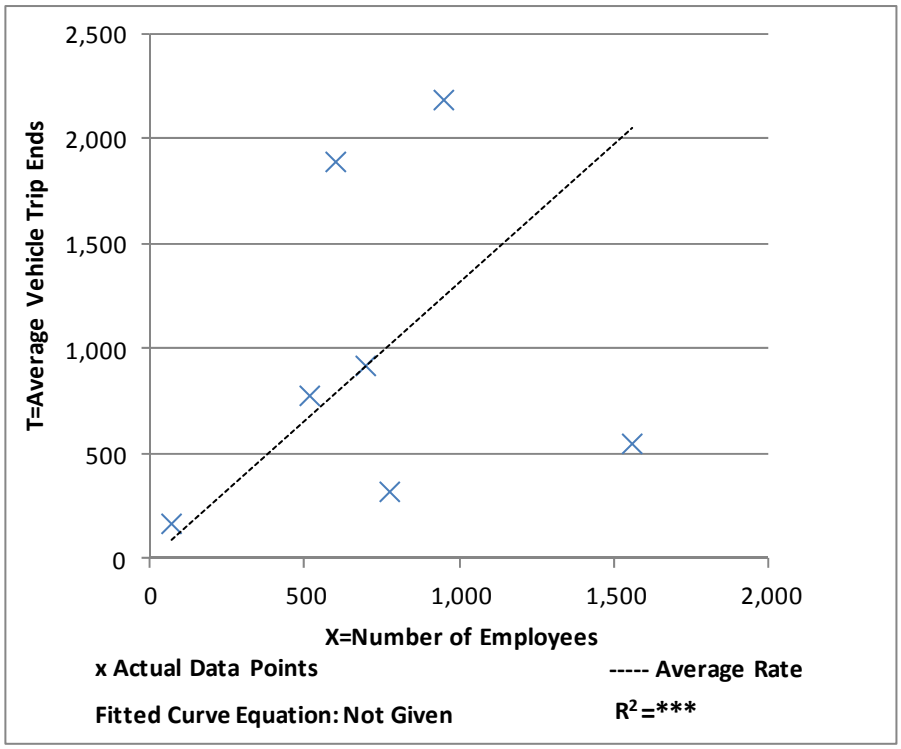
Junior/Community College
(540)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of Employees:	740
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.31	0.35-3.15	1.11

Data Plot and Equation



Junior/Community College
(540)

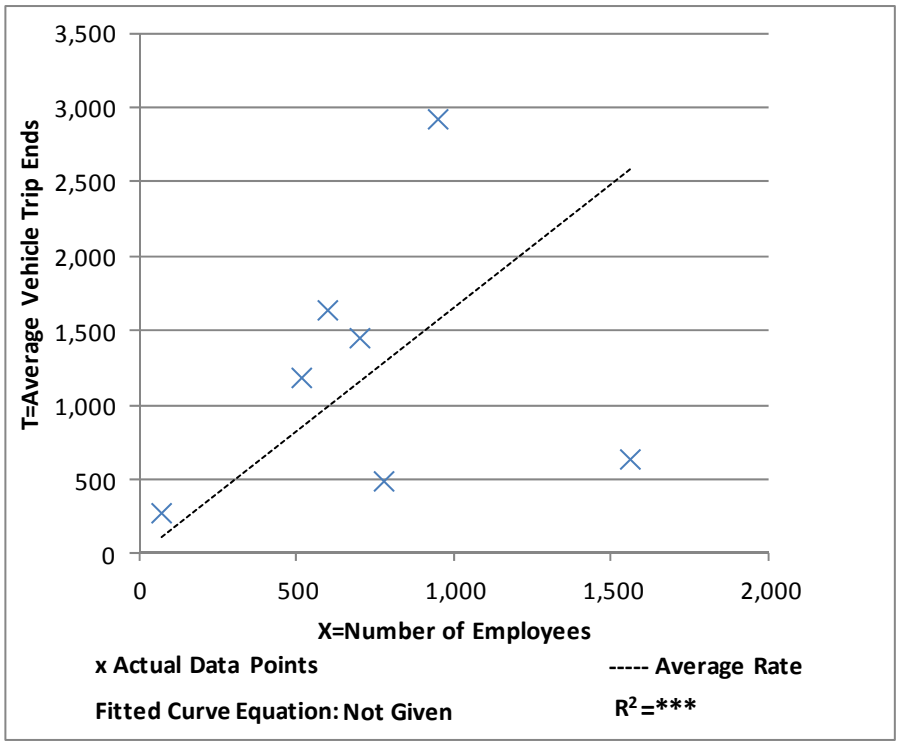
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	740
Directional Distribution:	71% entering, 29% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.66	0.41-3.93	1.25

Data Plot and Equation



Junior/Community College
(540)

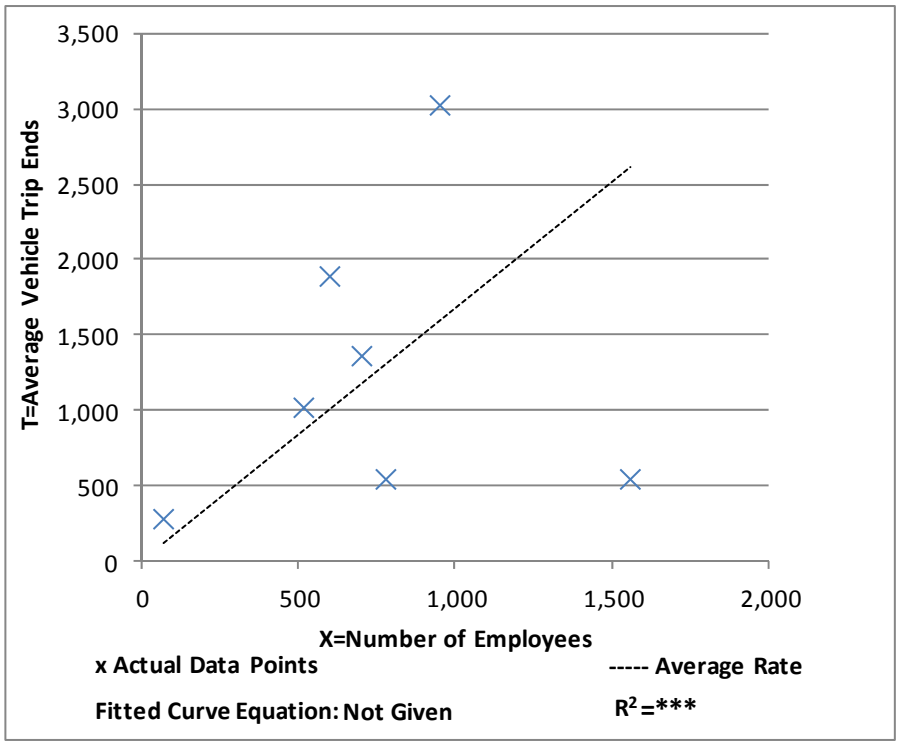
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	740
Directional Distribution:	52% entering, 48% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.67	0.35-4.01	1.33

Data Plot and Equation



Junior/Community College
(540)

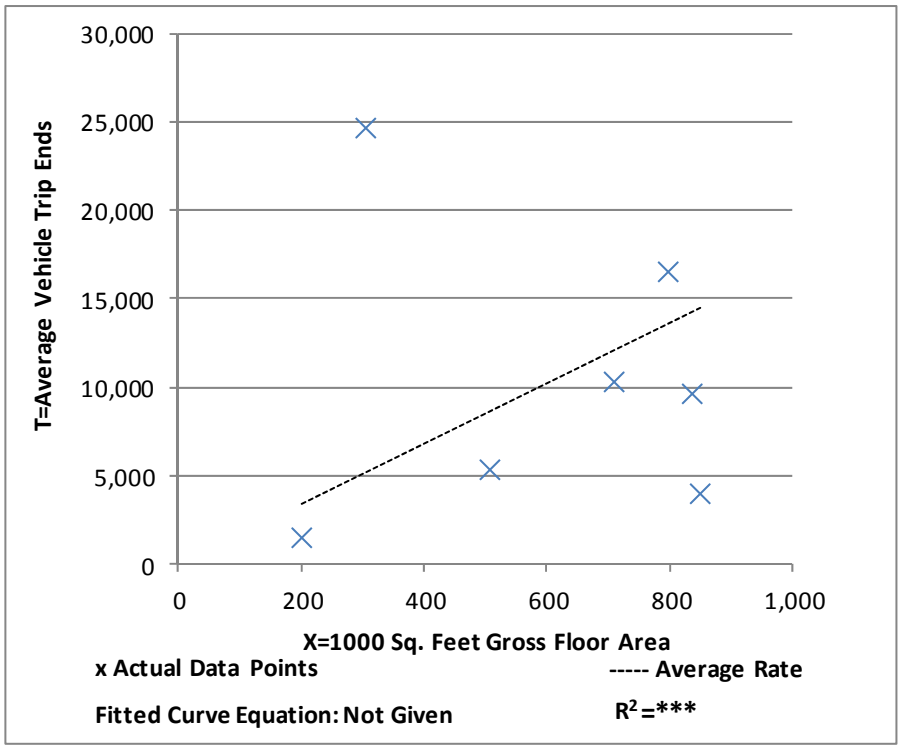
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	601
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
17.07	4.60-81.08	20.43

Data Plot and Equation



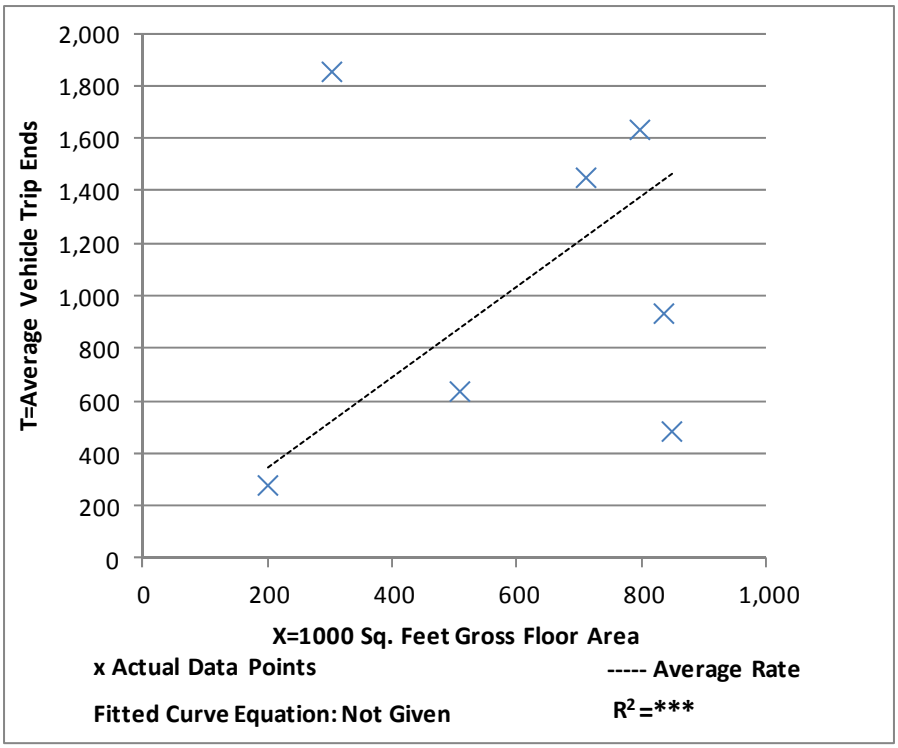
Junior/Community College
(540)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	601
Directional Distribution:	79% entering, 21% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.73	0.57-6.09	1.47

Data Plot and Equation



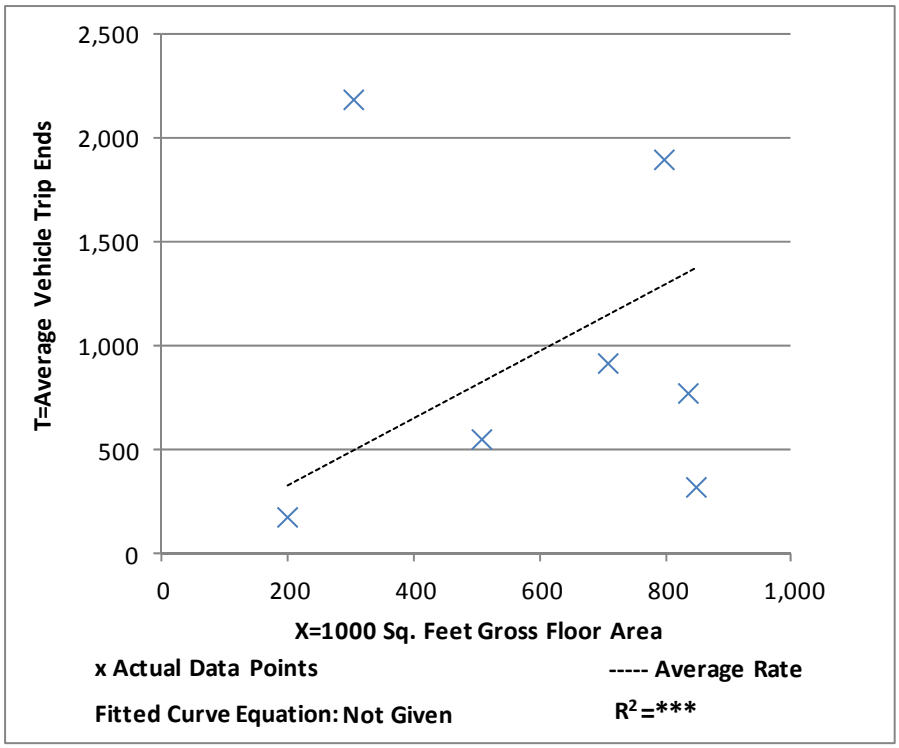
Junior/Community College
(540)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	601
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.62	0.37-7.17	1.84

Data Plot and Equation



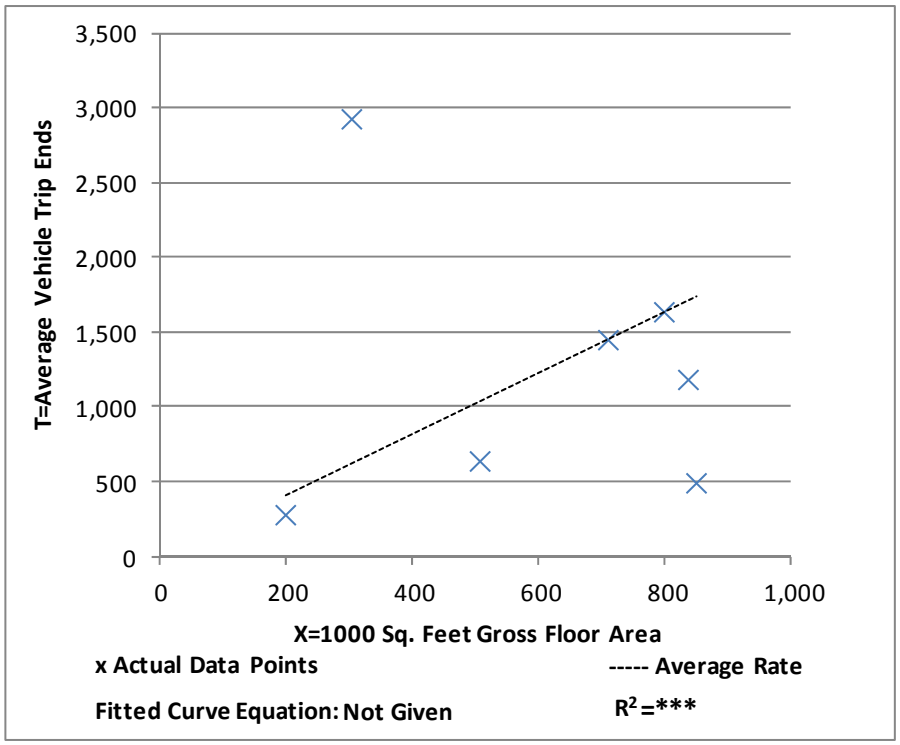
Junior/Community College
(540)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	601
Directional Distribution:	71% entering, 29% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.04	0.57-9.59	2.39

Data Plot and Equation



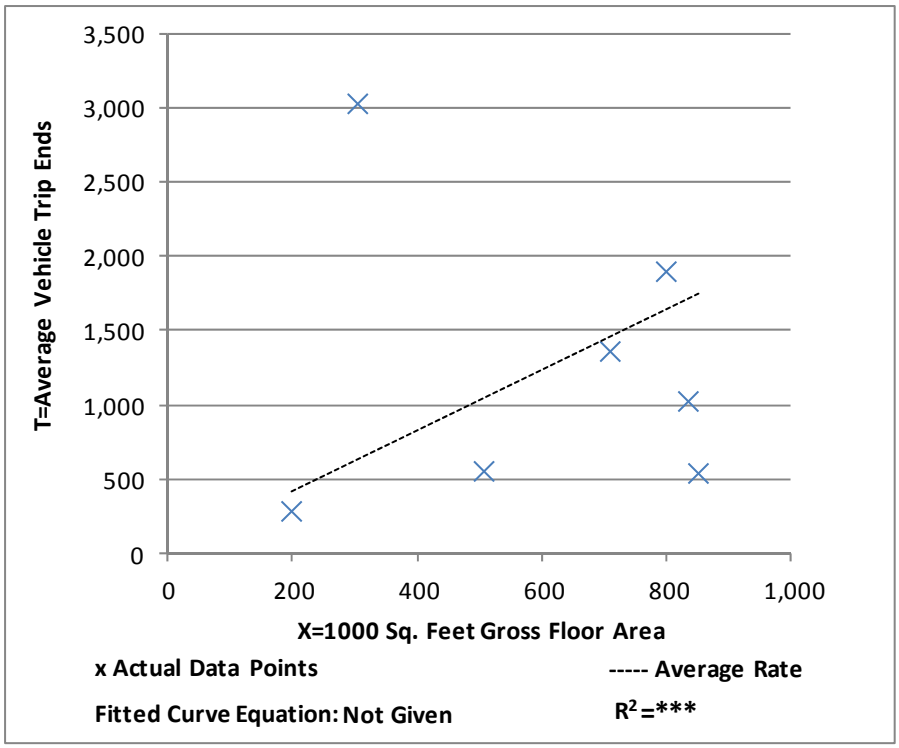
Junior/Community College
(540)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	601
Directional Distribution:	48% entering, 52% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.06	0.64-9.92	2.49

Data Plot and Equation



Junior/Community College
(540)

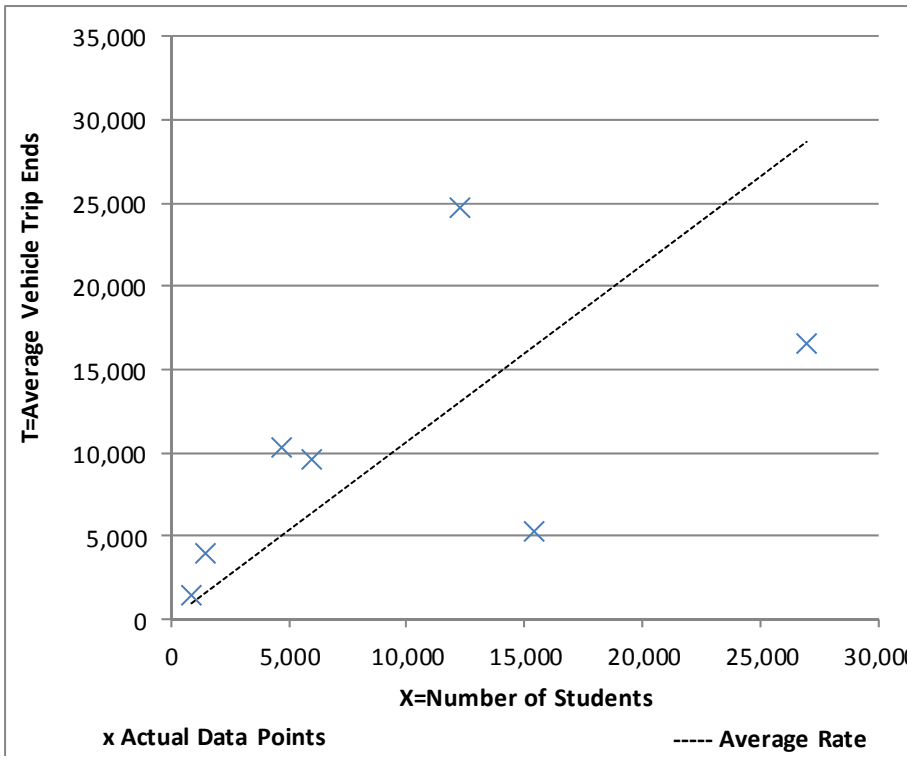
Average Vehicle Trip Ends vs: Students
On a: Weekday

Number of Studies: 7
Average Number of Students: 9,672
Directional Distribution: 51% entering, 49% exiting

Trip Generation per Students

Average Rate	Range of Rates	Standard Deviation
1.06	0.34-2.70	0.85

Data Plot and Equation



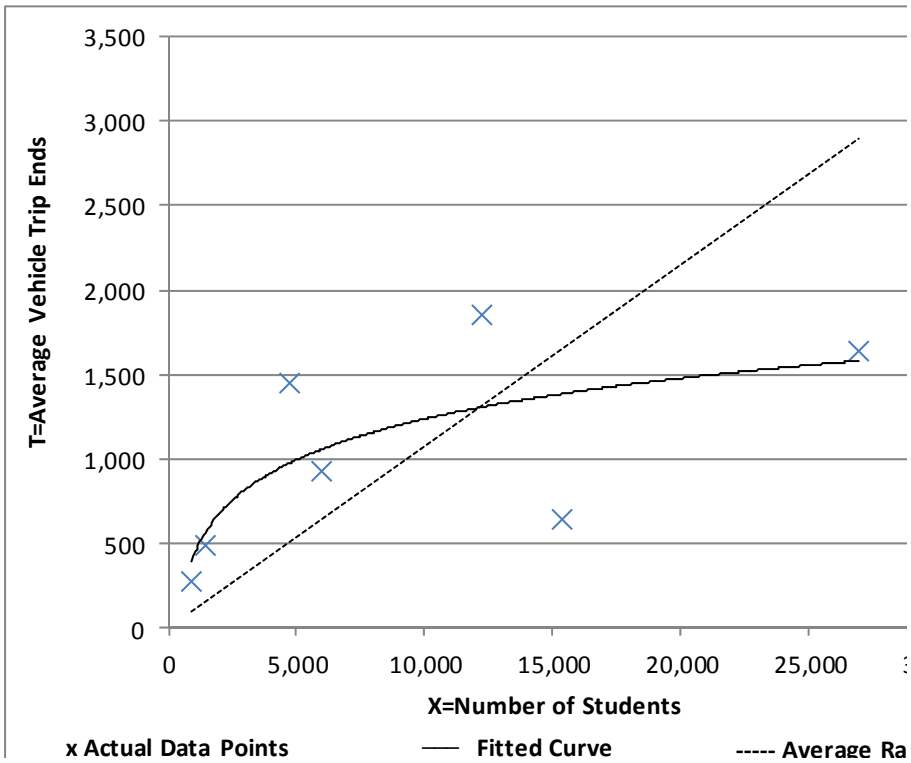
Junior/Community College
(540)

Average Vehicle Trip Ends vs:	**Students**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of Students:	9,672
Directional Distribution:	77% entering, 23% exiting

Trip Generation per Students

Average Rate	Range of Rates	Standard Deviation
0.11	0.04-0.33	0.10

Data Plot and Equation



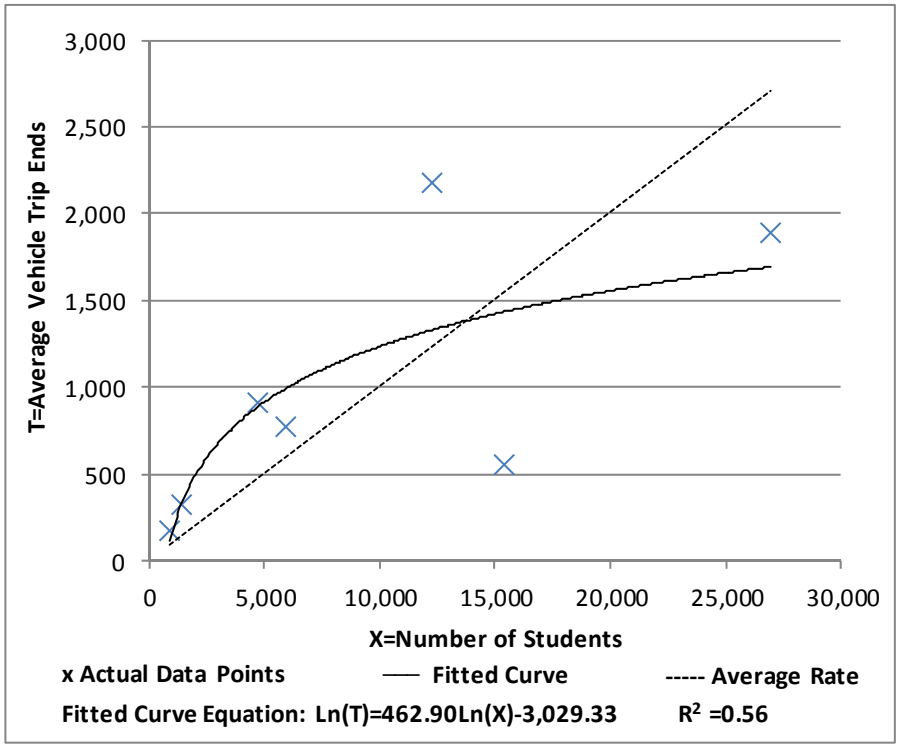
Junior/Community College
(540)

Average Vehicle Trip Ends vs:	**Students**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of Students:	9,672
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Students

Average Rate	Range of Rates	Standard Deviation
0.10	0.04-0.22	0.07

Data Plot and Equation



Junior/Community College
(540)

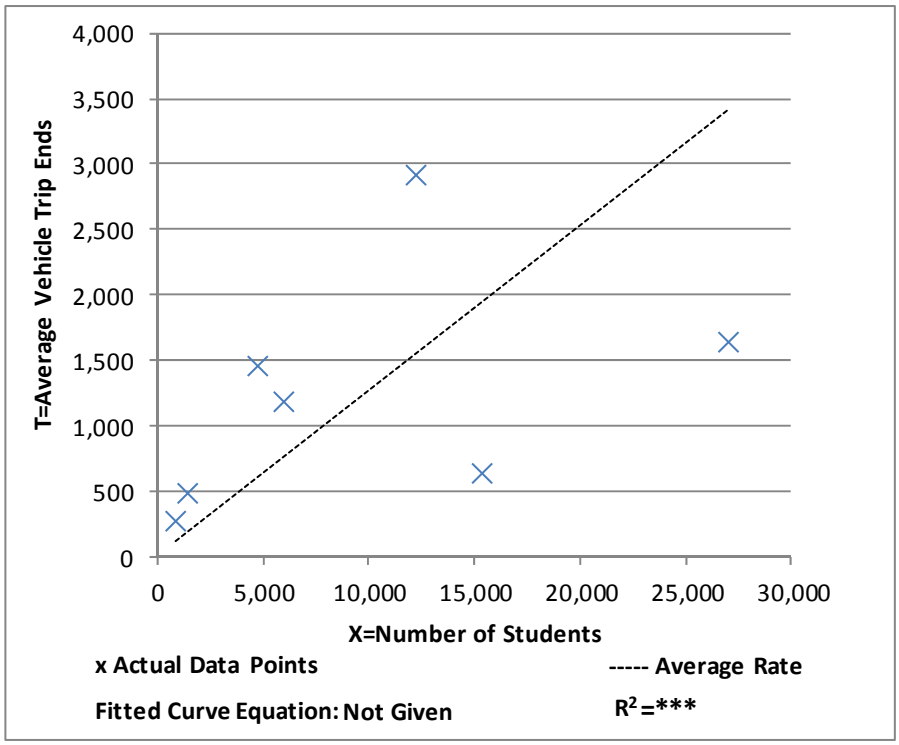
Average Vehicle Trip Ends vs:	**Students**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Students:	9,672
Directional Distribution:	70% entering, 30% exiting

Trip Generation per Students

Average Rate	Range of Rates	Standard Deviation
0.13	0.04-0.33	0.11

Data Plot and Equation



Junior/Community College
(540)

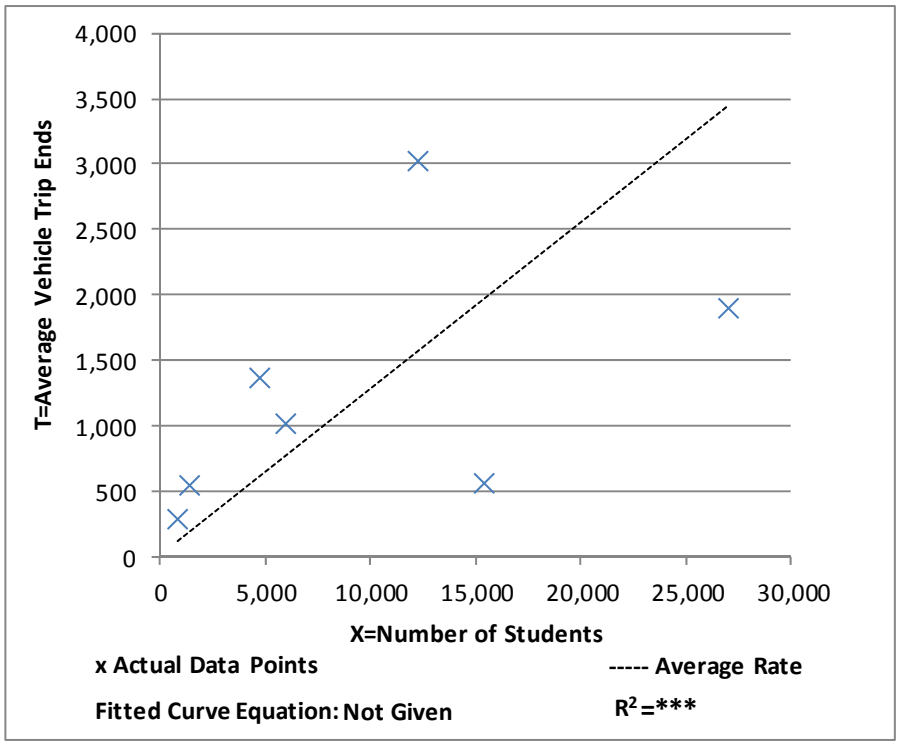
Average Vehicle Trip Ends vs:	**Students**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Students:	9,672
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Students

Average Rate	Range of Rates	Standard Deviation
0.13	0.04-0.37	0.11

Data Plot and Equation



Land Use: 565
Day Care Center

Description

A day care center is a facility where care for pre-school age children is provided, normally during the daytime hours. Day care facilities generally include classrooms, offices, eating areas and playgrounds. Some centers also provide after-school care for school-age children.

Source Numbers

1, 2, 3, 5

Day Care Center
(565)

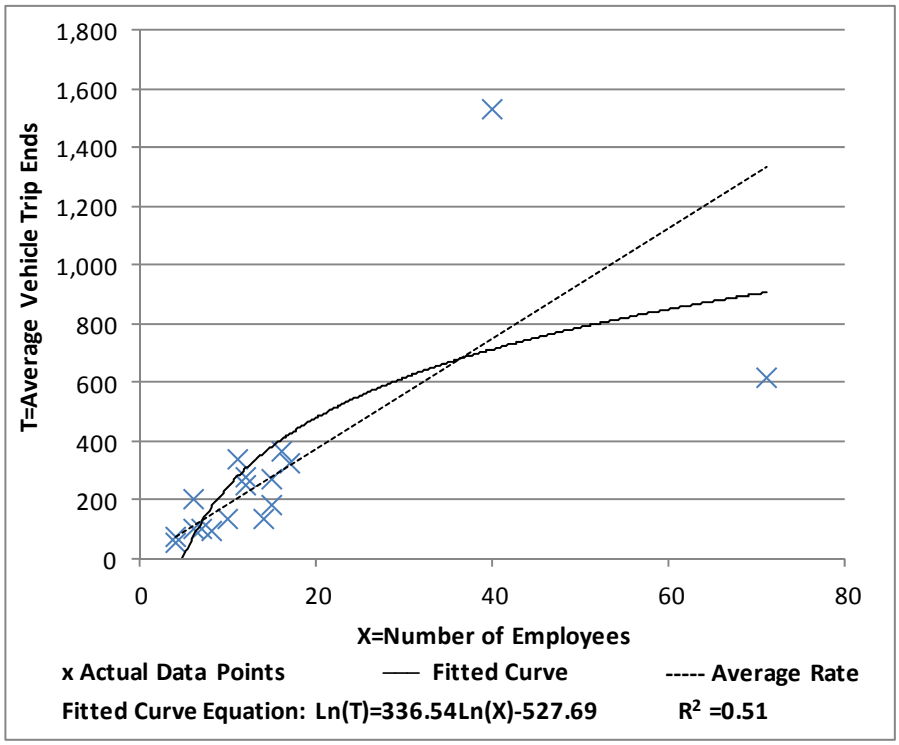
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	17
Average Number of Employees:	16
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
18.85	8.70-38.35	11.02

Data Plot and Equation



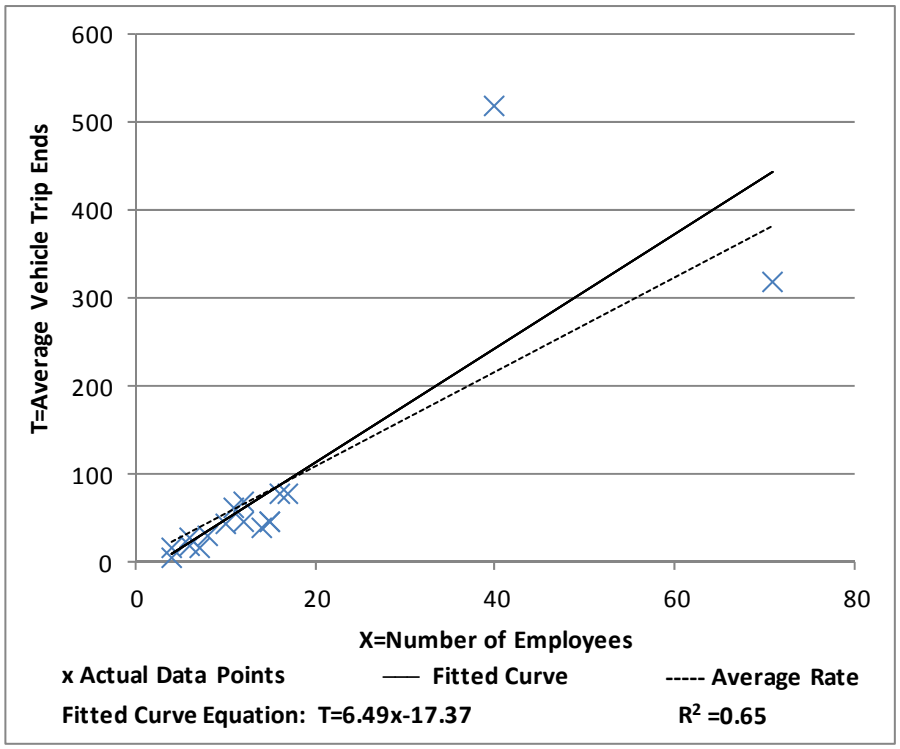
Day Care Center
(565)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	17
Average Number of Employees:	16
Directional Distribution:	53% entering, 47% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
5.38	1.25-12.95	3.50

Data Plot and Equation



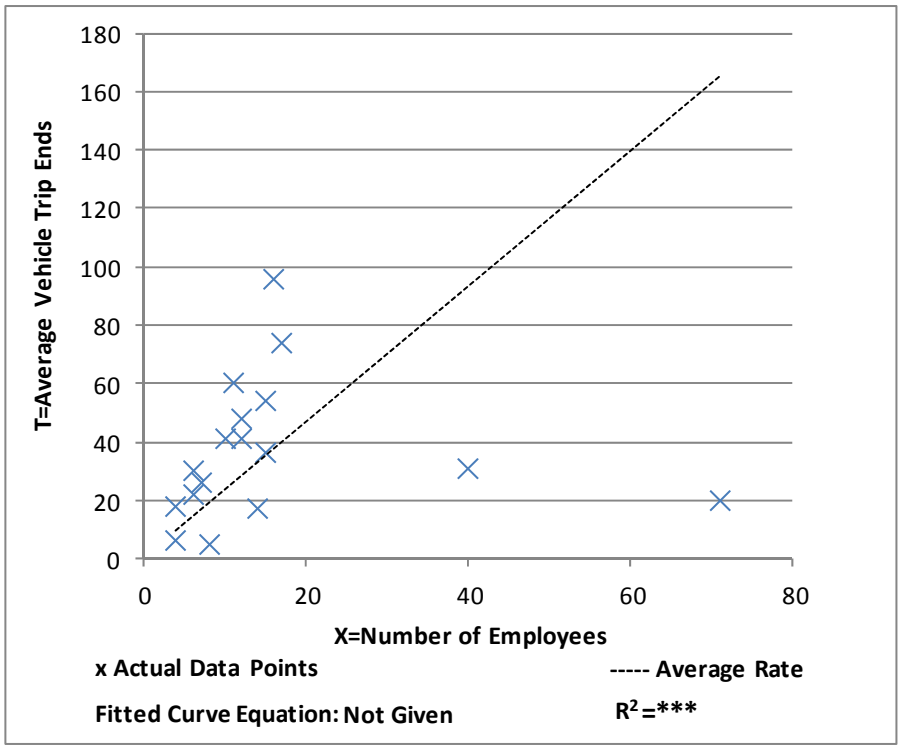
Day Care Center
(565)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	17
Average Number of Employees:	16
Directional Distribution:	34% entering, 66% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.33	0.28-6.00	2.08

Data Plot and Equation



Day Care Center
(565)

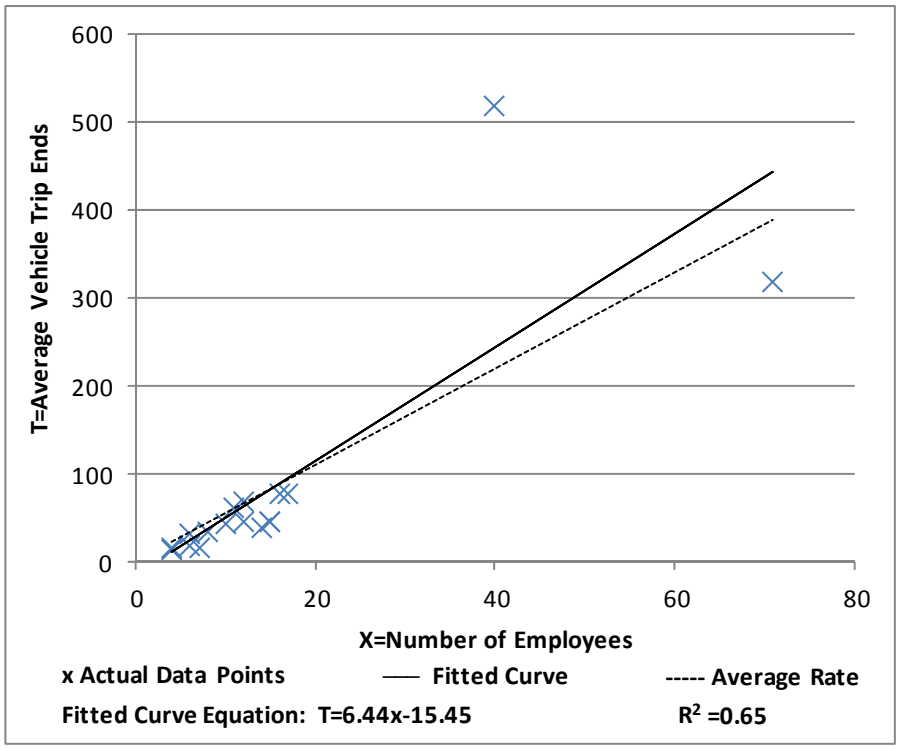
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	17
Average Number of Employees:	16
Directional Distribution:	53% entering, 47% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
5.46	2.29-12.95	3.45

Data Plot and Equation



Day Care Center
(565)

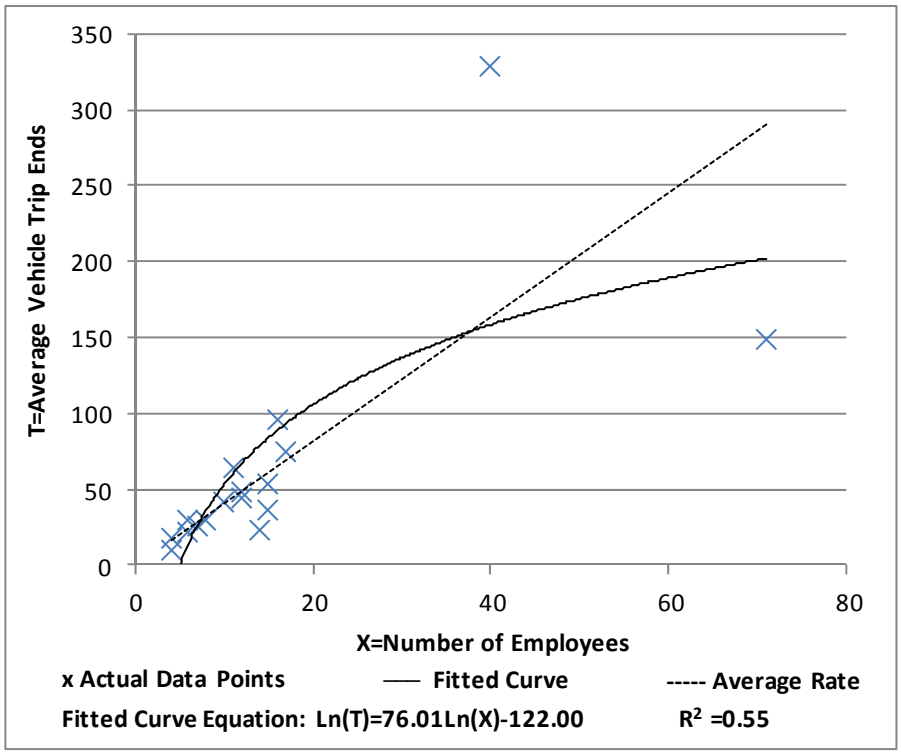
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	17
Average Number of Employees:	16
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.08	1.64-8.20	2.26

Data Plot and Equation



Day Care Center
(565)

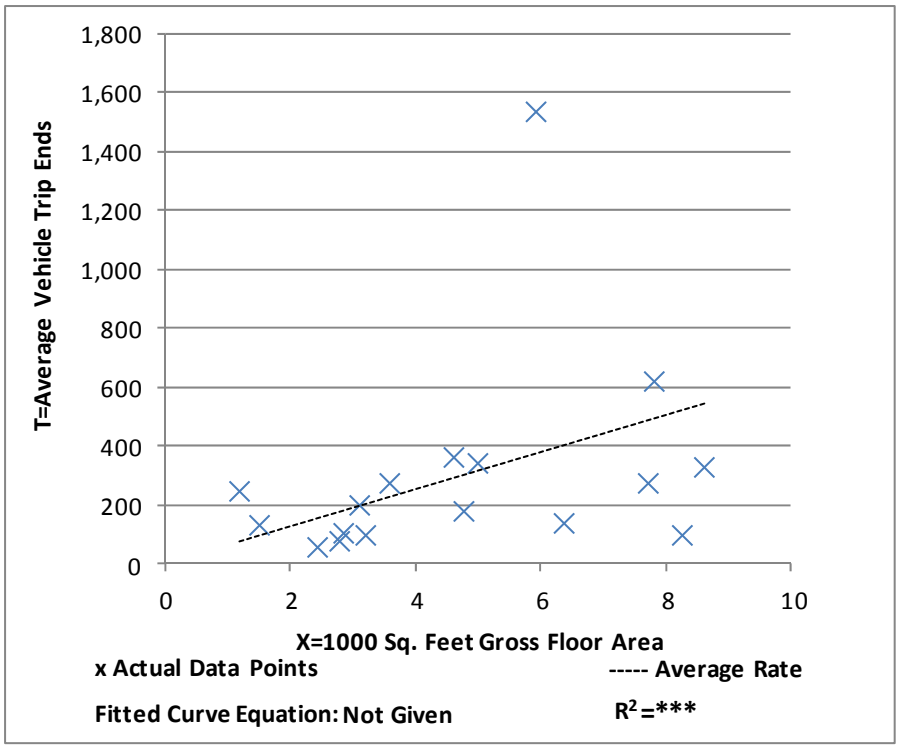
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	17
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
63.36	12.12-259.56	65.66

Data Plot and Equation



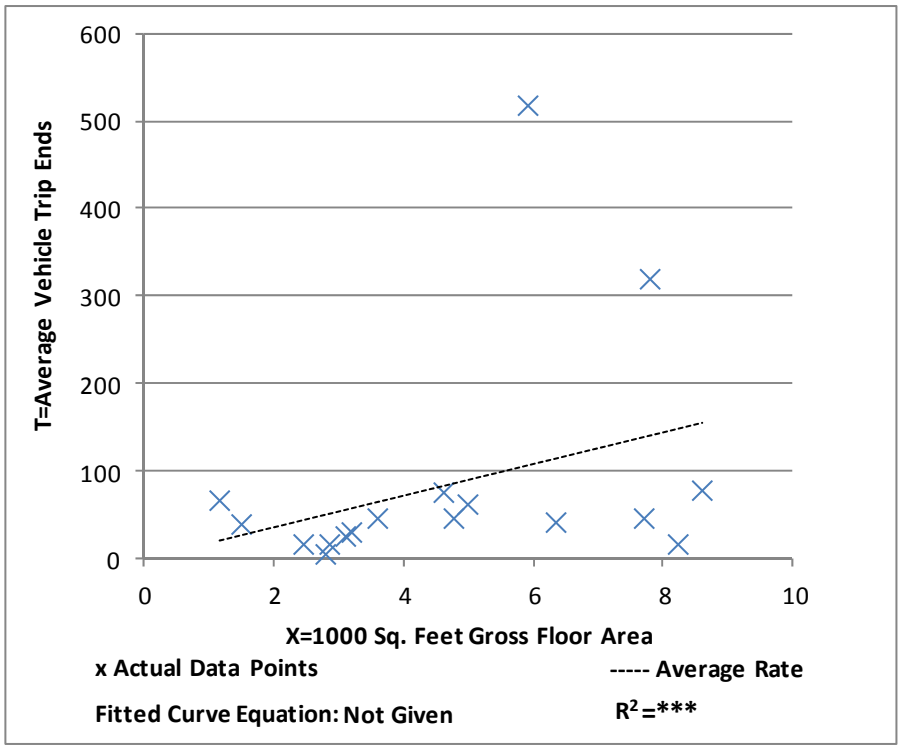
Day Care Center
(565)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	17
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	52% entering, 48% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
18.10	1.79-87.65	23.84

Data Plot and Equation



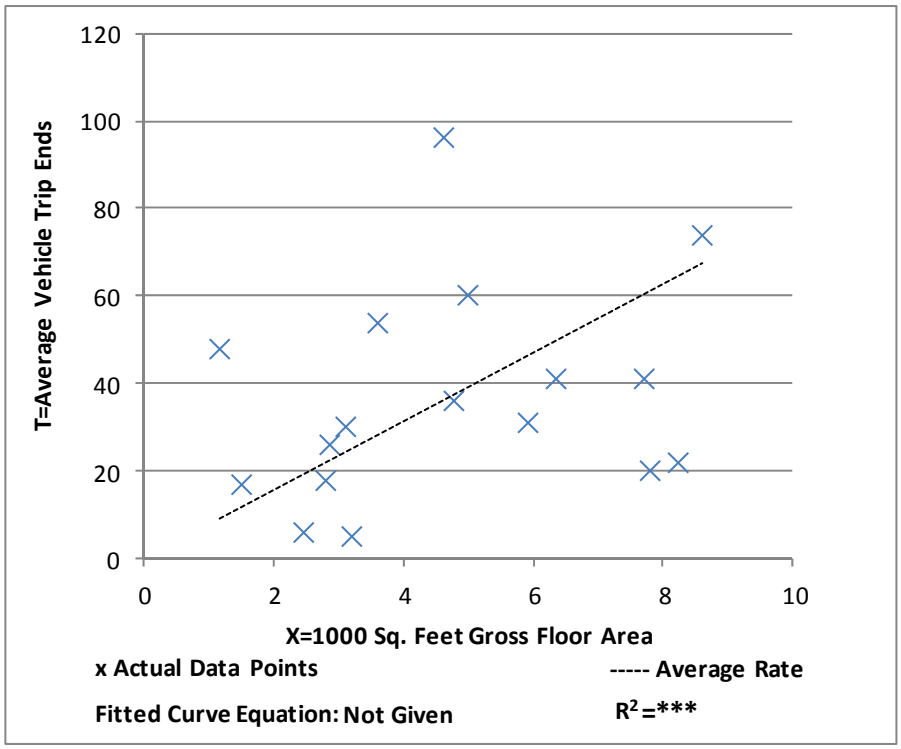
Day Care Center
(565)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	17
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	42% entering, 58% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
7.84	1.56-40.85	6.48

Data Plot and Equation



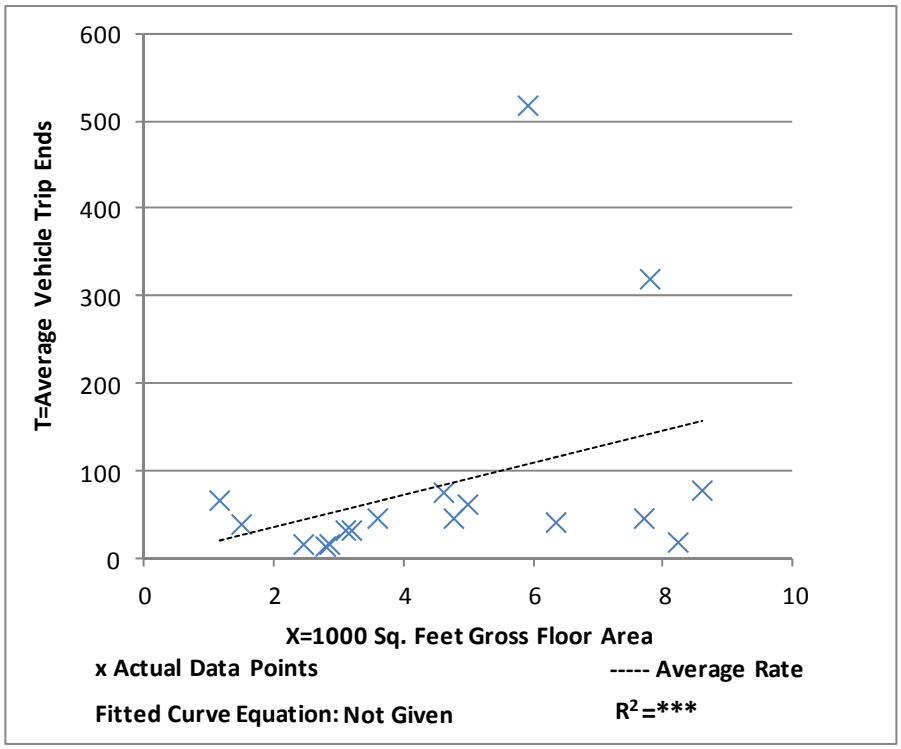
Day Care Center
(565)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	17
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	53% entering, 47% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
18.35	2.30-87.65	23.70

Data Plot and Equation



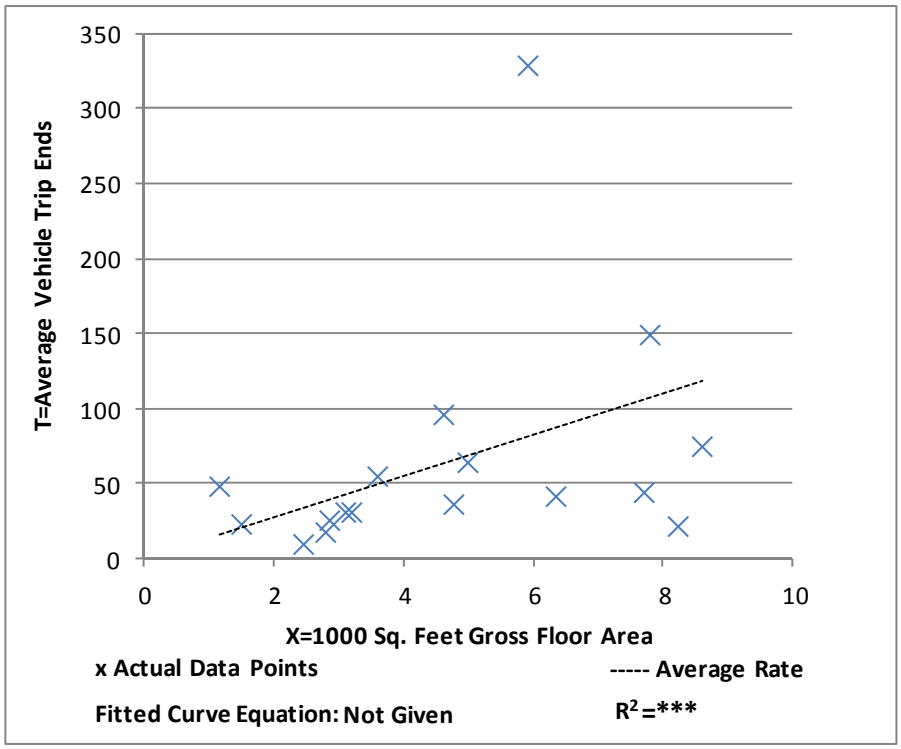
Day Care Center
(565)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	17
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	49% entering, 51% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
13.71	2.67-55.50	13.98

Data Plot and Equation



Land Use: 610
Hospital

Description

A hospital is any institution where medical or surgical care and overnight accommodations are provided to non-ambulatory and ambulatory patients. However, the term “hospital” does not refer to medical clinics (facilities that provide diagnoses and outpatient care only (or nursing homes (facilities devoted to the care of persons unable to care for themselves), which are covered elsewhere in this report. Clinic (Land Use 630) is a related use.

Source Numbers
2, 3, 4, 5

Hospital
(610)

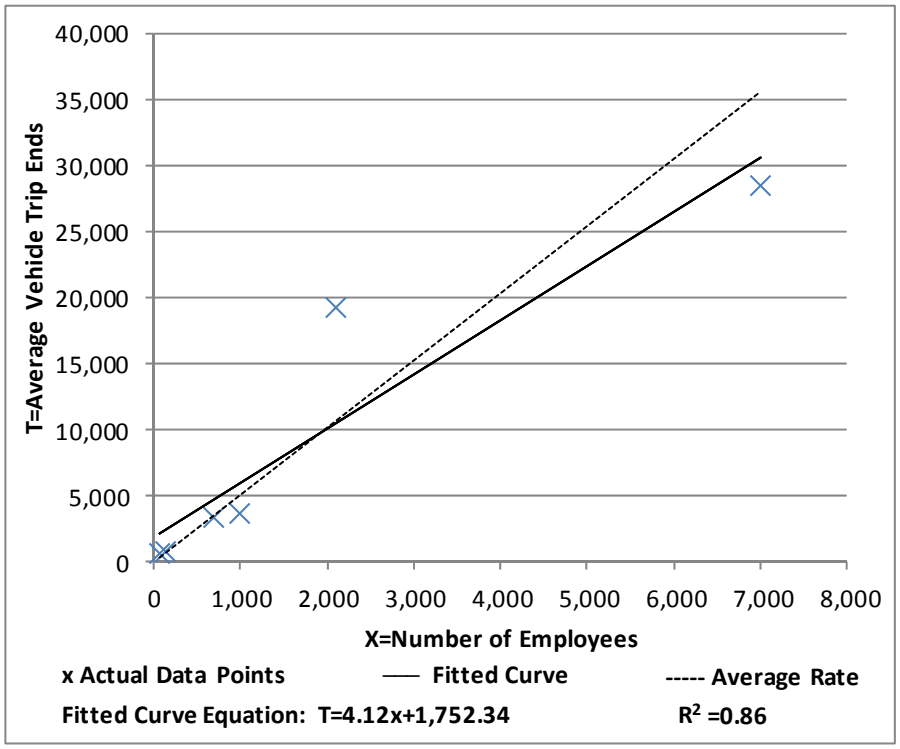
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	6
Average Number of Employees:	1,835
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
5.08	3.61-9.15	2.72

Data Plot and Equation

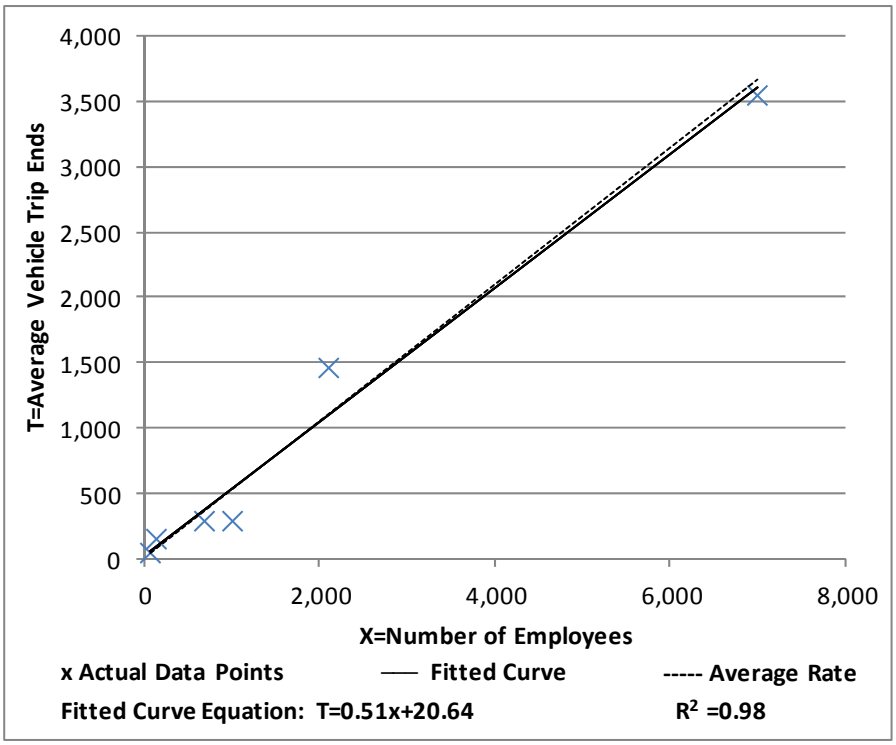


	Hospital (610)
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	6
Average Number of Employees:	1,835
Directional Distribution:	69% entering, 31% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.52	0.29-1.05	0.17

Data Plot and Equation

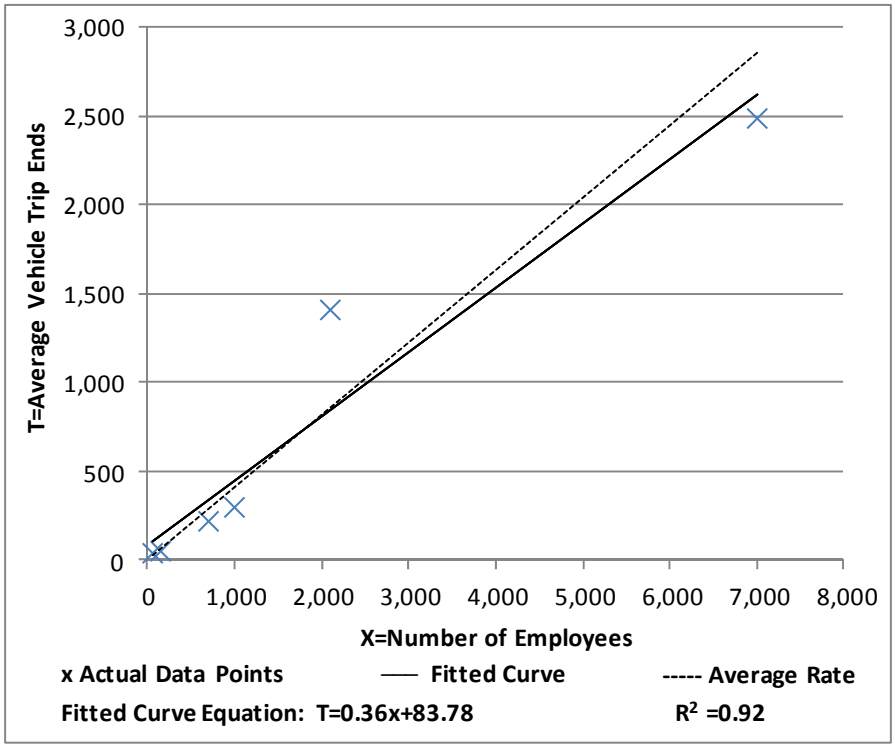


	Hospital (610)
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 4 and 6 p.m.**
Number of Studies:	6
Average Number of Employees:	1,835
Directional Distribution:	32% entering, 68% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.41	0.29-0.67	0.17

Data Plot and Equation



Hospital
(610)

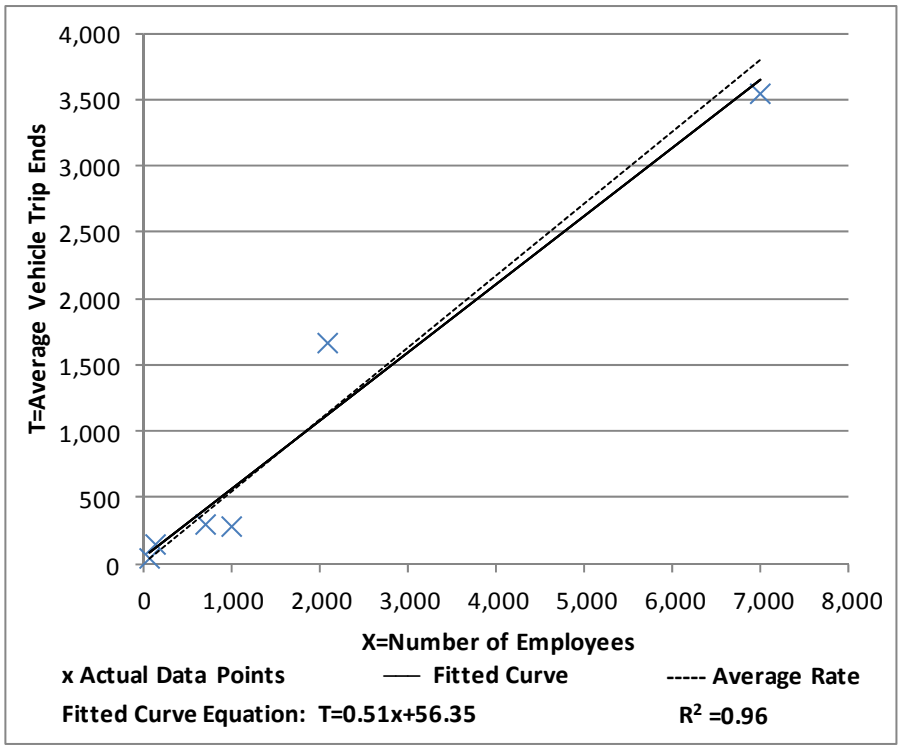
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	6
Average Number of Employees:	1,835
Directional Distribution:	64% entering, 36% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.54	0.29-1.05	0.20

Data Plot and Equation



Hospital
(610)

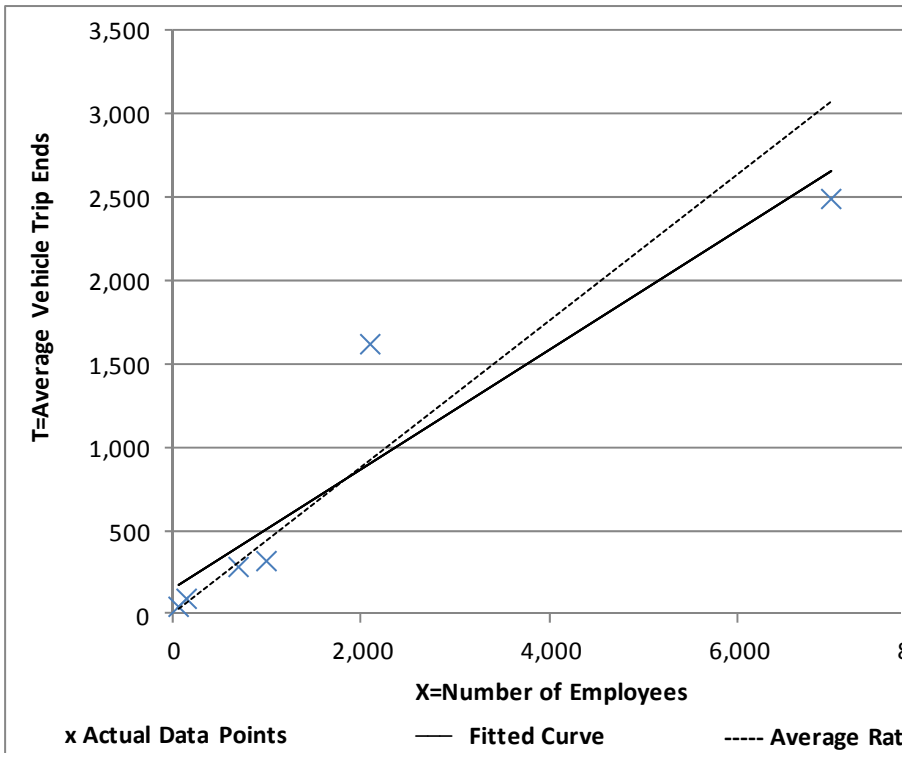
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	6
Average Number of Employees:	1,835
Directional Distribution:	37% entering, 63% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.44	0.32-0.77	0.22

Data Plot and Equation



Hospital
(610)

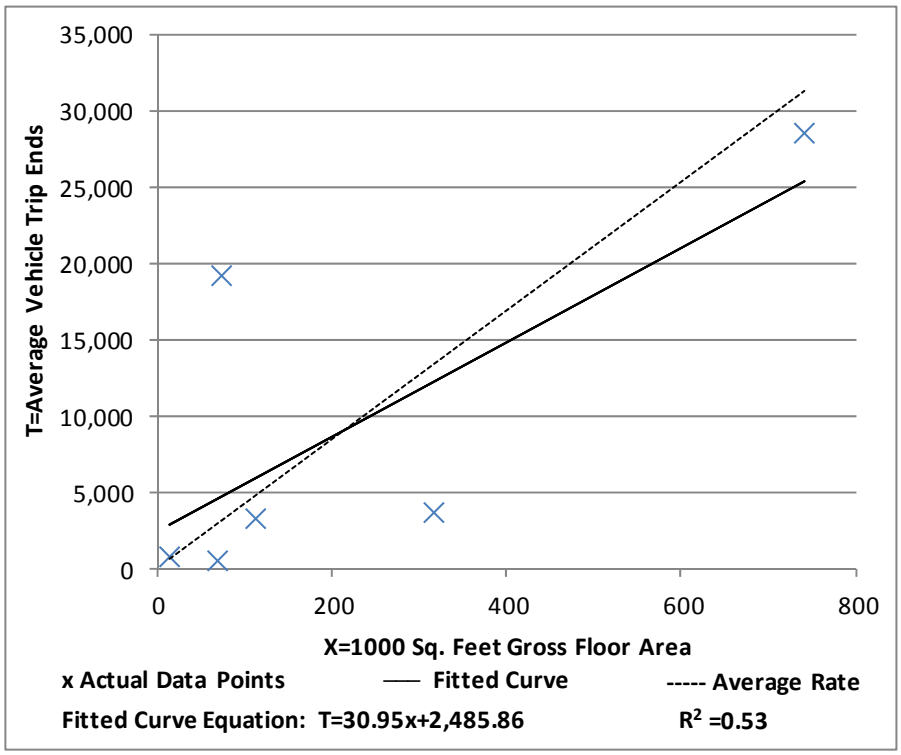
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	221
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
42.20	7.49-261.1	69.38

Data Plot and Equation



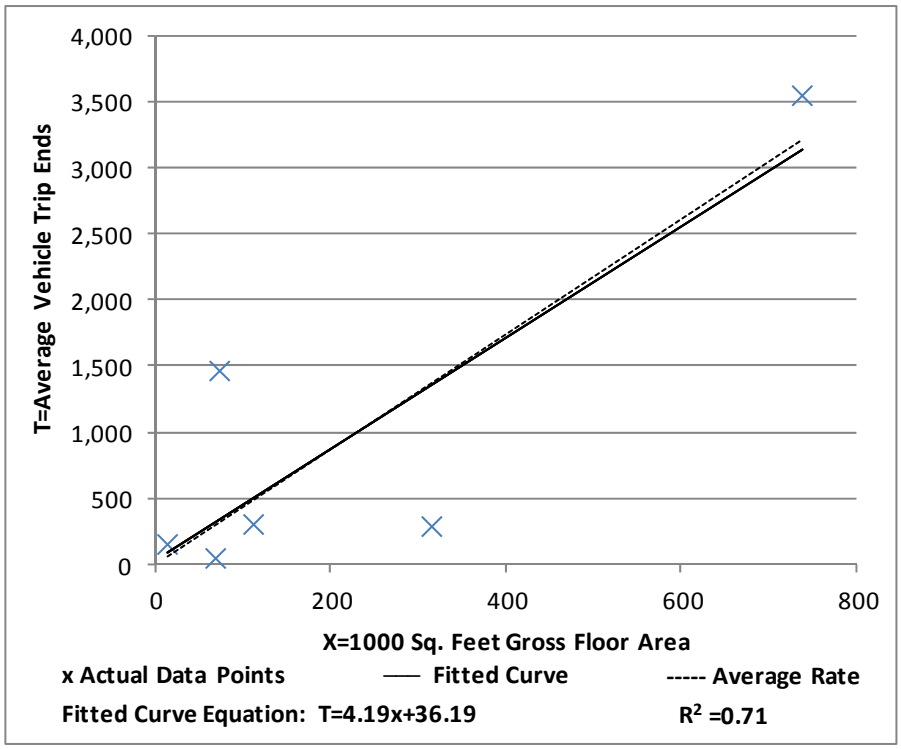
Hospital
(610)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	221
Directional Distribution:	69% entering, 31% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.35	0.55-19.82	5.35

Data Plot and Equation



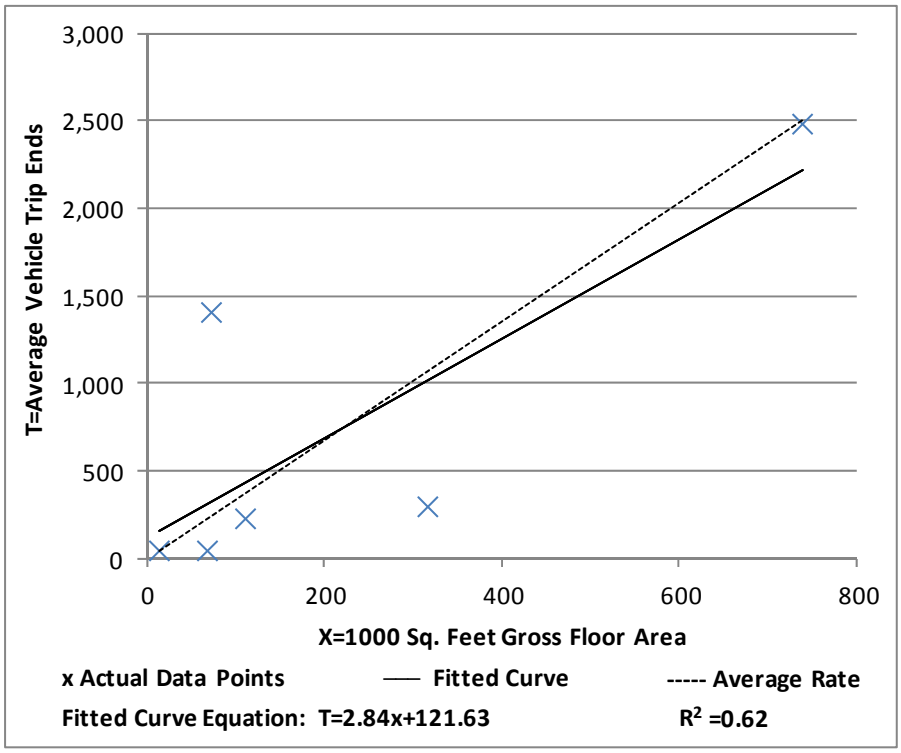
Hospital
(610)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	221
Directional Distribution:	33% entering, 67% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.39	0.58-19.06	5.04

Data Plot and Equation



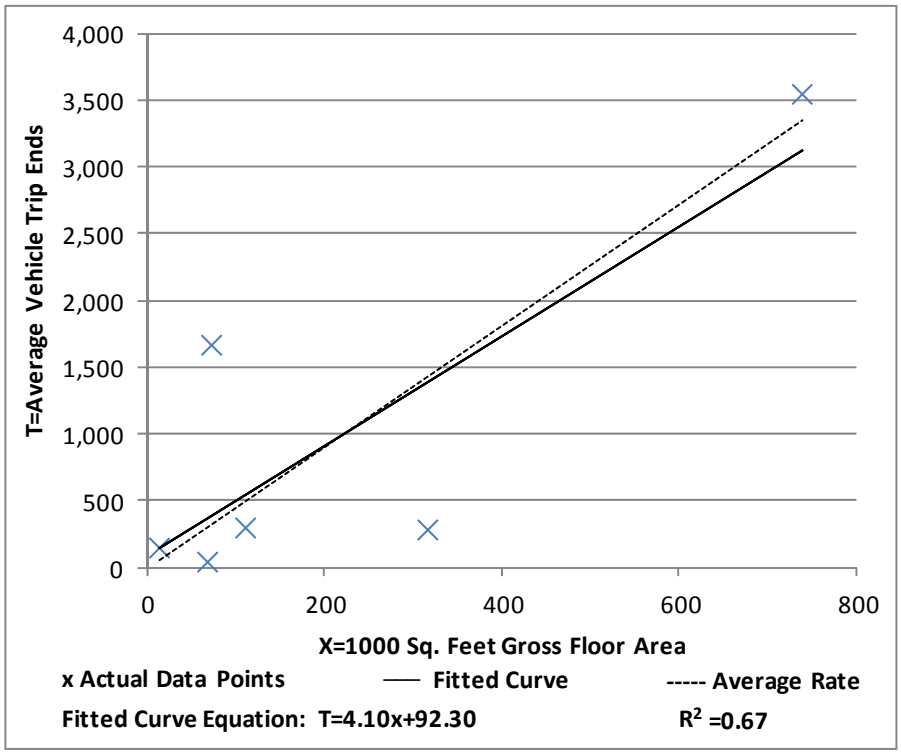
Hospital
(610)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	221
Directional Distribution:	64% entering, 36% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.52	0.67-22.60	6.07

Data Plot and Equation



Hospital
(610)

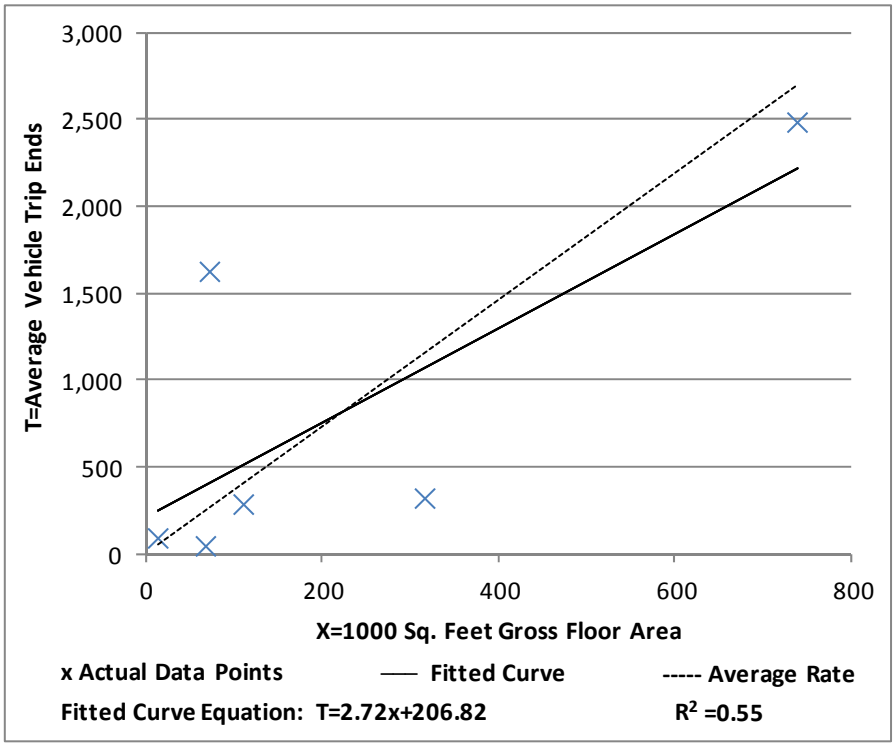
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	6
Average Number of 1000 Sq. Feet Gross Floor Area:	221
Directional Distribution:	38% entering, 62% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.65	0.58-22.01	5.84

Data Plot and Equation



Land Use: 620
Nursing Home

Description

A nursing home is any facility whose primary function is to provide care for persons who are unable to care for themselves. Examples of such facilities include rest homes and chronic care and convalescent homes. Skilled nurses and nursing aides are present 24 hours a day at these sites. Nursing homes are occupied by residents who do little or no driving; traffic is primarily generated by employees, visitors and deliveries. Assisted living (Land Use 254) and continuing care retirement community (Land Use 255) are related uses.

Source Numbers

4, 5

Nursing Home
(620)

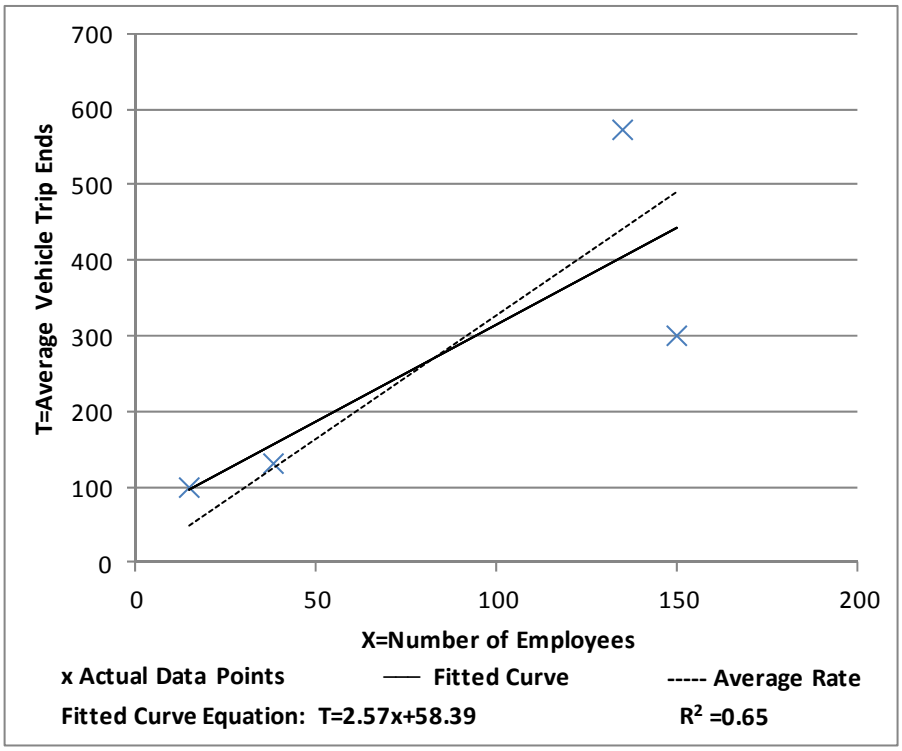
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 4
Average Number of Employees: 85
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.26	2.00-6.67	1.60

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



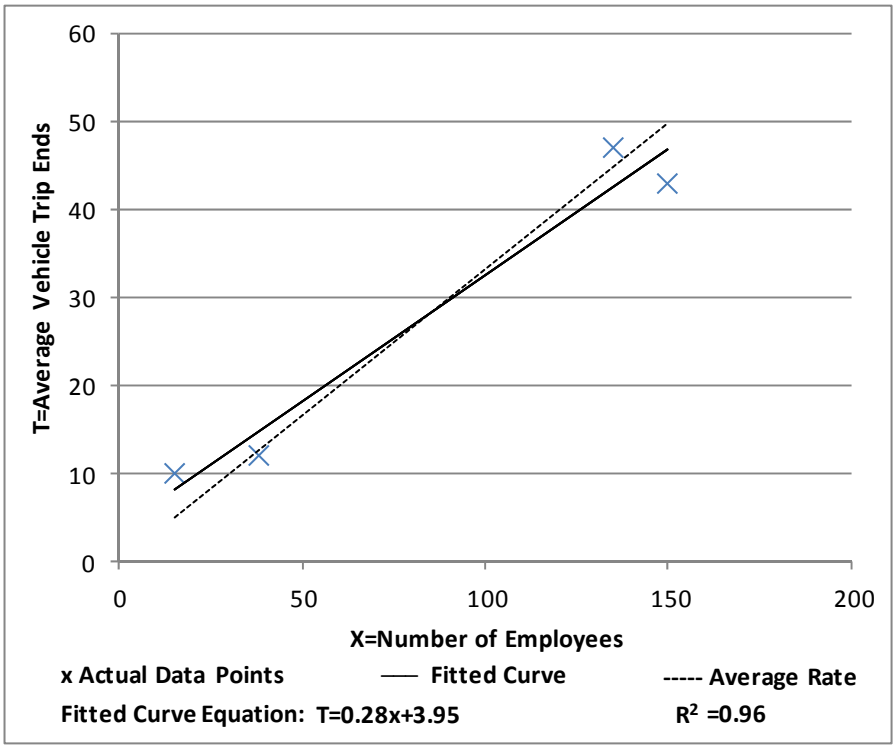
Nursing Home
(620)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	4
Average Number of Employees:	85
Directional Distribution:	82% entering, 18% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.33	0.29-0.67	0.10

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



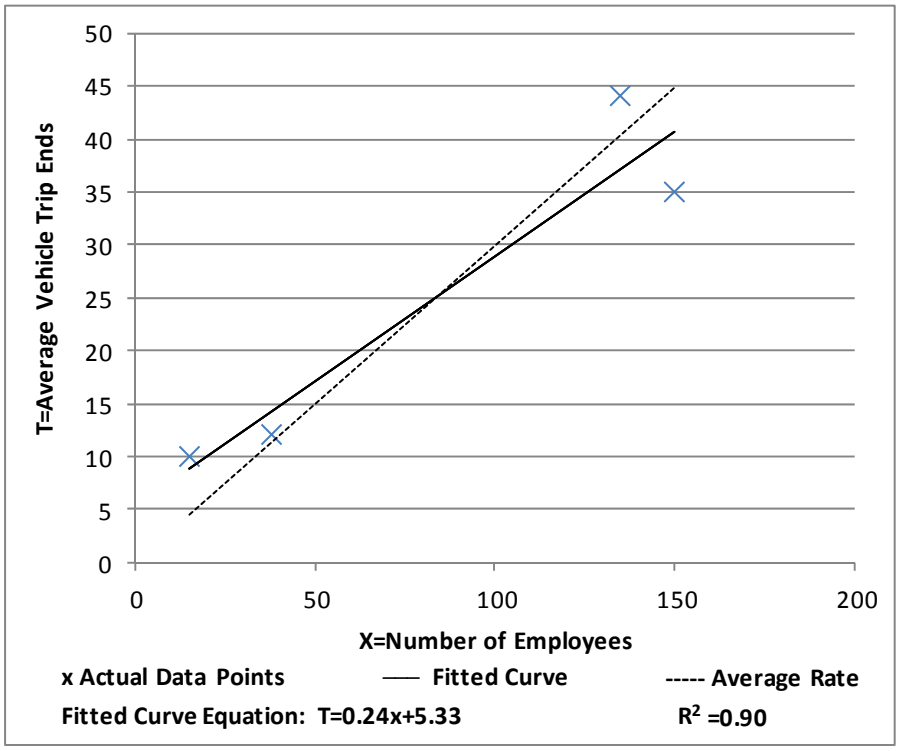
Nursing Home
(620)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	4
Average Number of Employees:	85
Directional Distribution:	32% entering, 68% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.30	0.23-0.67	0.11

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Nursing Home
(620)

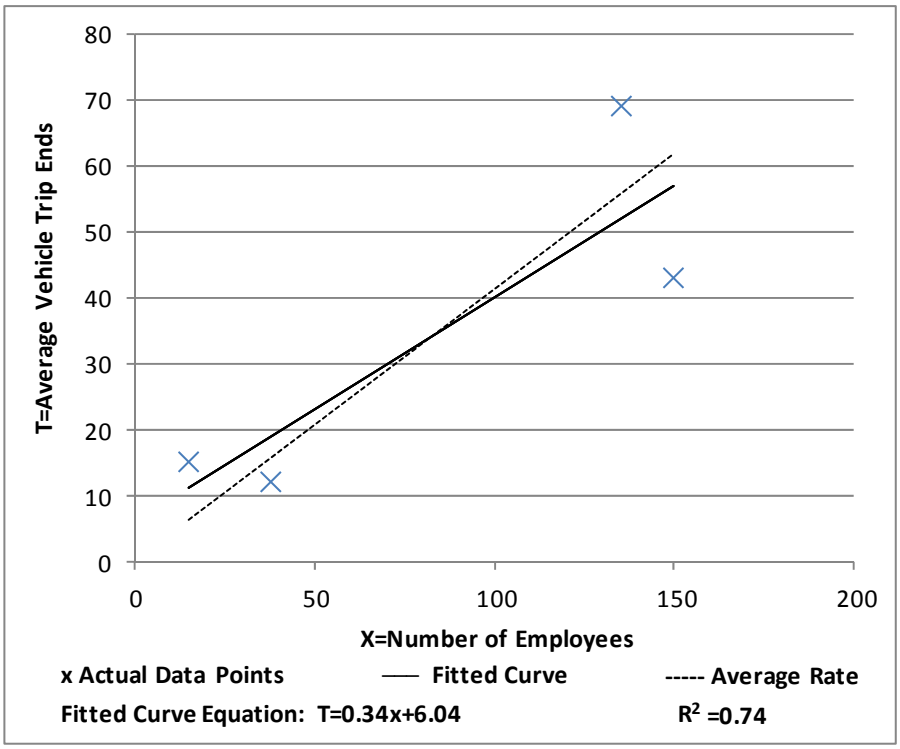
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	4
Average Number of Employees:	85
Directional Distribution:	70% entering, 30% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.41	0.29-1.00	0.21

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Nursing Home
(620)

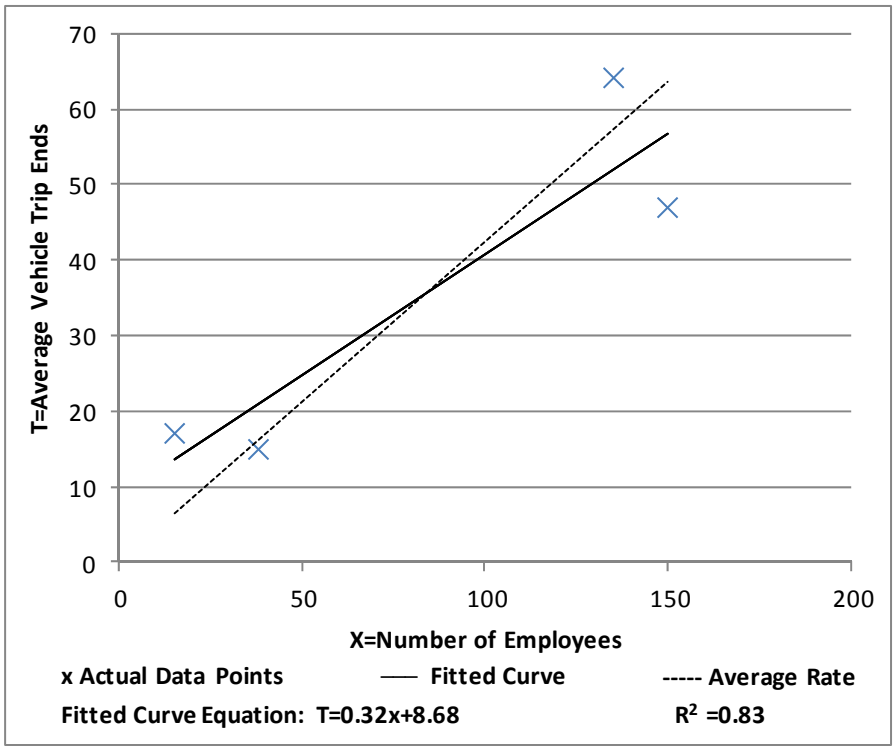
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	4
Average Number of Employees:	85
Directional Distribution:	38% entering, 62% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.42	0.31-1.13	0.21

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Nursing Home
(620)

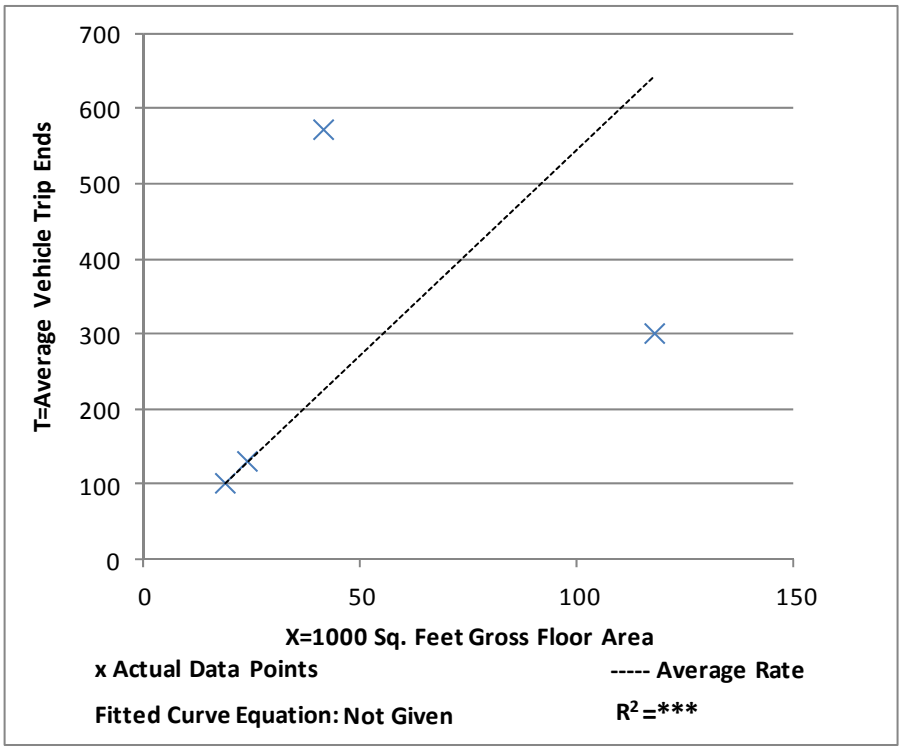
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	51
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
5.44	2.54-13.70	5.65

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



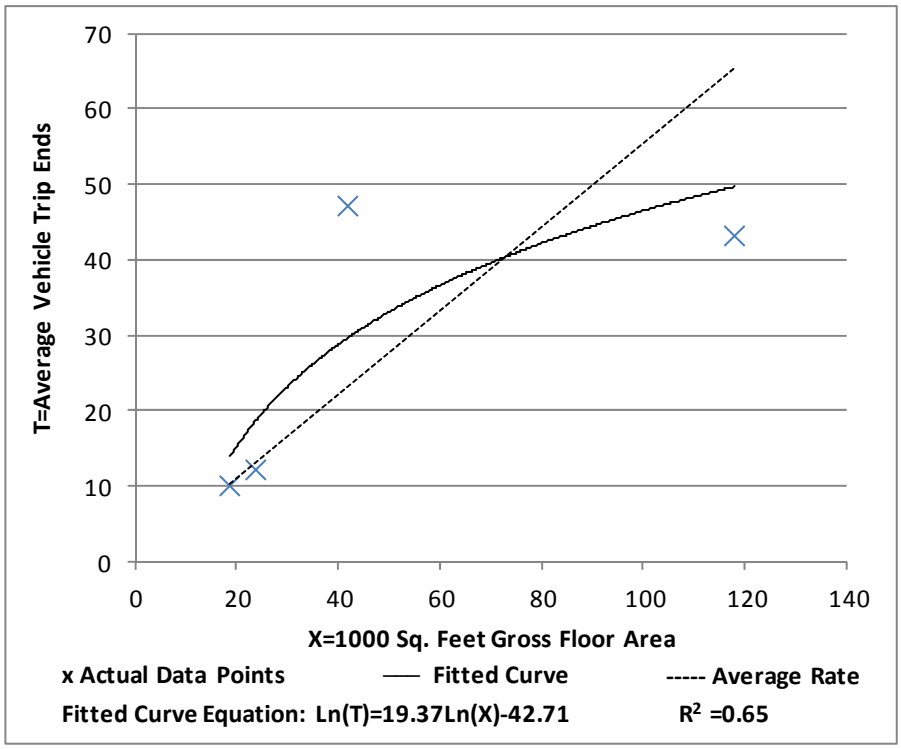
Nursing Home
(620)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	51
Directional Distribution:	86% entering, 14% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.55	0.36-1.13	0.39

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



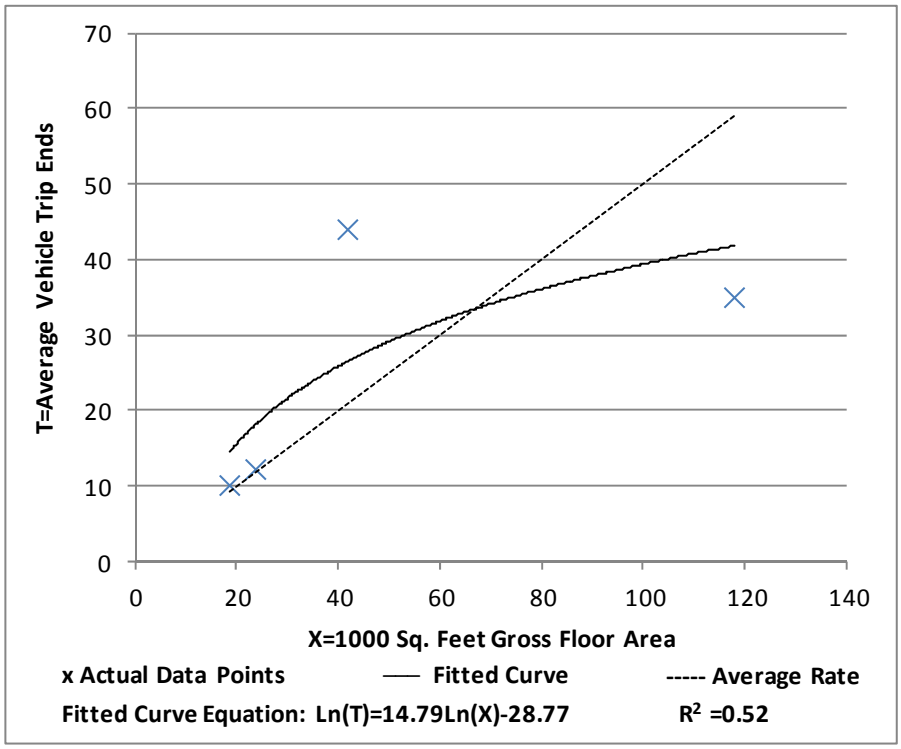
Nursing Home
(620)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	51
Directional Distribution:	30% entering, 70% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.50	0.30-1.05	0.38

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



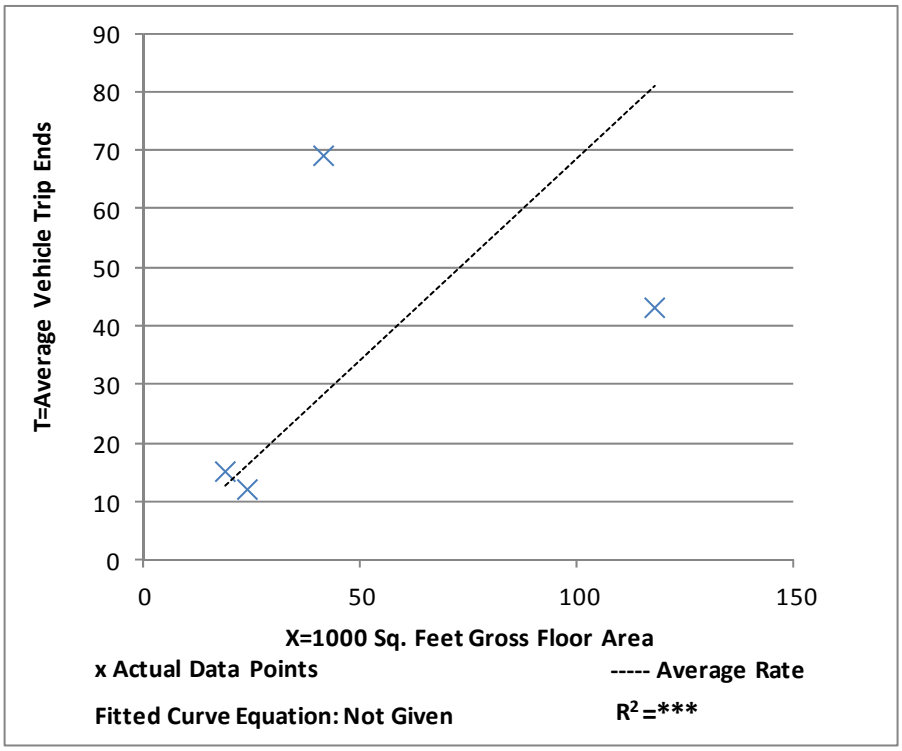
Nursing Home
(620)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	51
Directional Distribution:	70% entering, 30% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.69	0.36-1.65	0.66

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



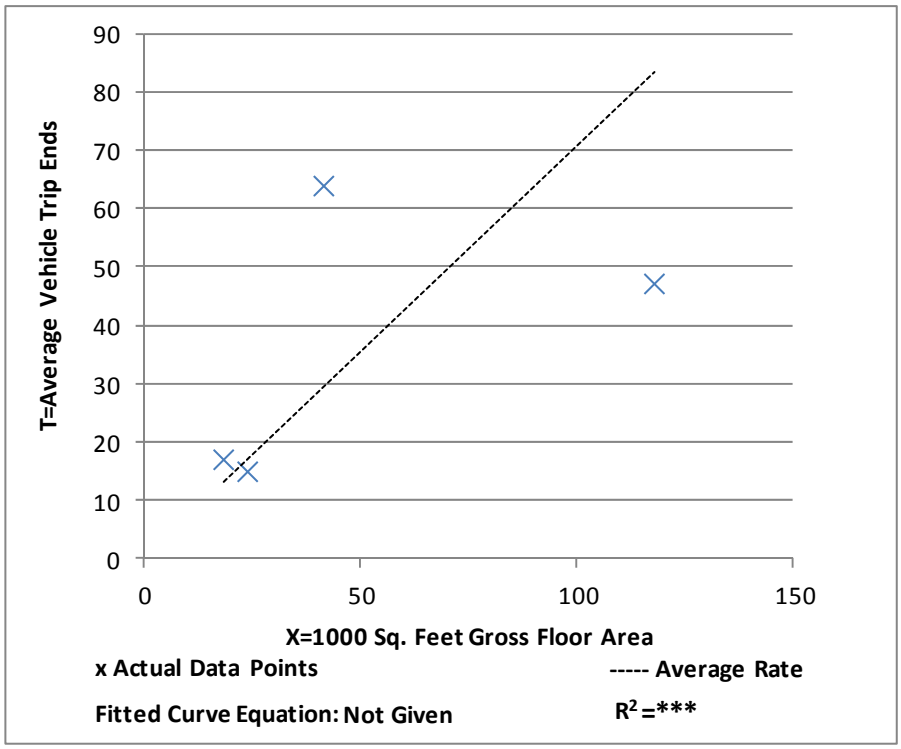
Nursing Home
(620)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	51
Directional Distribution:	35% entering, 65% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.71	0.40-1.53	0.58

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Land Use: 630
Clinic

Description

A clinic is any facility that provides limited diagnostic and outpatient care but is unable to provide prolonged in-house medical and surgical care. Clinics commonly have lab facilities, supporting pharmacies and a wide range of services (compared to the medical office, which may only have specialized or individual physicians). Hospital (Land Use 610) and medical-dental office building (Land Use 720) are related uses.

Source Numbers

3, 4, 5

Clinic
(630)

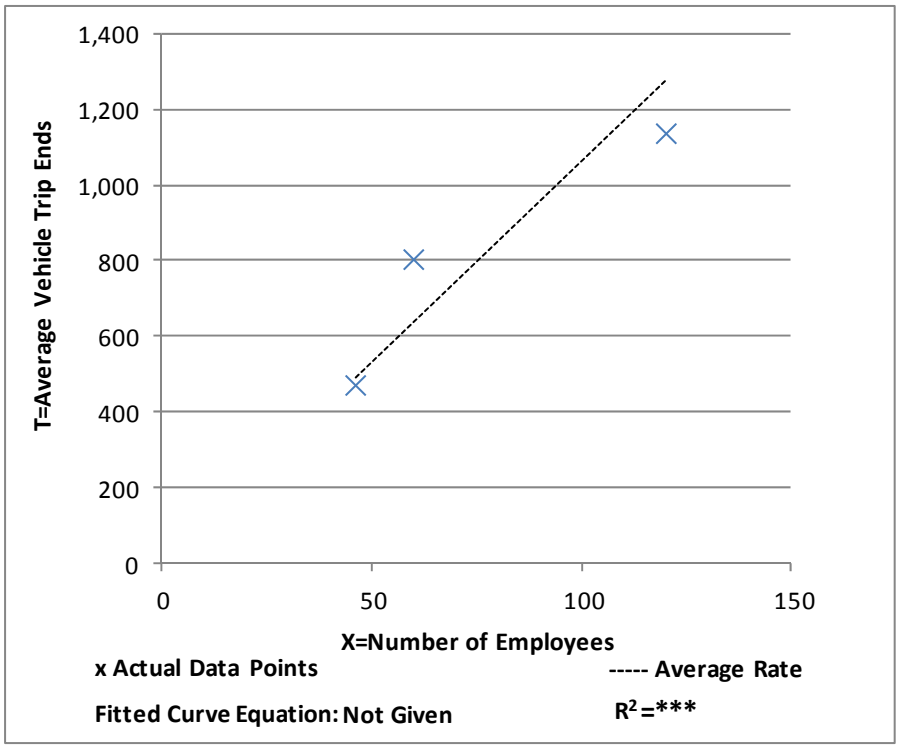
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday**

Number of Studies:	3
Average Number of Employees:	75
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
10.65	9.44-13.42	2.17

Data Plot and Equation ***Caution--Use Carefully--Small Sample Size***

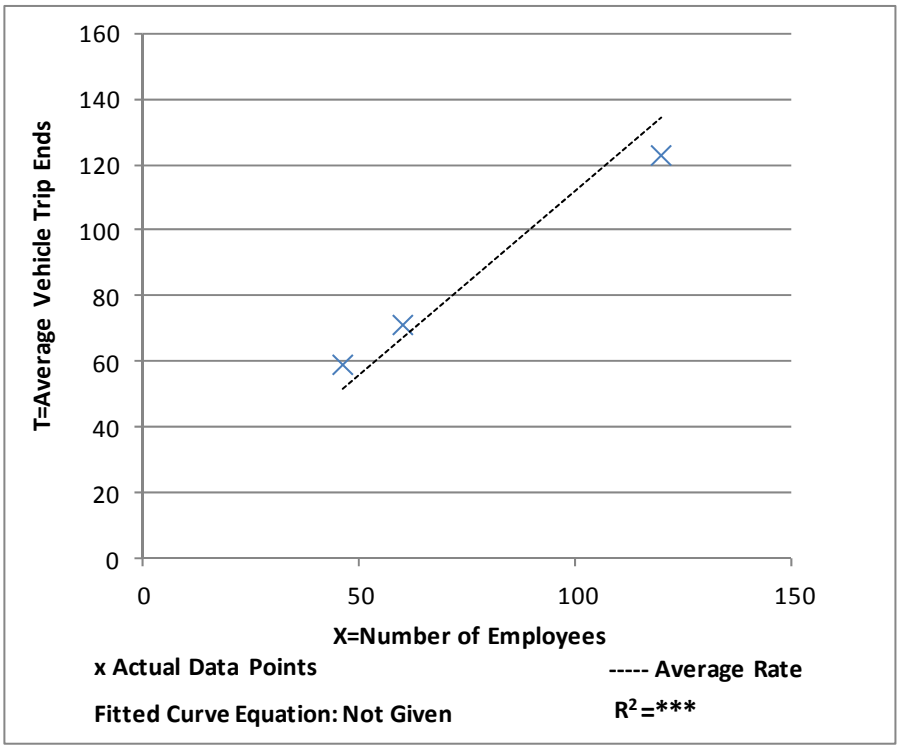


	Clinic (630)
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	3
Average Number of Employees:	75
Directional Distribution:	77% entering, 23% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.12	1.03-1.28	0.14

Data Plot and Equation ***Caution--Use Carefully--Small Sample Size***

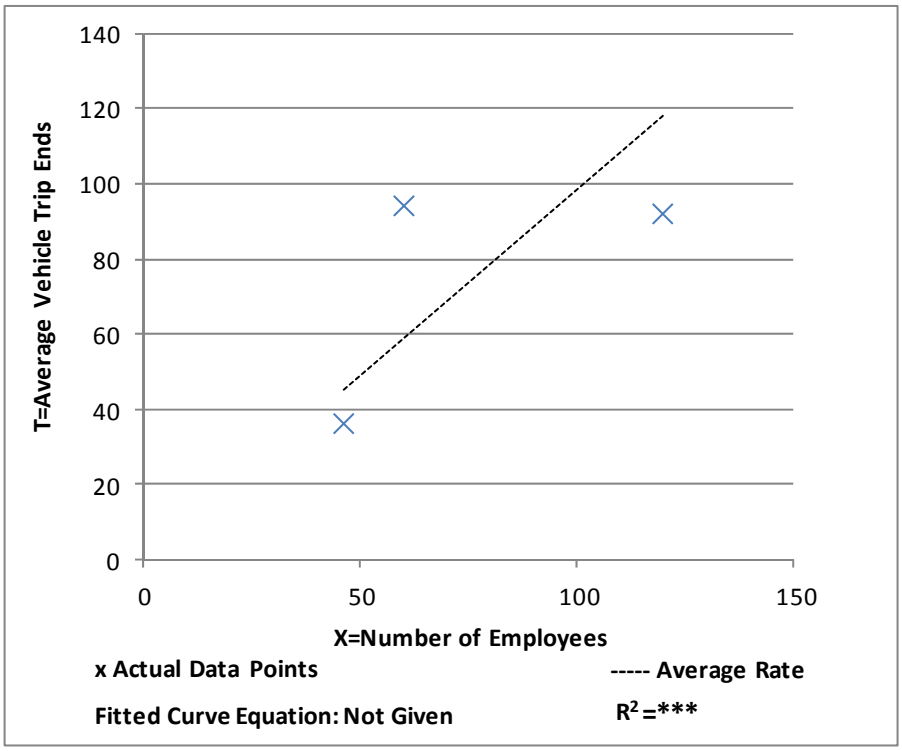


	Clinic (630)
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	3
Average Number of Employees:	75
Directional Distribution:	26% entering, 74% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.98	0.77-1.57	0.45

Data Plot and Equation ***Caution--Use Carefully--Small Sample Size***



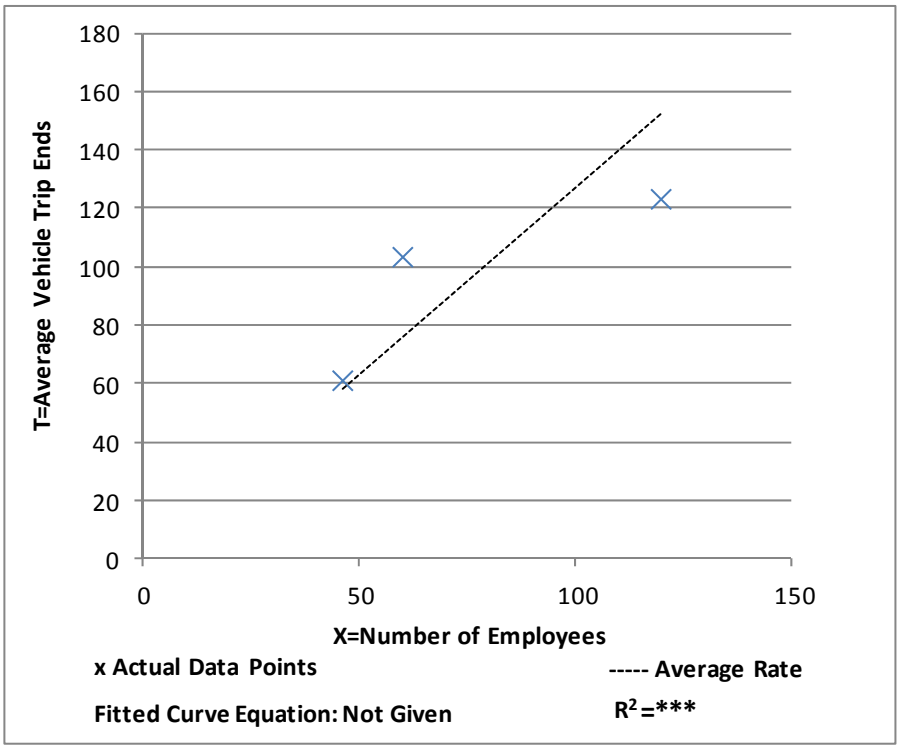
Clinic
(630)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	3
Average Number of Employees:	75
Directional Distribution:	63% entering, 37% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.27	1.03-1.72	0.38

Data Plot and Equation ***Caution--Use Carefully--Small Sample Size***



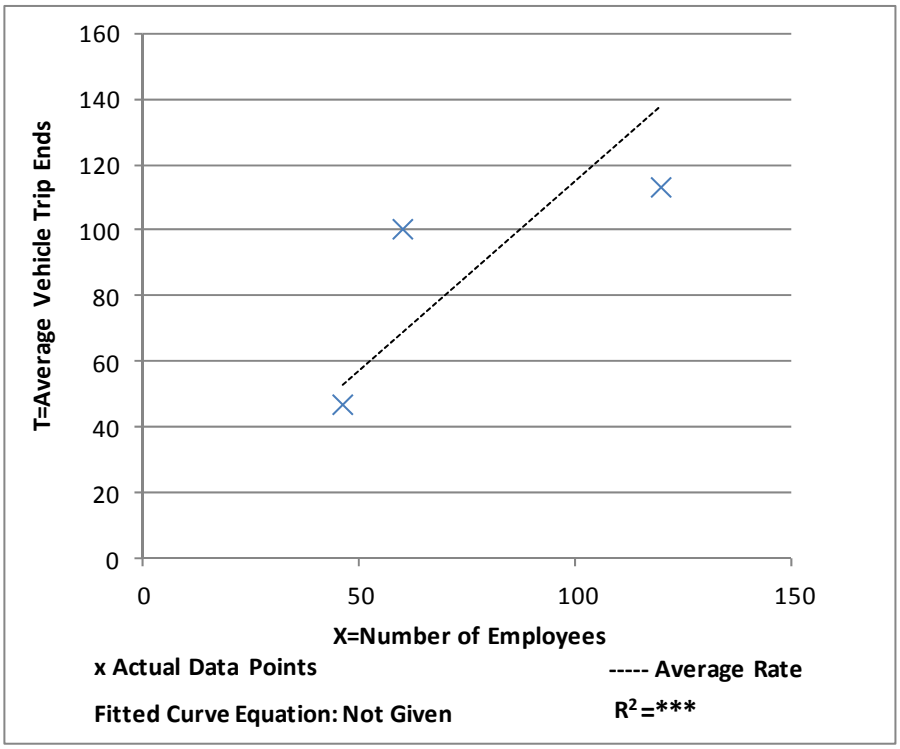
Clinic
(630)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	3
Average Number of Employees:	75
Directional Distribution:	42% entering, 58% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.15	0.94-1.67	0.40

Data Plot and Equation ***Caution--Use Carefully--Small Sample Size***



Clinic
(630)

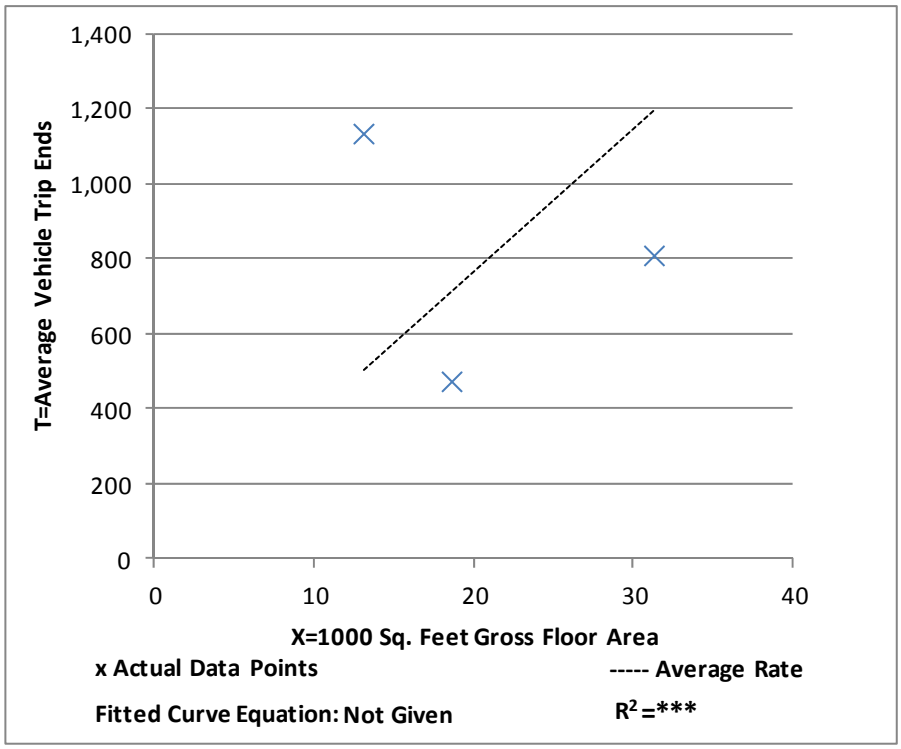
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	21
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
38.16	25.25-86.21	31.22

Data Plot and Equation ***Caution--Use Carefully--Small Sample Size***



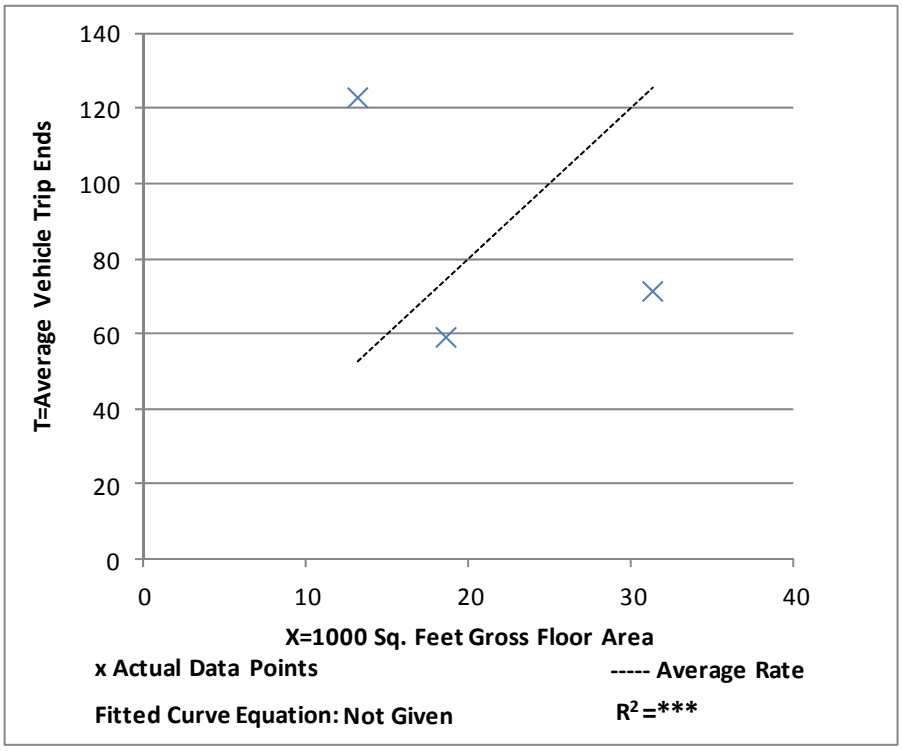
Clinic
(630)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	21
Directional Distribution:	79% entering, 21% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.01	2.27-9.36	3.51

Data Plot and Equation ***Caution--Use Carefully--Small Sample Size***



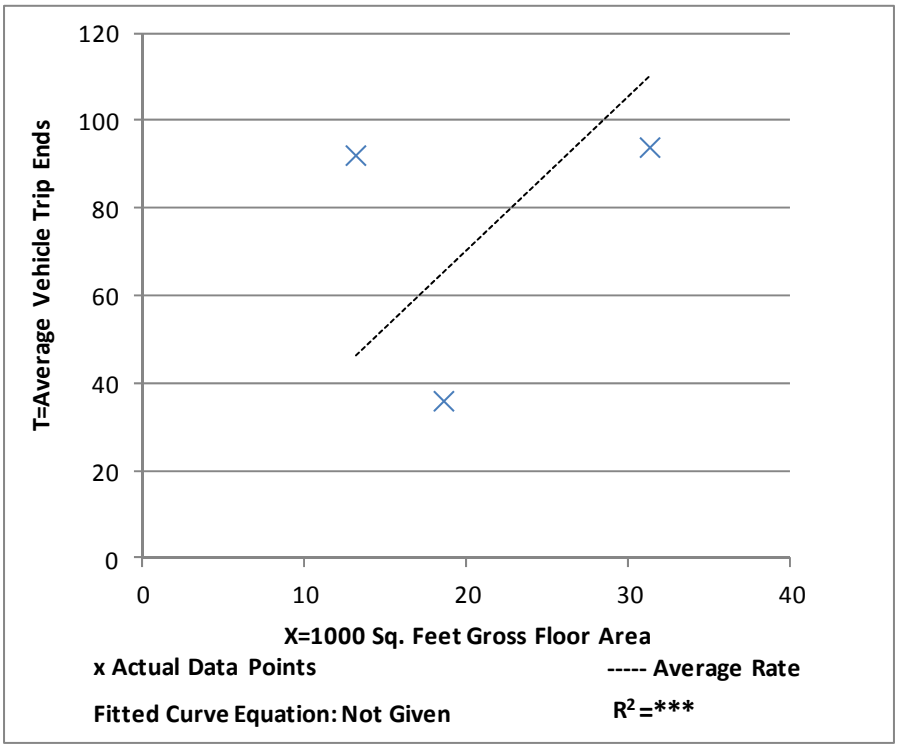
Clinic
(630)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	21
Directional Distribution:	33% entering, 67% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.52	1.93-7.00	2.34

Data Plot and Equation ***Caution--Use Carefully--Small Sample Size***



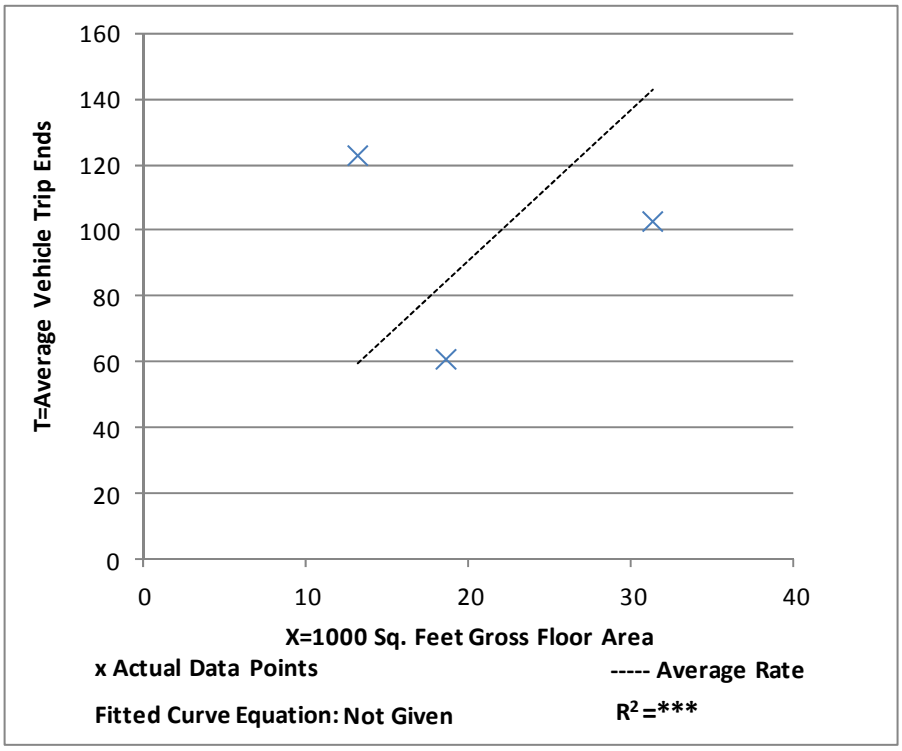
Clinic
(630)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	21
Directional Distribution:	63% entering, 37% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.55	3.28-9.36	3.13

Data Plot and Equation ***Caution--Use Carefully--Small Sample Size***



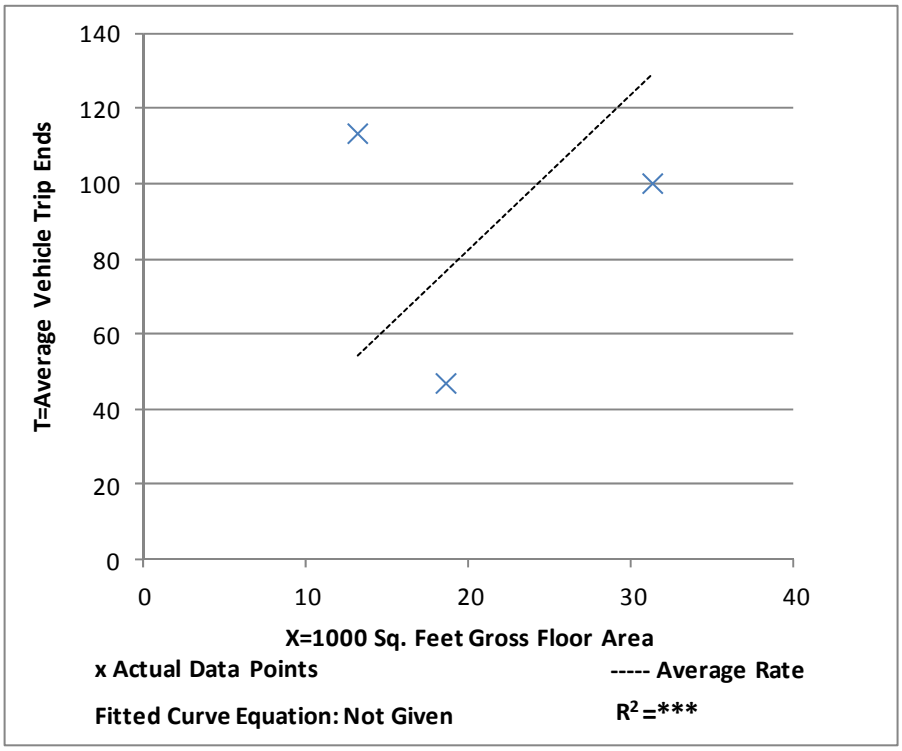
Clinic
(630)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	21
Directional Distribution:	40% entering, 60% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.12	2.53-8.60	2.93

Data Plot and Equation ***Caution--Use Carefully--Small Sample Size***



Land Use: 640
Animal Hospital/Vet Clinic

Description

An animal hospital or veterinary clinic is a facility that specializes in the medical care and treatment of animals.

Source Numbers

2, 3, 4, 5

Animal Hospital/Veterinary Clinic
(640)

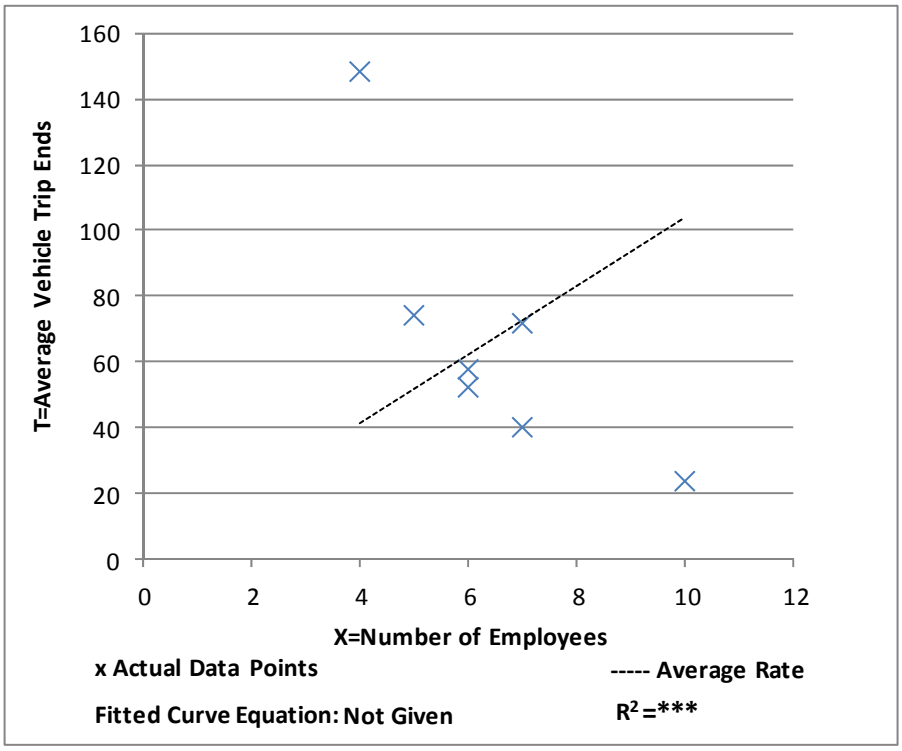
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 7
Average Number of Employees: 6
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
10.40	2.40-37.00	9.91

Data Plot and Equation



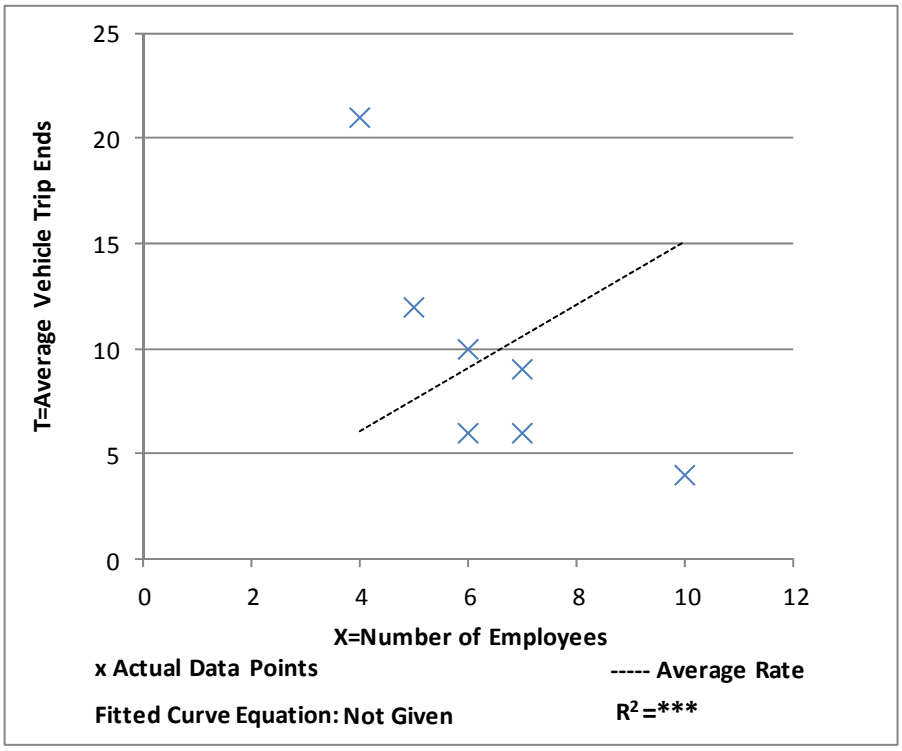
Animal Hospital/Veterinary Clinic
(640)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of Employees:	6
Directional Distribution:	69% entering, 31% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.51	0.40-5.25	1.42

Data Plot and Equation



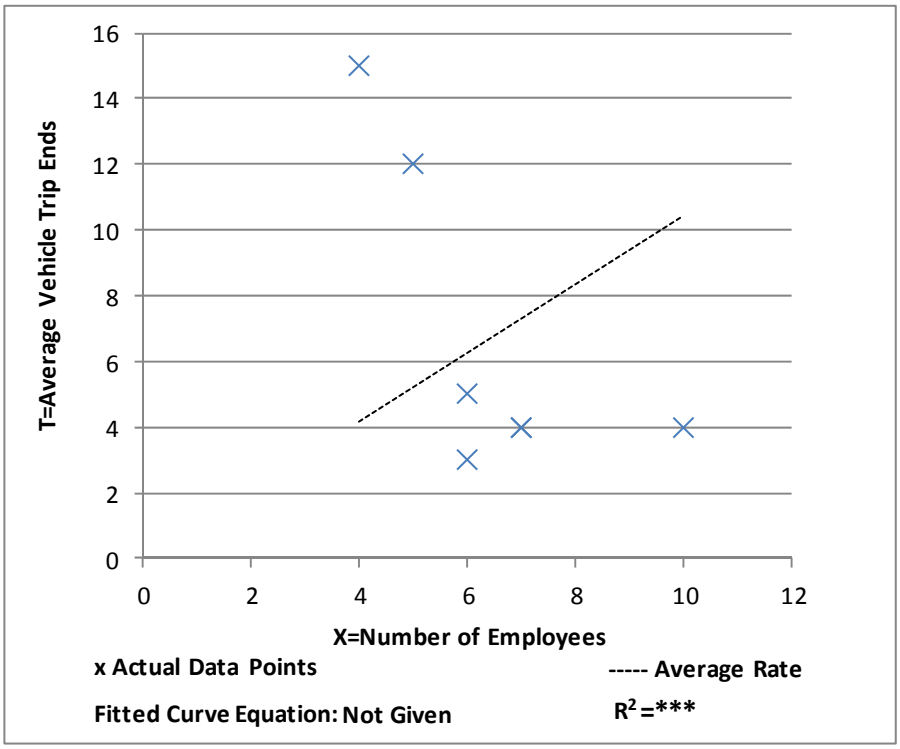
Animal Hospital/Veterinary Clinic
(640)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of Employees:	6
Directional Distribution:	34% entering, 66% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.04	0.40-3.75	1.12

Data Plot and Equation



Animal Hospital/Veterinary Clinic
(640)

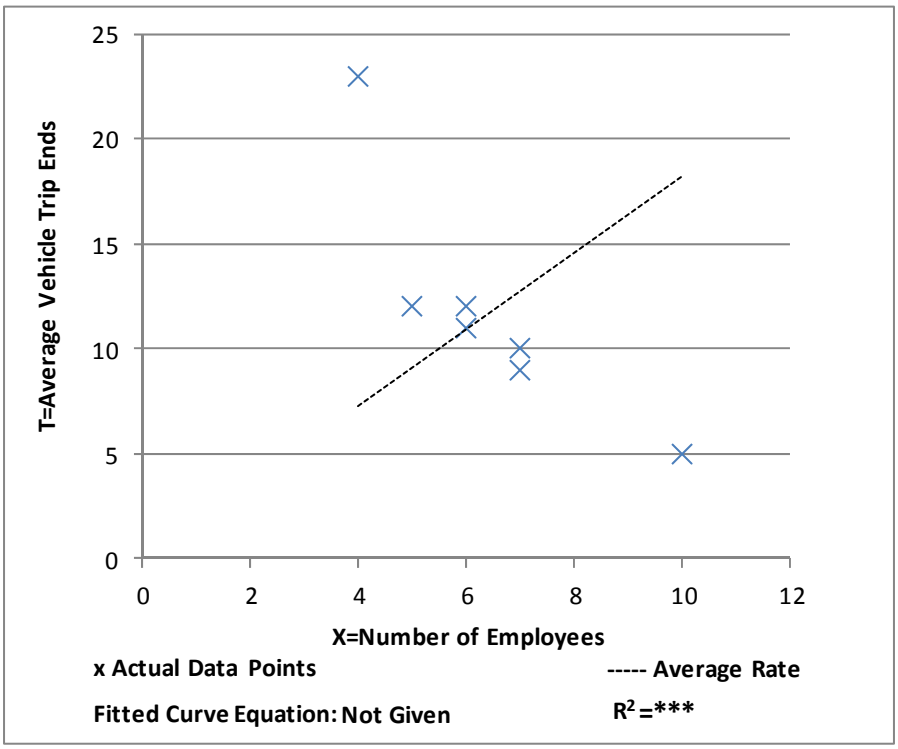
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.82	0.50-5.75	1.49

Data Plot and Equation



Animal Hospital/Veterinary Clinic
(640)

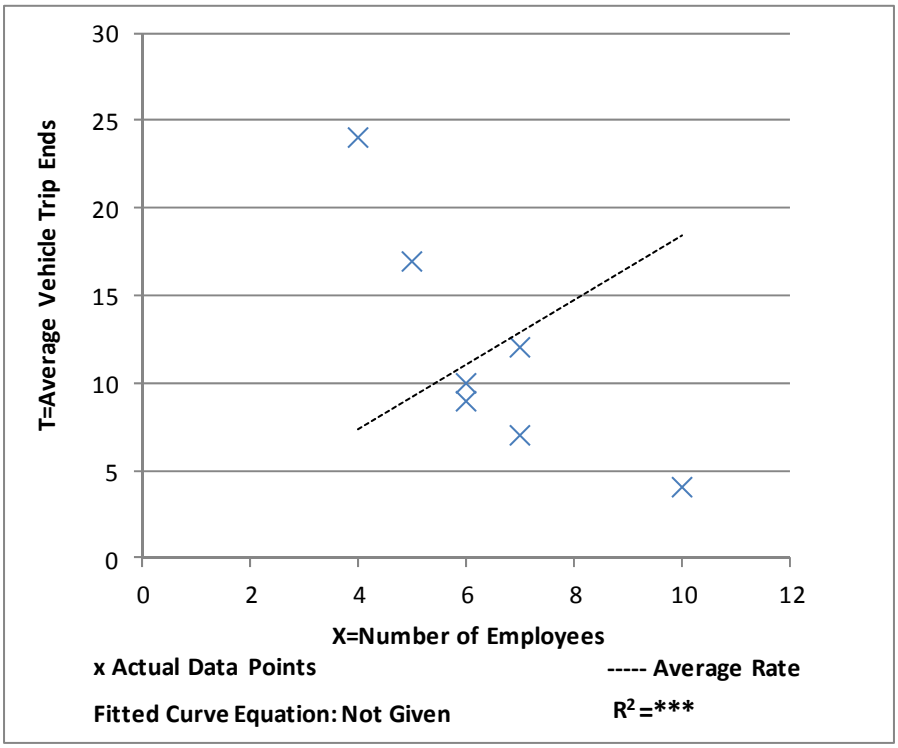
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.84	0.40-6.00	1.68

Data Plot and Equation



Animal Hospital/Veterinary Clinic
(640)

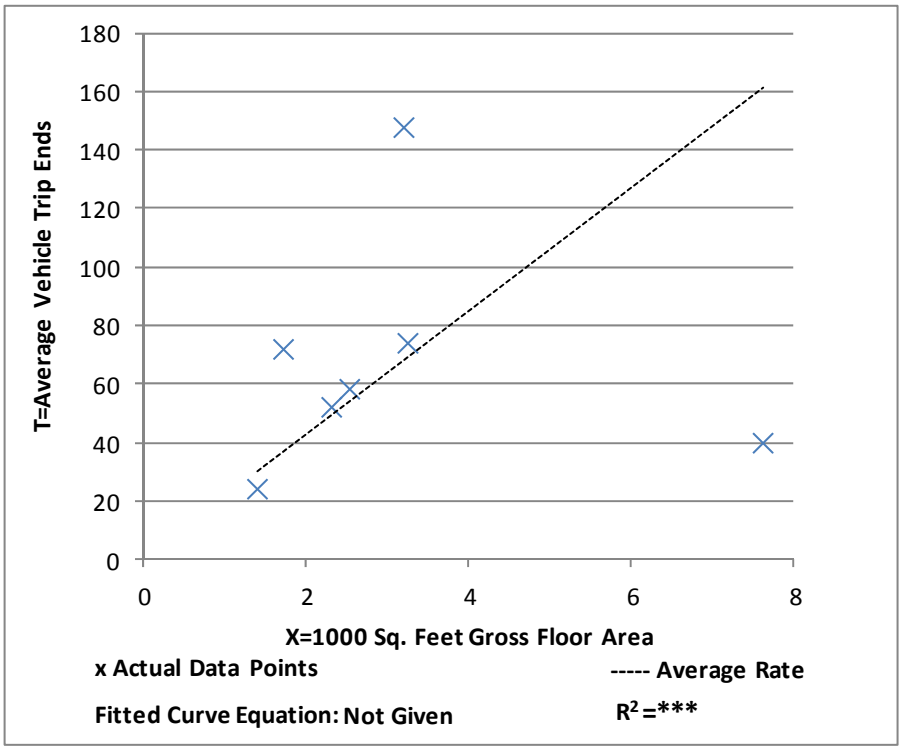
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
21.22	5.25-46.25	16.30

Data Plot and Equation



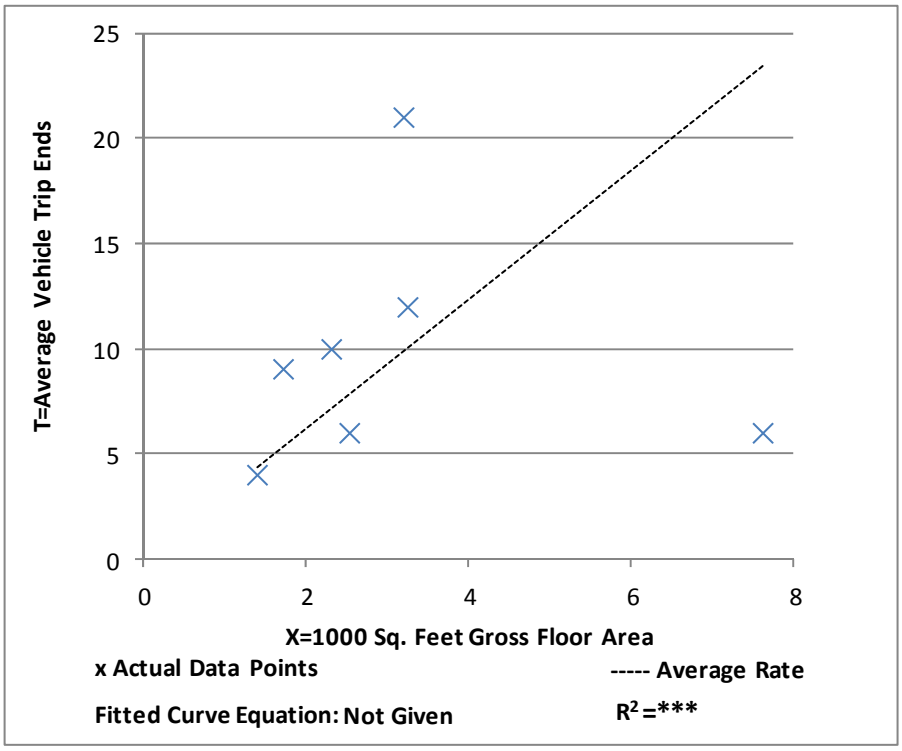
Animal Hospital/Veterinary Clinic
(640)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	64% entering, 36% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.08	0.79-6.56	2.29

Data Plot and Equation



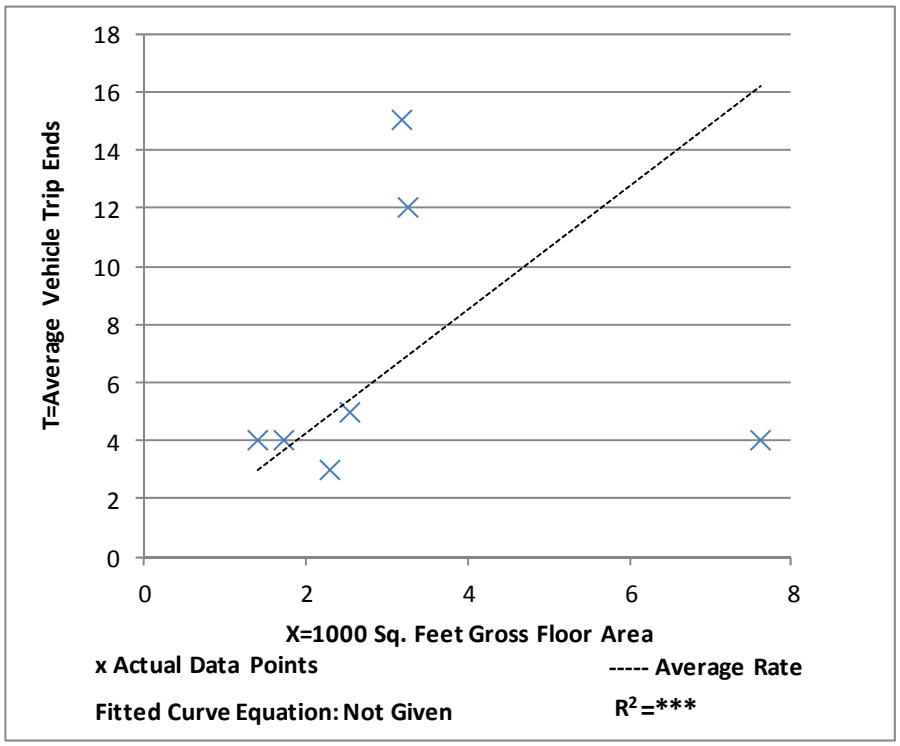
Animal Hospital/Veterinary Clinic
(640)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	30% entering, 70% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.13	0.53-4.69	1.69

Data Plot and Equation



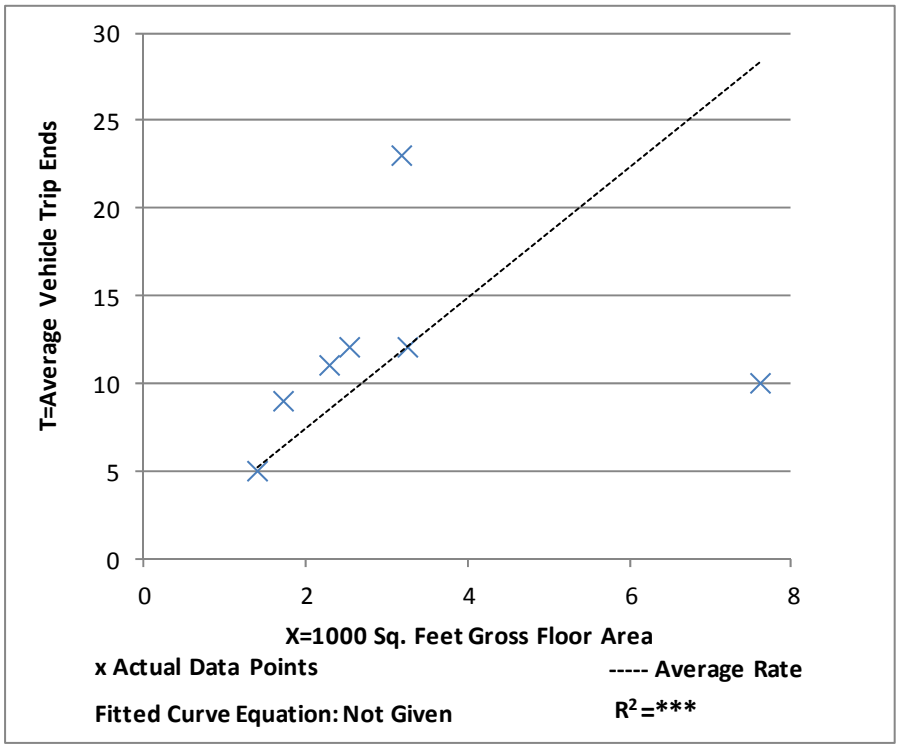
Animal Hospital/Veterinary Clinic
(640)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.72	1.31-7.19	2.27

Data Plot and Equation



Animal Hospital/Veterinary Clinic
(640)

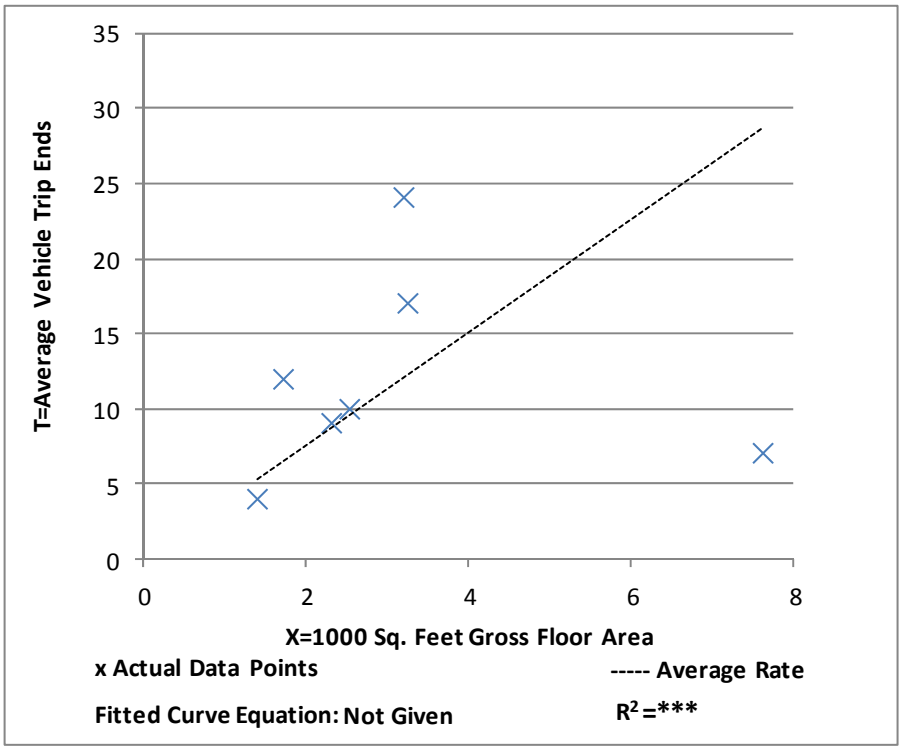
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	49% entering, 51% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.76	0.92-7.50	2.73

Data Plot and Equation



VOLUME 3-TRIP GENERATION RATES, PLOTS AND EQUATIONS

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Convenience Market (Open 15-16 Hours) 285
Convenience Market w/ Gas Pumps 297
Pharmacy/Drugstore w/ Drive Through 313
Furniture Store 325

Land Use: 720
Medical-Dental Office Building

Description

A medical-dental office building is a facility that provides diagnoses and outpatient care on a routine basis but is unable to provide prolonged in-house medical and surgical care. One or more private physicians or dentists generally operate this type of facility. Clinic (Land Use 630) is a related use.

Source Numbers

1, 2, 3, 4, 5

Medical-Dental Office Building
(720)

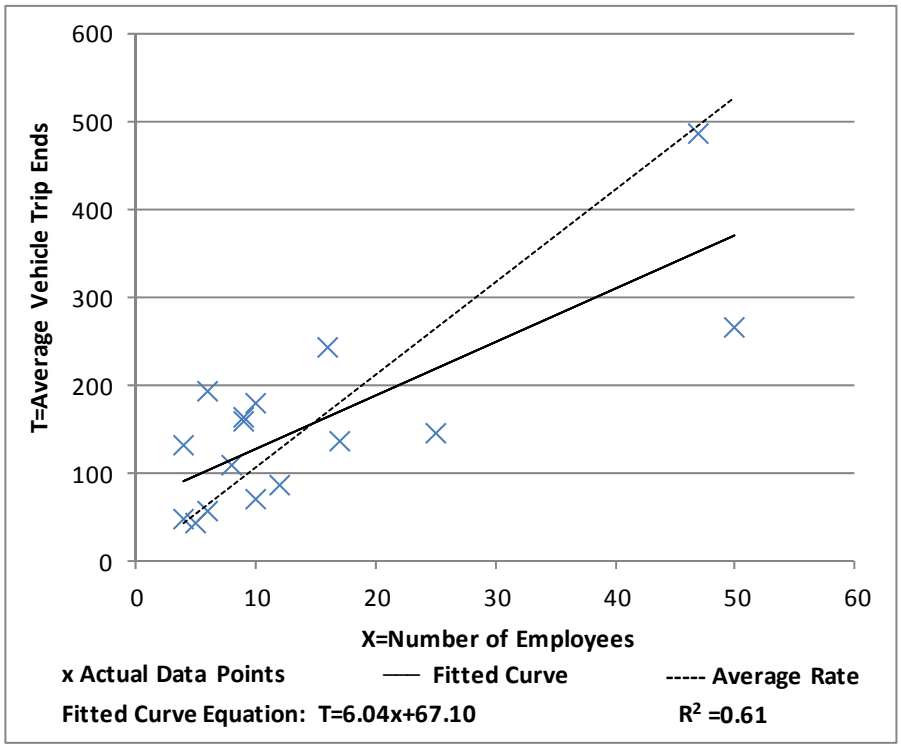
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 16
Average Number of Employees: 15
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
10.55	5.32-33.00	6.55

Data Plot and Equation



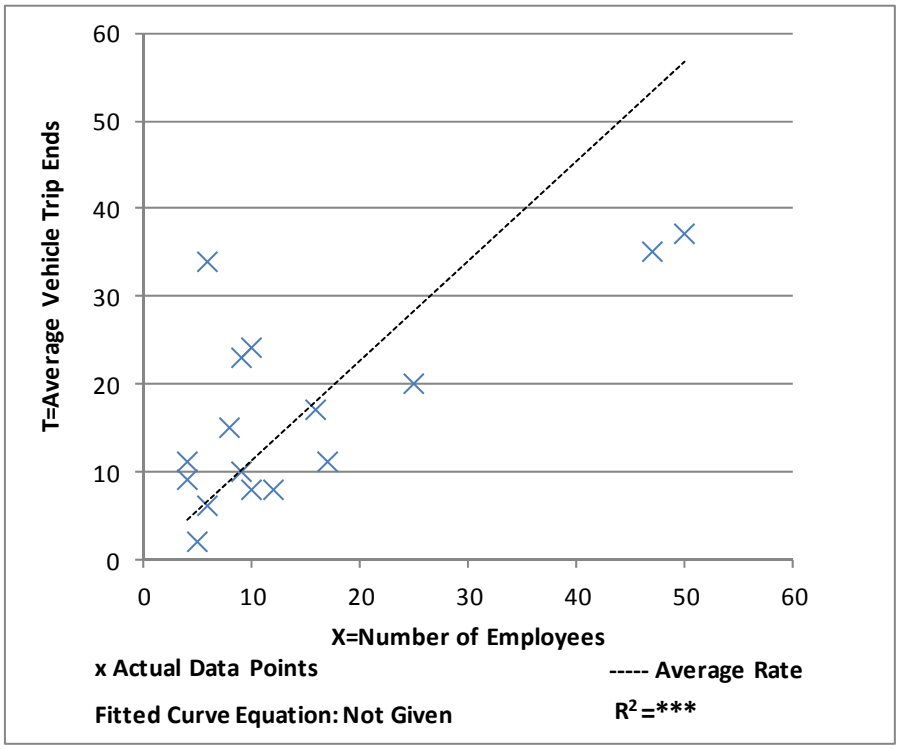
Medical-Dental Office Building
(720)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	16
Average Number of Employees:	15
Directional Distribution:	78% entering, 22% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.13	0.40-5.67	0.99

Data Plot and Equation



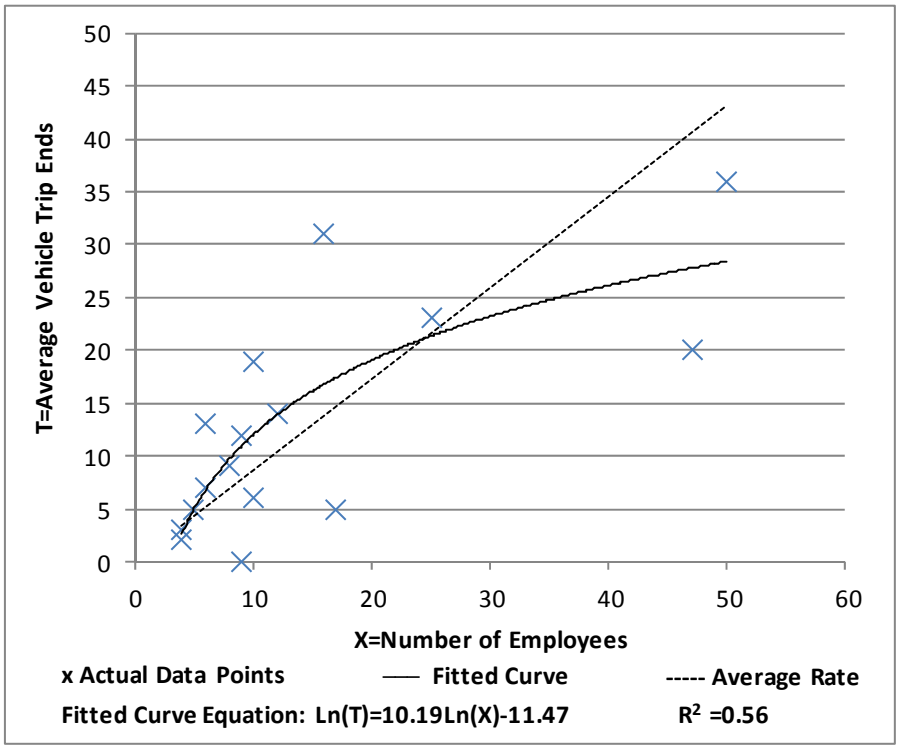
Medical-Dental Office Building
(720)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	16
Average Number of Employees:	15
Directional Distribution:	27% entering, 73% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.86	0.00-2.17	0.57

Data Plot and Equation



Medical-Dental Office Building
(720)

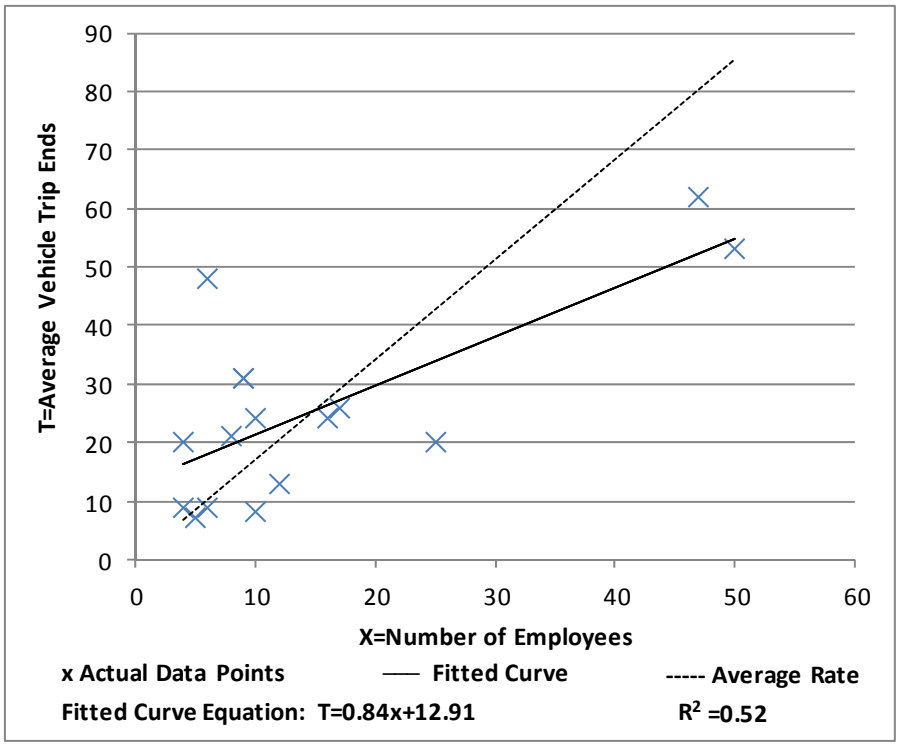
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	16
Average Number of Employees:	15
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.71	0.80-8.00	1.40

Data Plot and Equation



Medical-Dental Office Building
(720)

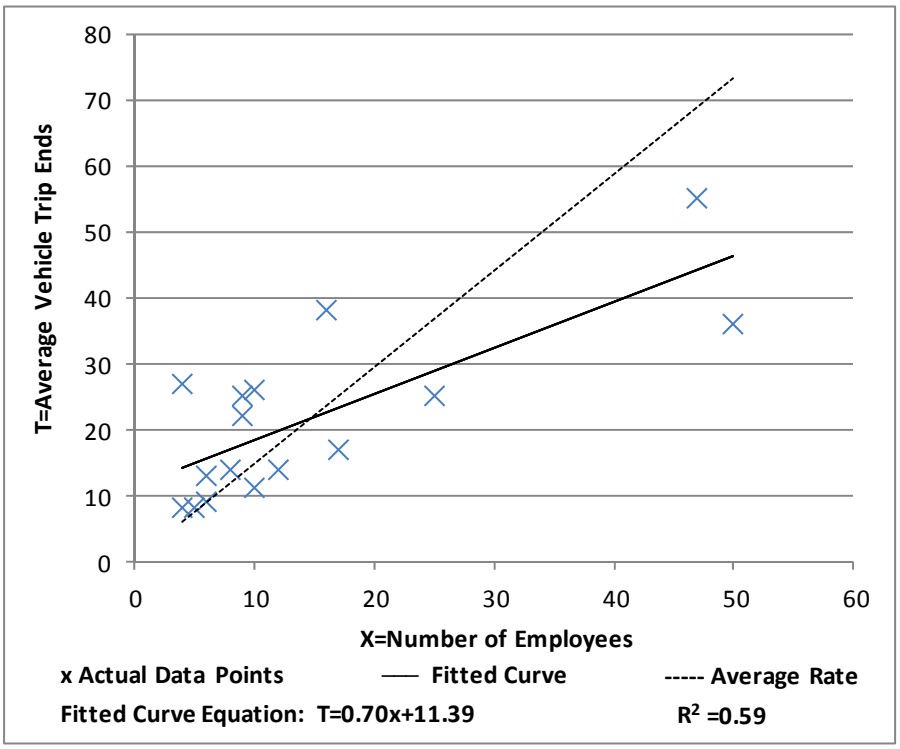
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	16
Average Number of Employees:	15
Directional Distribution:	41% entering, 59% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.46	0.72-6.75	1.00

Data Plot and Equation



Medical-Dental Office Building
(720)

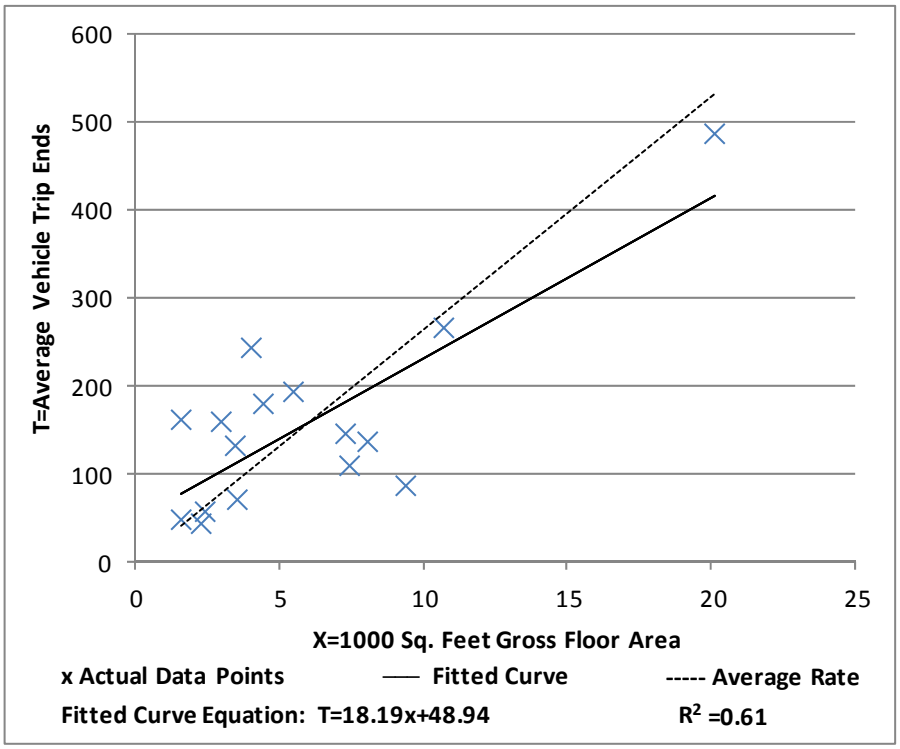
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	16
Average Number of 1000 Sq. Feet Gross Floor Area:	6
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
26.44	9.14-100.75	16.29

Data Plot and Equation



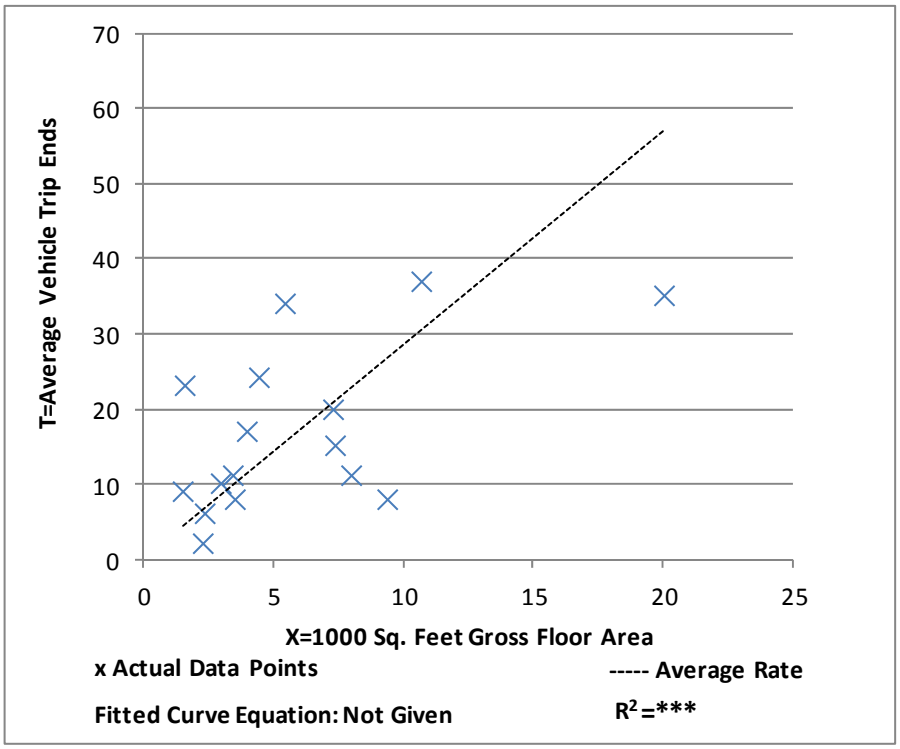
Medical-Dental Office Building
(720)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	16
Average Number of 1000 Sq. Feet Gross Floor Area:	6
Directional Distribution:	75% entering, 25% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.84	0.85-14.30	2.22

Data Plot and Equation



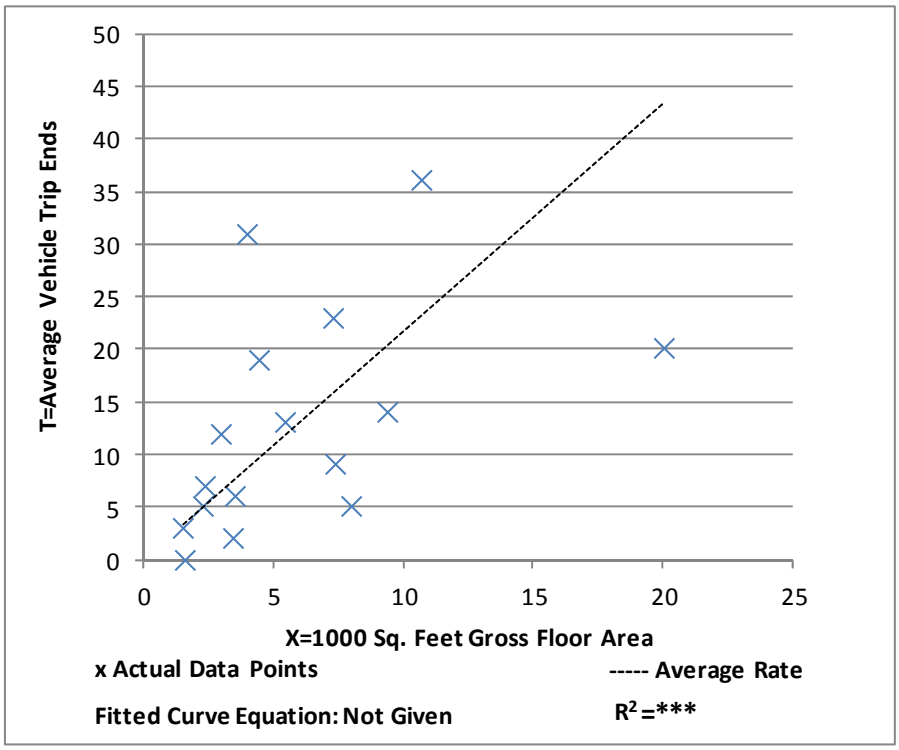
Medical-Dental Office Building
(720)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	16
Average Number of 1000 Sq. Feet Gross Floor Area:	6
Directional Distribution:	31% entering, 69% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.16	0.00-7.75	1.72

Data Plot and Equation



Medical-Dental Office Building
(720)

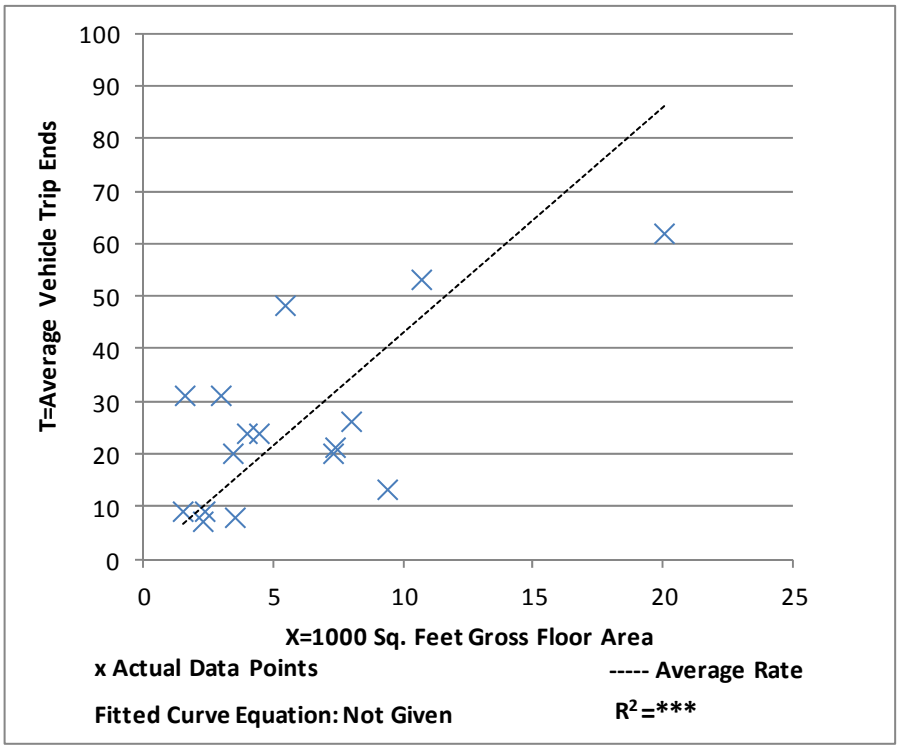
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	16
Average Number of 1000 Sq. Feet Gross Floor Area:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.28	1.38-19.28	3.02

Data Plot and Equation



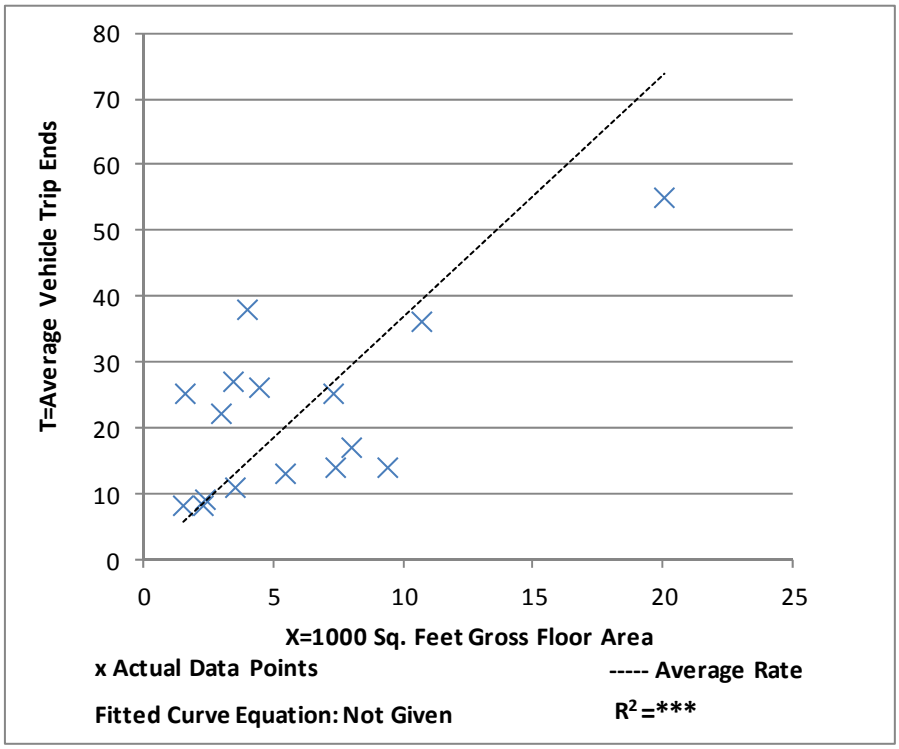
Medical-Dental Office Building
(720)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	16
Average Number of 1000 Sq. Feet Gross Floor Area:	6
Directional Distribution:	44% entering, 56% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.67	1.49-15.55	2.66

Data Plot and Equation



Land Use: 812
Building Materials and Lumber Store

Description

A building materials and lumber store is a free-standing building that sells hardware, building materials and lumber. The lumber may be stored in the main building, yard, or storage shed. The buildings contained in this land use are less than 30,000 square feet gross floor area. Hardware/paint store (Land Use 816) and home improvement superstore (Land Use 862) are related uses.

Source Numbers

1, 2, 3, 4

Building Materials and Lumber Store
(812)

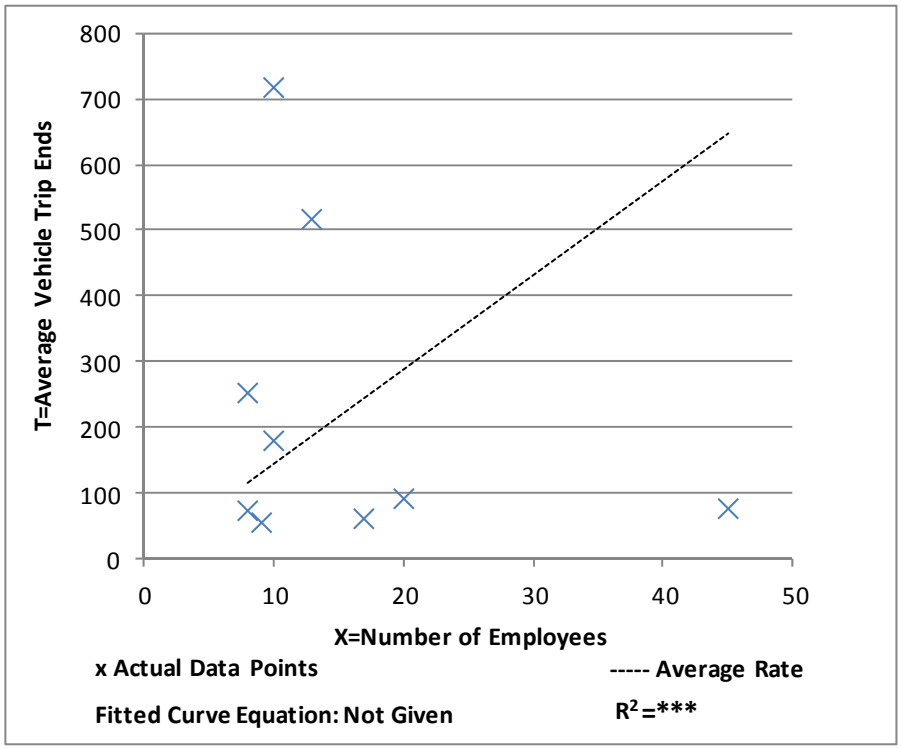
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 9
Average Number of Employees: 16
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
14.39	1.69-71.60	21.83

Data Plot and Equation



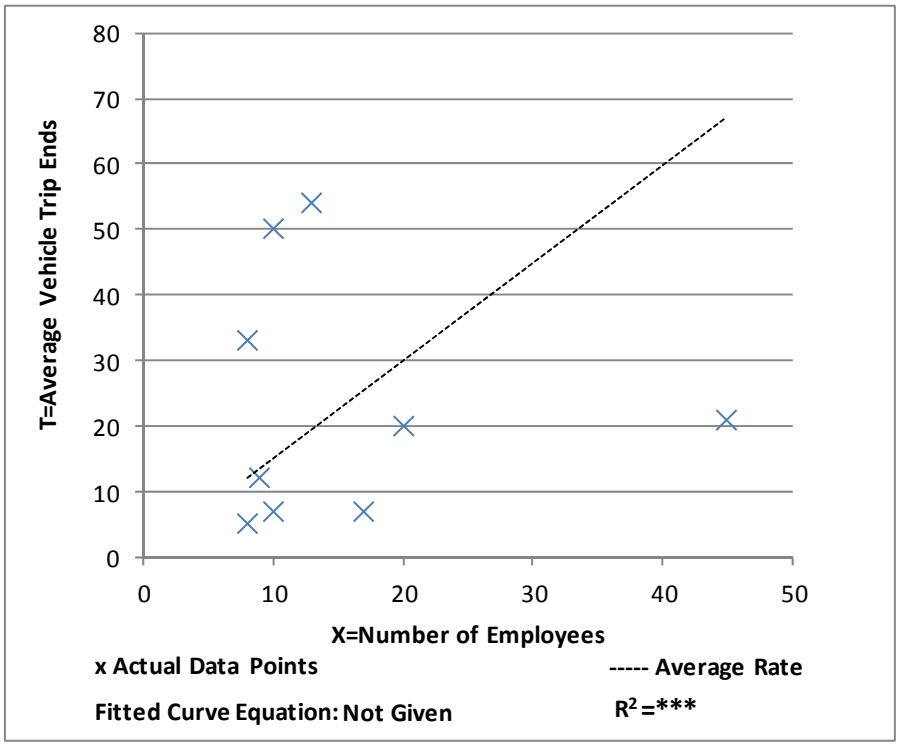
Building Materials and Lumber Store
(812)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	9
Average Number of Employees:	16
Directional Distribution:	79% entering, 21% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.49	0.41-5.00	1.75

Data Plot and Equation



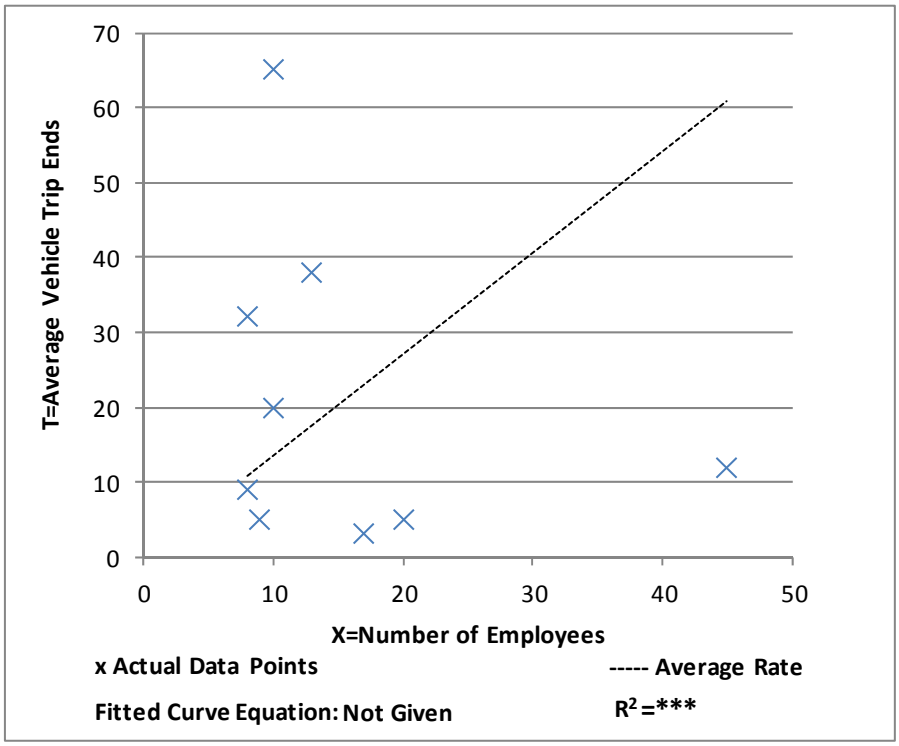
Building Materials and Lumber Store
(812)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	9
Average Number of Employees:	16
Directional Distribution:	26% entering, 74% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.35	0.18-6.50	2.00

Data Plot and Equation



Building Materials and Lumber Store
(812)

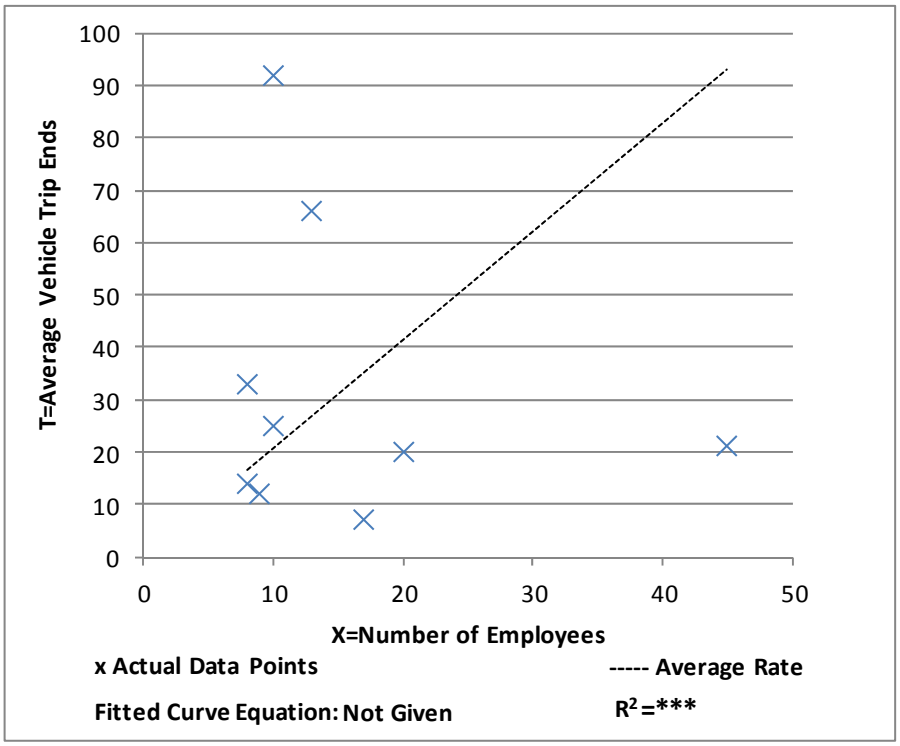
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	9
Average Number of Employees:	16
Directional Distribution:	76% entering, 24% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.07	0.41-9.20	2.71

Data Plot and Equation



Building Materials and Lumber Store
(812)

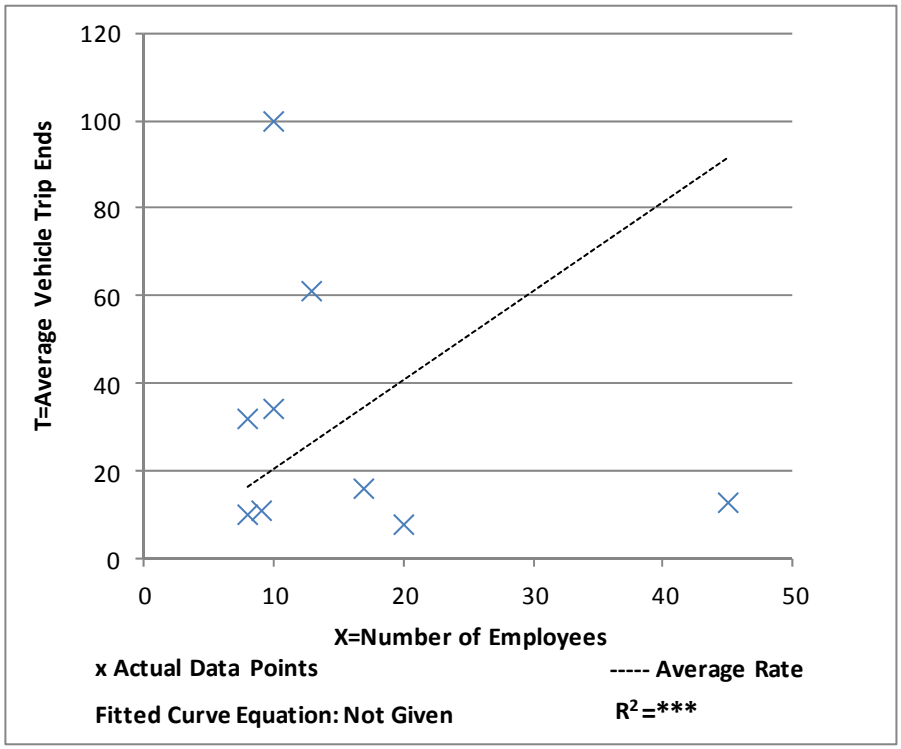
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	9
Average Number of Employees:	16
Directional Distribution:	28% entering, 72% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.04	0.29-10.00	2.93

Data Plot and Equation



Building Materials and Lumber Store
(812)

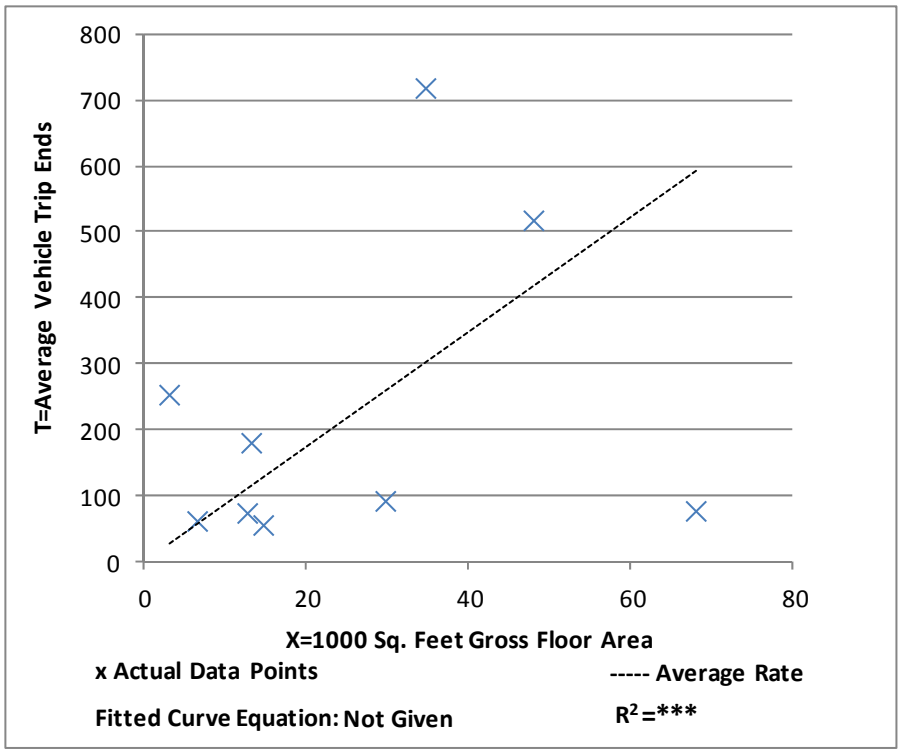
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	26
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
8.72	1.12-80.45	11.90

Data Plot and Equation



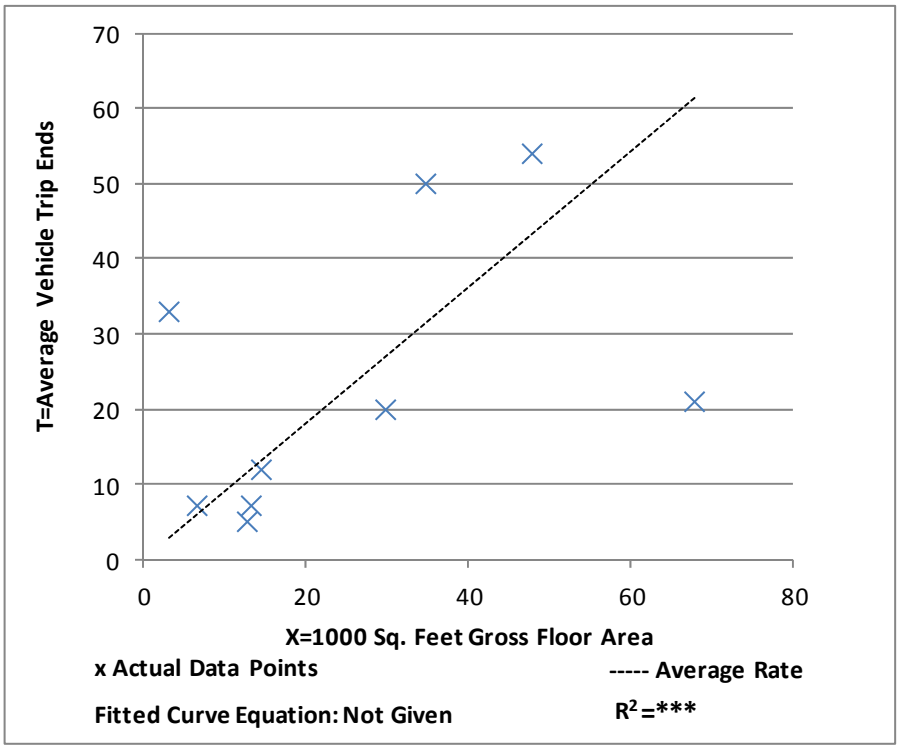
Building Materials and Lumber Store
(812)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	26
Directional Distribution:	73% entering, 27% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.90	0.31-10.58	1.33

Data Plot and Equation



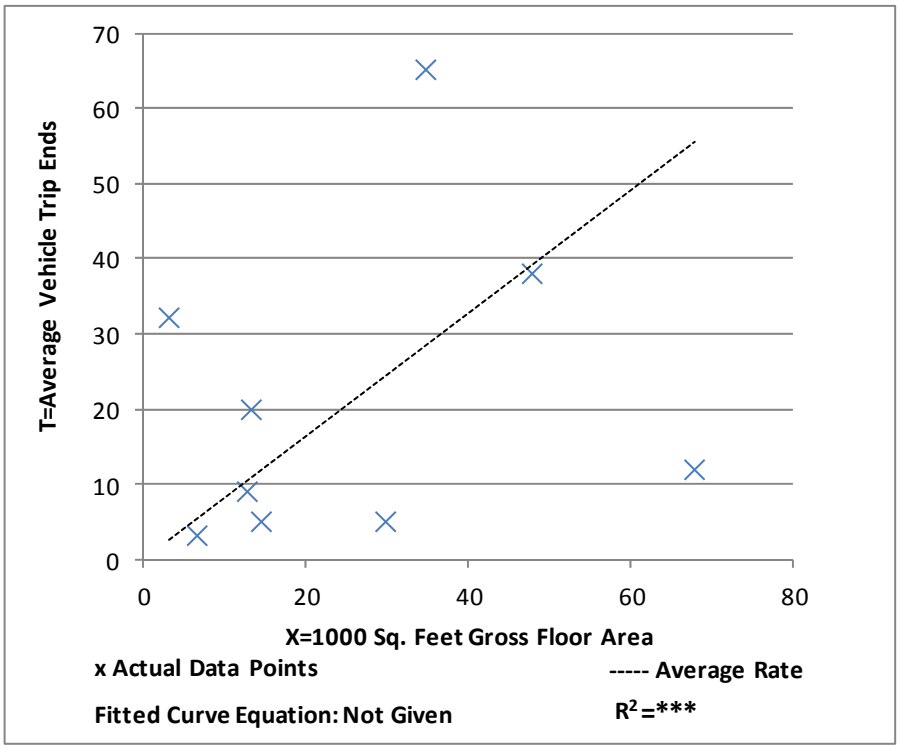
Building Materials and Lumber Store
(812)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	26
Directional Distribution:	29% entering, 71% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.82	0.17-10.26	1.39

Data Plot and Equation



Building Materials and Lumber Store
(812)

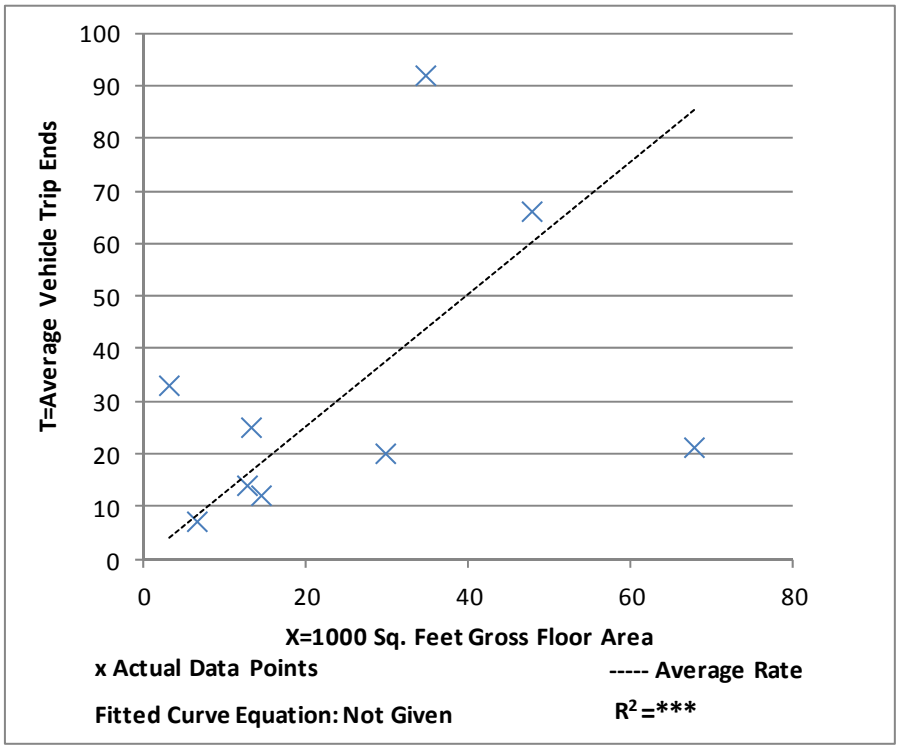
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	26
Directional Distribution:	76% entering, 24% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.26	0.31-10.58	1.49

Data Plot and Equation



Building Materials and Lumber Store
(812)

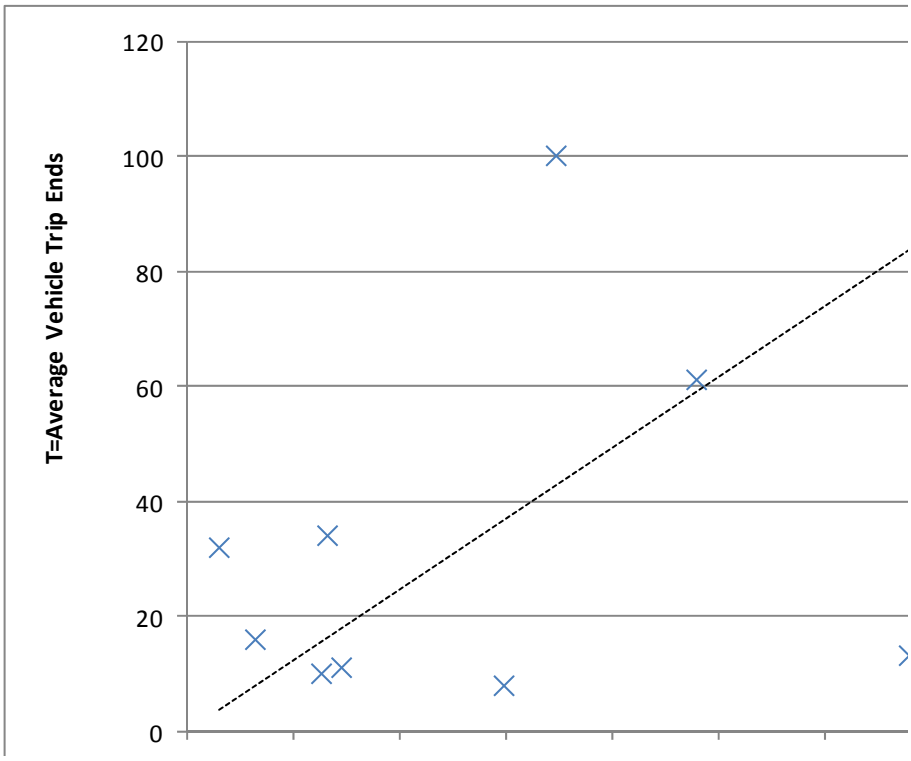
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	26
Directional Distribution:	31% entering, 69% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.23	0.19-10.26	1.61

Data Plot and Equation



Land Use: 814
Variety Store

Description

A variety store is a retail store that sells a broad range of inexpensive items often at a single price. These stores are typically referred to as "dollar stores." Items sold at these stores typically include kitchen supplies, cleaning products, home office supplies, food products, household goods, decorations and toys. These stores are sometimes stand-alone sites, but they may also be located in small strip shopping centers. Free-standing discount store (Land Use 815) is a related use.

Source Numbers

2, 3, 4, 5

Variety Store
(814)

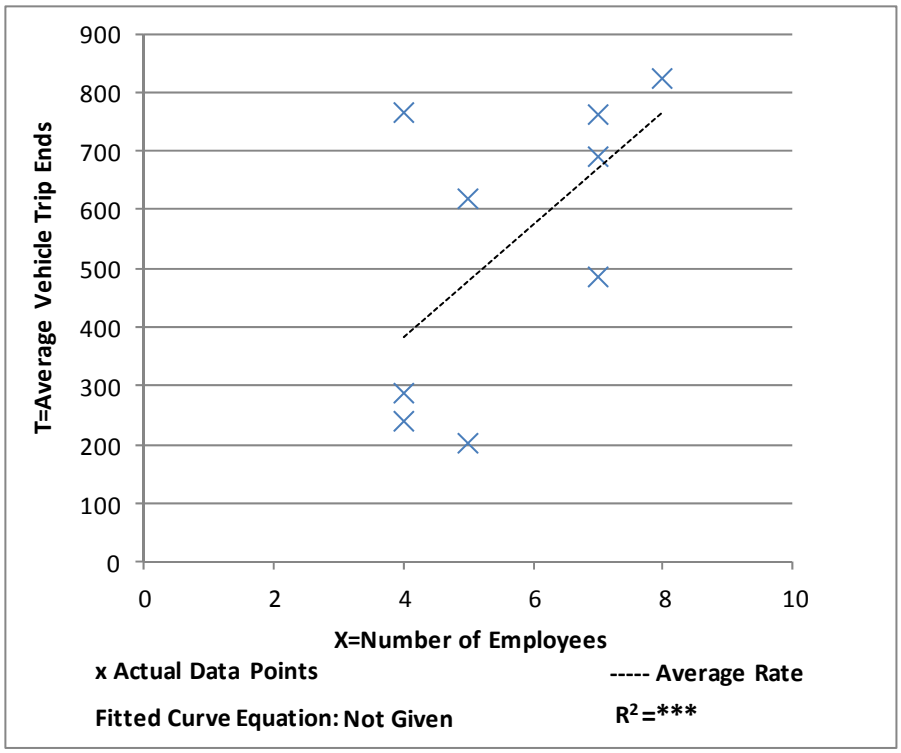
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	9
Average Number of Employees:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
95.59	40.40-191.00	39.30

Data Plot and Equation



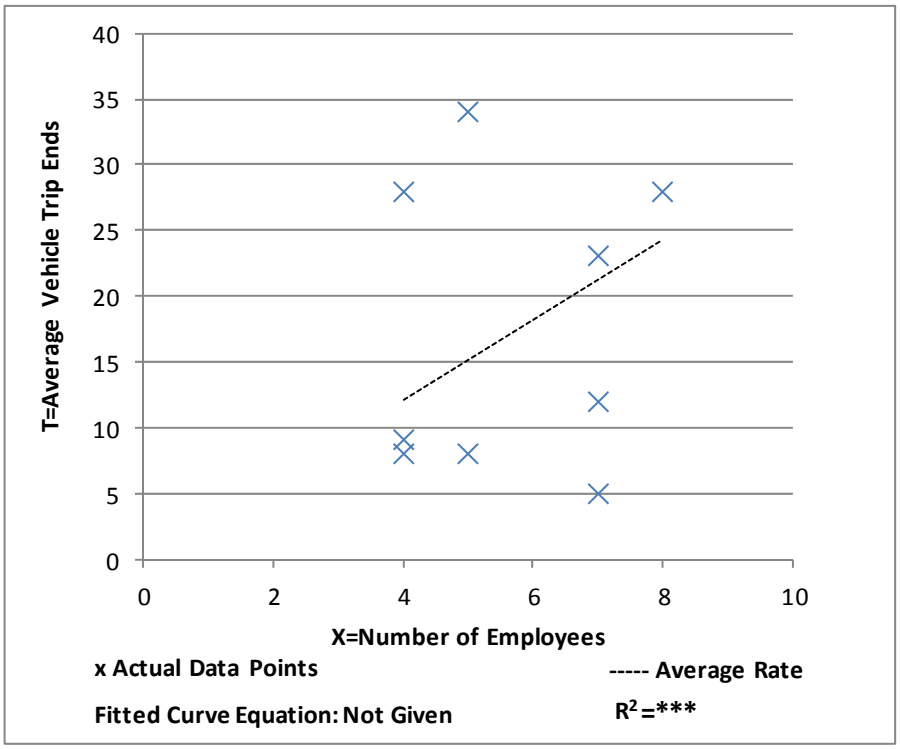
Variety Store
(814)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	9
Average Number of Employees:	6
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.04	0.71-7.00	2.12

Data Plot and Equation



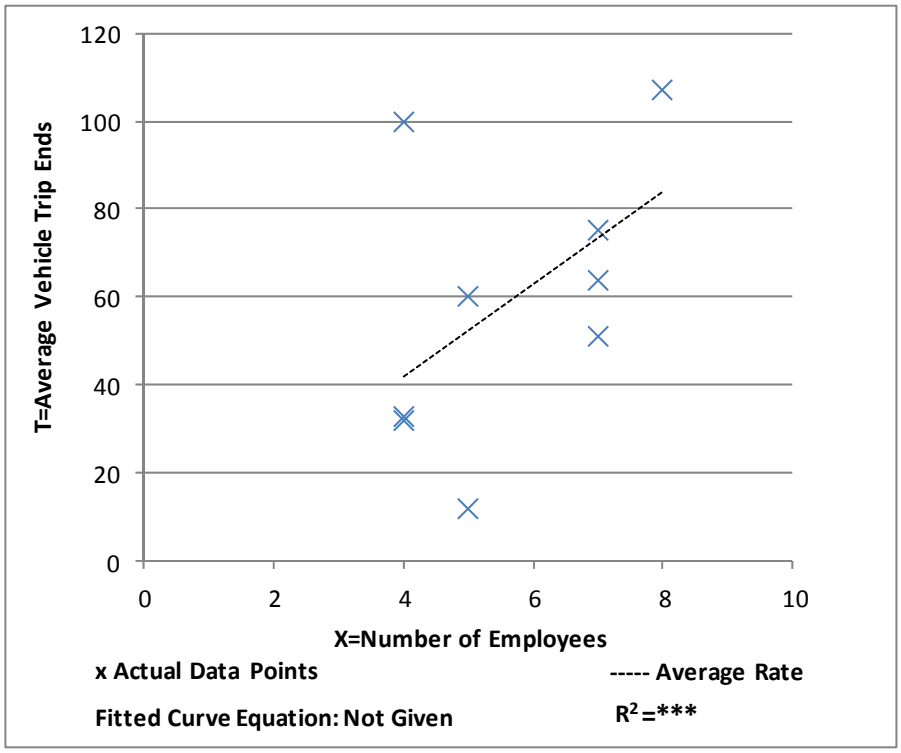
Variety Store
(814)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	9
Average Number of Employees:	6
Directional Distribution:	62% entering, 38% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
10.47	2.40-25.00	5.54

Data Plot and Equation



Variety Store
(814)

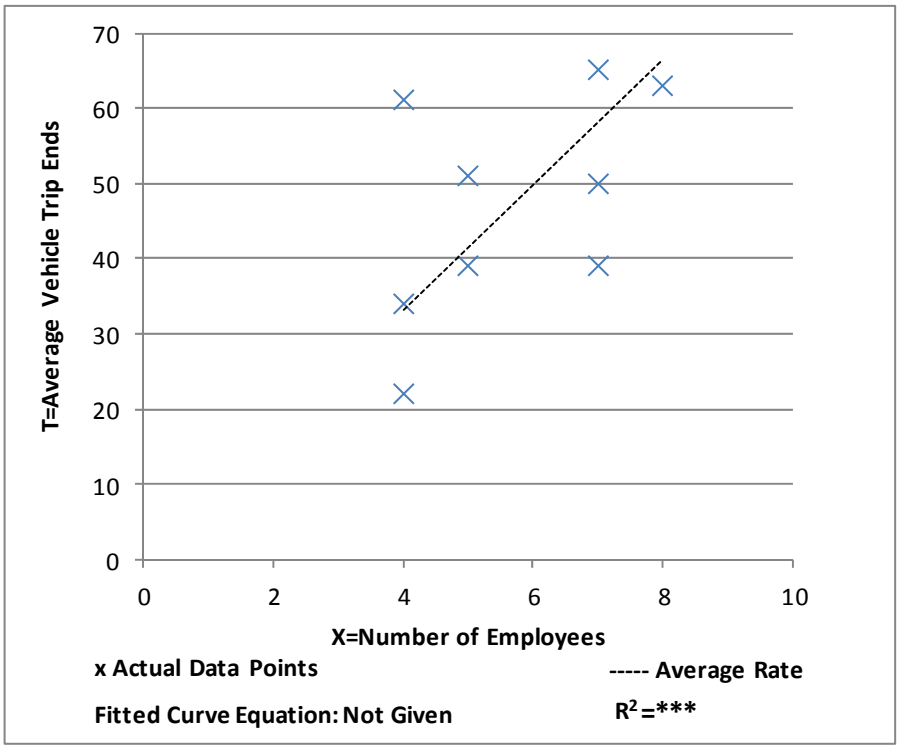
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	9
Average Number of Employees:	6
Directional Distribution:	53% entering, 47% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
8.31	5.50-15.25	2.64

Data Plot and Equation



Variety Store
(814)

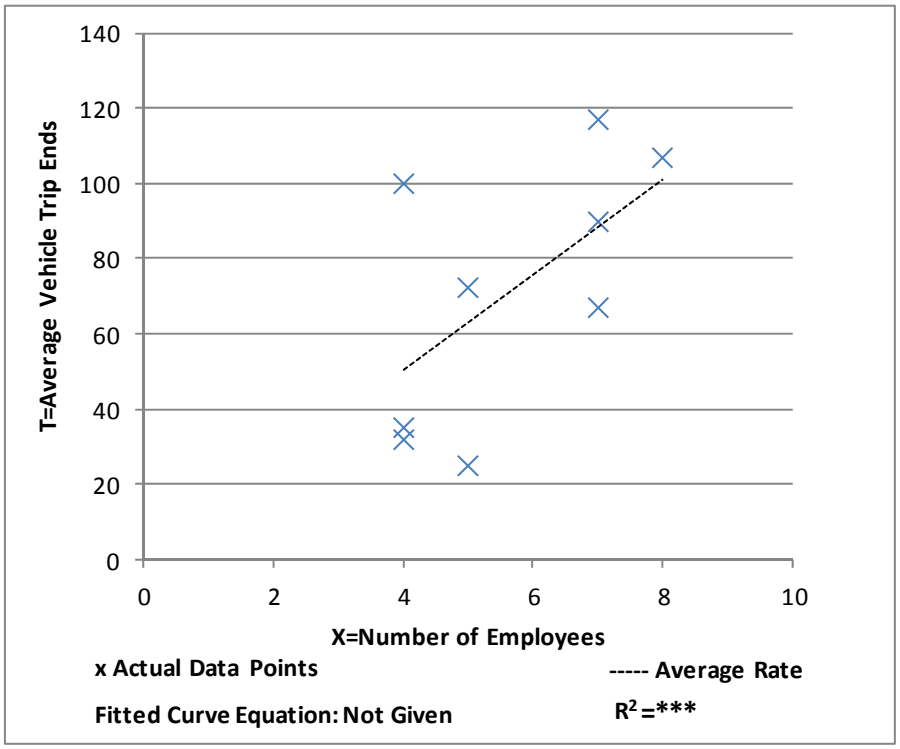
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	9
Average Number of Employees:	6
Directional Distribution:	72% entering, 28% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
12.65	5.00-25.00	5.28

Data Plot and Equation



Variety Store
(814)

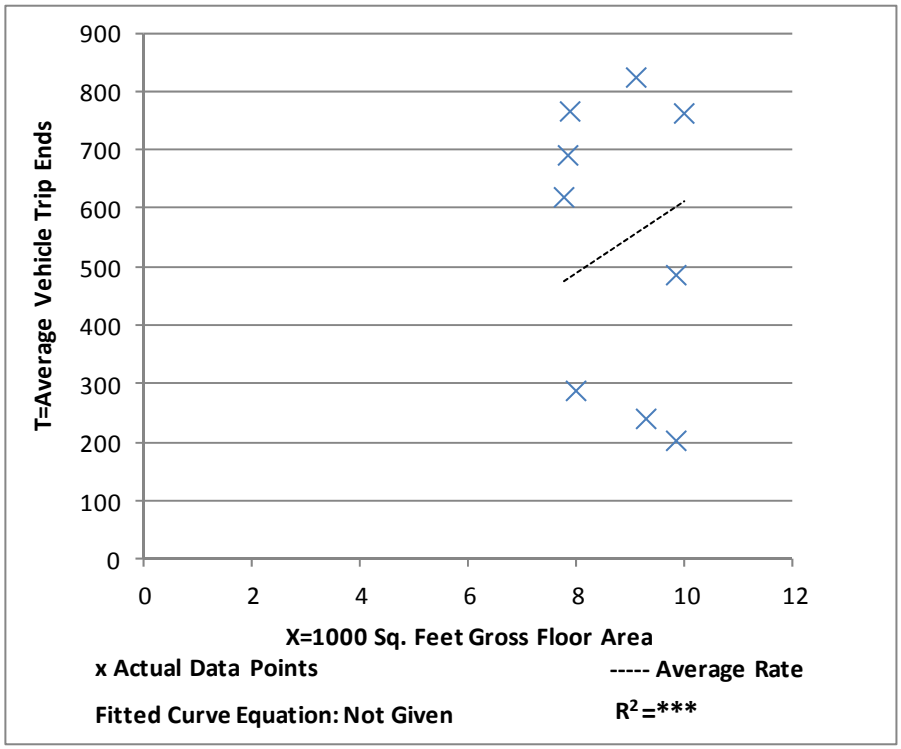
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	9
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
61.29	20.51-97.15	29.82

Data Plot and Equation



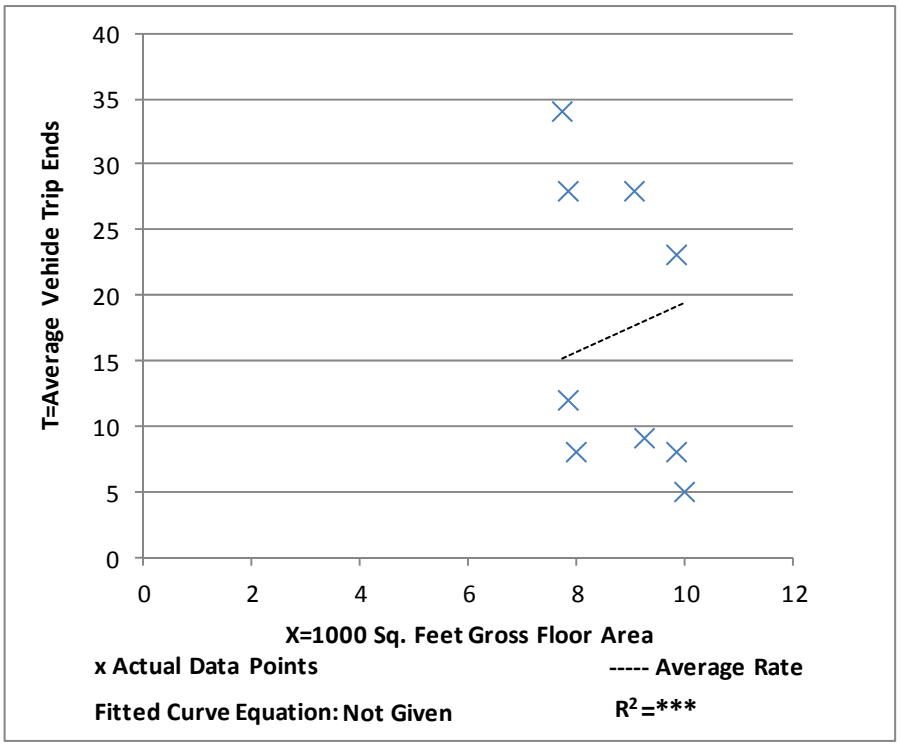
Variety Store
(814)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	9
Directional Distribution:	48% entering, 52% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.95	0.50-4.38	1.36

Data Plot and Equation



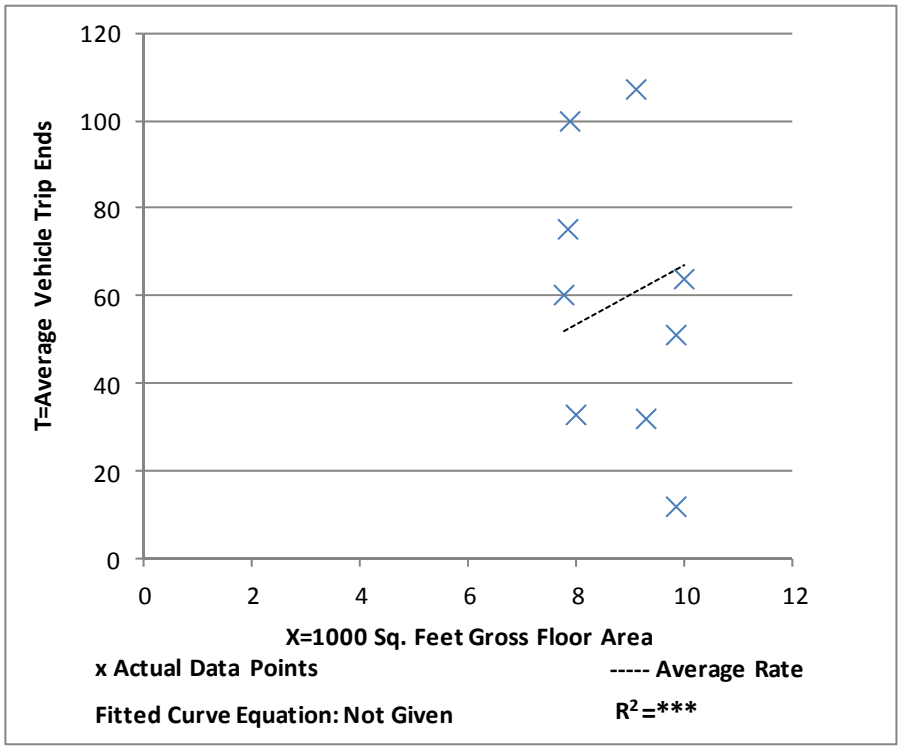
Variety Store
(814)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	9
Directional Distribution:	66% entering, 34% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
6.71	1.22-12.72	3.87

Data Plot and Equation



Variety Store
(814)

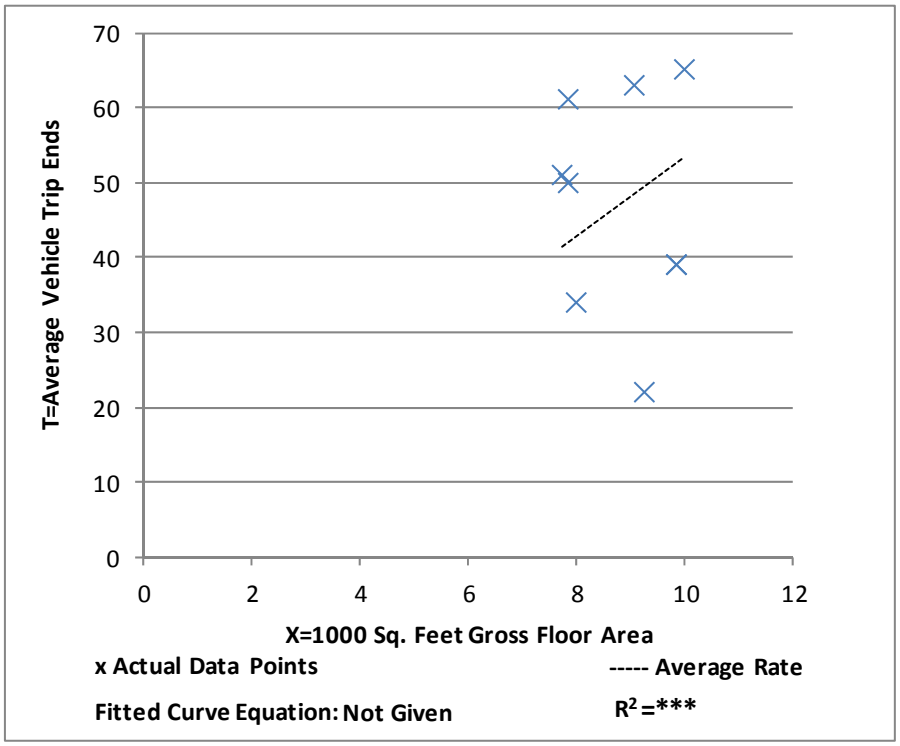
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	9
Directional Distribution:	53% entering, 47% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
5.33	2.37-7.76	1.81

Data Plot and Equation



Variety Store
(814)

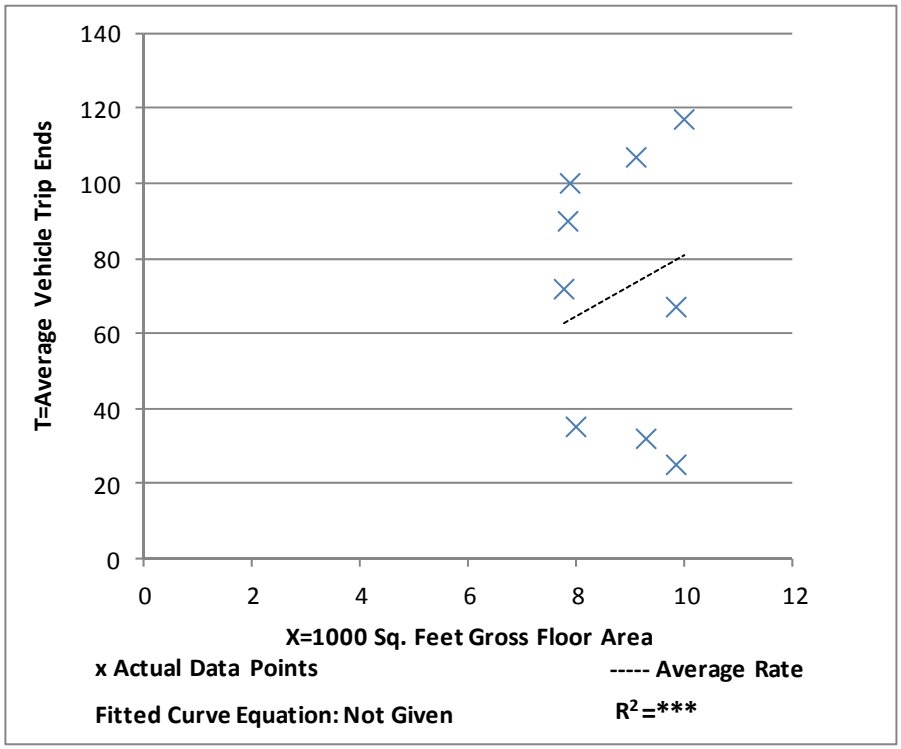
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	9
Average Number of 1000 Sq. Feet Gross Floor Area:	9
Directional Distribution:	81% entering, 19% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
8.11	2.54-12.72	4.04

Data Plot and Equation



Land Use: 816
Hardware/Paint Store

Description

Hardware/paint stores are generally free-standing buildings. Building materials and lumber store (Land Use 812) and home improvement superstore (Land Use 862) are related uses.

Source Numbers

1, 4

Hardware/Paint Store
(816)

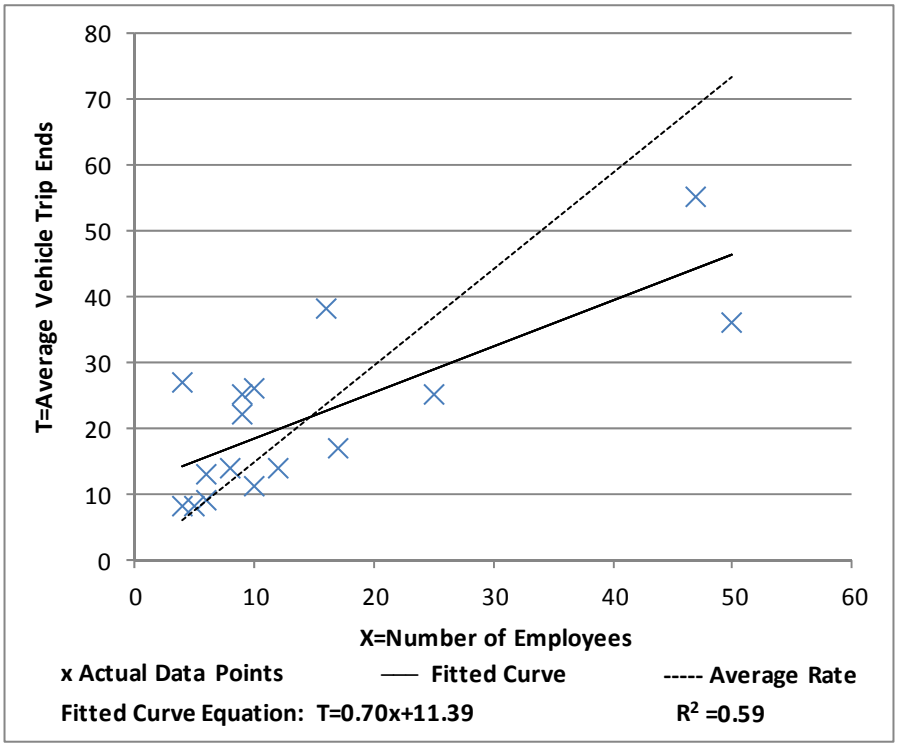
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	5
Average Number of Employees:	4
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
36.53	12.50-55.67	18.92

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



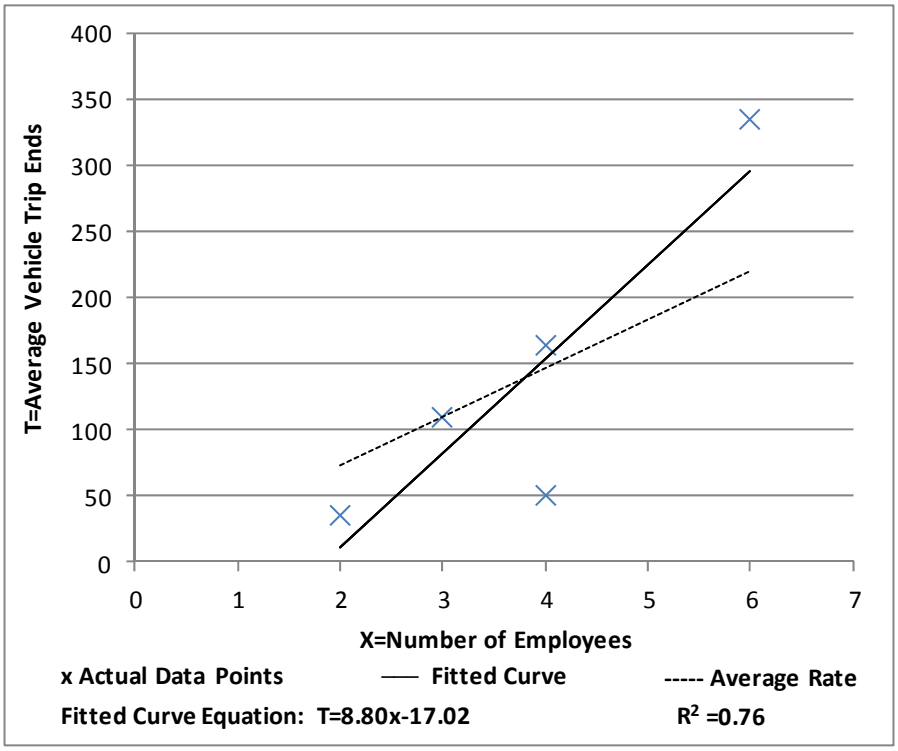
Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	5
Average Number of Employees:	4
Directional Distribution:	52% entering, 48% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.32	1.50-6.83	2.33

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



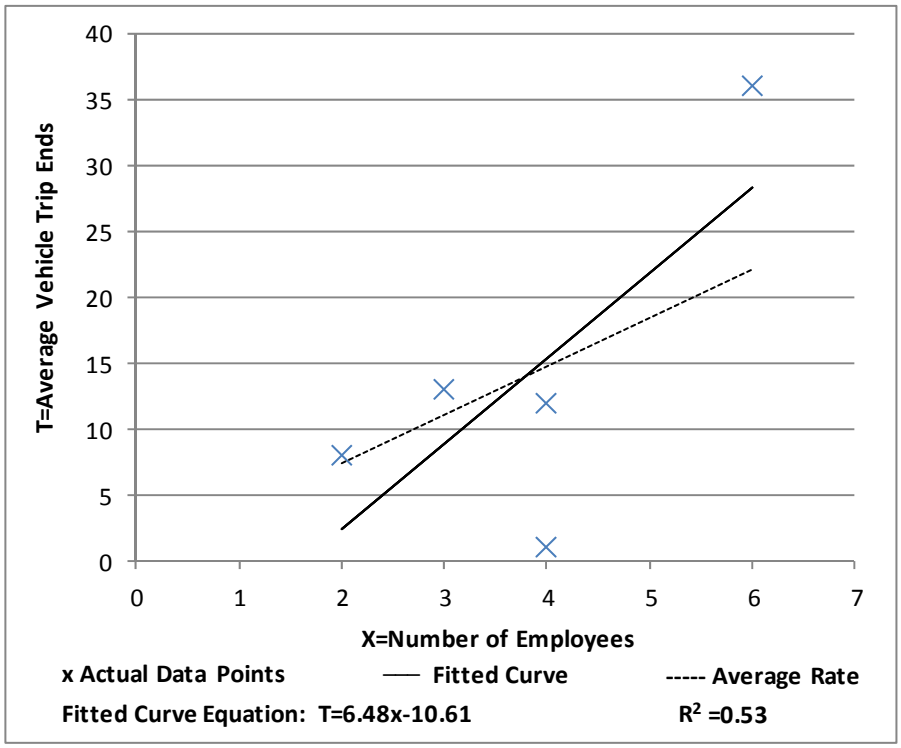
Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	5
Average Number of Employees:	4
Directional Distribution:	34% entering, 66% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.68	0.25-6.00	2.37

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Hardware/Paint Store
(816)

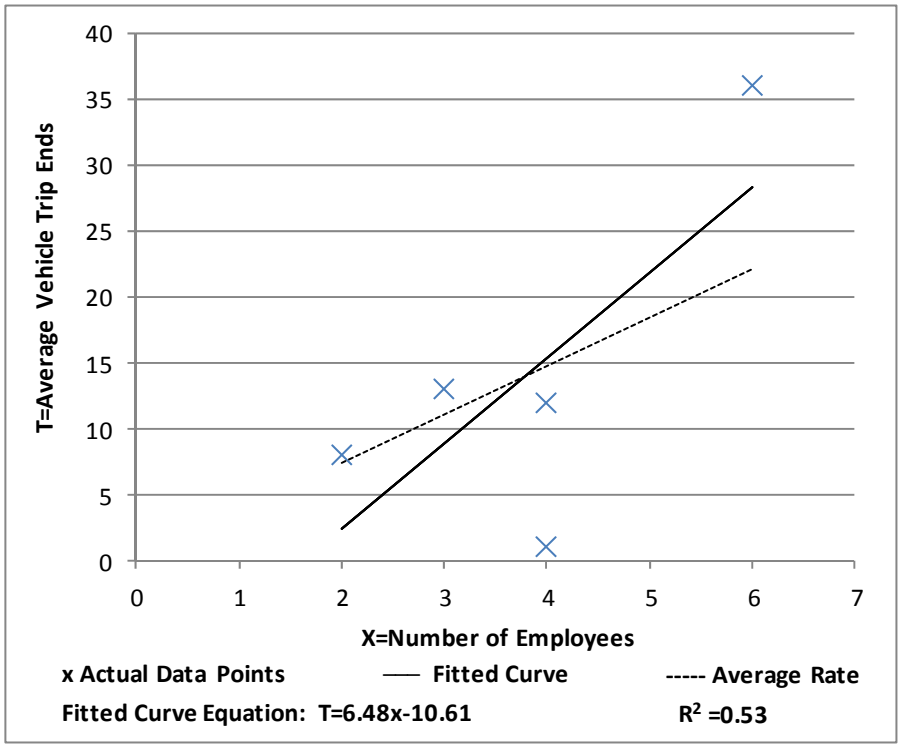
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	5
Average Number of Employees:	4
Directional Distribution:	55% entering, 45% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
5.37	3.00-6.83	1.64

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Hardware/Paint Store
(816)

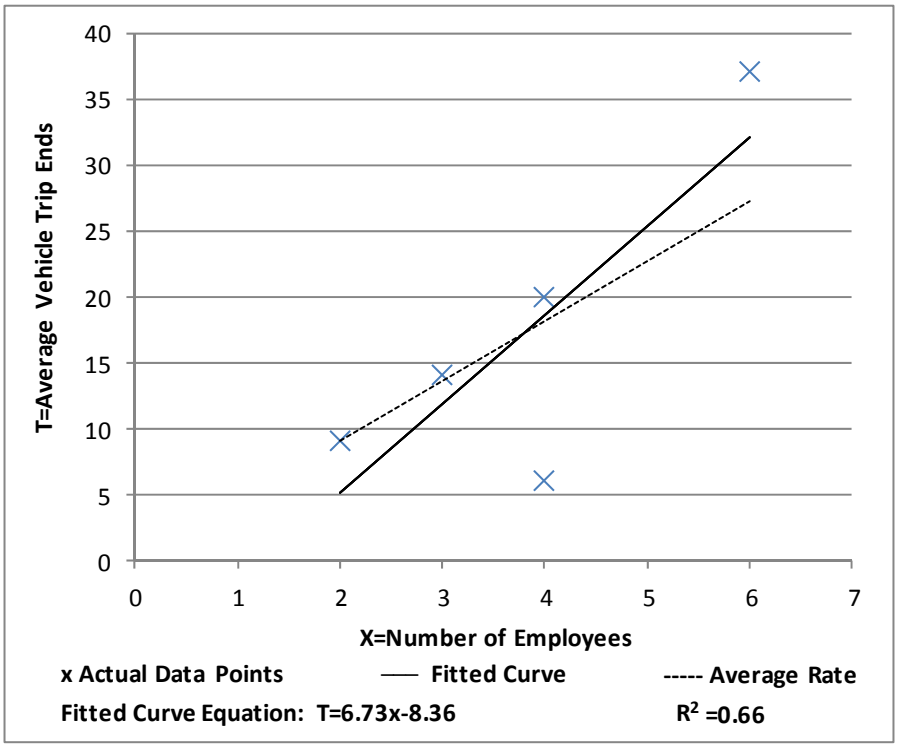
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	5
Average Number of Employees:	4
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.53	1.50-6.17	1.91

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



General Light Industrial
(816)

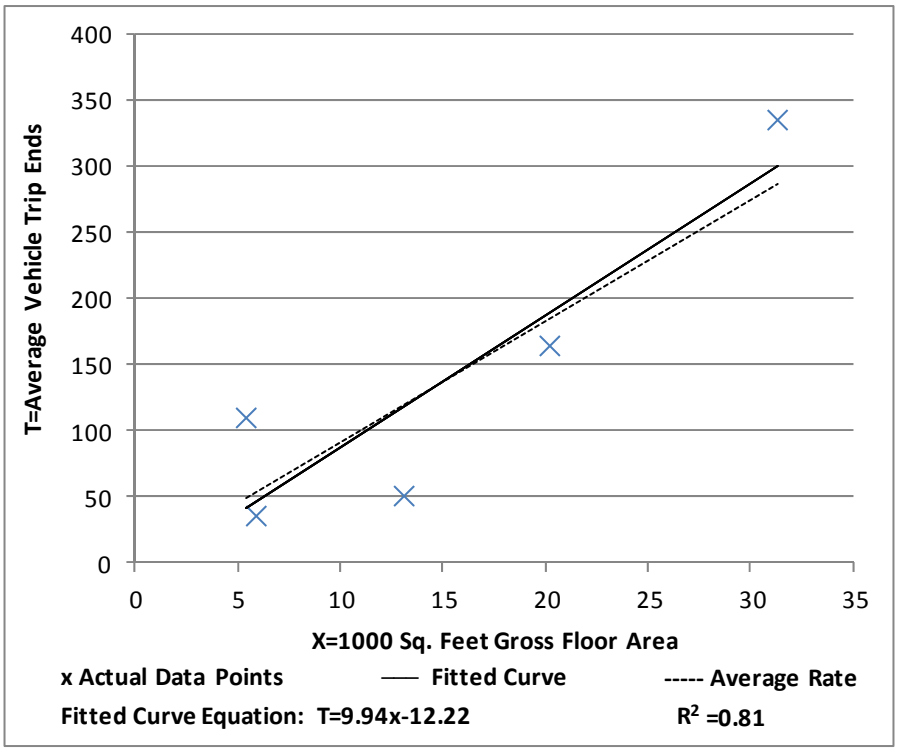
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	15
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
9.14	3.82-20.33	4.68

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



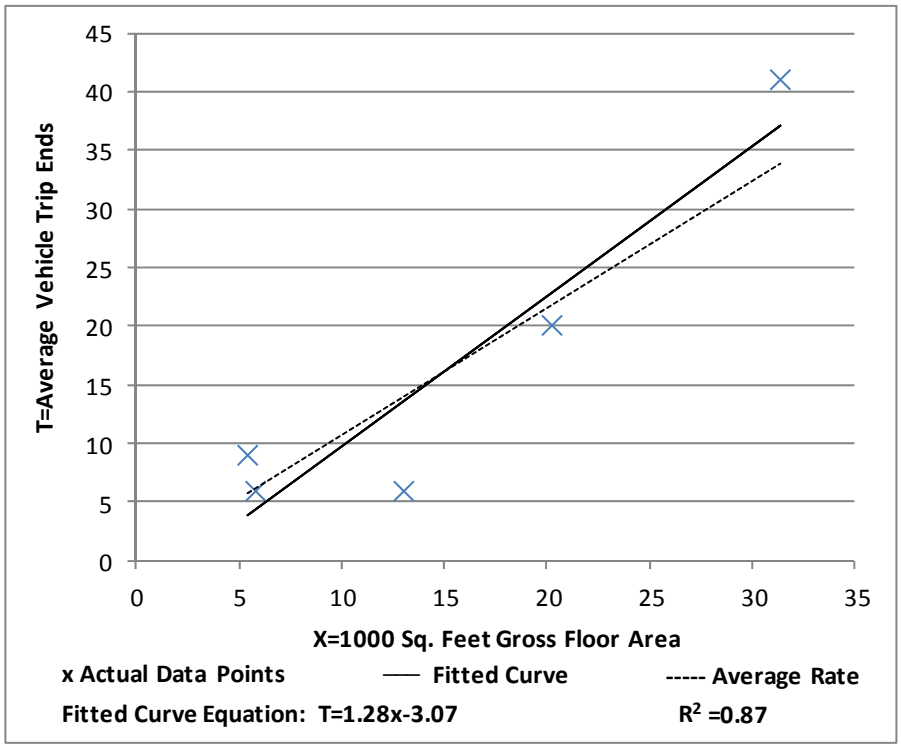
General Light Industrial
(816)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	15
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.08	0.46-1.66	0.40

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



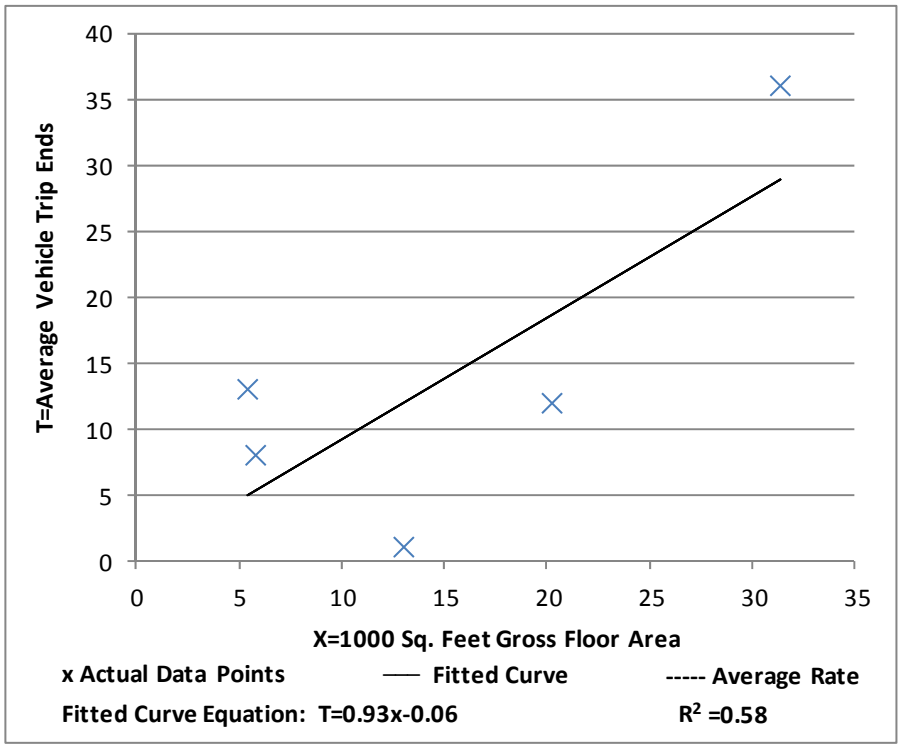
Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	15
Directional Distribution:	34% entering, 66% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.92	0.08-2.40	0.69

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



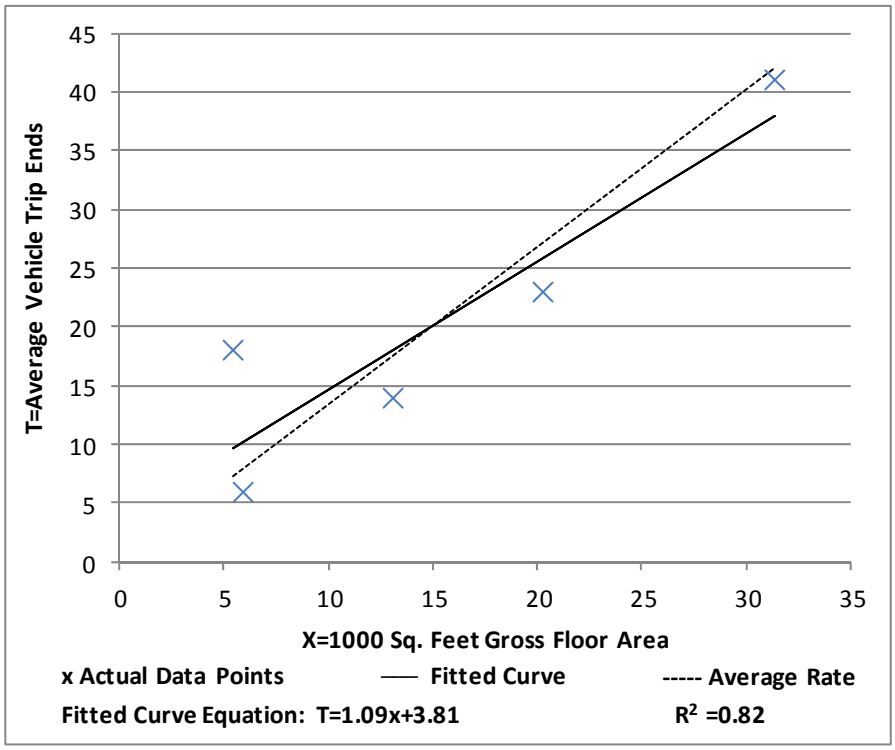
Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	15
Directional Distribution:	55% entering, 45% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.34	1.02-3.33	0.66

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



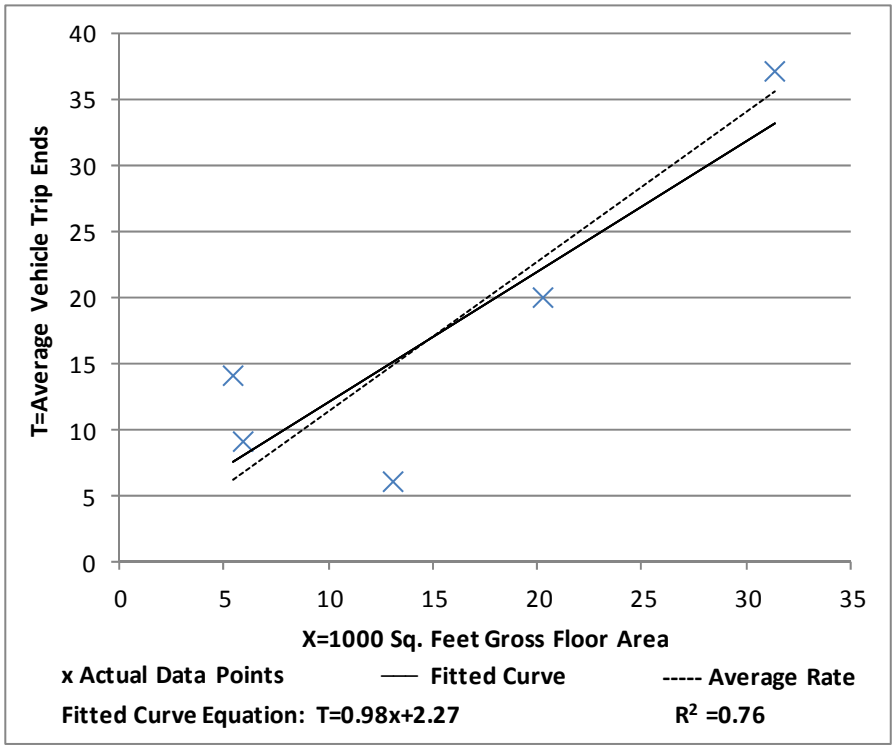
Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	15
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.13	0.46-2.59	0.59

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Hardware/Paint Store
(816)

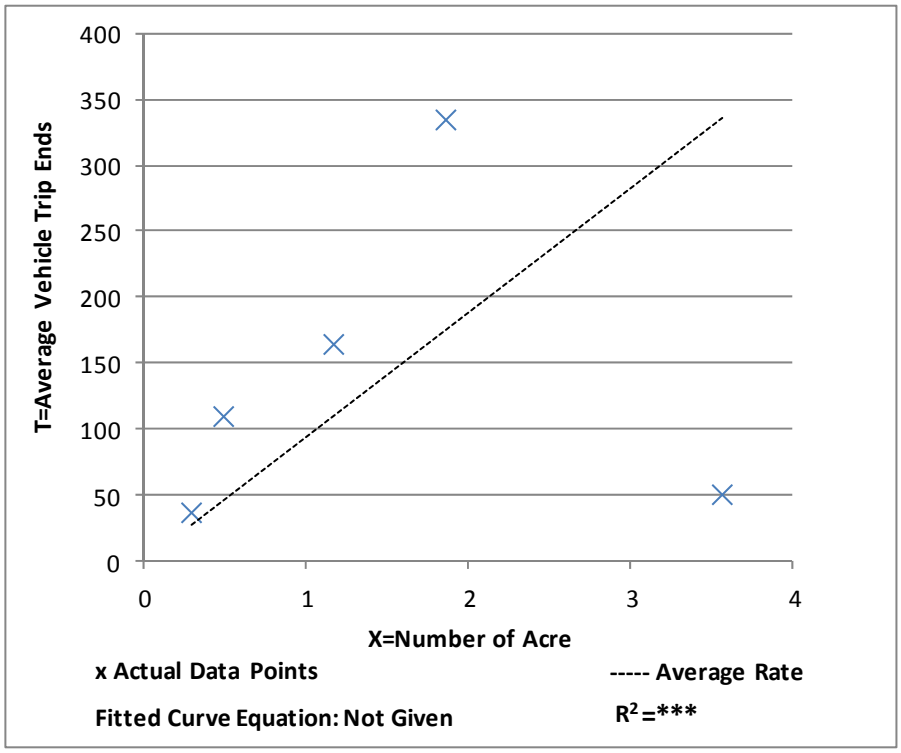
Average Vehicle Trip Ends vs: Acres
On a: Weekday

Number of Studies: 5
Average Number of Acres: 1
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
94.17	14.04-224.49	97.92

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



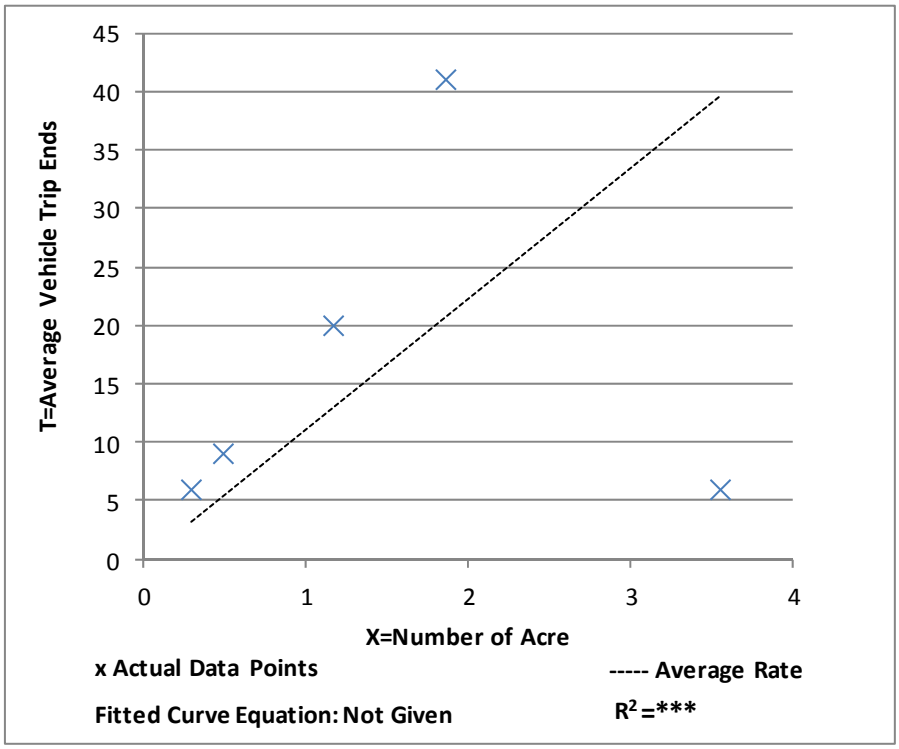
Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	5
Average Number of Acres:	1
Directional Distribution:	45% entering, 55% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
11.13	1.69-22.04	11.31

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



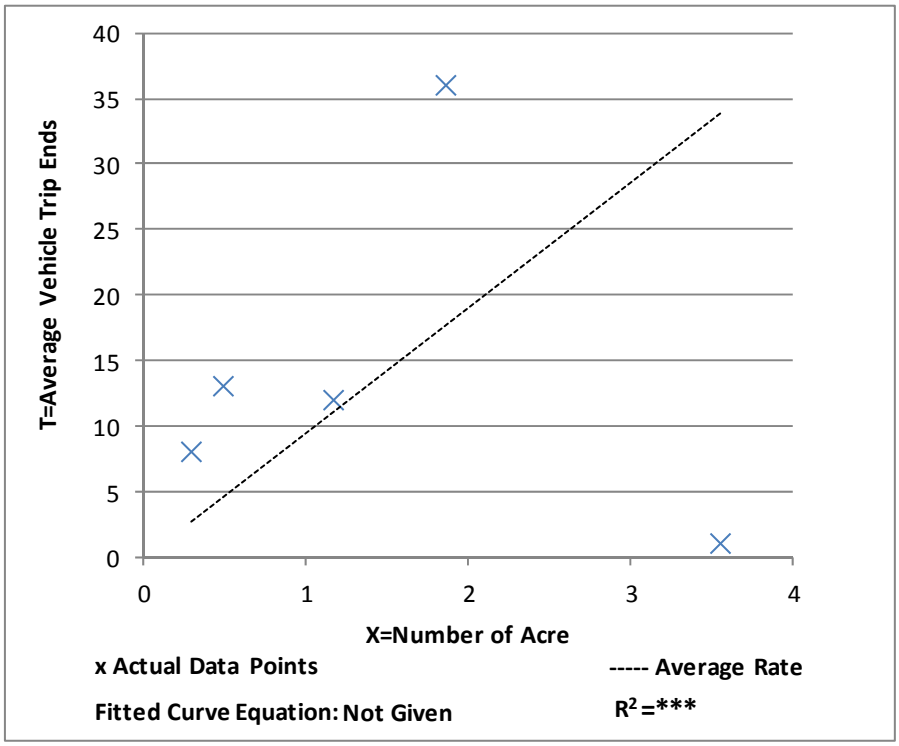
Hardware/Paint Store
(816)

Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	5
Average Number of Acres:	1
Directional Distribution:	22% entering, 78% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
9.50	0.28-27.59	12.07

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Hardware/Paint Store
(816)

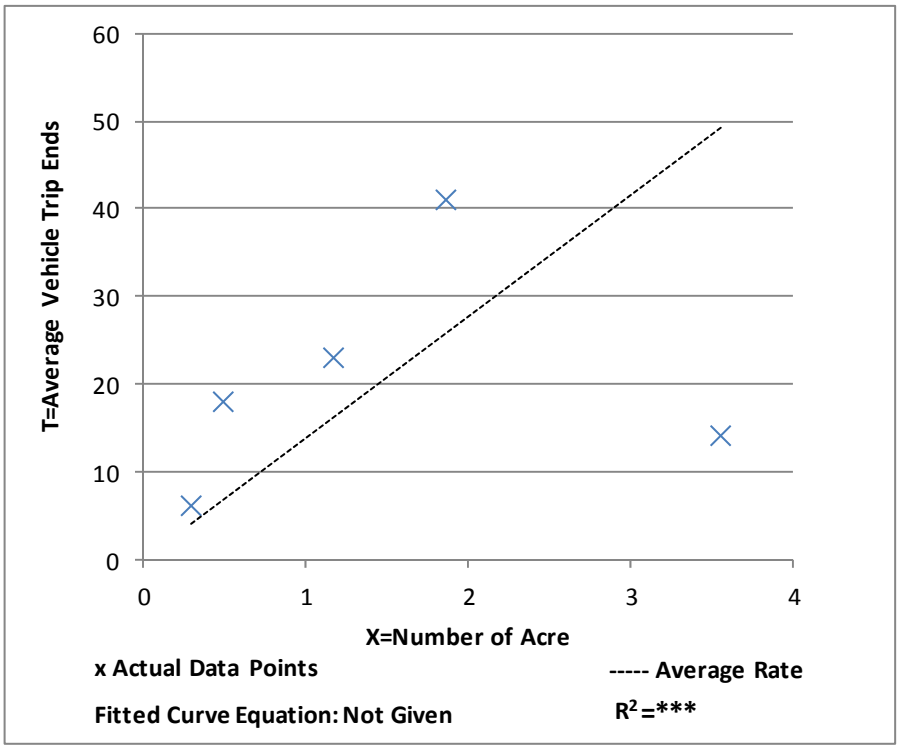
Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	5
Average Number of Acres:	1
Directional Distribution:	58% entering, 42% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
13.84	3.93-36.73	12.59

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Hardware/Paint Store
(816)

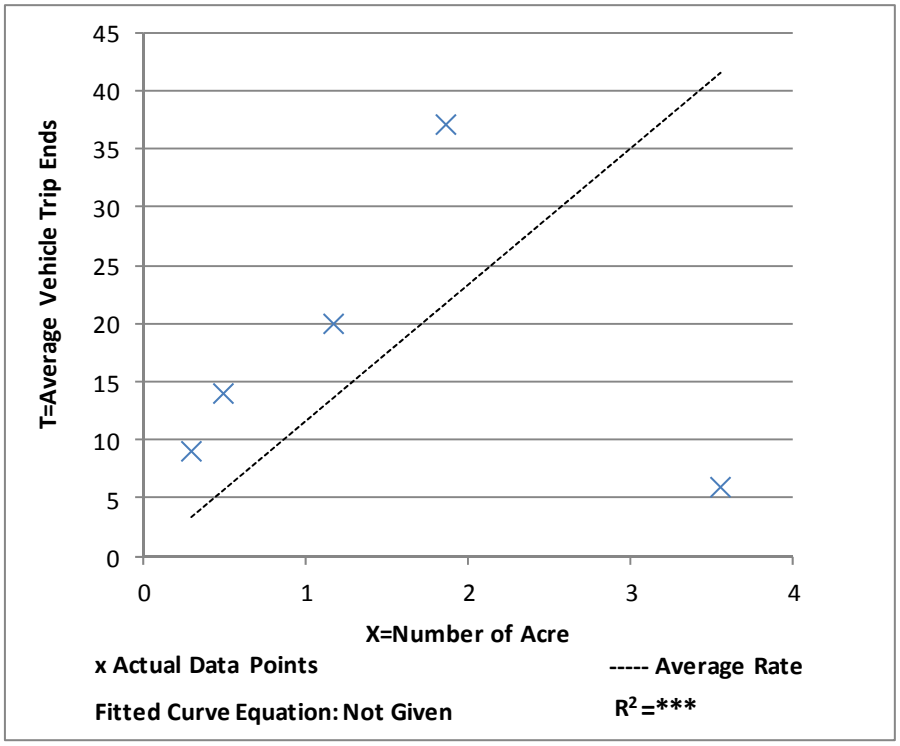
Average Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	5
Average Number of Acres:	1
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Acres

Average Rate	Range of Rates	Standard Deviation
11.67	1.69-31.03	12.42

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Land Use: 820
Shopping Center

Description

A shopping center is an integrated group of commercial establishments that is planned, developed, owned and managed as a unit. A shopping center's composition is related to its market area in terms of size, location and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands. Specialty retail center (Land Use 826) and factory outlet center (Land Use 823) are related uses.

Source Numbers

1, 2, 3, 4, 5

Shopping Center
(820)

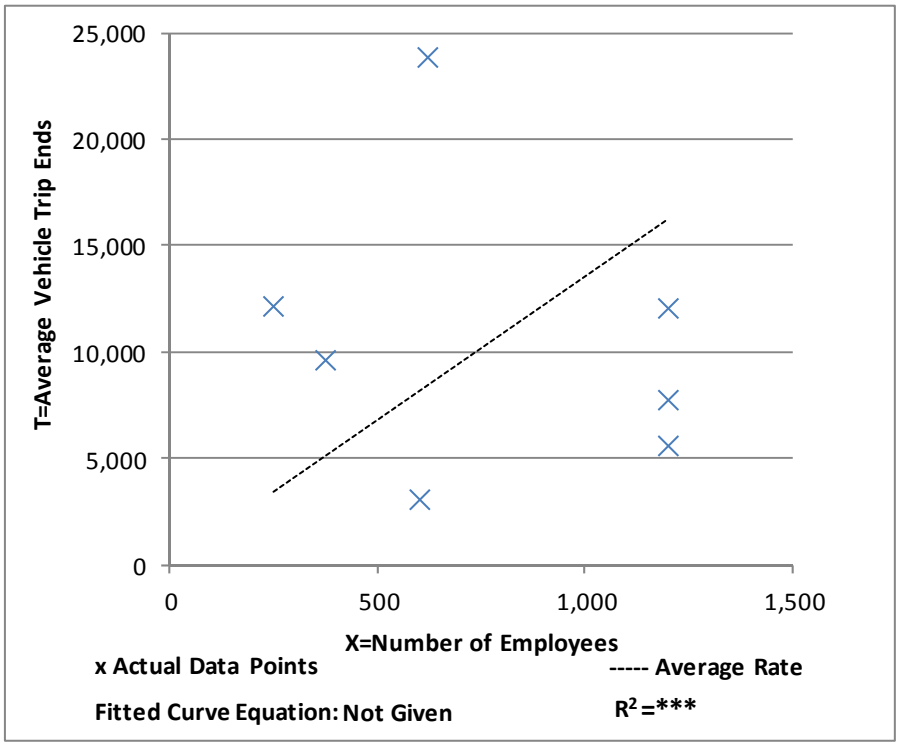
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	7
Average Number of Employees:	778
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
13.58	4.63-48.63	14.60

Data Plot and Equation



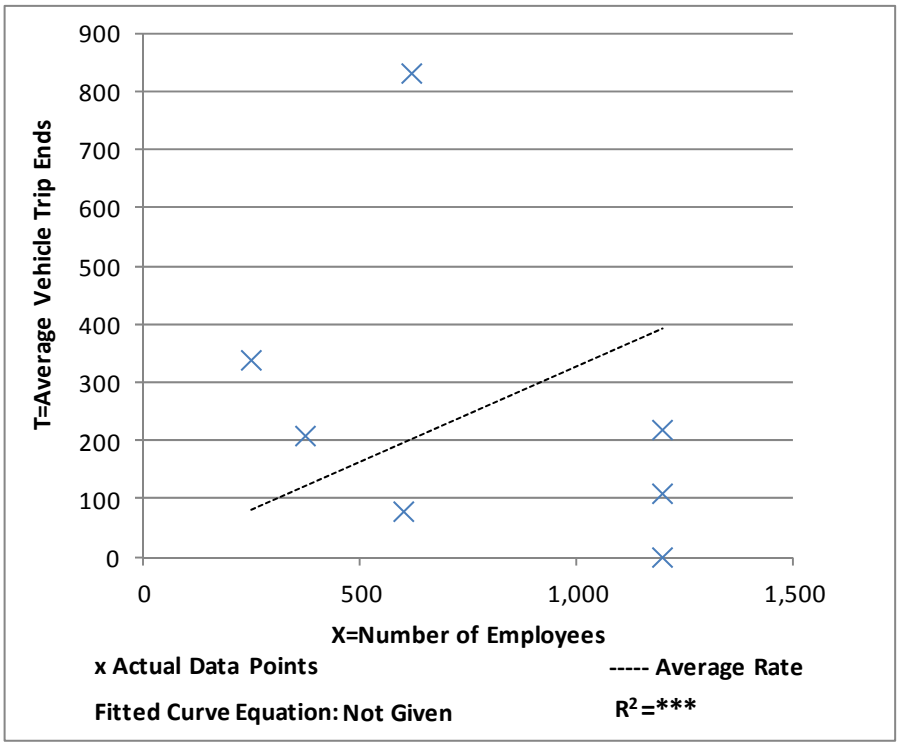
Shopping Center
(820)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of Employees:	778
Directional Distribution:	53% entering, 47% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.33	0.00-1.34	0.51

Data Plot and Equation



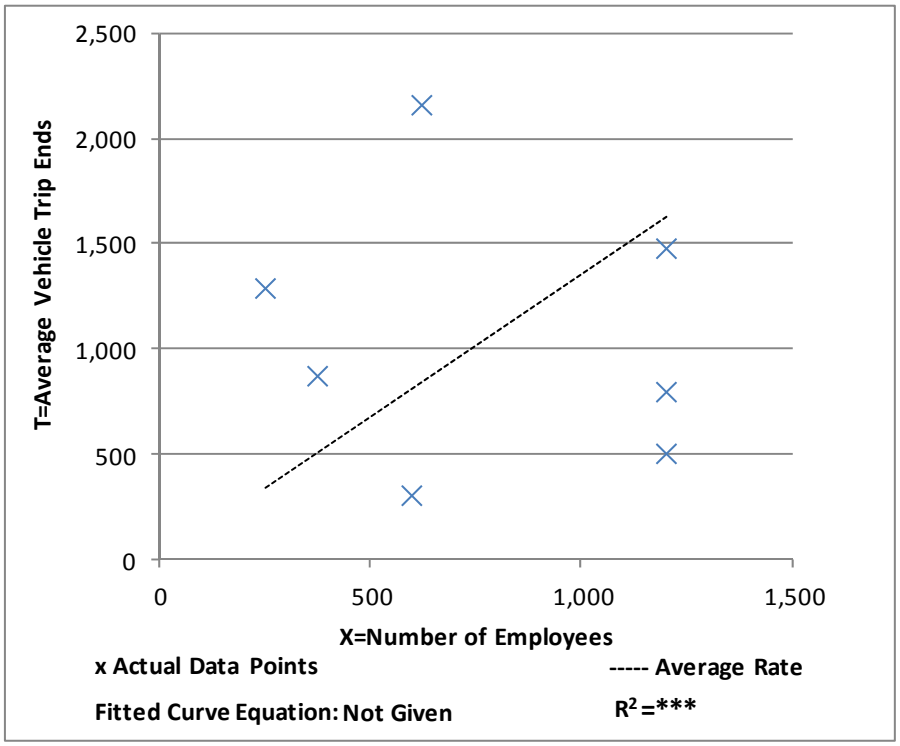
Shopping Center
(820)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of Employees:	778
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.36	0.42-5.16	1.40

Data Plot and Equation



Shopping Center
(820)

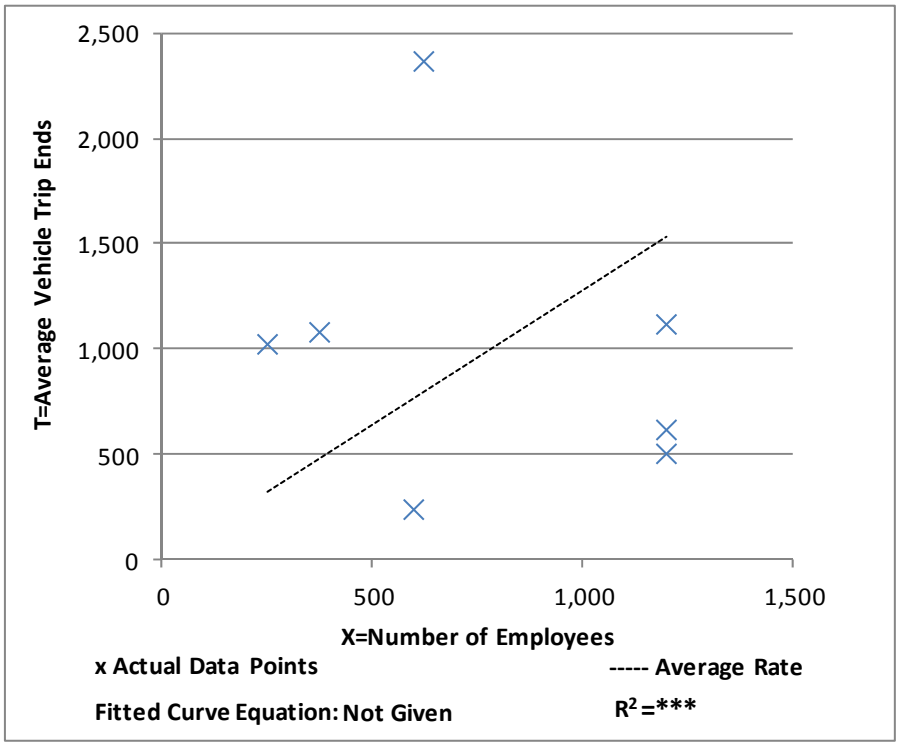
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	778
Directional Distribution:	56% entering, 44% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.27	0.39-4.10	1.42

Data Plot and Equation



Shopping Center
(820)

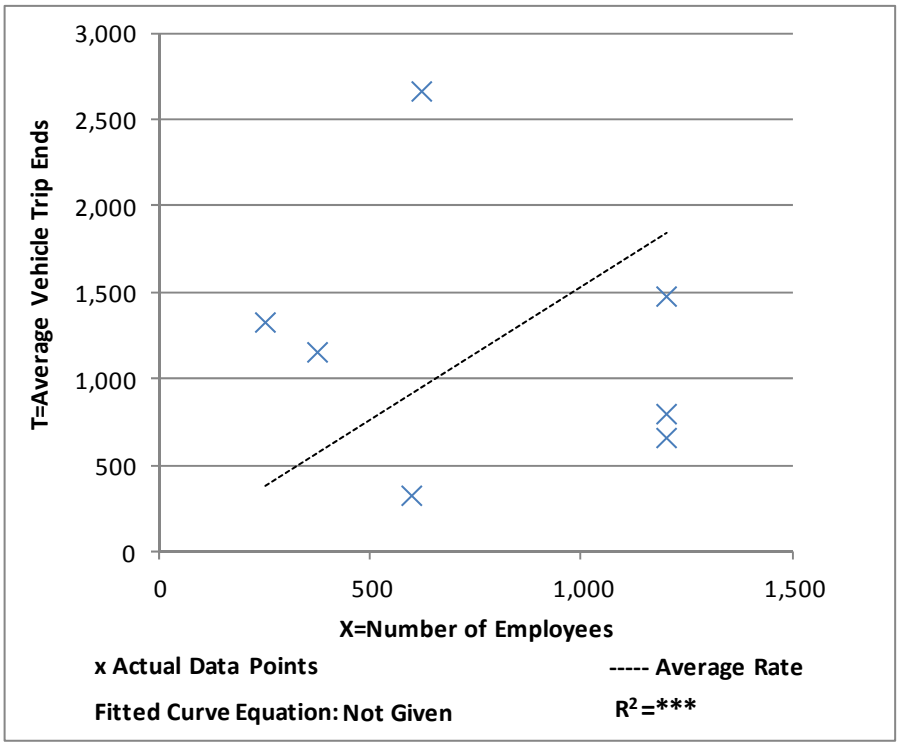
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	778
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.54	0.54-5.31	1.63

Data Plot and Equation



Shopping Center
(820)

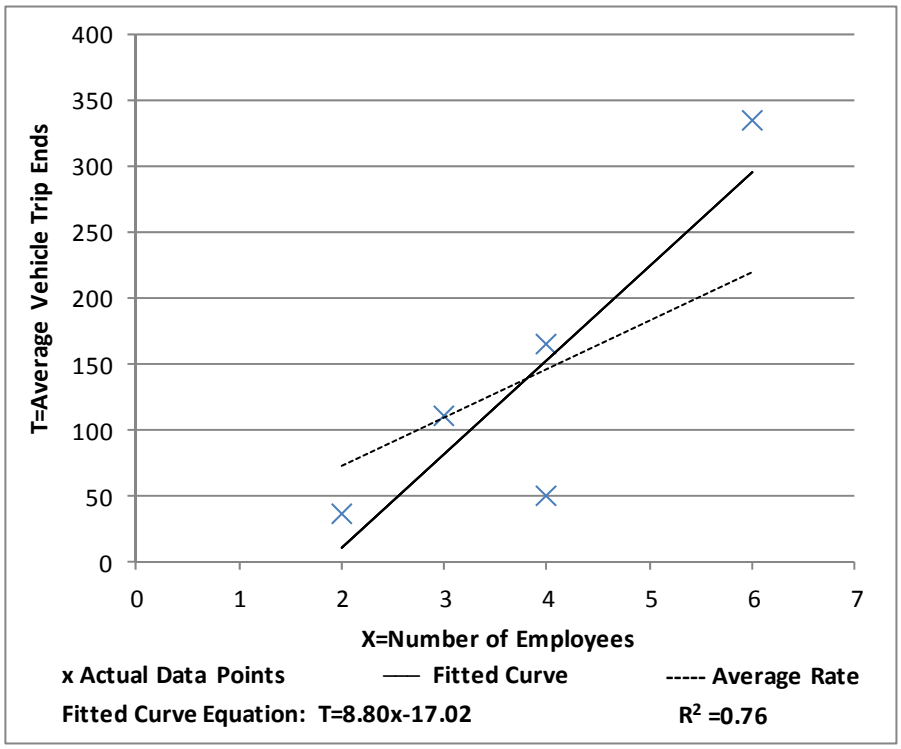
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	440
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
24.01	7.42-3,370.15	86.02

Data Plot and Equation



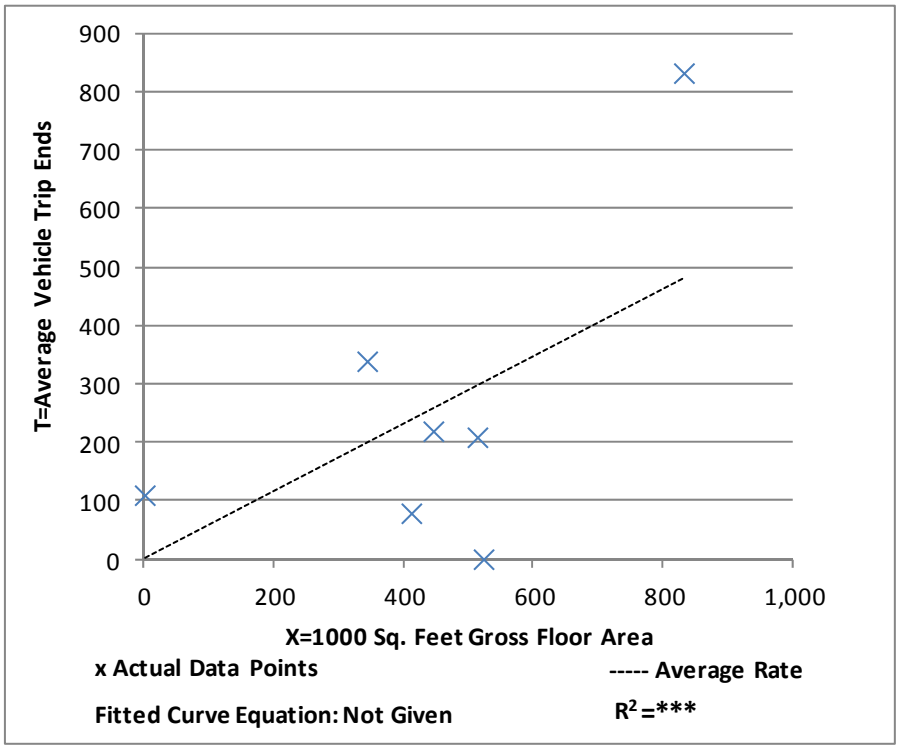
Shopping Center
(820)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	440
Directional Distribution:	55% entering, 45% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.58	0.00-64.93	1.70

Data Plot and Equation



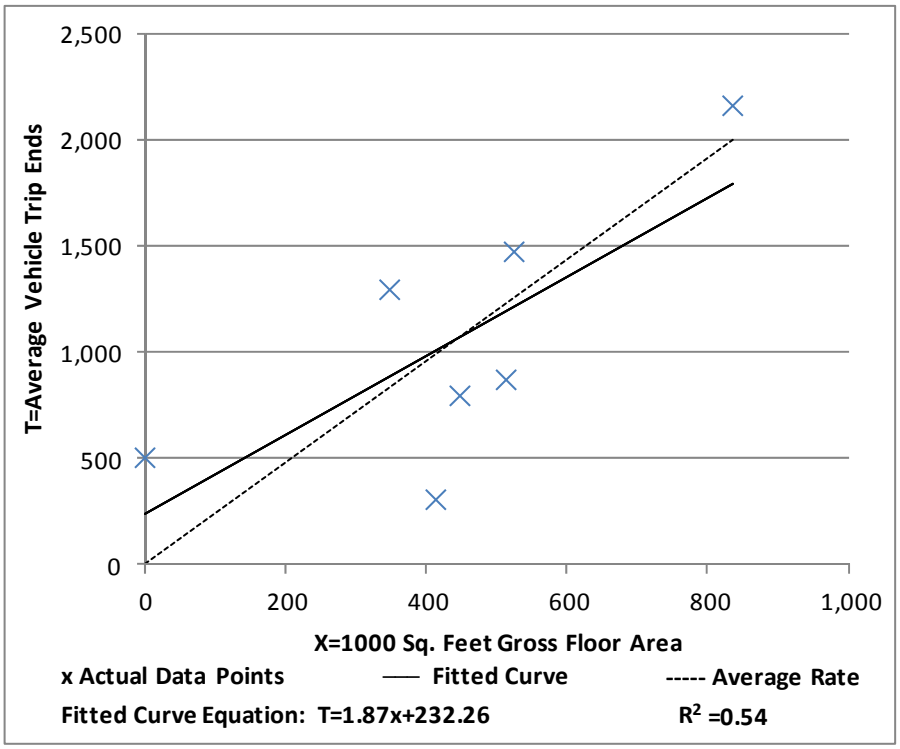
Shopping Center
(820)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	440
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.40	0.74-307.04	7.85

Data Plot and Equation



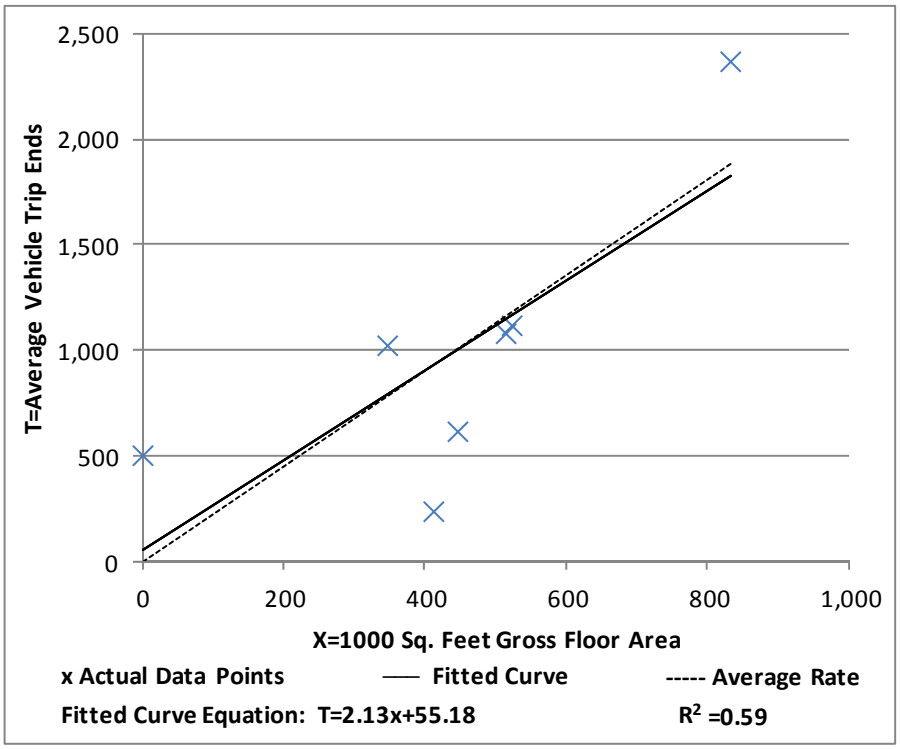
Shopping Center
(820)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	440
Directional Distribution:	56% entering, 44% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.25	0.57-305.22	7.80

Data Plot and Equation



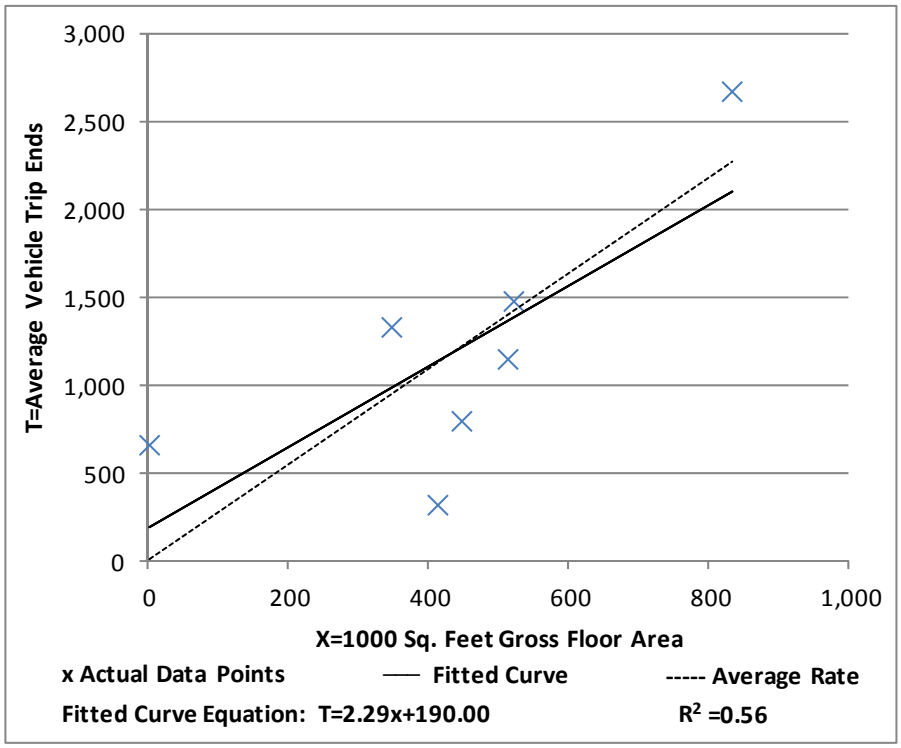
Shopping Center
(820)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	440
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.72	0.78-395.63	10.10

Data Plot and Equation



Land Use: 841
Automobile Sales

Description

Automobile sales dealerships are typically located along major arterial streets characterized by abundant commercial development. Automobile services, parts sales and substantial used car sales may also be available. Some dealerships also include leasing options, truck sales and servicing. Recreational vehicle sales (Land Use 842) is a related use.

Source Numbers

1, 2, 3, 4, 5

Automobile Sales
(841)

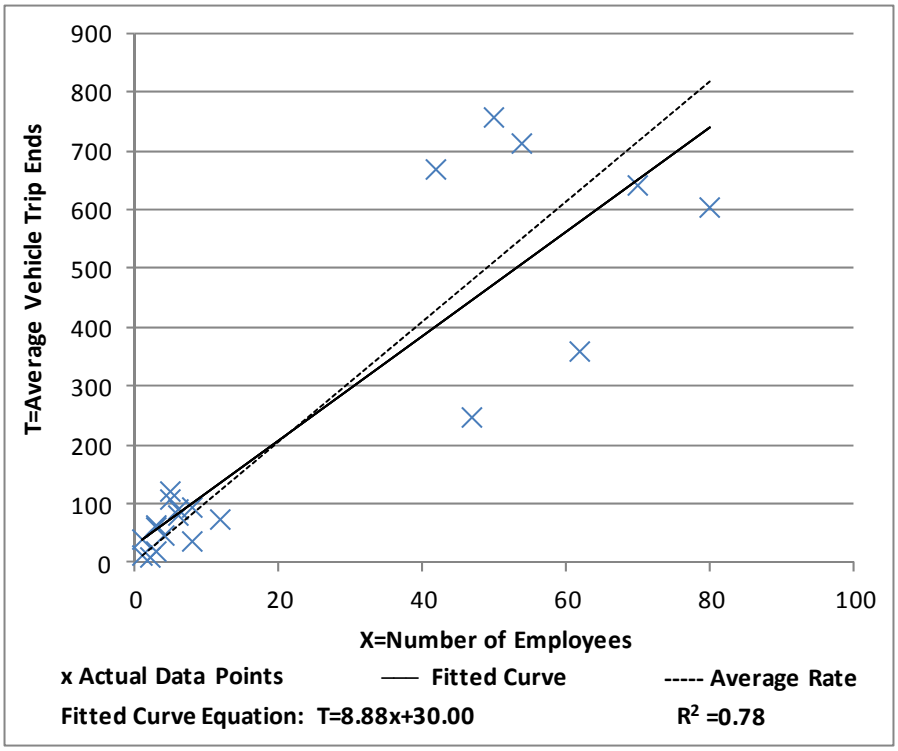
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	21
Average Number of Employees:	22
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
10.22	4.00-40.00	4.87

Data Plot and Equation



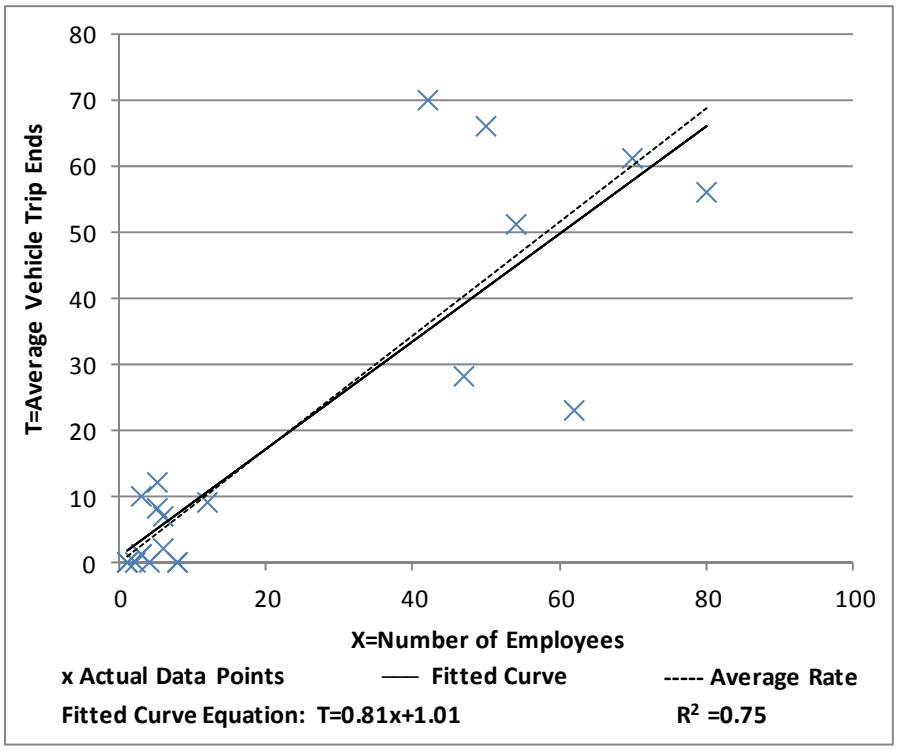
Automobile Sales
(841)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	21
Average Number of Employees:	22
Directional Distribution:	70% entering, 30% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.86	0.00-3.33	0.52

Data Plot and Equation



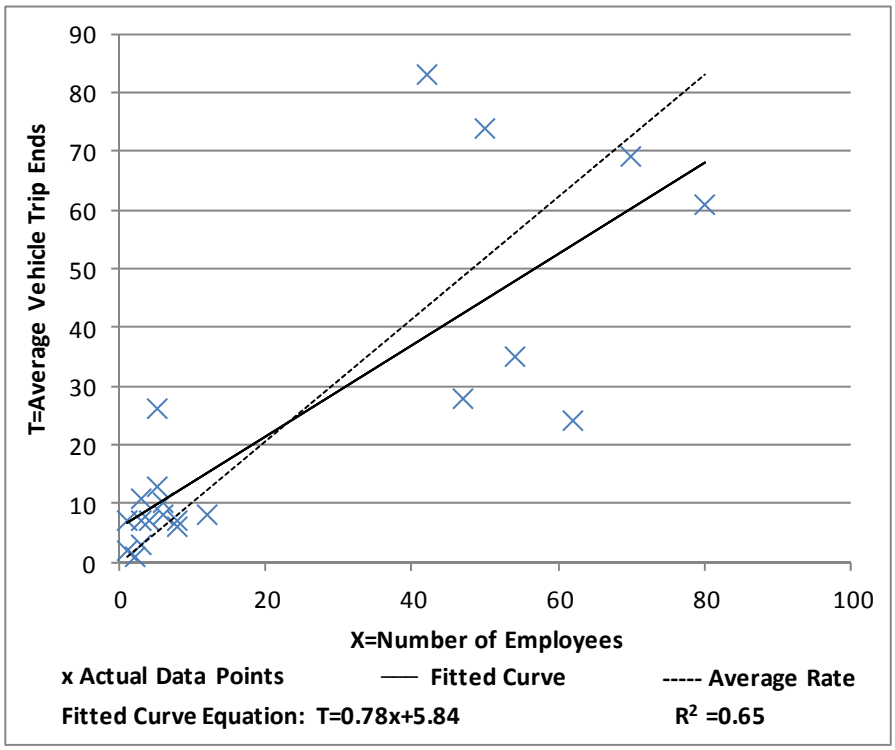
Automobile Sales
(841)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	21
Average Number of Employees:	22
Directional Distribution:	44% entering, 56% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.04	0.39-7.00	0.80

Data Plot and Equation



Automobile Sales
(841)

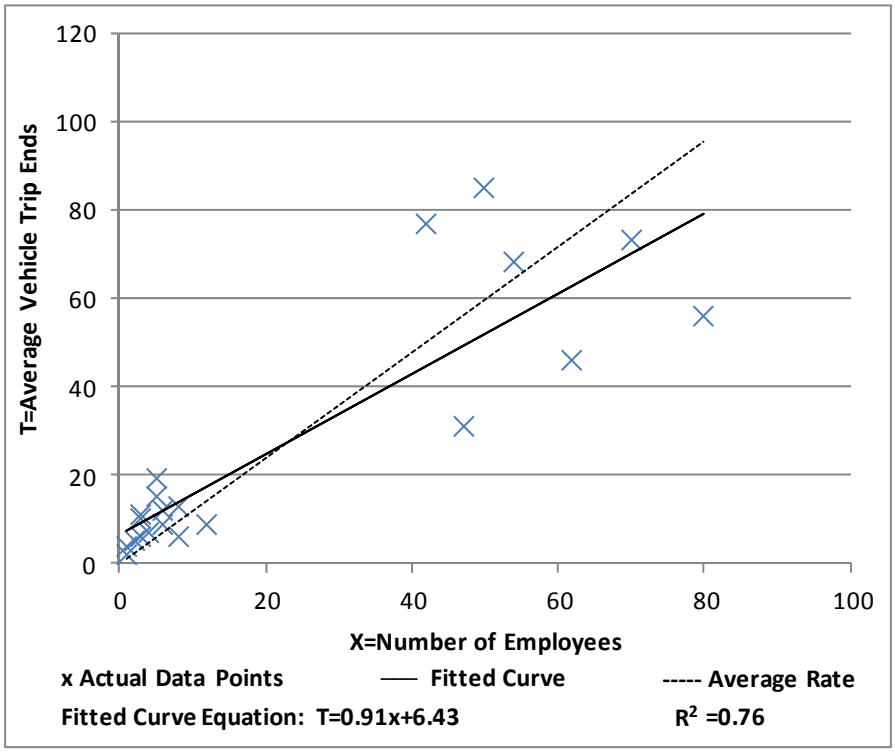
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	21
Average Number of Employees:	22
Directional Distribution:	58% entering, 42% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.19	0.66-4.00	0.66

Data Plot and Equation



Automobile Sales
(841)

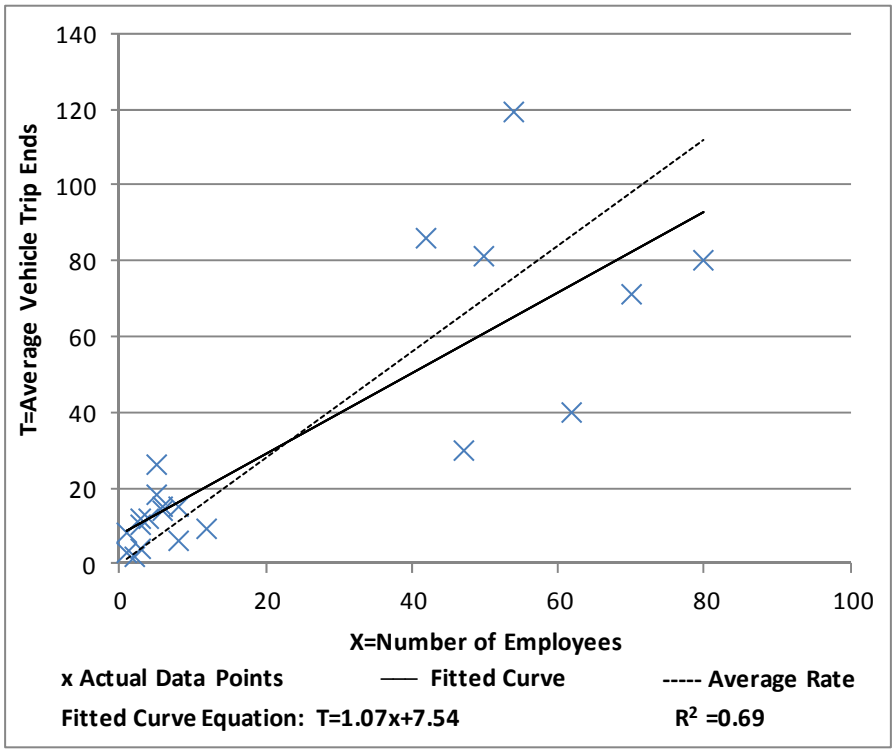
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	21
Average Number of Employees:	22
Directional Distribution:	52% entering, 48% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.40	0.64-8.00	0.91

Data Plot and Equation



Automobile Sales
(841)

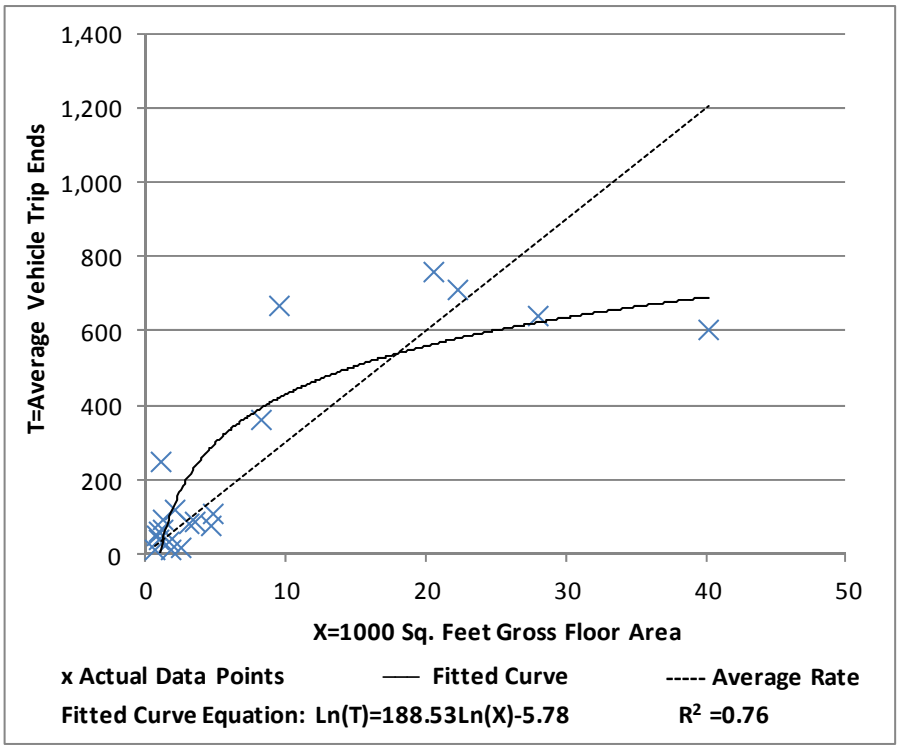
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	21
Average Number of 1000 Sq. Feet Gross Floor Area:	8
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
29.93	4.44-217.81	23.59

Data Plot and Equation



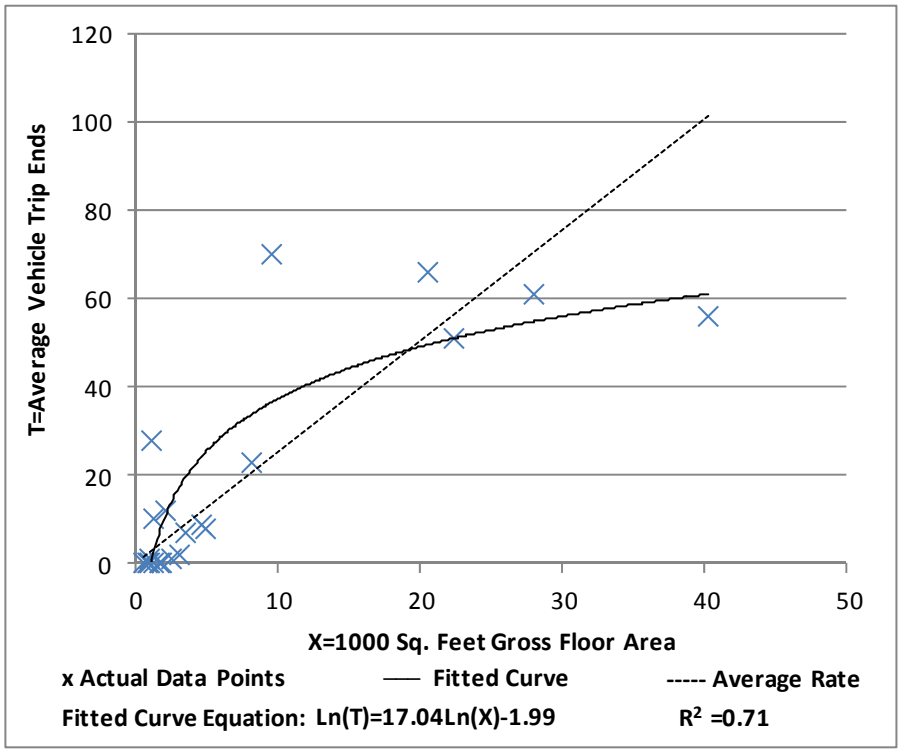
Automobile Sales
(841)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	21
Average Number of 1000 Sq. Feet Gross Floor Area:	8
Directional Distribution:	71% entering, 29% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.51	0.00-24.69	2.64

Data Plot and Equation



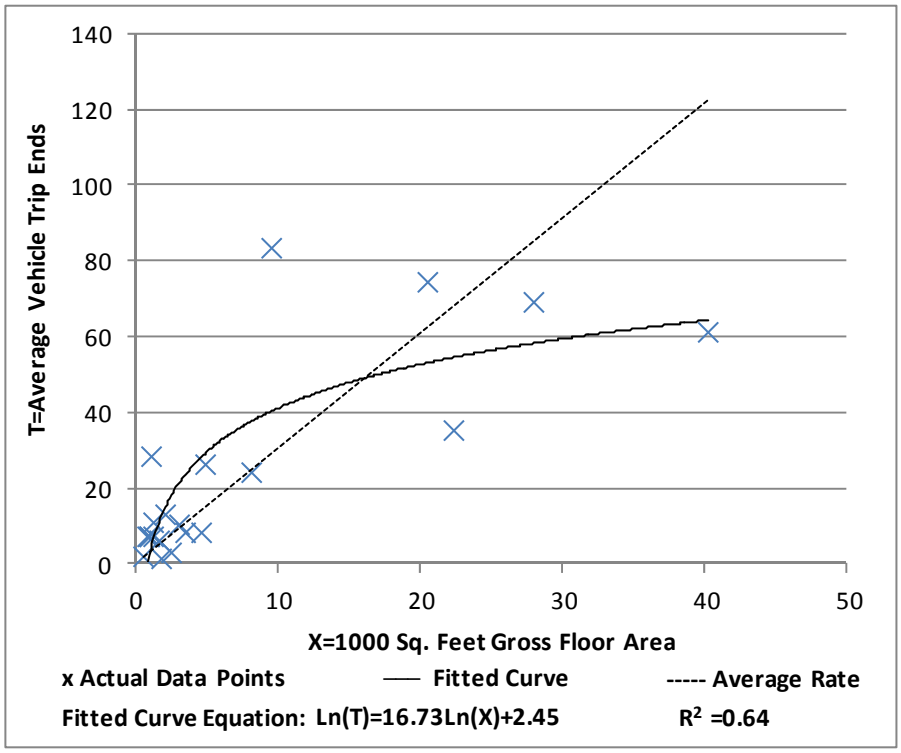
Automobile Sales
(841)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	21
Average Number of 1000 Sq. Feet Gross Floor Area:	8
Directional Distribution:	46% entering, 54% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.04	0.56-24.69	2.88

Data Plot and Equation



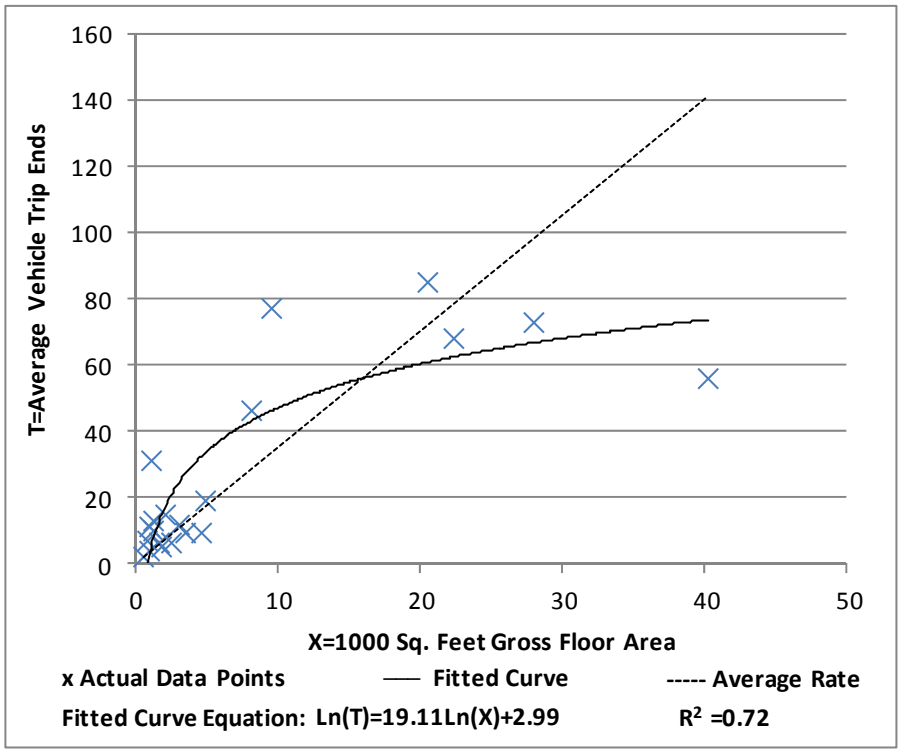
Automobile Sales
(841)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	21
Average Number of 1000 Sq. Feet Gross Floor Area:	8
Directional Distribution:	58% entering, 42% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.50	1.39-27.34	3.03

Data Plot and Equation



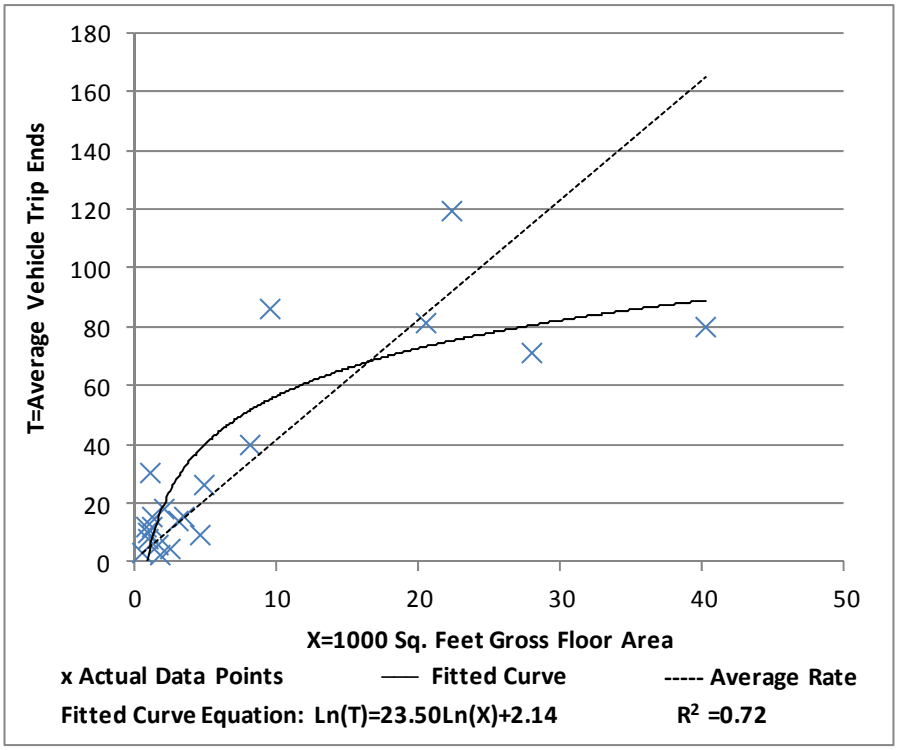
Automobile Sales
(841)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	21
Average Number of 1000 Sq. Feet Gross Floor Area:	8
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.10	1.11-26.46	3.18

Data Plot and Equation



Land Use: 842
Recreational Vehicle Sales

Description

A recreational vehicles (RV) sales dealership is a free-standing facility that specializes in the sales of new RVs. Recreational vehicle services, parts and accessories sales and substantial used RV sales may also be available. Some RV dealerships may also include boat sales and servicing. Automobile sales (Land Use 841) is a related use.

Source Numbers

2, 3, 4

Recreational Vehicle Sales
(842)

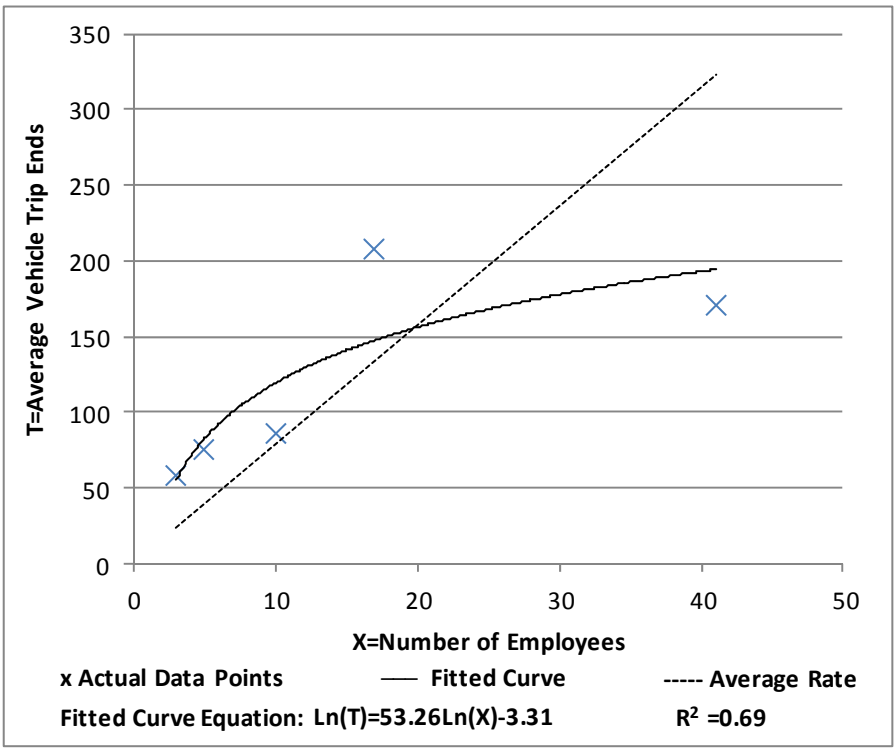
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 5
Average Number of Employees: 15
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
7.88	4.17-19.33	5.67

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



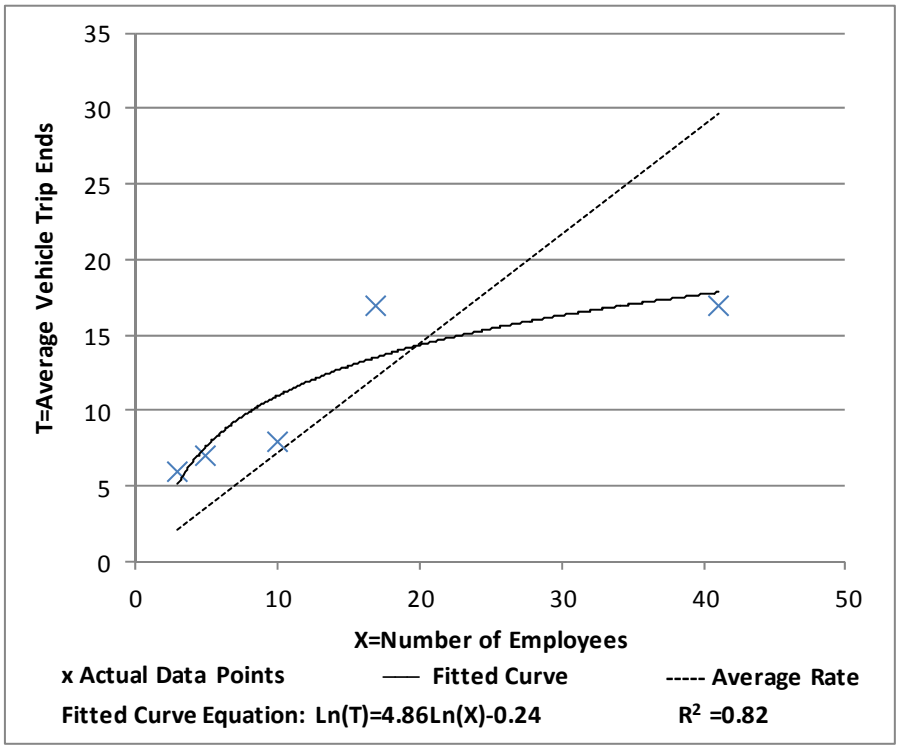
Recreational Vehicle Sales
(842)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	5
Average Number of Employees:	15
Directional Distribution:	90% entering, 10% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.72	0.41-2.00	0.51

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



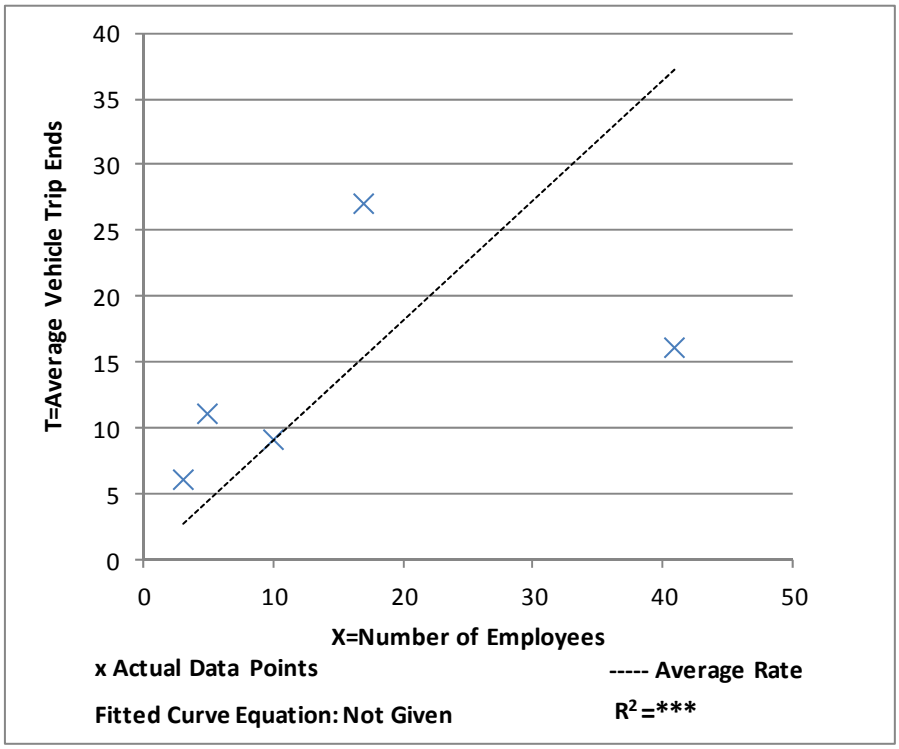
Recreational Vehicle Sales
(842)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	5
Average Number of Employees:	15
Directional Distribution:	19% entering, 81% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.91	0.39-2.20	0.80

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Recreational Vehicle Sales
(842)

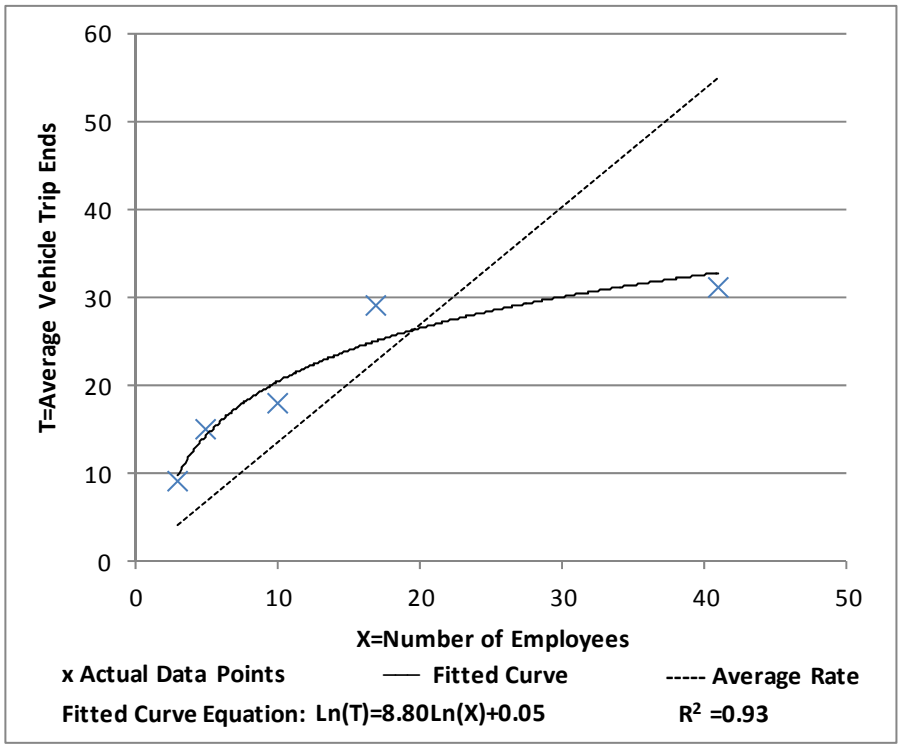
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	5
Average Number of Employees:	15
Directional Distribution:	54% entering, 46% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.34	0.76-3.00	0.91

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Recreational Vehicle Sales
(842)

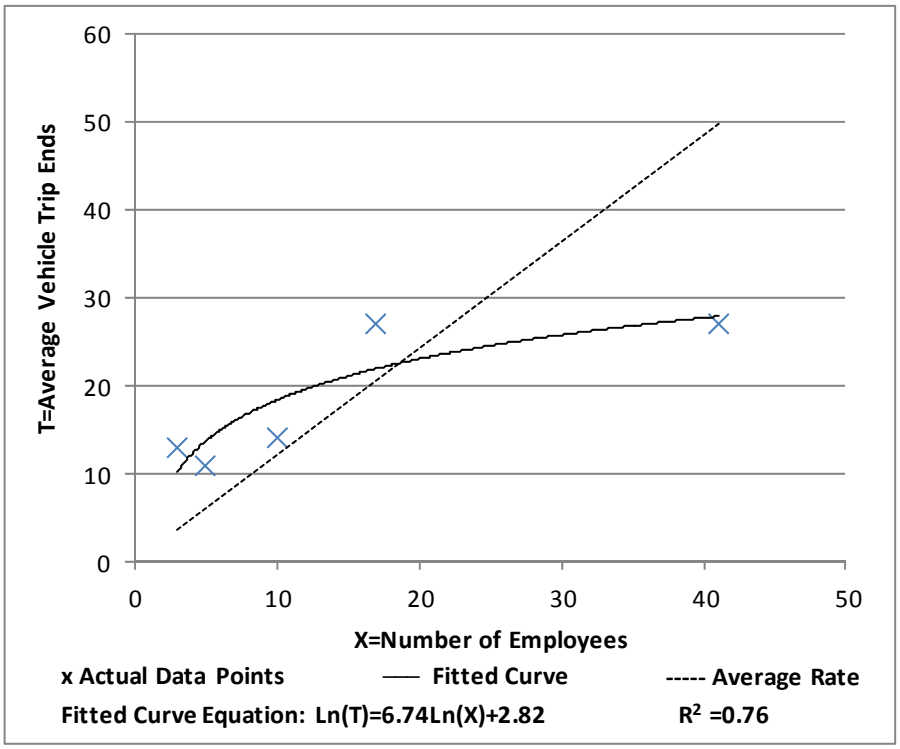
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	5
Average Number of Employees:	15
Directional Distribution:	29% entering, 71% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.21	0.66-4.33	1.01

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Recreational Vehicle Sales
(842)

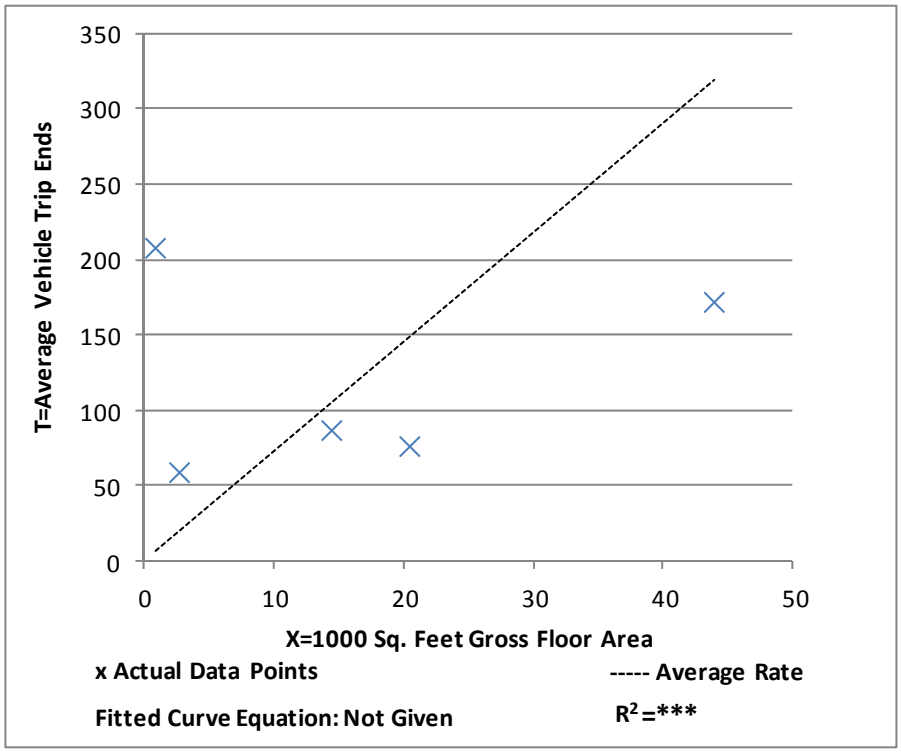
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	17
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
7.26	3.72-236.36	30.40

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



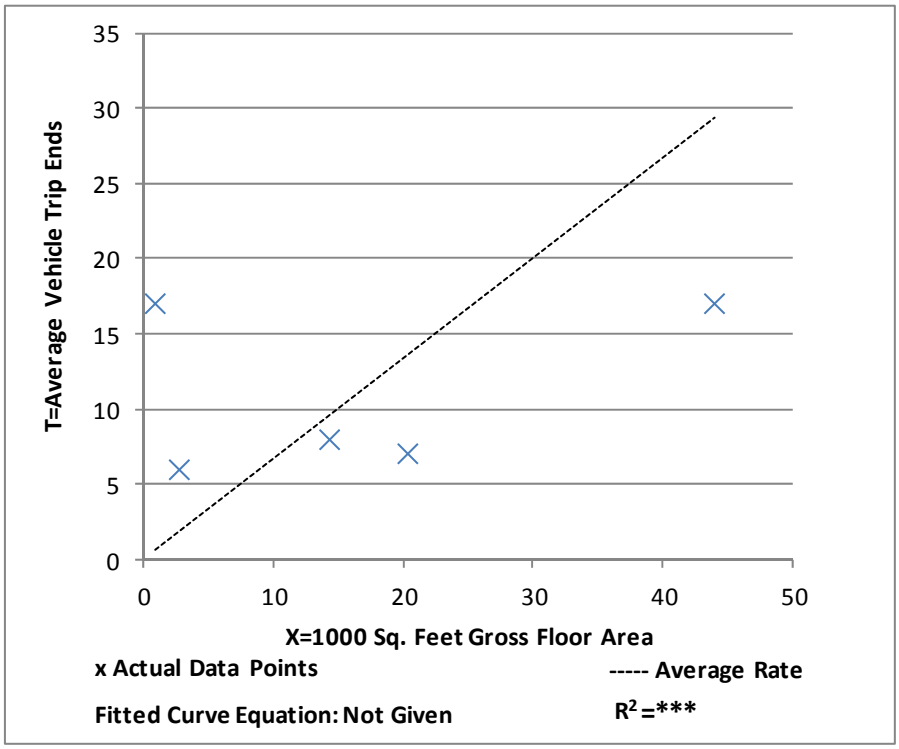
Recreational Vehicle Sales
(842)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	17
Directional Distribution:	89% entering, 11% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.67	0.34-19.32	2.49

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



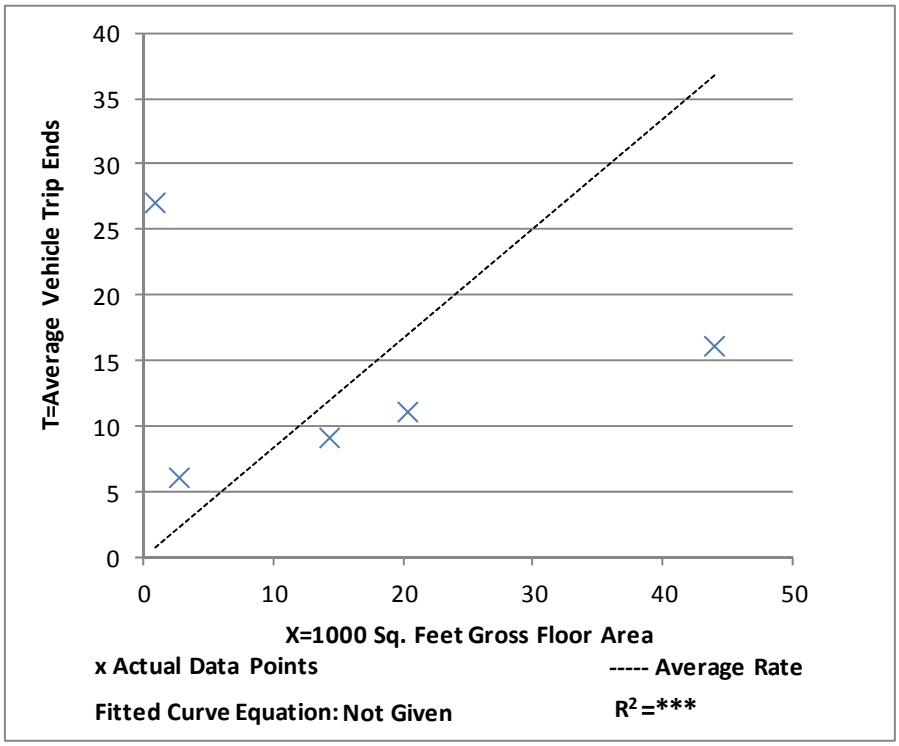
Recreational Vehicle Sales
(842)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	17
Directional Distribution:	10% entering, 90% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.84	0.36-30.68	3.95

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Recreational Vehicle Sales
(842)

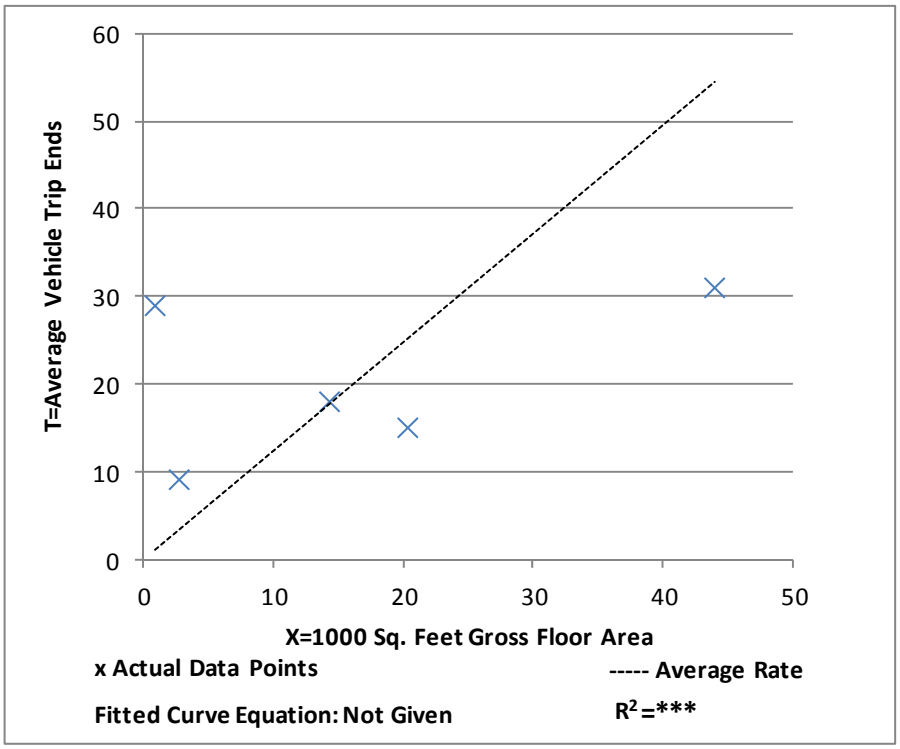
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	17
Directional Distribution:	54% entering, 46% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.24	0.70-32.95	4.22

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Recreational Vehicle Sales
(842)

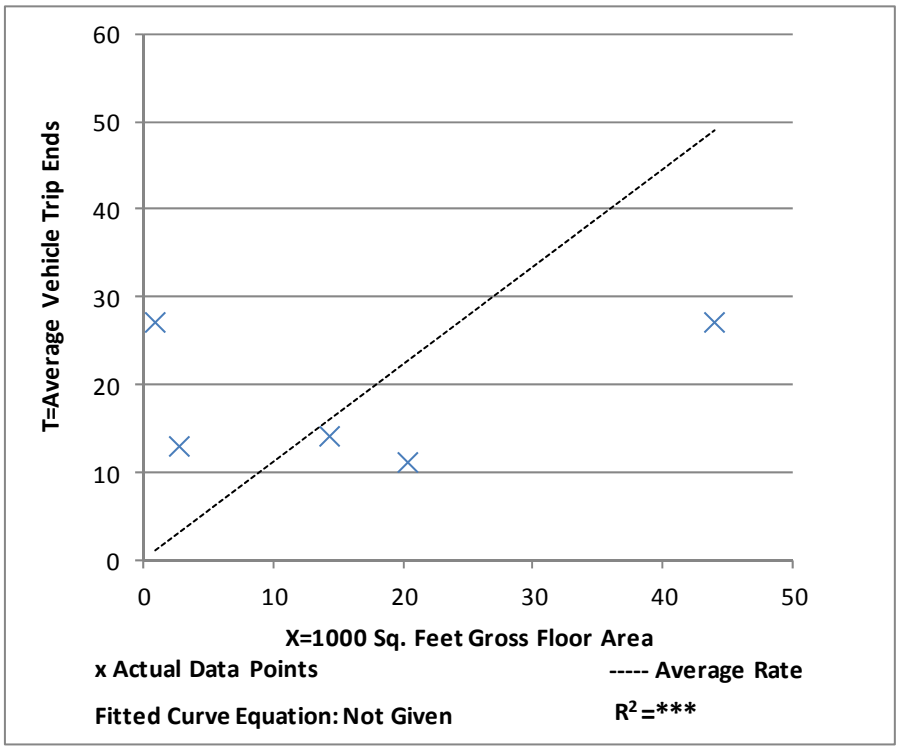
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	17
Directional Distribution:	28% entering, 72% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.11	0.54-30.68	4.00

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Land Use: 843
Automobile Parts Sale

Description

Automobile parts sales facilities specialize in the sale of automobile parts for maintenance and repair. Items sold at these facilities include spark plugs, oil, batteries and a wide range of automobile parts. These facilities are not equipped for on-site vehicle repair. Tire store (Land Use 848), tire superstore (Land Use 849) and automobile parts and service center (Land Use 943) are related uses.

Source Numbers

3, 4, 5

Automobile Parts Sales
(843)

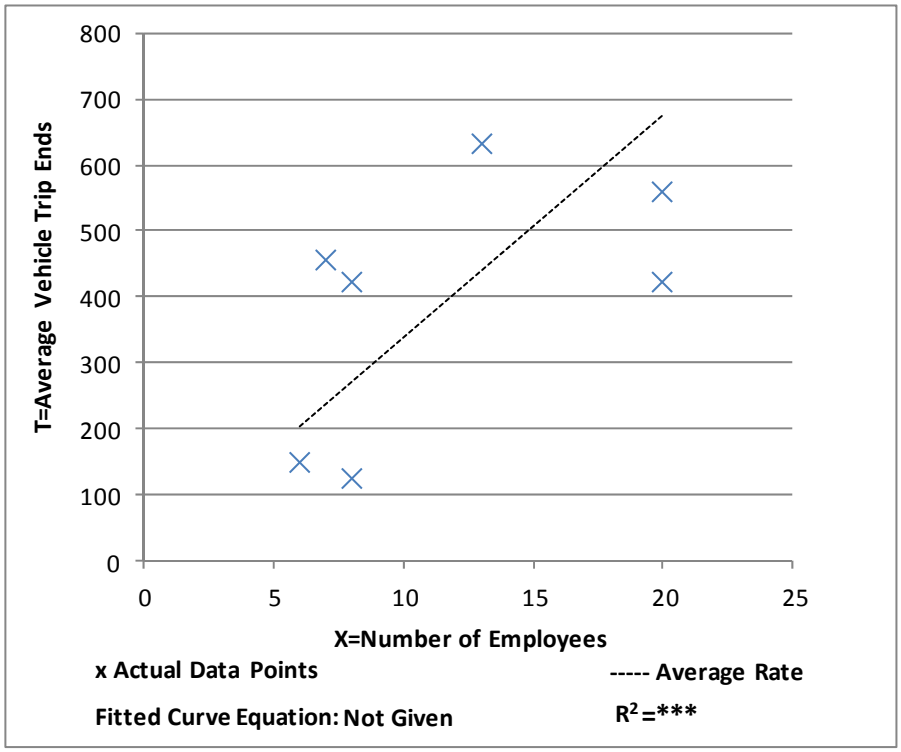
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	7
Average Number of Employees:	12
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
33.73	15.75-65.14	17.03

Data Plot and Equation



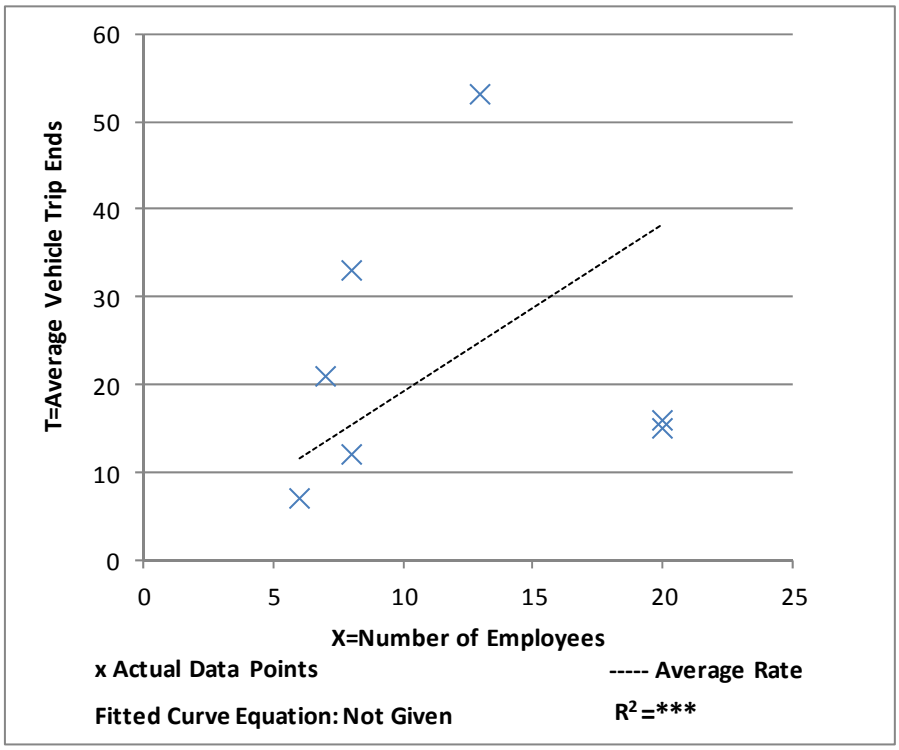
Automobile Parts Sales
(843)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of Employees:	12
Directional Distribution:	61% entering, 39% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.91	0.75-4.13	1.56

Data Plot and Equation



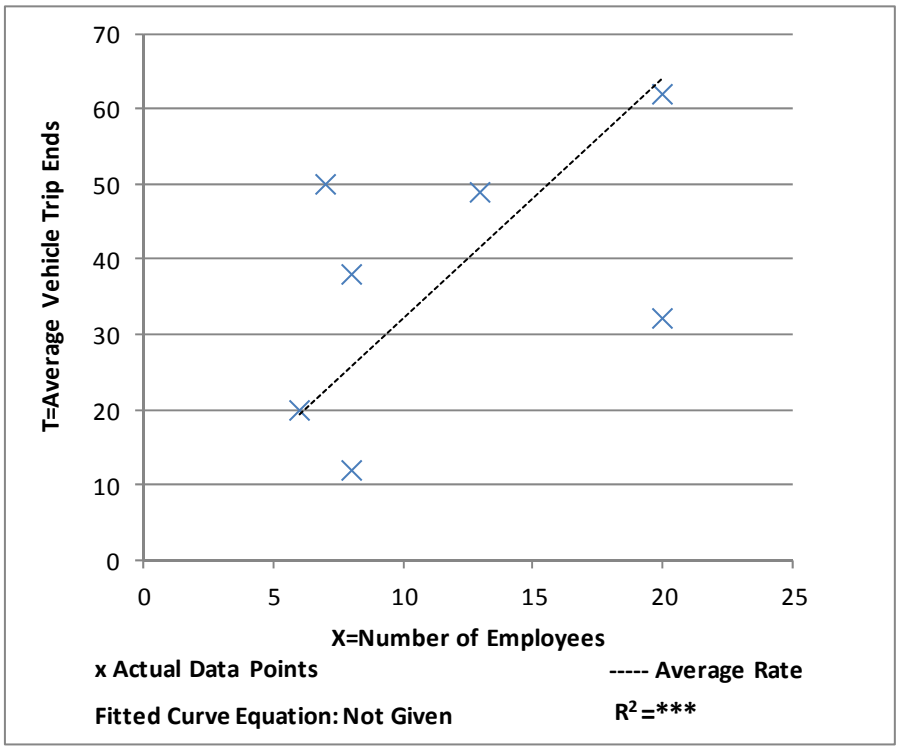
Automobile Parts Sales
(843)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of Employees:	12
Directional Distribution:	48% entering, 52% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.21	1.50-7.14	1.75

Data Plot and Equation



Automobile Parts Sales
(843)

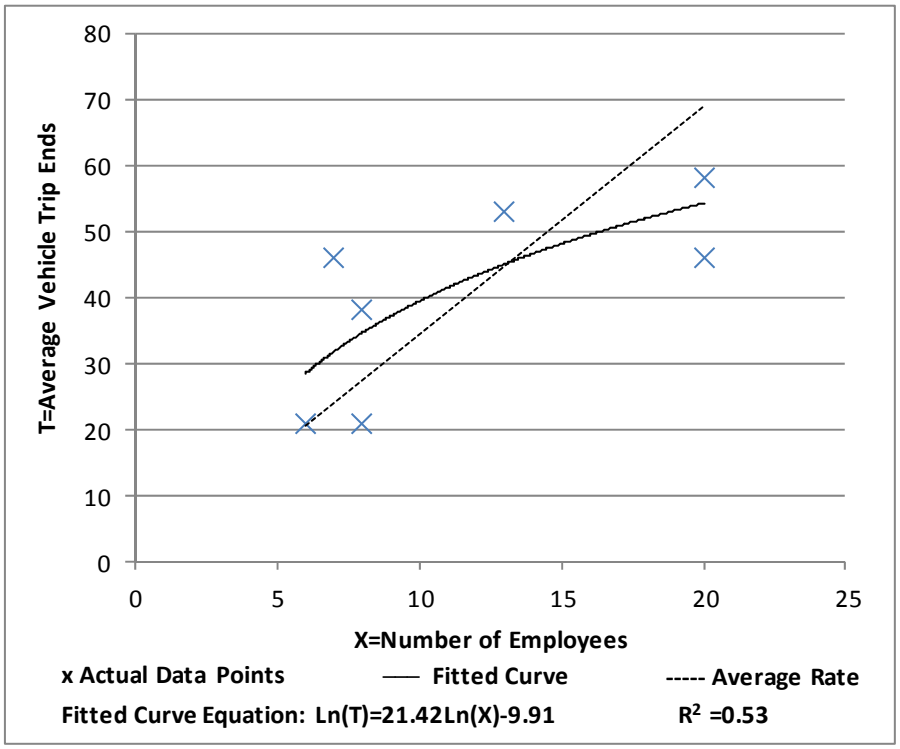
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	12
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.45	2.30-6.57	1.36

Data Plot and Equation



Automobile Parts Sales
(843)

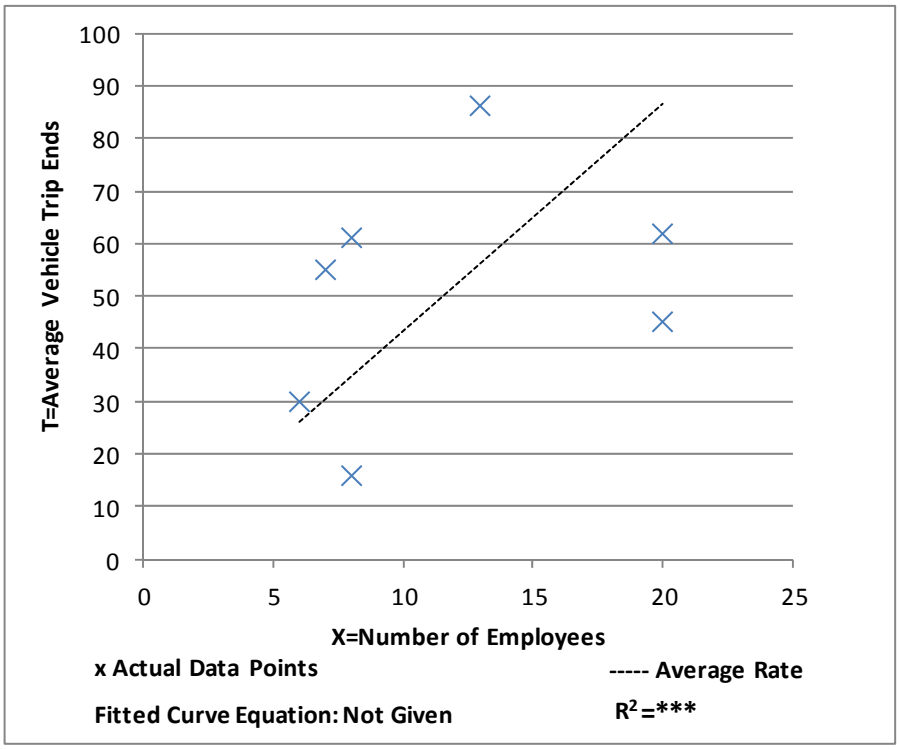
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	12
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.33	2.00-7.86	2.45

Data Plot and Equation



Automobile Parts Sales
(843)

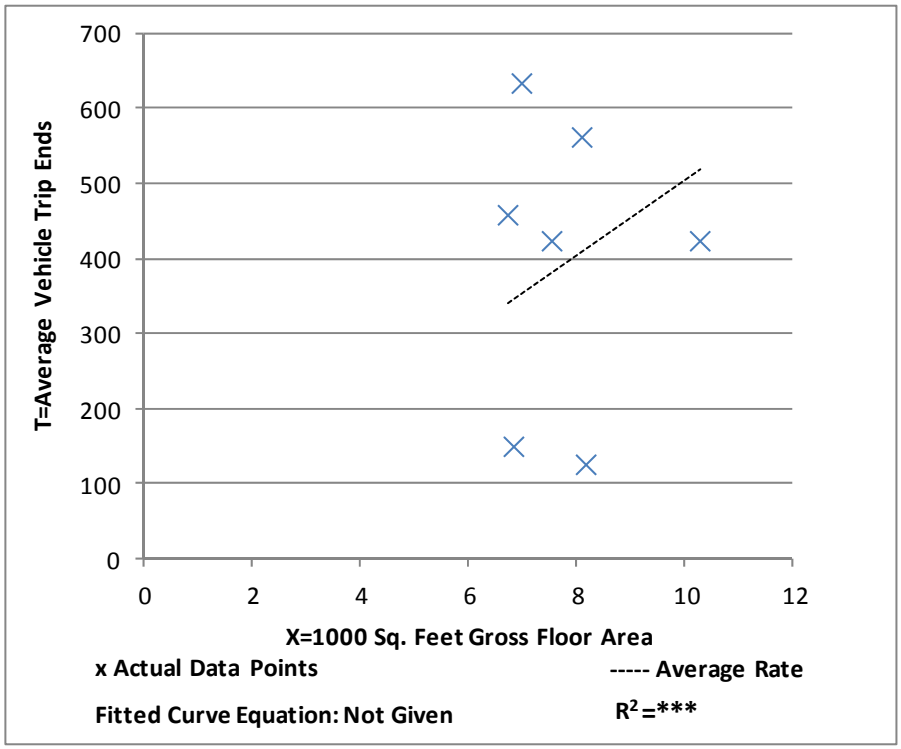
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	8
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
50.58	15.38-90.41	26.52

Data Plot and Equation



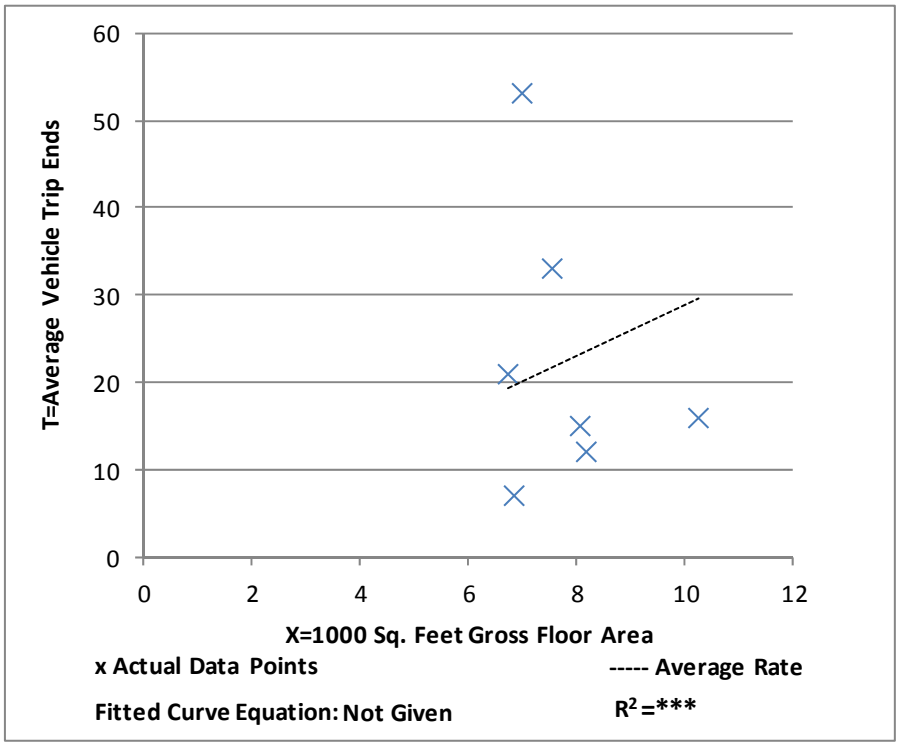
Automobile Parts Sales
(843)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	8
Directional Distribution:	62% entering, 38% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.87	1.02-7.58	2.26

Data Plot and Equation



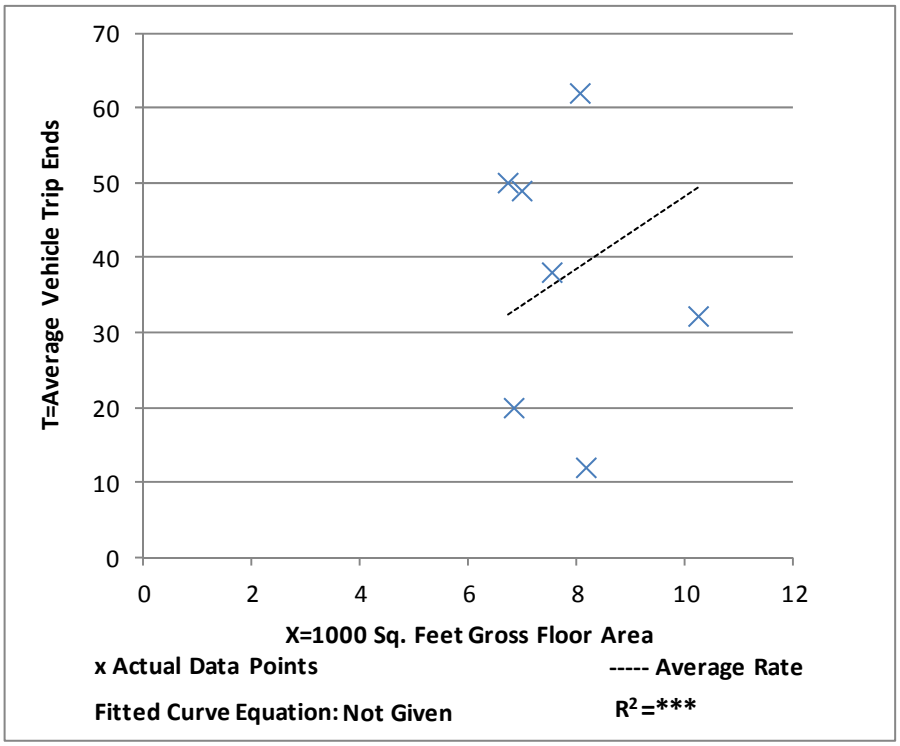
Automobile Parts Sales
(843)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	8
Directional Distribution:	48% entering, 52% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.81	1.47-7.65	2.50

Data Plot and Equation



Automobile Parts Sales
(843)

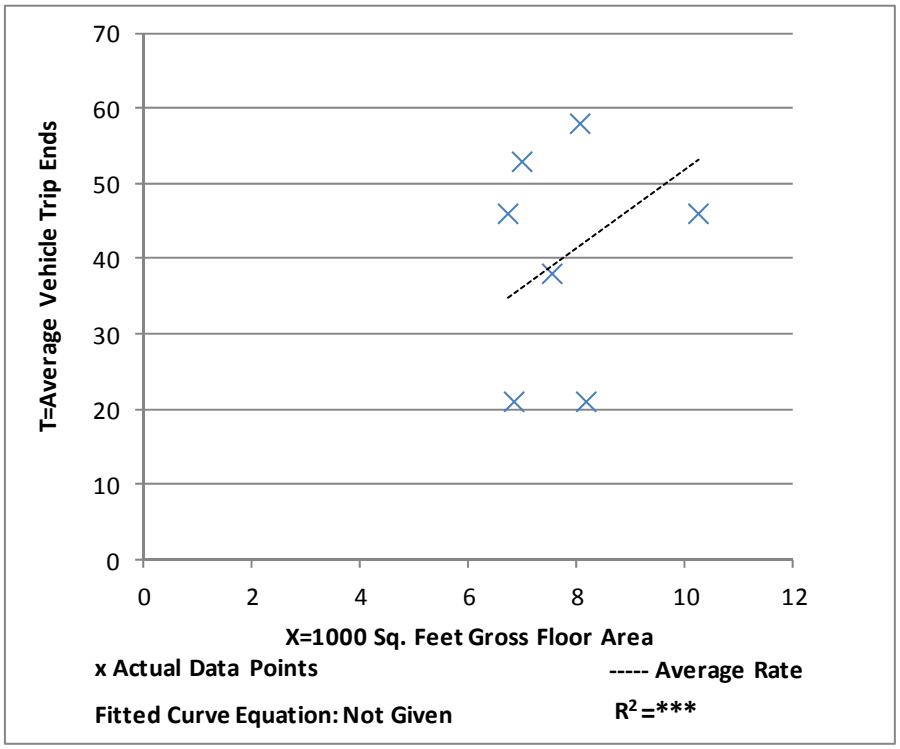
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	8
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
5.17	2.56-7.58	1.97

Data Plot and Equation



Automobile Parts Sales
(843)

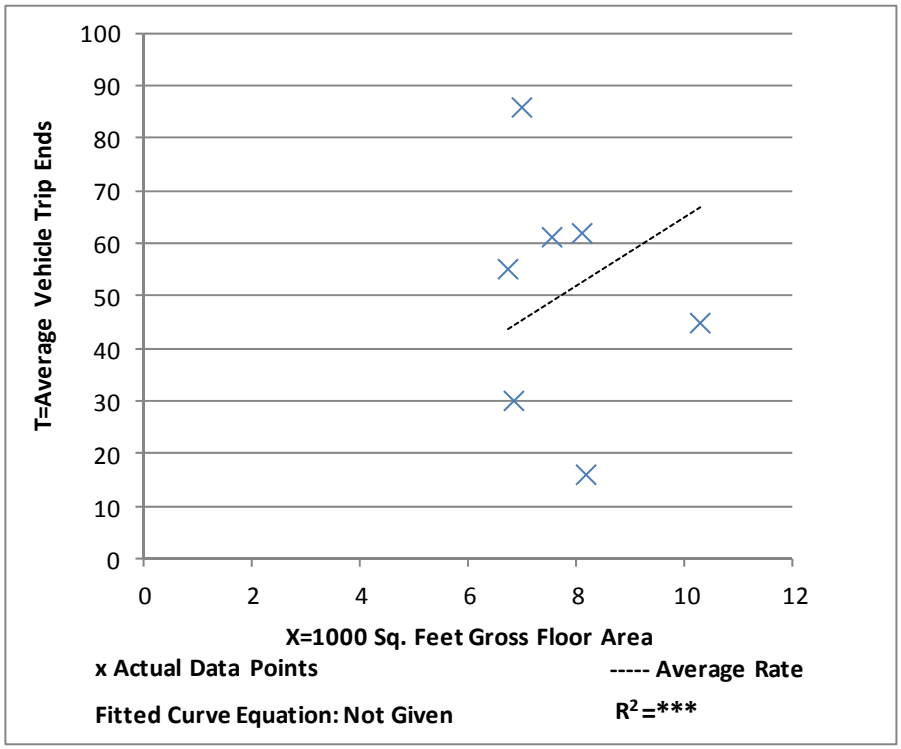
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	8
Directional Distribution:	49% entering, 51% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
6.49	1.95-12.30	3.37

Data Plot and Equation



Land Use: 852
Convenience Market (Open 15-16 Hours)

Description

The convenience markets in this classification are open 15-16 hours per day. These markets sell convenience foods, newspapers, magazines and often beer and wine; they do not have gasoline pumps. Convenience market (open 24 hours) (Land Use 851), convenience market with gasoline pumps (Land Use 853), gasoline/service station with convenience market (Land Use 945) and gasoline/service station with convenience market and car wash (Land Use 946) are related uses.

Source Numbers

1, 2

Convenience Market (Open 15-16 Hours)
(852)

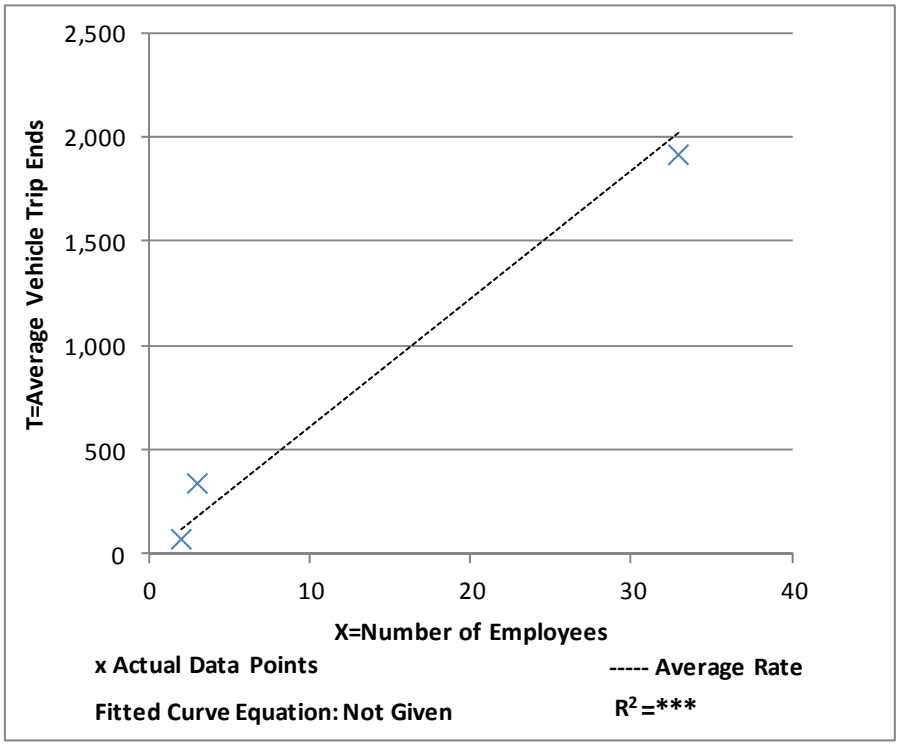
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday**

Number of Studies:	3
Average Number of Employees:	13
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
61.16	35.00-114.00	33.48

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



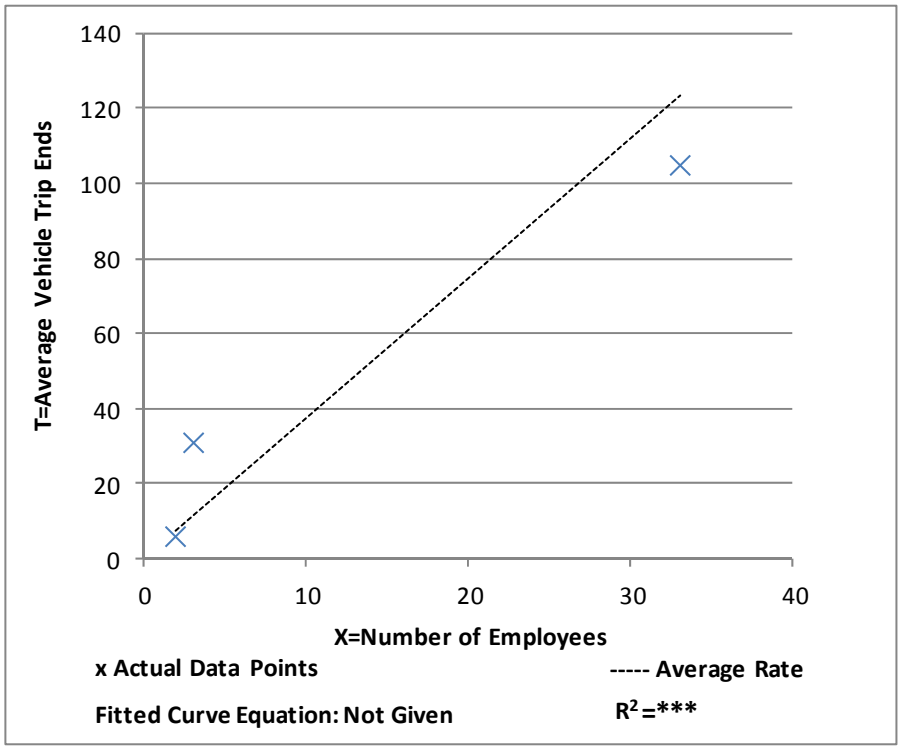
Convenience Market (Open 15-16 Hours)
(852)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	3
Average Number of Employees:	13
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.74	3.00-10.33	3.97

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



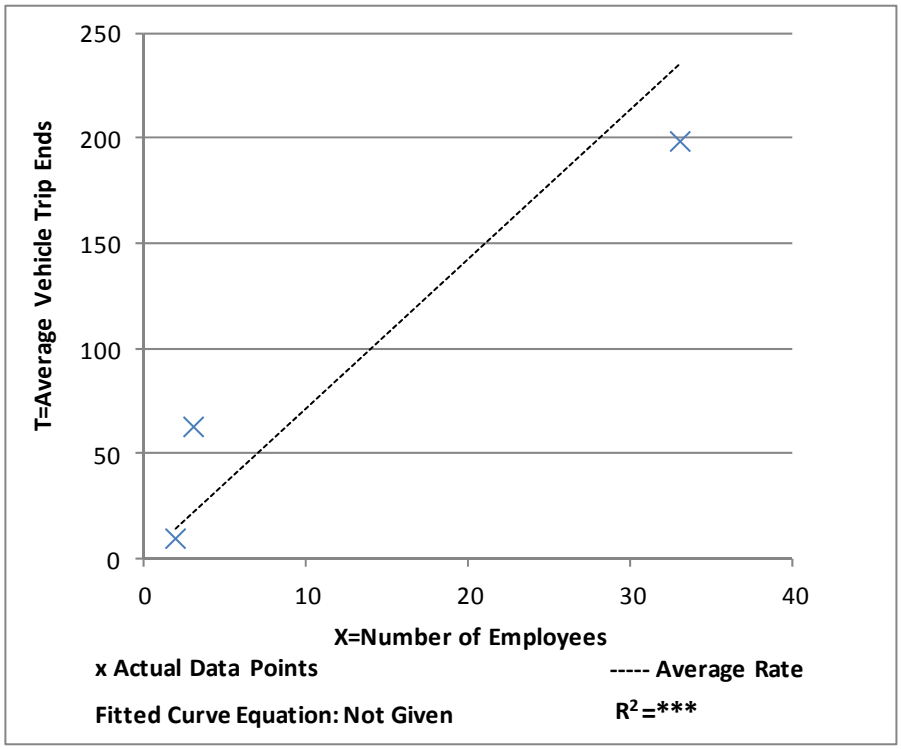
Convenience Market (Open 15-16 Hours)
(852)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	3
Average Number of Employees:	13
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
7.13	5.00-21.00	8.36

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Convenience Market (Open 15-16 Hours)
(852)

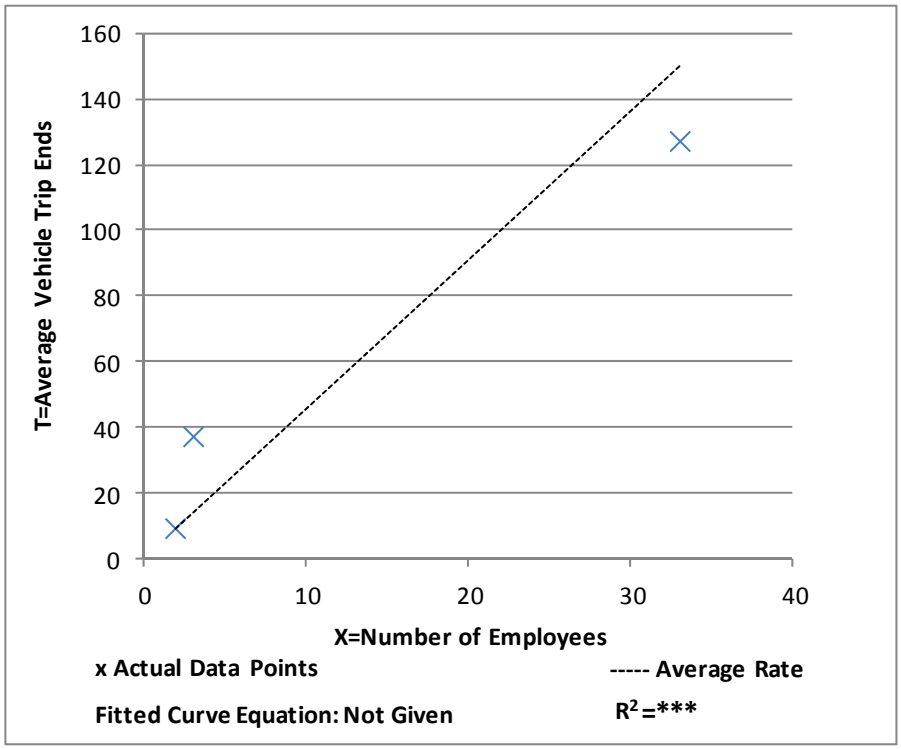
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	3
Average Number of Employees:	13
Directional Distribution:	46% entering, 54% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.55	3.85-12.33	4.69

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Convenience Market (Open 15-16 Hours)
(852)

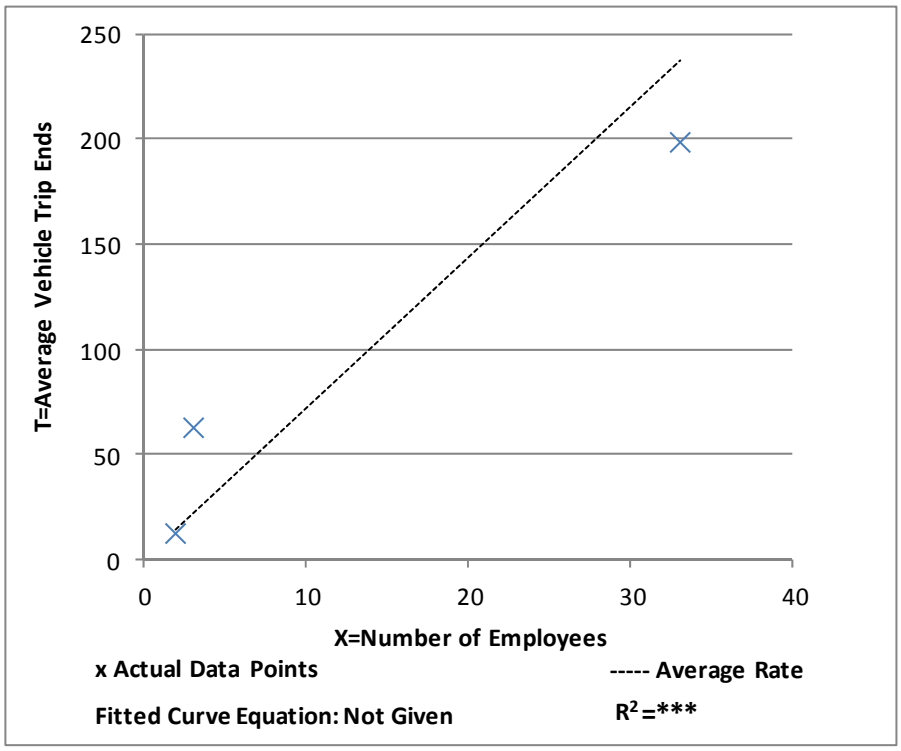
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	3
Average Number of Employees:	13
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
7.18	6.00-21.00	8.31

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Convenience Market (Open 15-16 Hours)
(852)

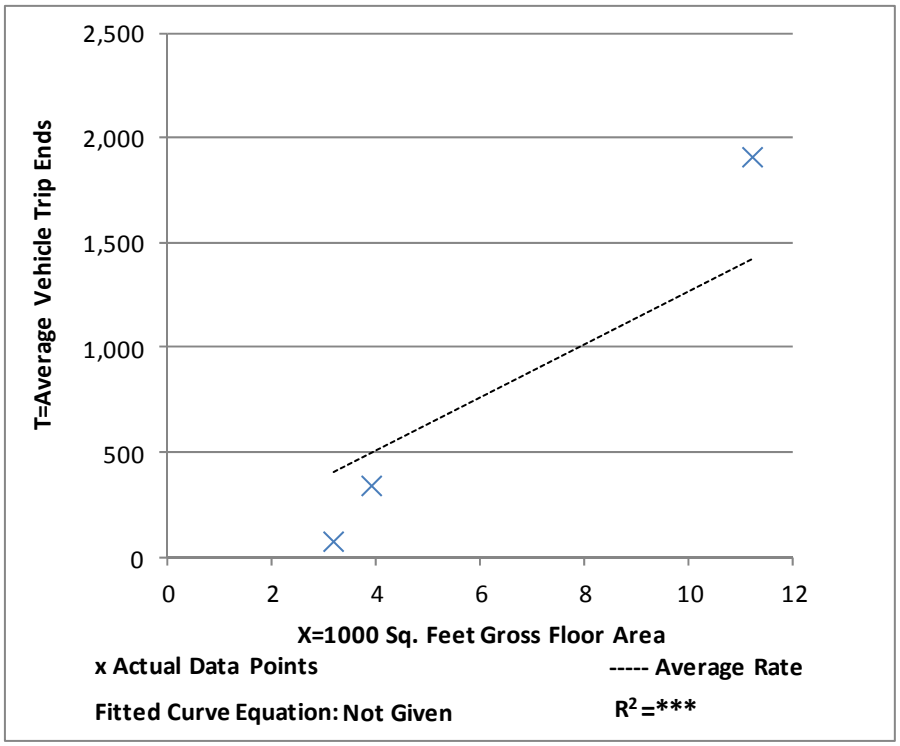
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	6
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
126.51	21.88-170.24	78.79

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



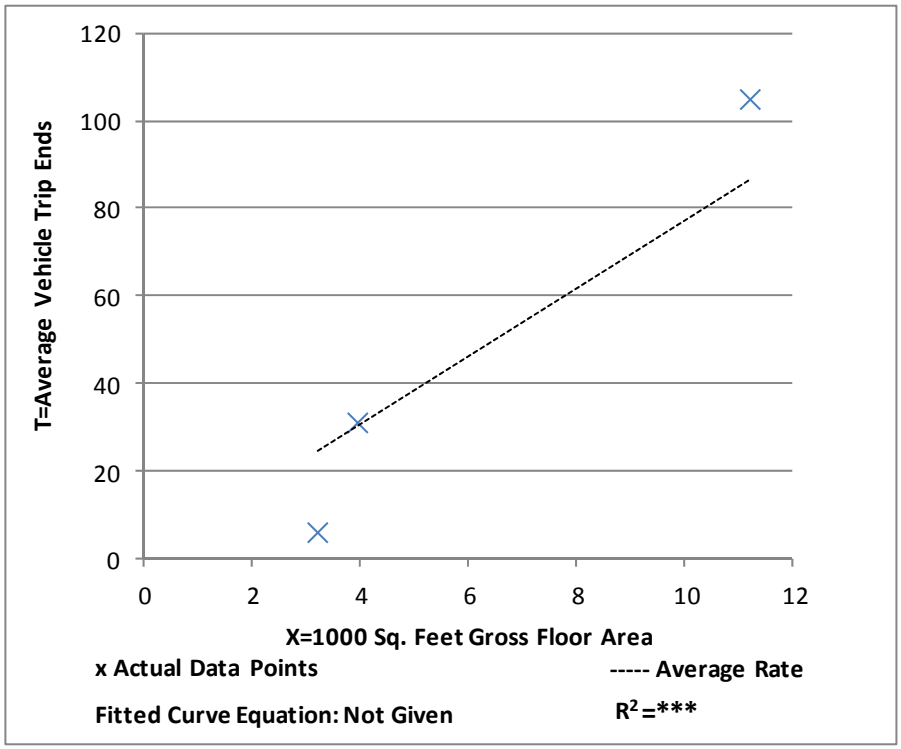
Convenience Market (Open 15-16 Hours)
(852)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
7.73	1.88-9.35	3.71

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



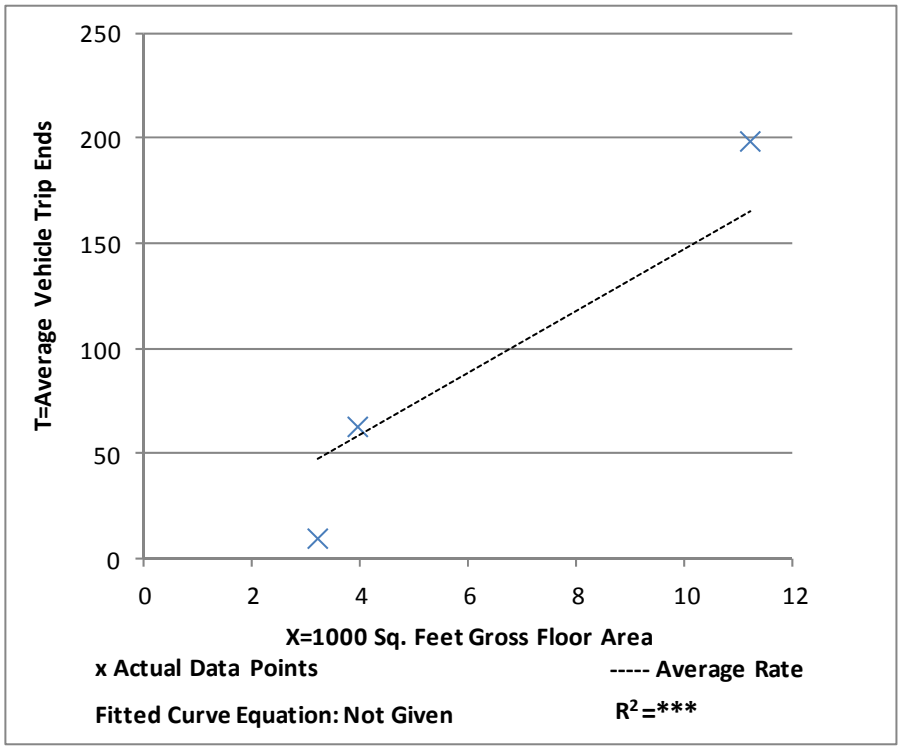
Convenience Market (Open 15-16 Hours)
(852)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	6
Directional Distribution:	49% entering, 51% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
14.75	3.13-17.63	7.25

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Convenience Market (Open 15-16 Hours)
(852)

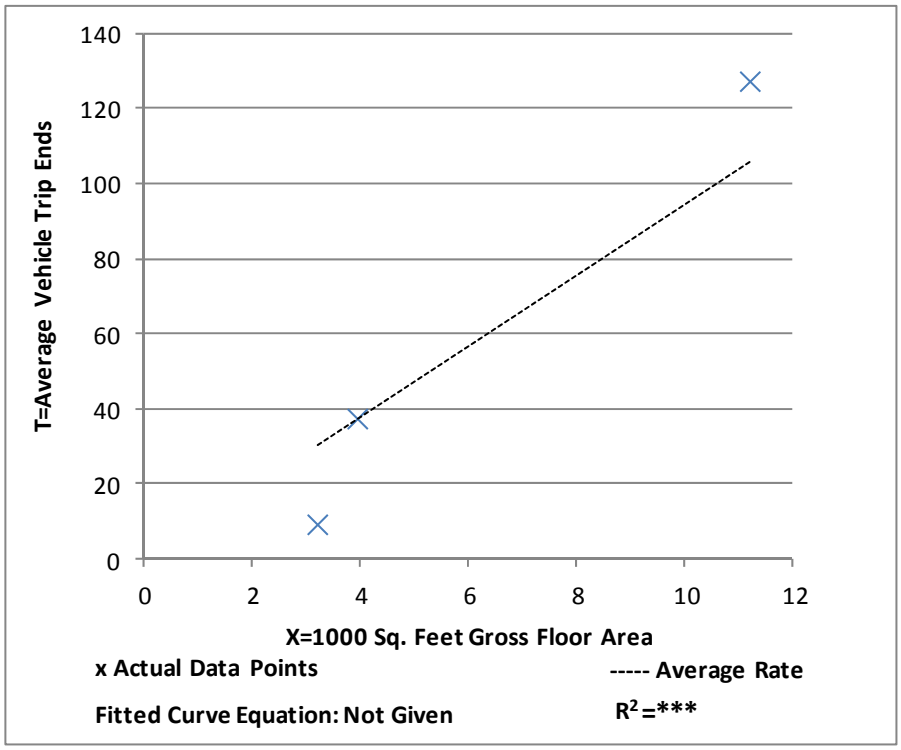
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	6
Directional Distribution:	46% entering, 54% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
9.42	2.81-11.31	4.22

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Convenience Market (Open 15-16 Hours)
(852)

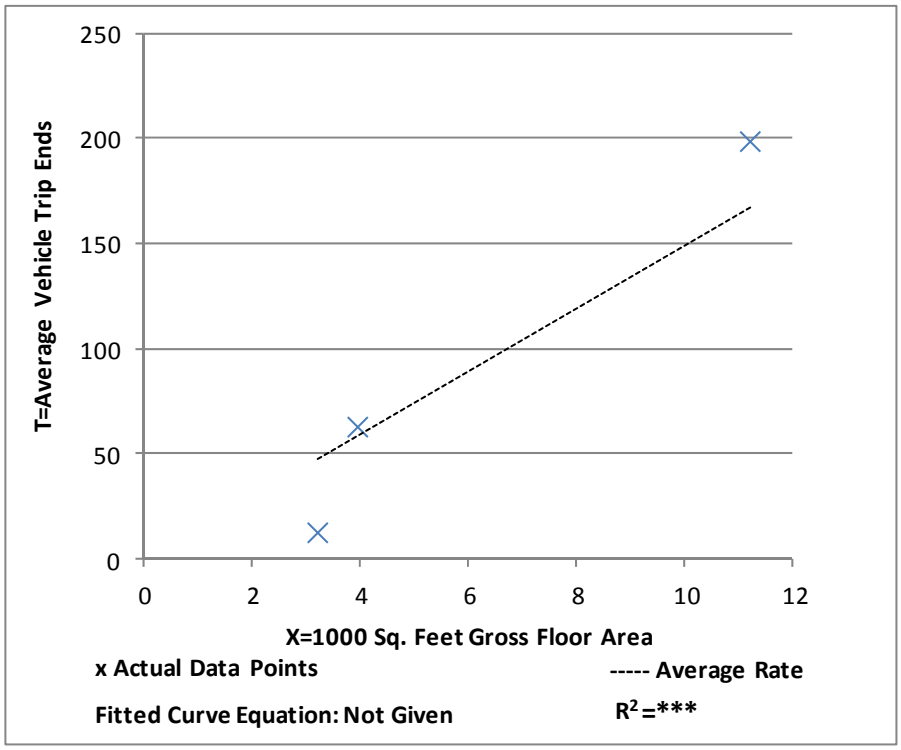
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	6
Directional Distribution:	49% entering, 51% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
14.86	3.75-17.63	6.94

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Land Use: 853
Convenience Market w/ Gas Pumps

Description

The convenience markets surveyed sell gasoline, convenience foods, newspapers, magazines and often beer and wine. This land use includes convenience markets with gasoline pumps, where the primary business is the selling of convenience items, not the fueling of motor vehicles. Convenience market (open 24 hours) (Land Use 851), convenience market (open 15-16 hours) (Land Use 852), gasoline/service station (Land Use 944), gasoline/service station with convenience market (Land Use 945) and gasoline/service station with convenience market and car wash (Land Use 946) are related uses.

Source Numbers

1, 2, 3, 4, 5

Convenience Market with Gasoline Pumps
(853)

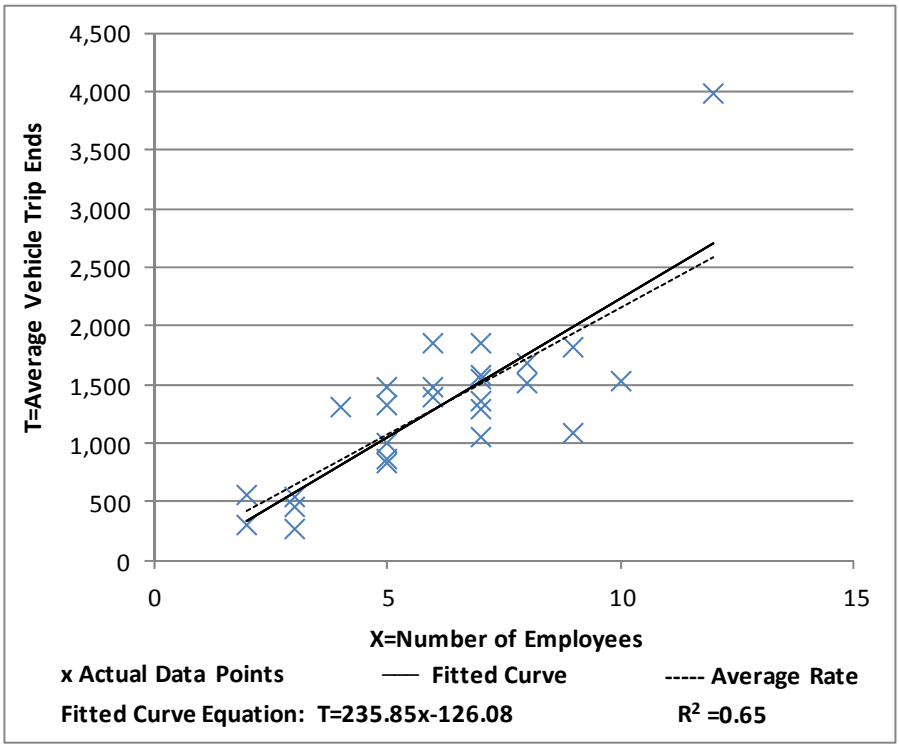
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 26
Average Number of Employees: 6
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
215.10	91.33-332.17	63.44

Data Plot and Equation



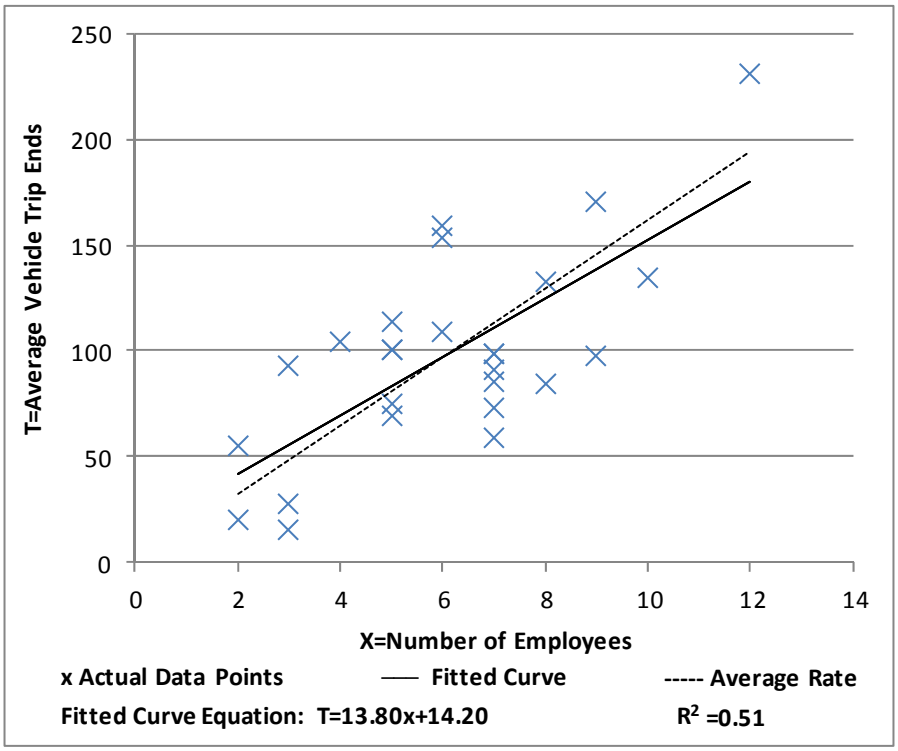
Convenience Market with Gasoline Pumps
(853)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	26
Average Number of Employees:	6
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
16.14	5.00-31.00	5.84

Data Plot and Equation



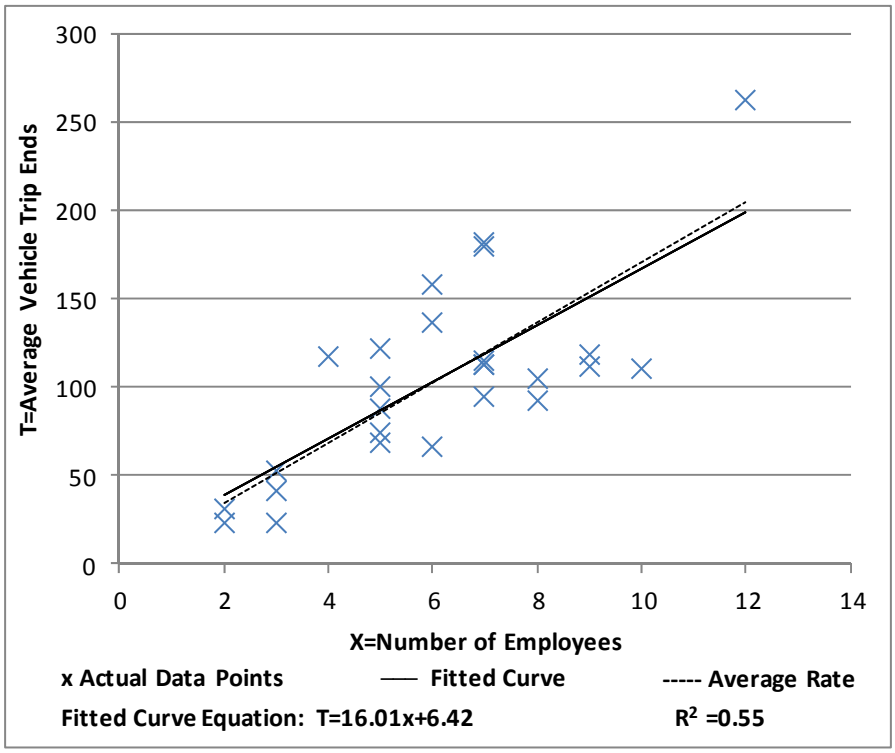
Convenience Market with Gasoline Pumps
(853)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	26
Average Number of Employees:	6
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
17.06	7.67-29.25	5.65

Data Plot and Equation



Convenience Market with Gasoline Pumps
(853)

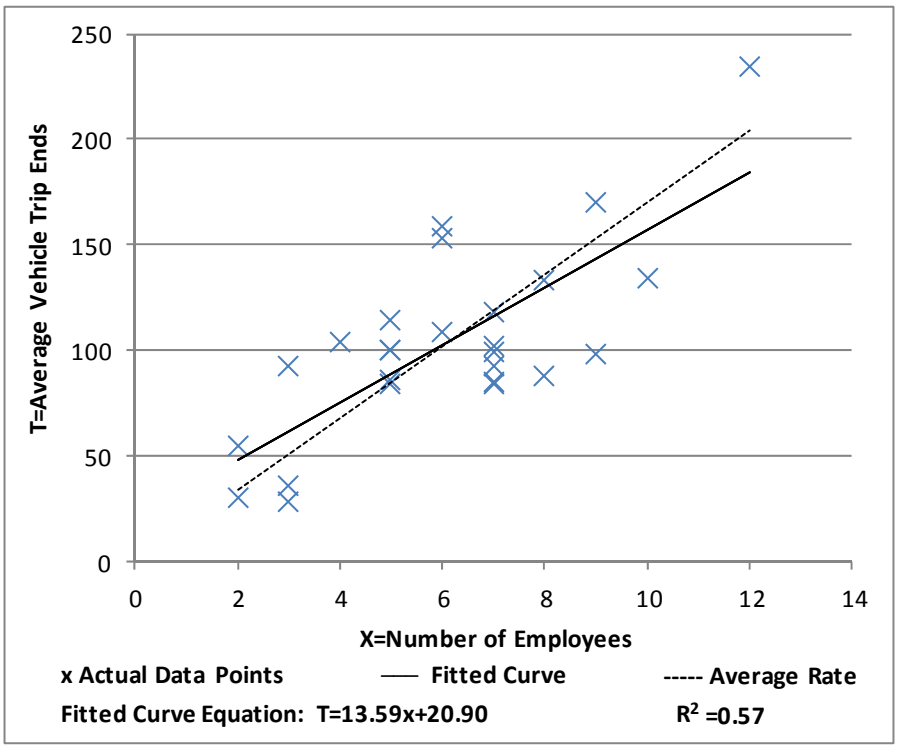
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	26
Average Number of Employees:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
17.03	9.33-31.00	5.17

Data Plot and Equation



Convenience Market with Gasoline Pumps
(853)

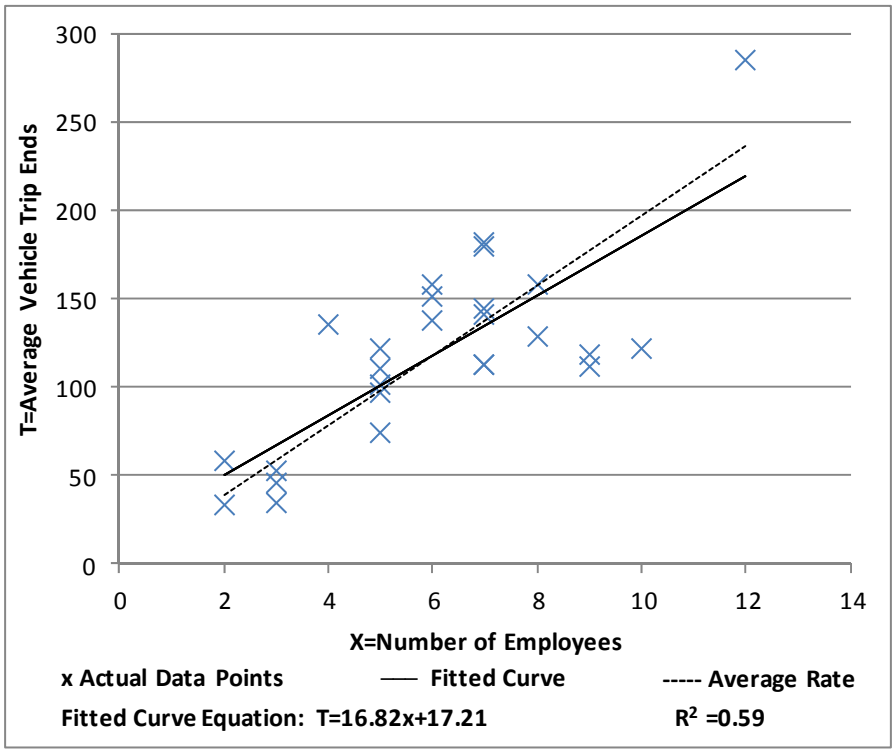
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	26
Average Number of Employees:	6
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
19.65	11.33-33.75	5.46

Data Plot and Equation



Convenience Market with Gasoline Pumps
(853)

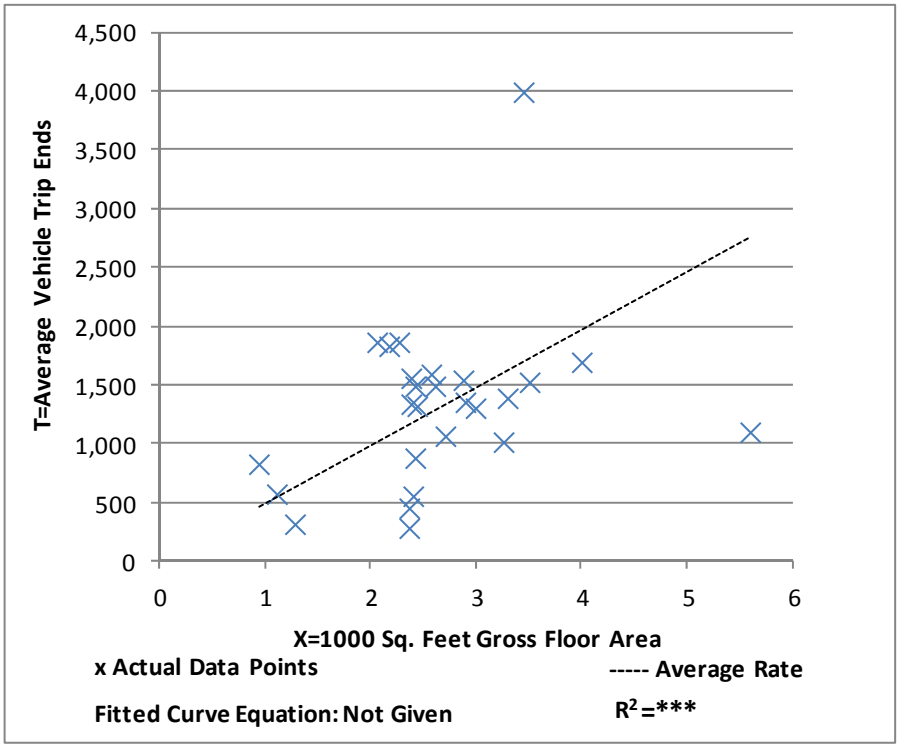
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	26
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
491.80	115.13-1,149.37	251.82

Data Plot and Equation



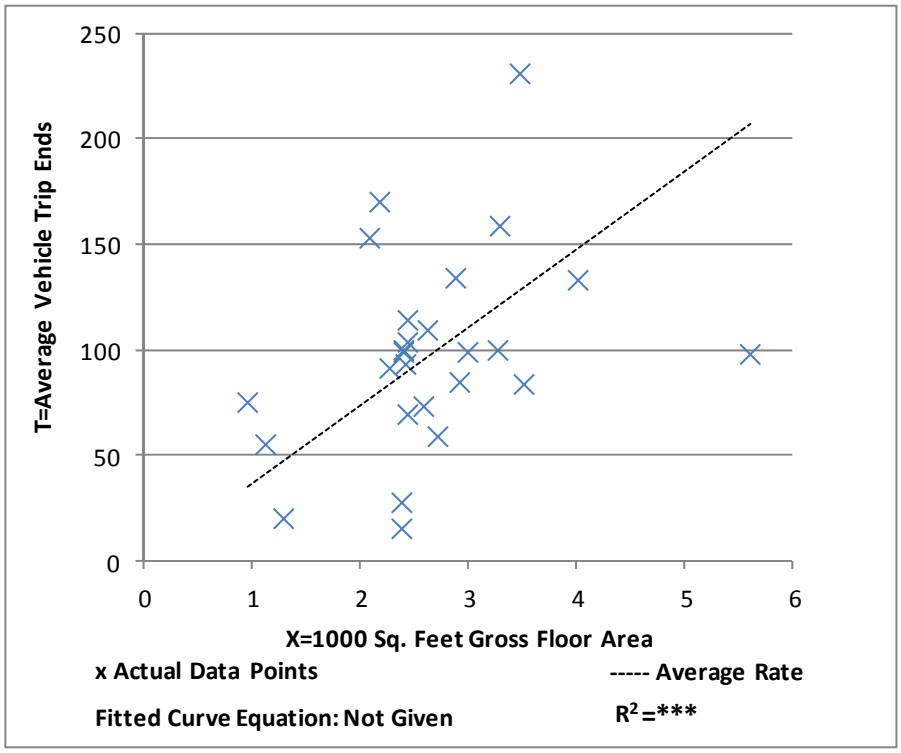
Convenience Market with Gasoline Pumps
(853)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	26
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	49% entering, 51% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
36.90	6.30-78.78	17.83

Data Plot and Equation



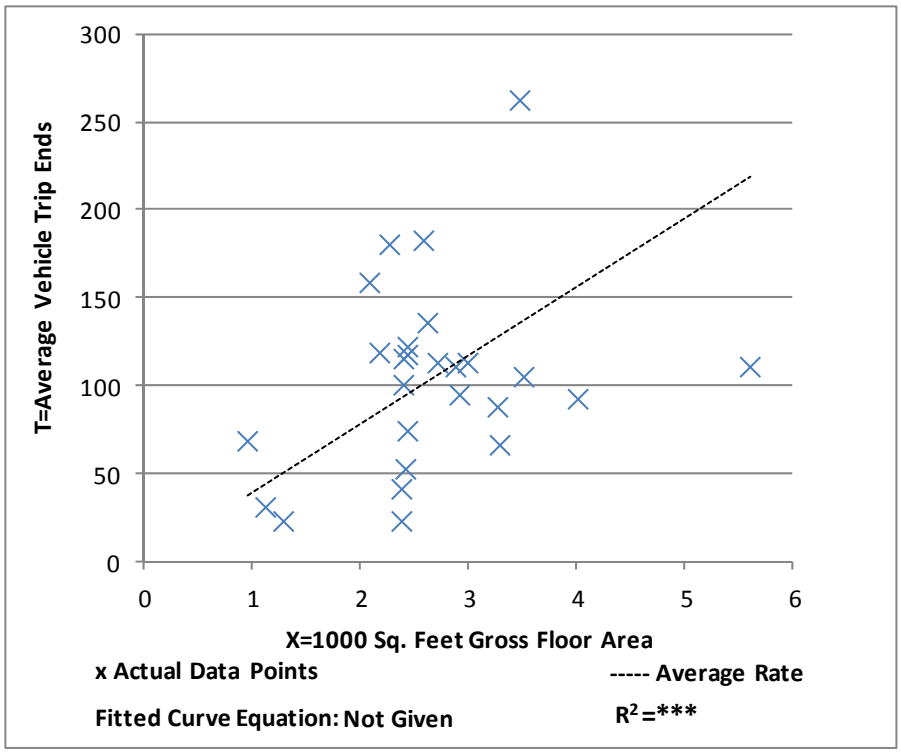
Convenience Market with Gasoline Pumps
(853)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	26
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
39.01	9.66-79.12	19.94

Data Plot and Equation



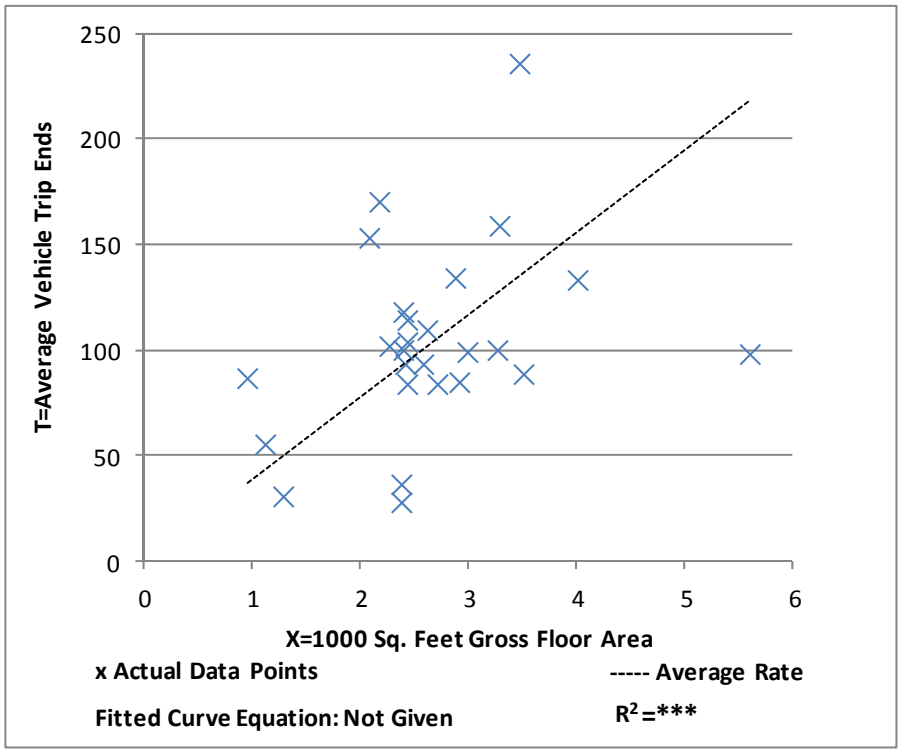
Convenience Market with Gasoline Pumps
(853)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	26
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
38.93	11.76-90.34	17.40

Data Plot and Equation



Convenience Market with Gasoline Pumps
(853)

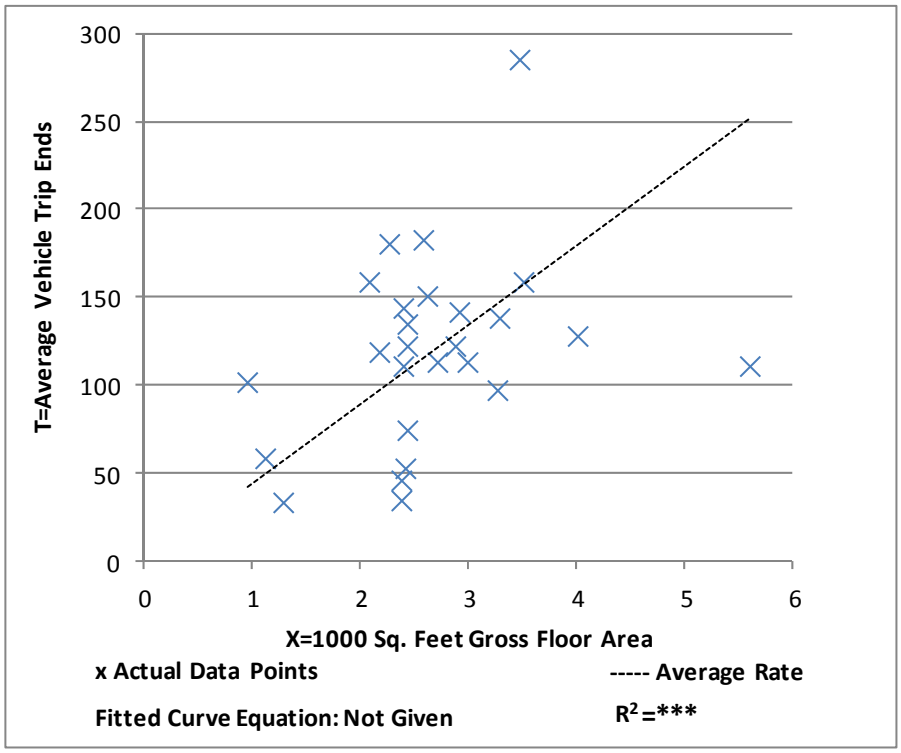
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	26
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
44.93	14.29-106.09	20.41

Data Plot and Equation



Convenience Market with Gasoline Pumps
(853)

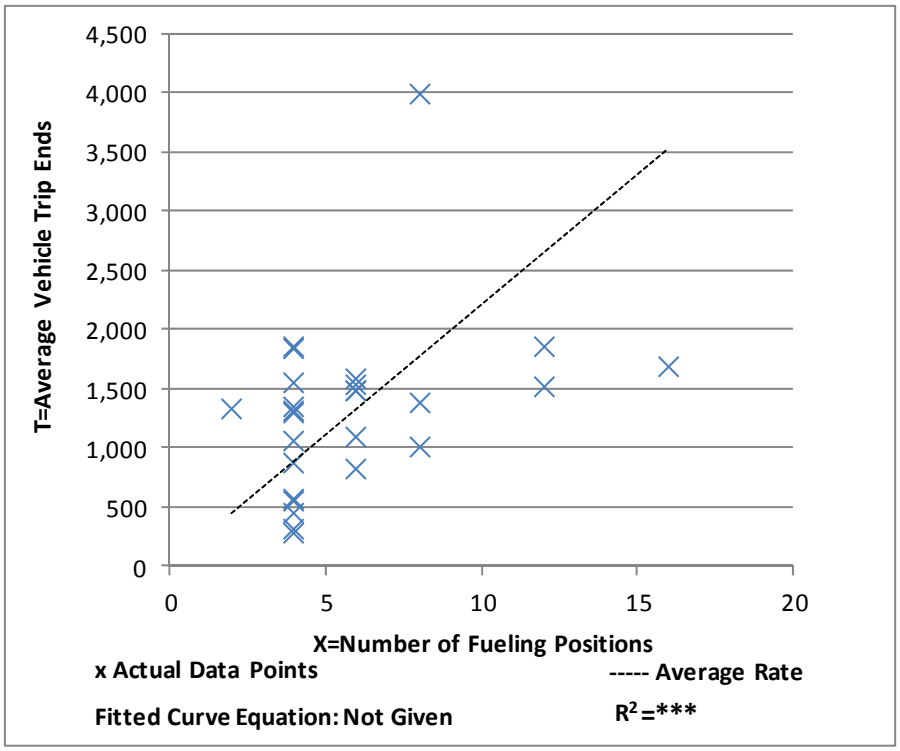
Average Vehicle Trip Ends vs: Fueling Positions
On a: Weekday

Number of Studies:	26
Average Number of Fueling Positions:	6
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
220.69	68.50-664.00	132.02

Data Plot and Equation



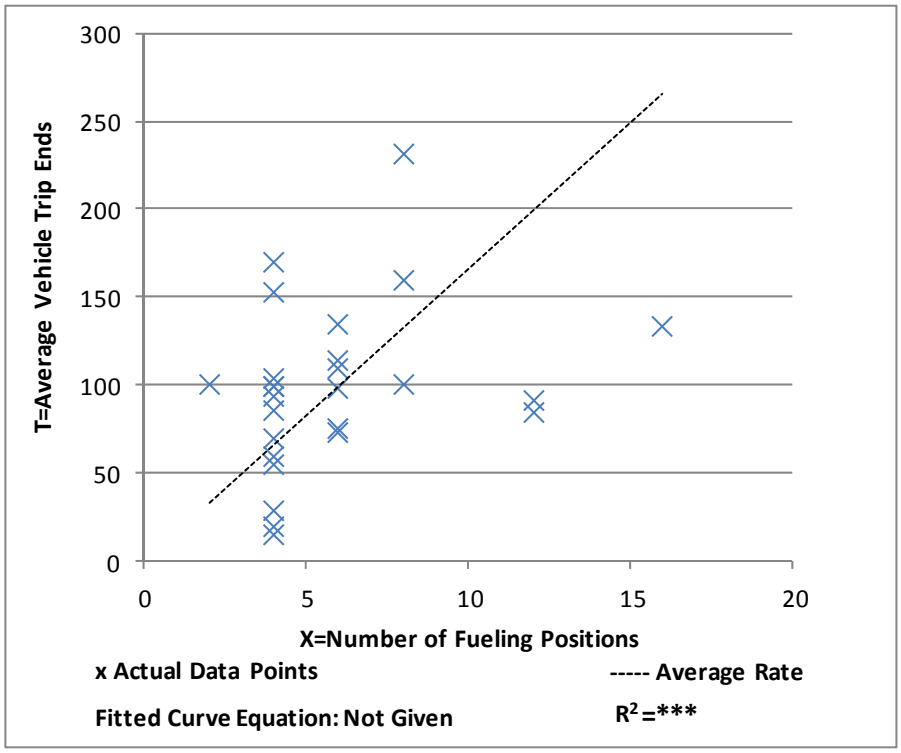
Convenience Market with Gasoline Pumps
(853)

Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	26
Average Number of Fueling Positions:	6
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
16.56	3.75-50.00	9.99

Data Plot and Equation



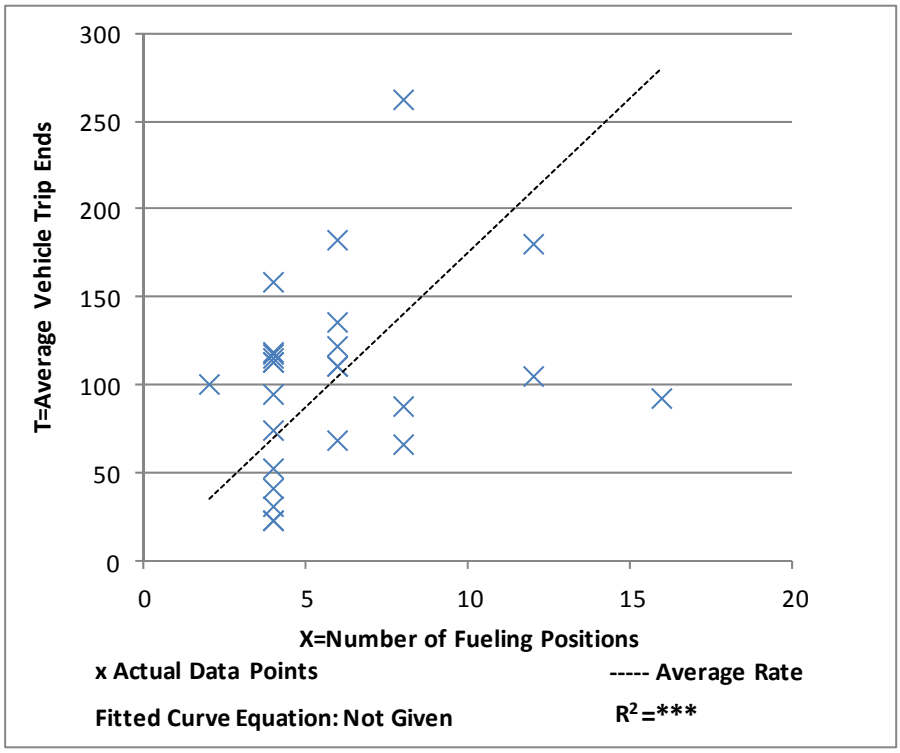
Convenience Market with Gasoline Pumps
(853)

Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	26
Average Number of Fueling Positions:	6
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
17.51	5.75-50.00	10.47

Data Plot and Equation



Convenience Market with Gasoline Pumps
(853)

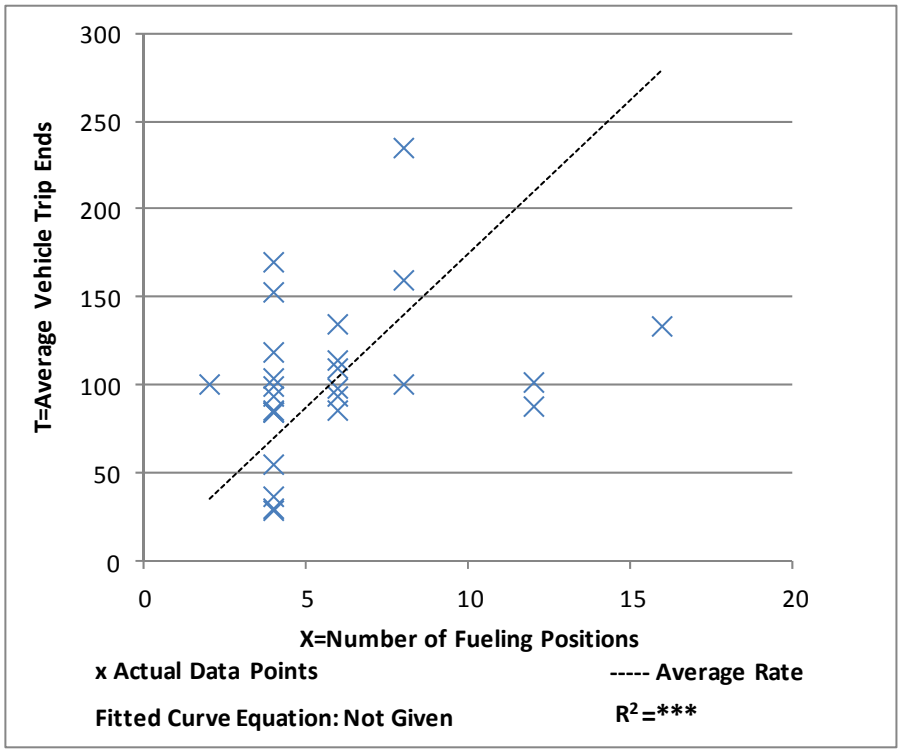
Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	26
Average Number of Fueling Positions:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
17.47	7.00-50.00	9.80

Data Plot and Equation



Convenience Market with Gasoline Pumps
(853)

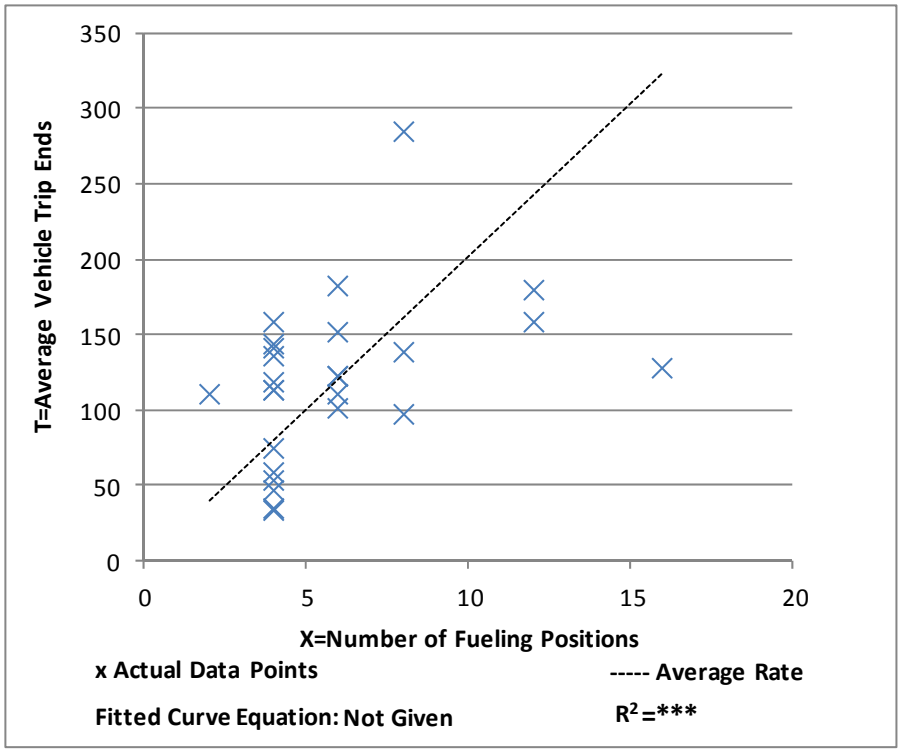
Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	26
Average Number of Fueling Positions:	6
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
20.16	8.00-55.00	10.39

Data Plot and Equation



Land Use: 881
Pharmacy/Drugstore w/ Drive Through

Description

Pharmacies/drugstores are retail facilities that primarily sell prescription and non-prescription drugs. These facilities may also sell cosmetics, toiletries, medications, stationery, personal care products, limited food products and general merchandise. The drug stores in this category contain drive-through windows. Pharmacy/drugstore without a drive-through window (Land Use 880) is a related use.

Source Numbers

1, 2, 4

Pharmacy/Drugstore with Drive-Through Window
(881)

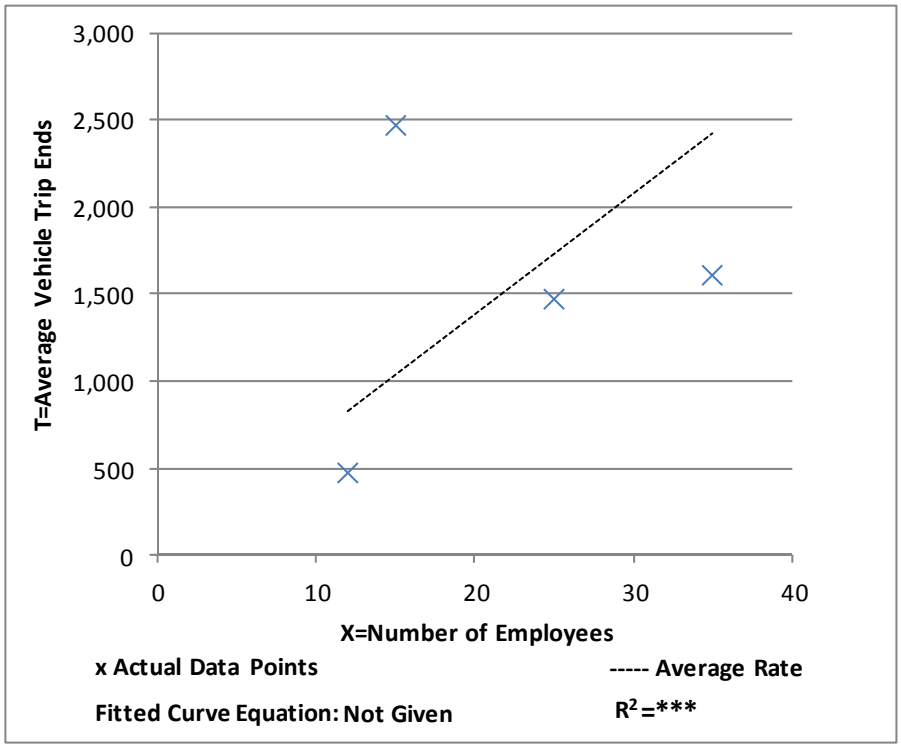
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	4
Average Number of Employees:	22
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
69.17	39.00-164.40	52.33

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



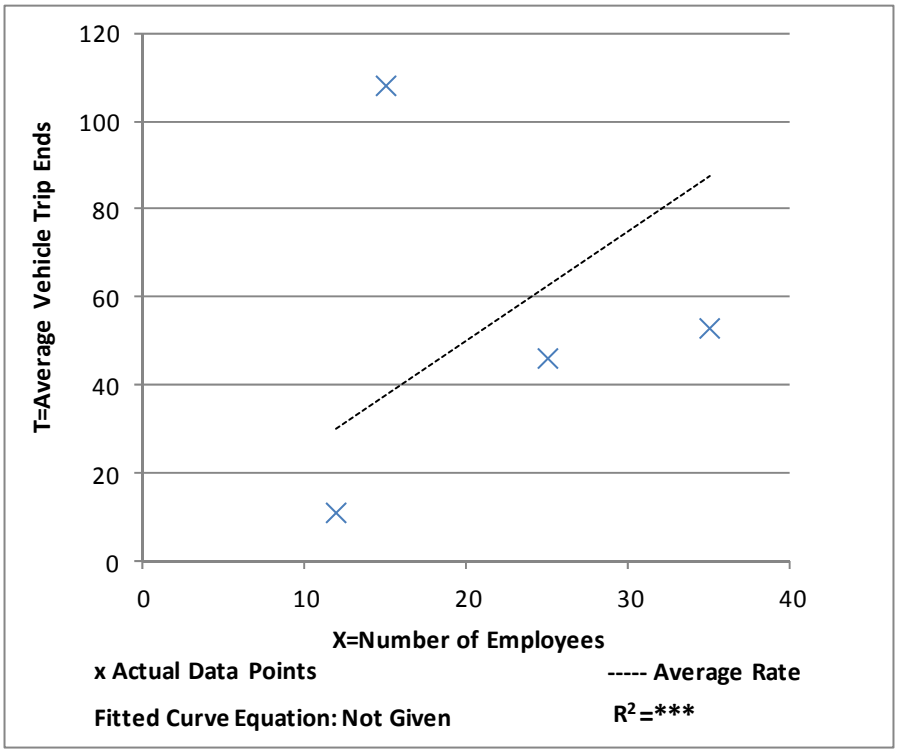
Pharmacy/Drugstore with Drive-Through Window
(881)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	4
Average Number of Employees:	22
Directional Distribution:	59% entering, 41% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.51	0.92-7.20	2.57

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



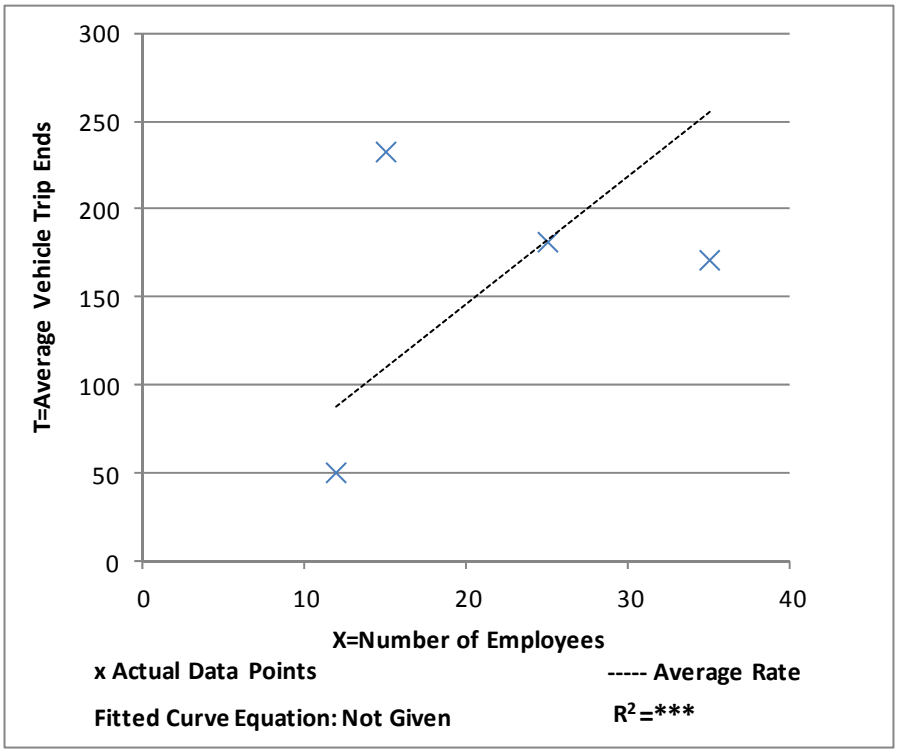
Pharmacy/Drugstore with Drive-Through Window
(881)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	4
Average Number of Employees:	22
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
7.30	4.17-15.53	4.67

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Pharmacy/Drugstore with Drive-Through Window
(881)

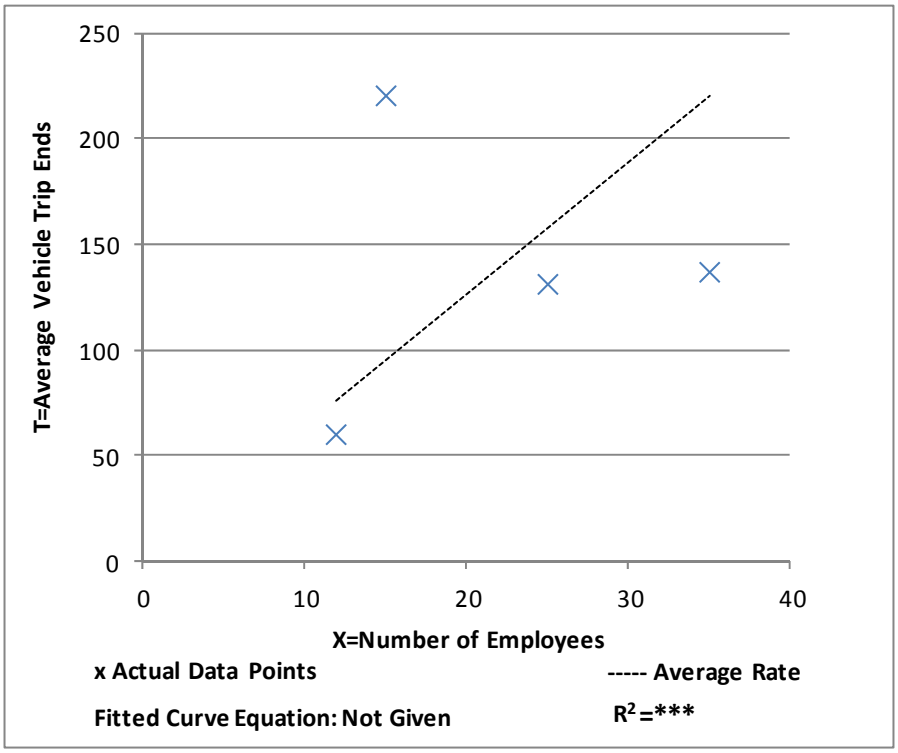
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	4
Average Number of Employees:	22
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
6.30	3.91-14.67	4.59

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Pharmacy/Drugstore with Drive-Through Window
(881)

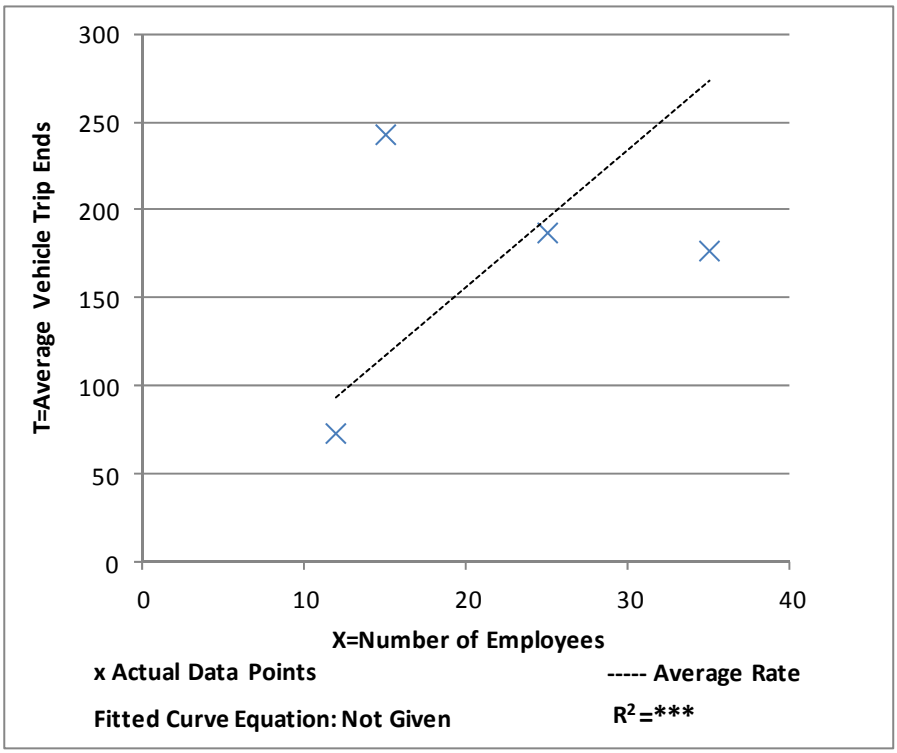
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	4
Average Number of Employees:	22
Directional Distribution:	48% entering, 52% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
7.82	5.06-16.20	4.70

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Pharmacy/Drugstore with Drive-Through Window
(881)

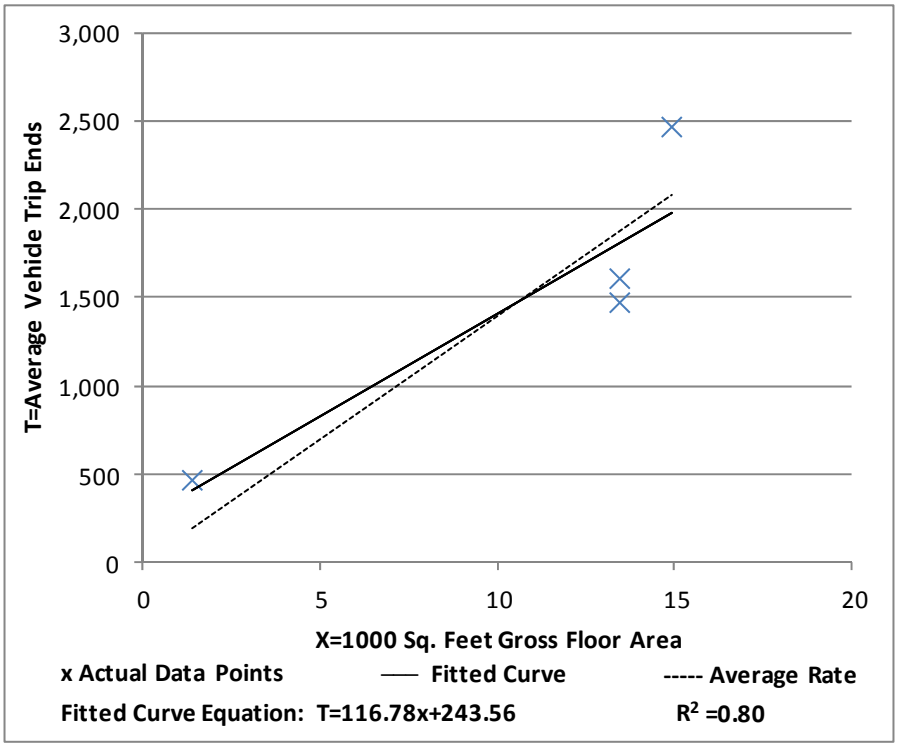
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	11
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
139.34	109.76-329.35	51.44

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



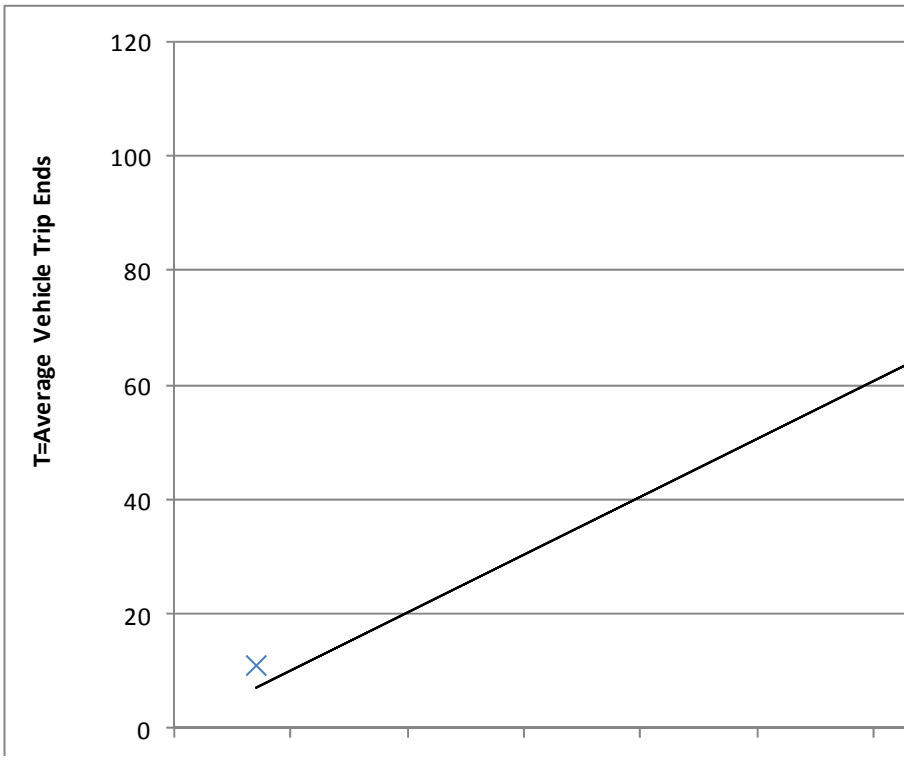
Pharmacy/Drugstore with Drive-Through Window
(881)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	11
Directional Distribution:	55% entering, 45% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
5.05	3.42-7.74	2.13

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



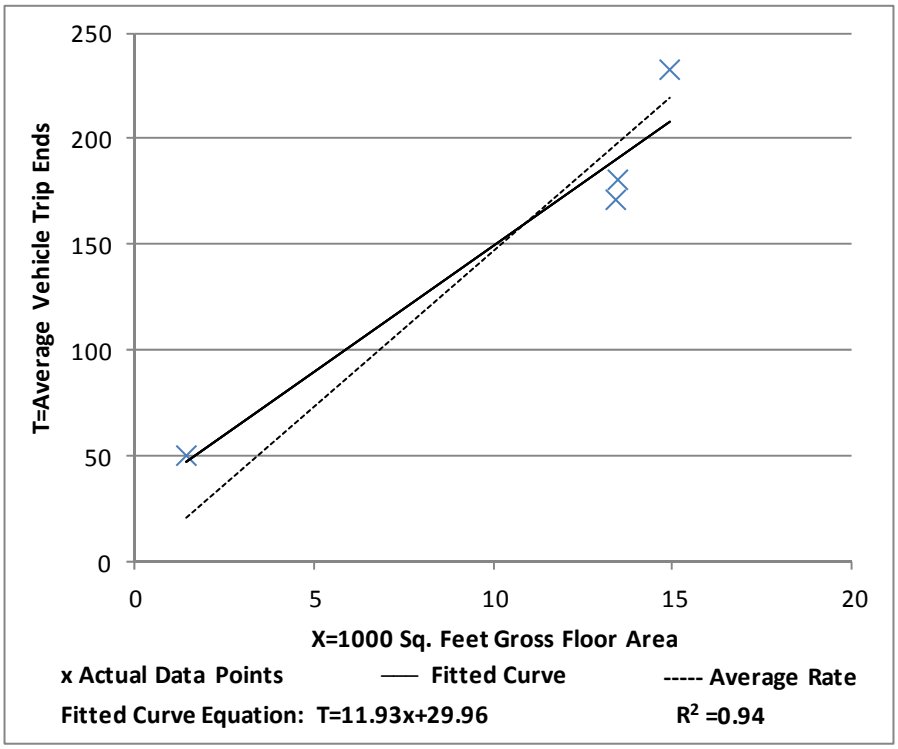
Pharmacy/Drugstore with Drive-Through Window
(881)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	11
Directional Distribution:	49% entering, 51% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
14.70	12.74-35.19	4.80

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Pharmacy/Drugstore with Drive-Through Window
(881)

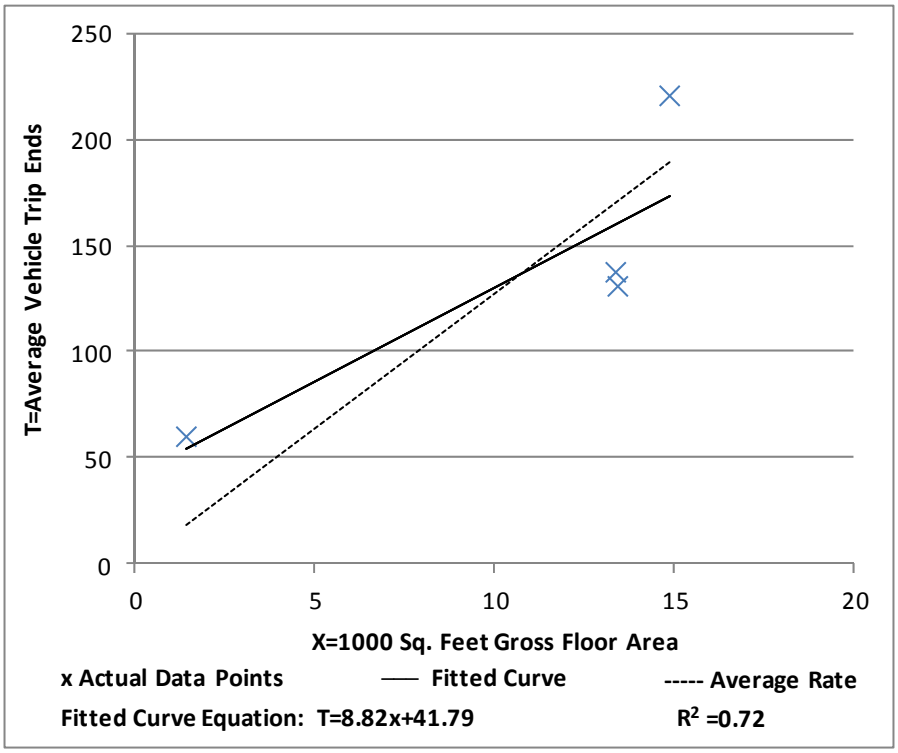
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	11
Directional Distribution:	49% entering, 51% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
12.69	9.74-42.22	7.12

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



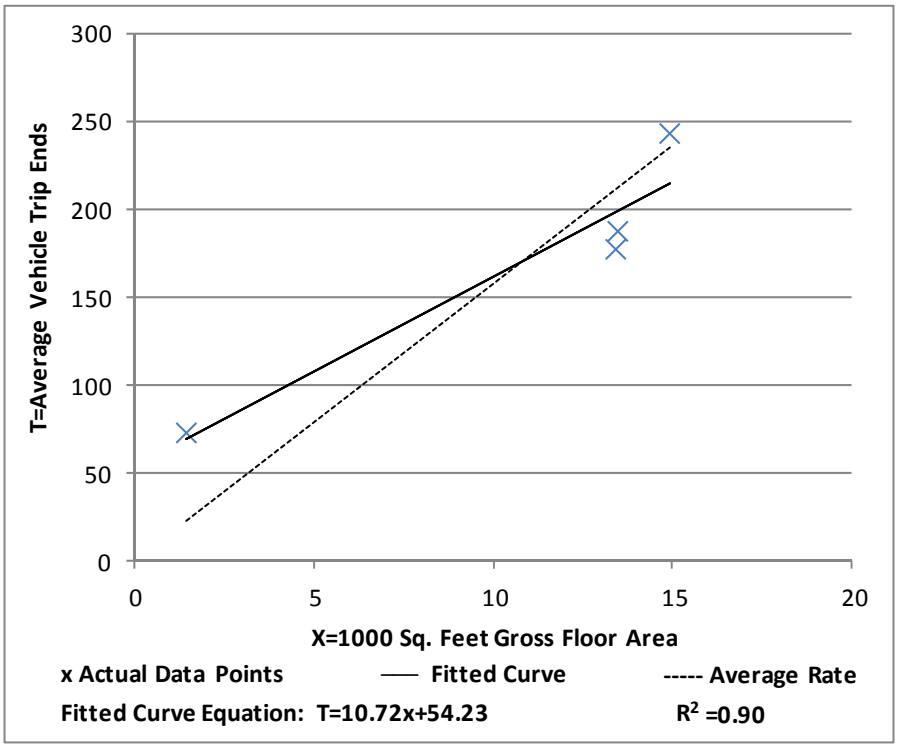
Pharmacy/Drugstore with Drive-Through Window
(881)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	11
Directional Distribution:	48% entering, 52% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
15.74	13.18-51.37	8.09

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Land Use: 890
Furniture Store

Description

A furniture store is a full-service retail facility that specializes in the sale of furniture and often carpeting. Furniture stores are generally large and may include storage areas. The sites surveyed included both traditional retail furniture stores and warehouse stores with showrooms. Although some home accessories may be sold, furniture stores primarily focus on the sale of pre-assembled furniture. A majority of items sold at these facilities must be ordered for delivery. Discount home furnishing superstore (Land Use 869) is a related use.

Source Numbers

2, 3, 4, 5

Furniture Store
(890)

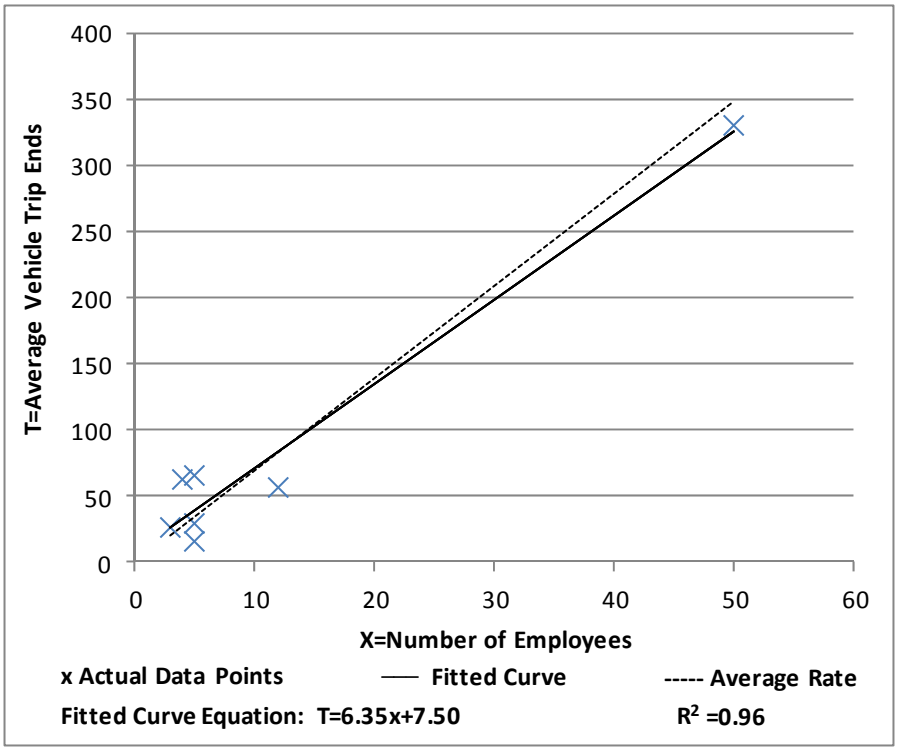
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 7
Average Number of Employees: 12
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
6.98	3.20-15.50	3.53

Data Plot and Equation



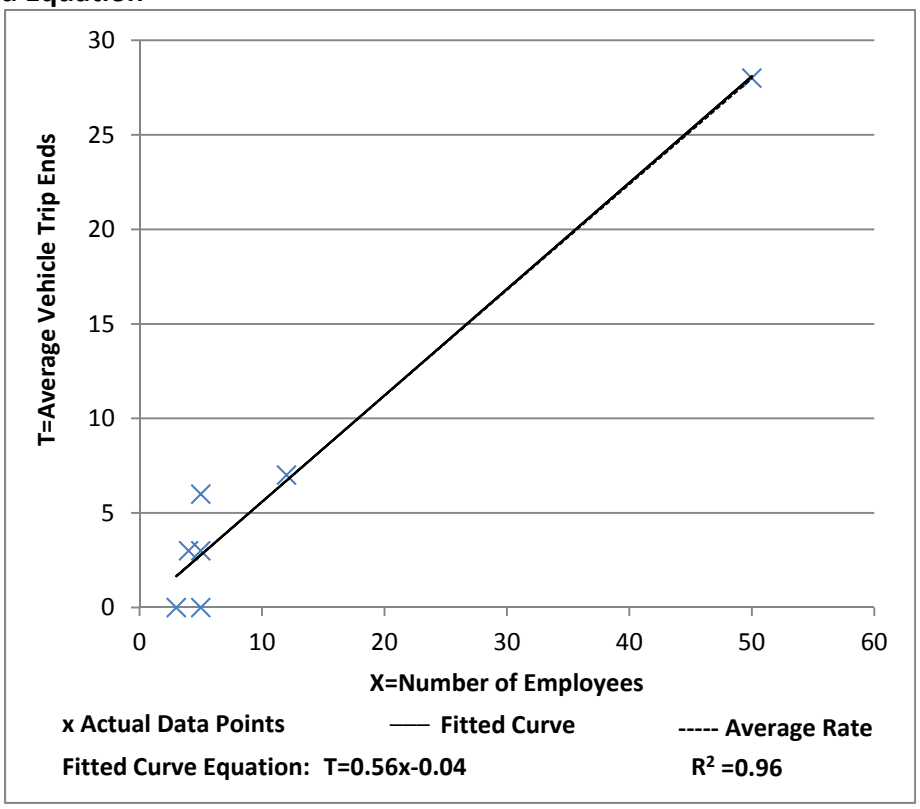
Furniture Store
(890)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of Employees:	12
Directional Distribution:	69% entering, 31% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.56	0.00-1.20	0.30

Data Plot and Equation



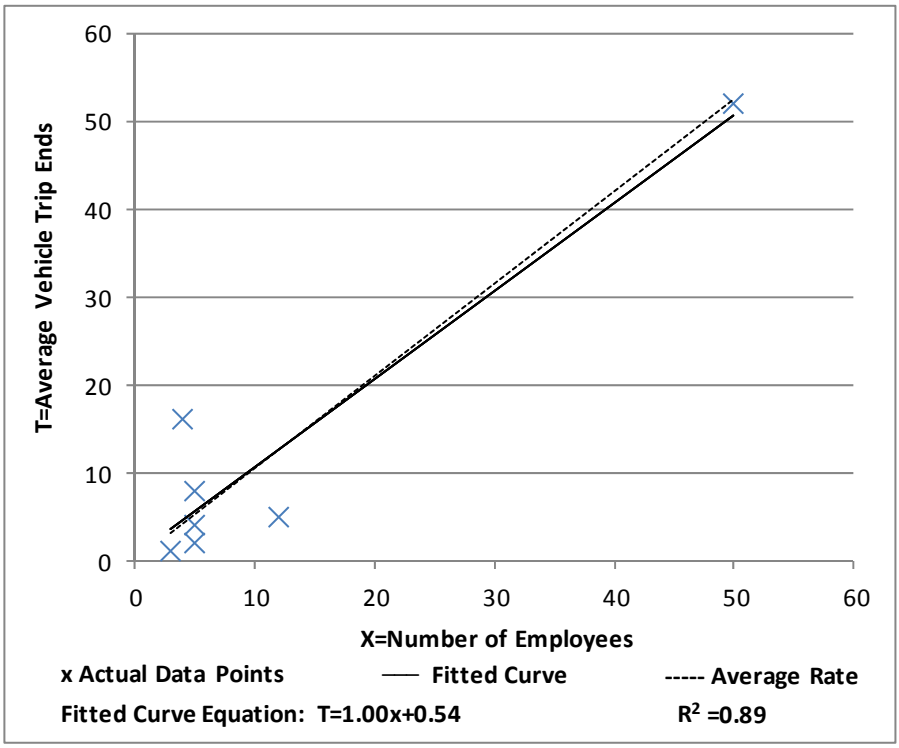
Furniture Store
(890)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of Employees:	12
Directional Distribution:	31% entering, 69% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.05	0.33-4.00	0.94

Data Plot and Equation



Furniture Store
(890)

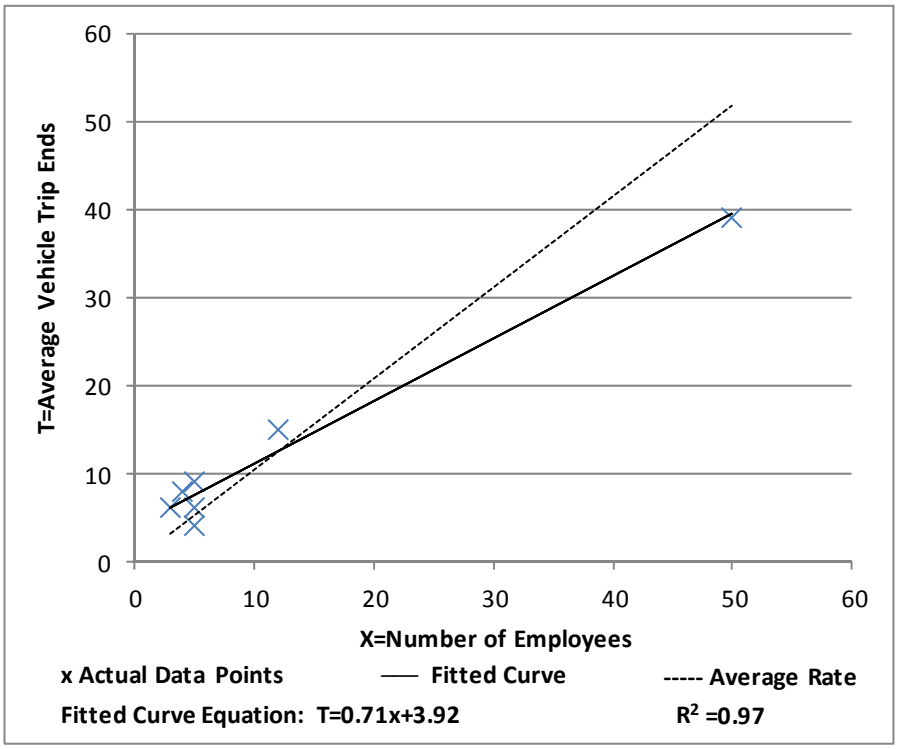
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	12
Directional Distribution:	72% entering, 28% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.04	0.78-2.00	0.52

Data Plot and Equation



Furniture Store
(890)

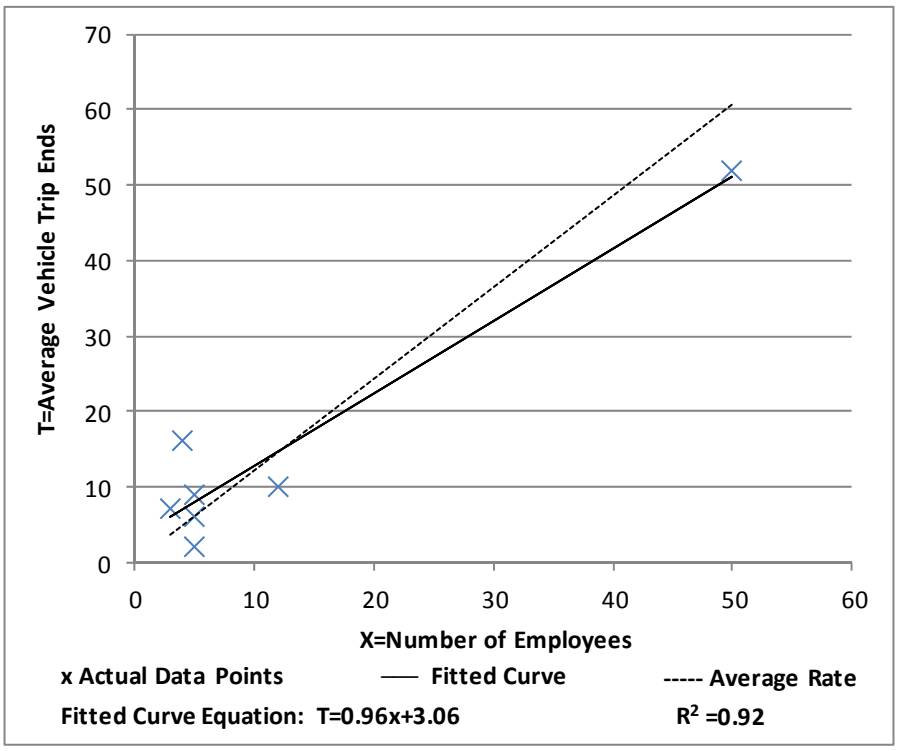
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	12
Directional Distribution:	45% entering, 55% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.21	0.40-4.00	0.92

Data Plot and Equation



Furniture Store
(890)

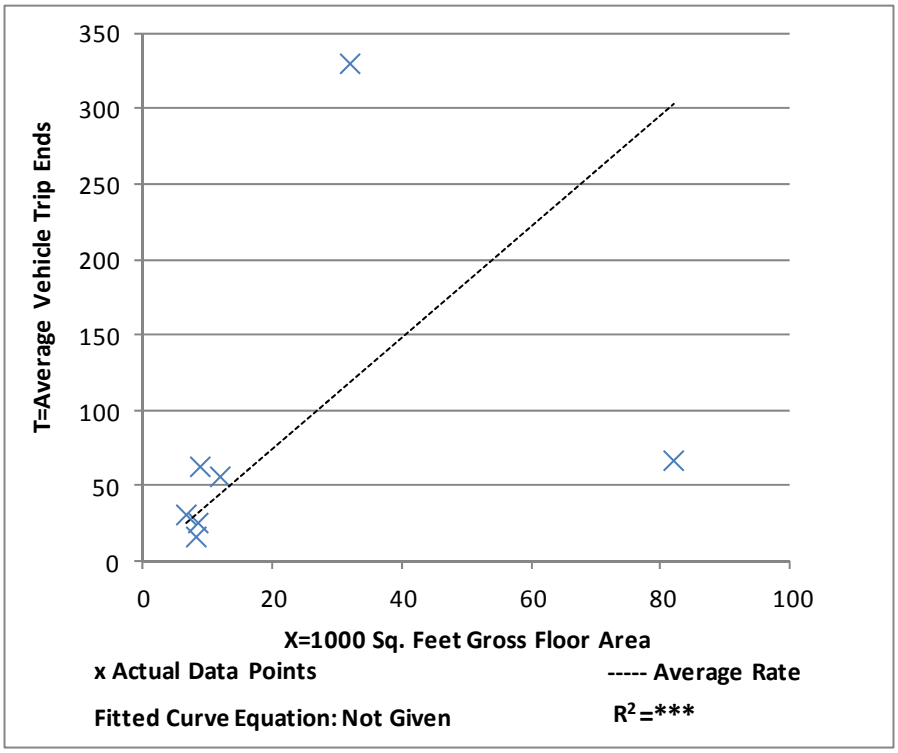
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	23
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.69	0.80-10.31	4.55

Data Plot and Equation



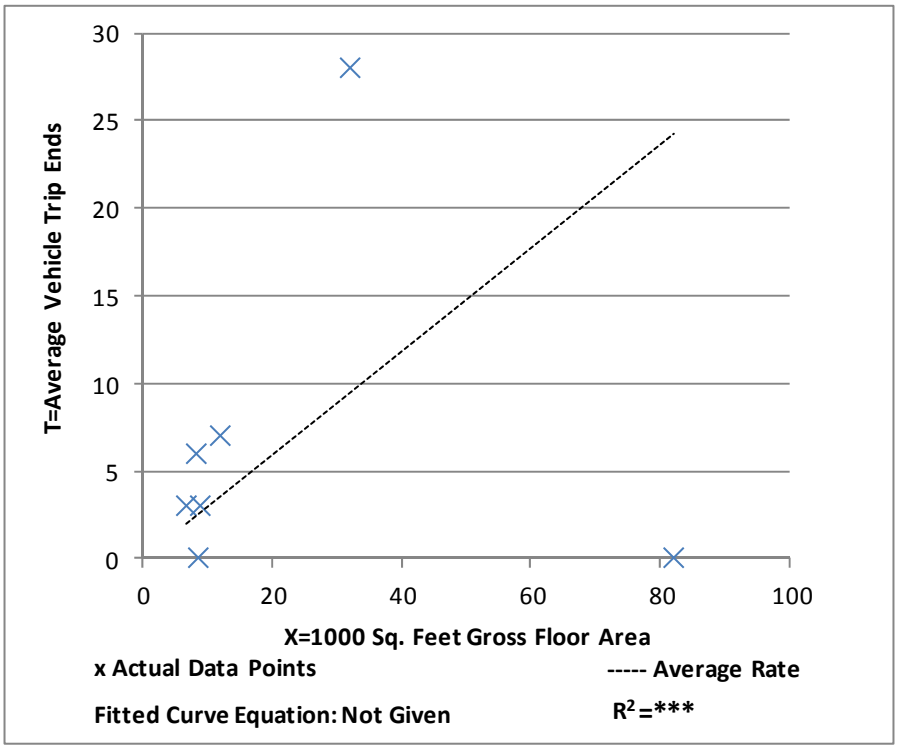
Furniture Store
(890)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	23
Directional Distribution:	35% entering, 65% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.30	0.00-0.88	0.45

Data Plot and Equation



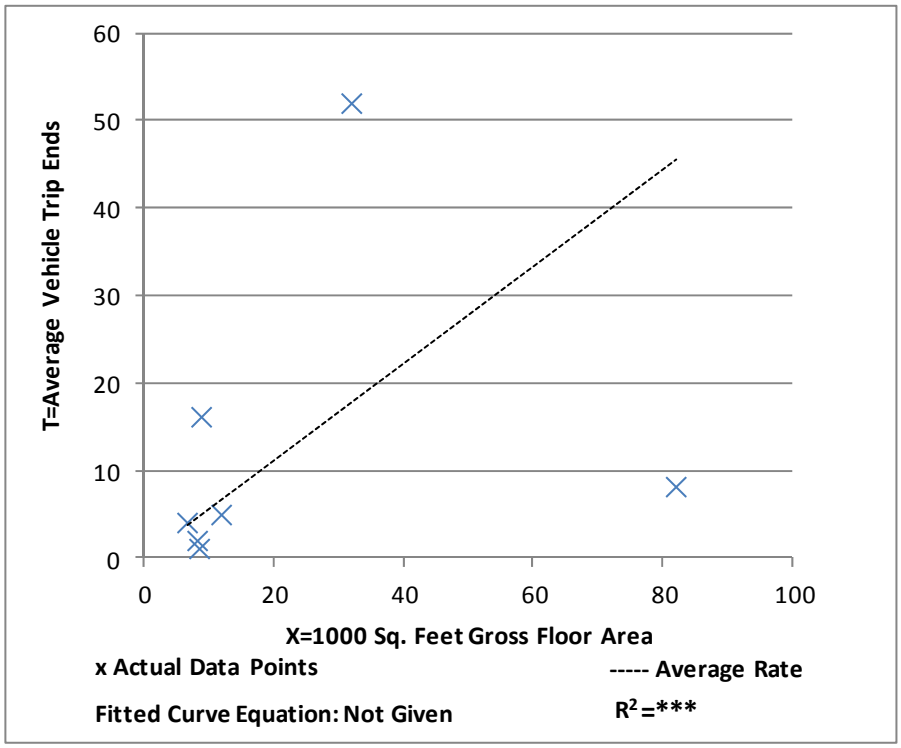
Furniture Store
(890)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	23
Directional Distribution:	38% entering, 62% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.55	0.10-1.78	0.81

Data Plot and Equation



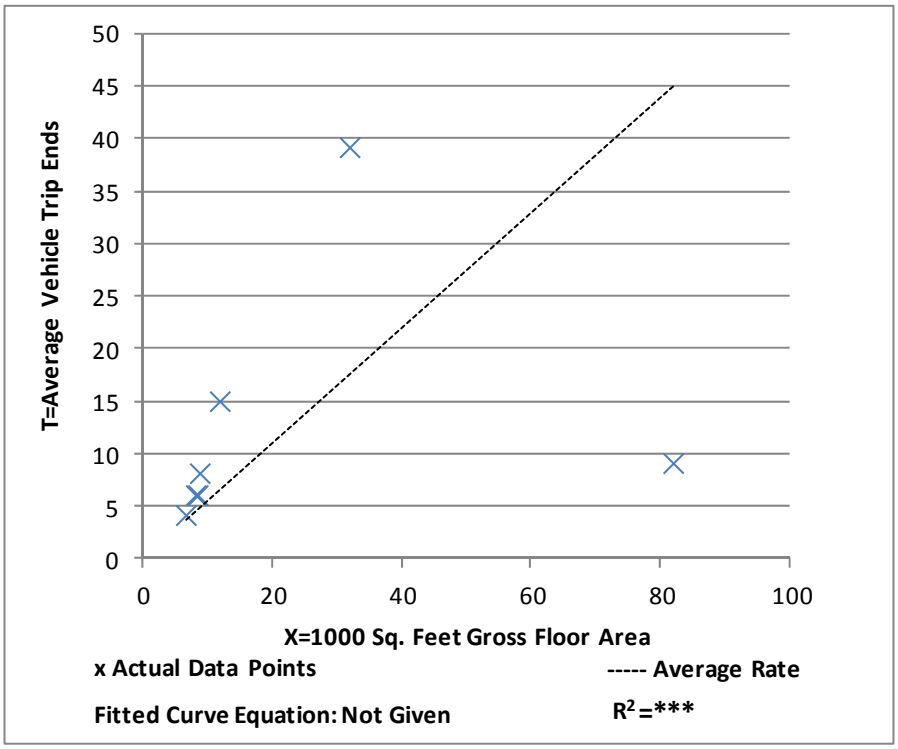
Furniture Store
(890)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	23
Directional Distribution:	72% entering, 28% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.55	0.11-1.24	0.59

Data Plot and Equation



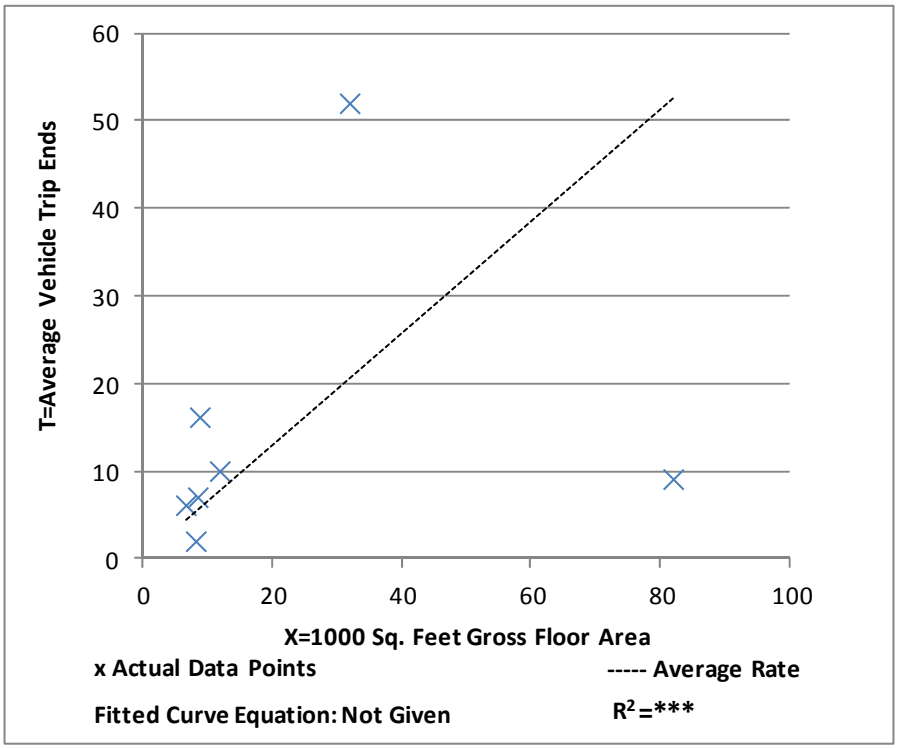
Furniture Store
(890)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	23
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.64	0.11-1.78	0.80

Data Plot and Equation



VOLUME 4-TRIP GENERATION RATES, PLOTS AND EQUATIONS

Drive-In Bank 339
High-Turnover (Sit-Down) Restaurant 355
Fast-Food Restaurant without Drive-Through Window 367
Fast-Food Restaurant with Drive-Through Window 379
Fast-Food Restaurant with Drive-Through Window and No Indoor Seating 391
Automobile Parts and Service Center 403
Gasoline/Service Station 415
Gasoline/Service Station with Convenience Market 431
Gasoline/Service Station with Convenience Market and Car Wash 447

Land Use: 912
Drive-In Bank

Description

Drive-in banks provide banking facilities for motorists who conduct financial transactions from their vehicles; many also serve patrons who walk into the building. The drive-in lanes may or may not provide automatic teller machines (ATMs). Walk-in bank (Land Use 911) is a related use.

Source Numbers

1, 2, 3, 4, 5

Drive-in Bank
(912)

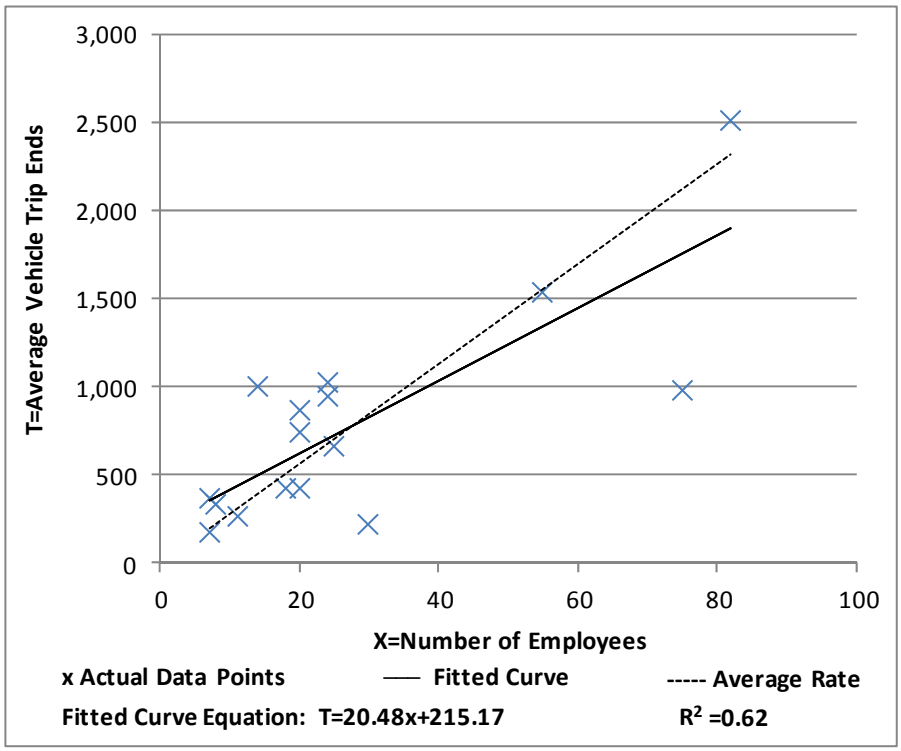
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 16
Average Number of Employees: 28
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
28.30	7.33-71.14	14.10

Data Plot and Equation



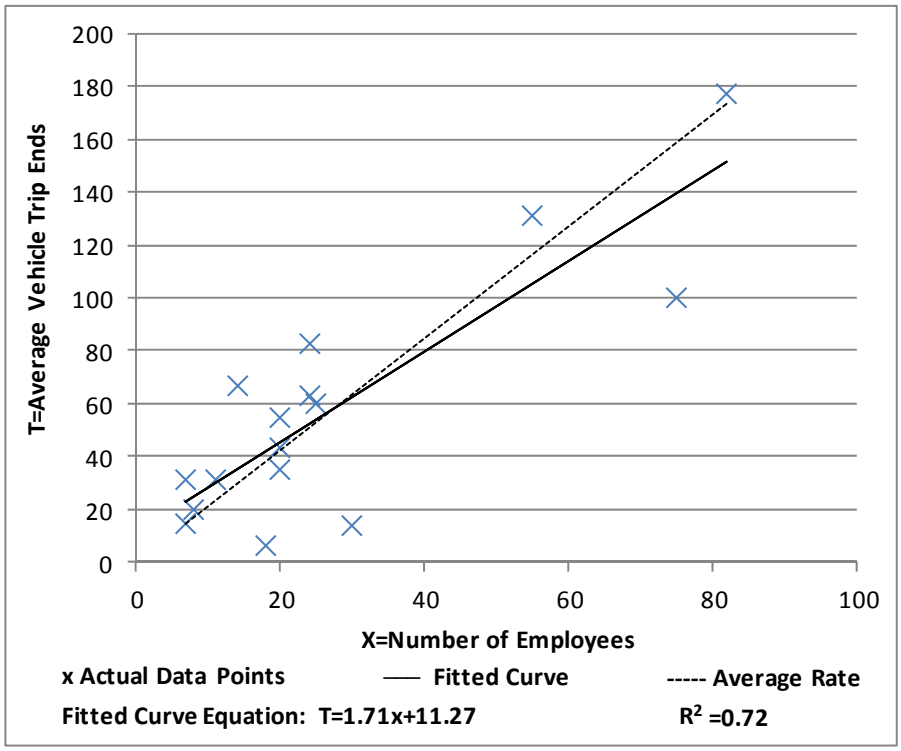
Drive-in Bank
(912)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	16
Average Number of Employees:	28
Directional Distribution:	62% entering, 38% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.12	0.33-4.79	1.00

Data Plot and Equation



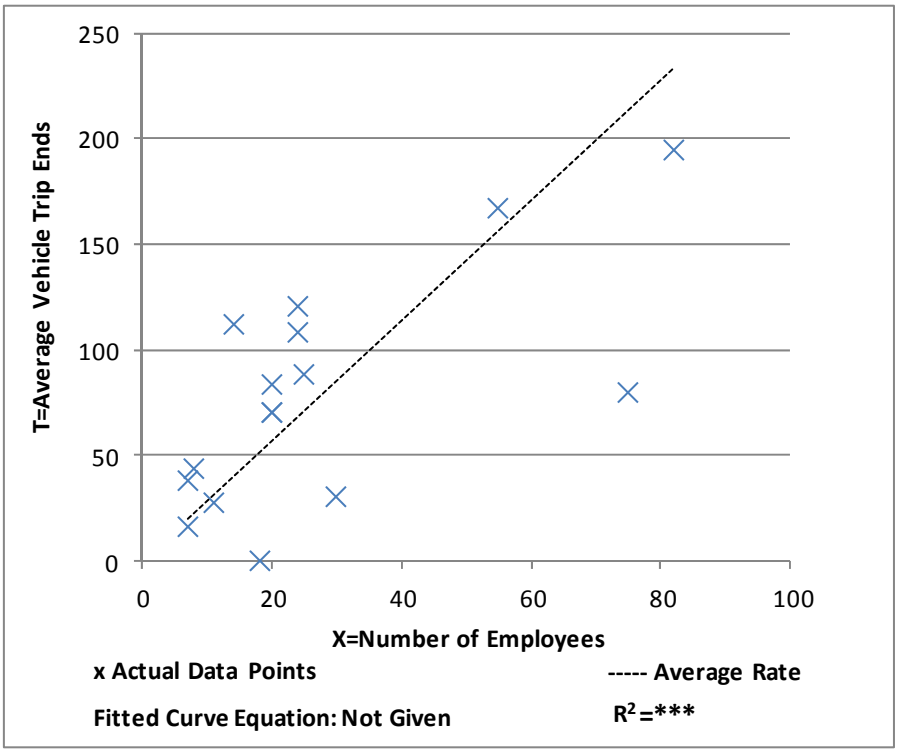
Drive-in Bank
(912)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	16
Average Number of Employees:	28
Directional Distribution:	45% entering, 55% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.84	0.00-8.00	1.77

Data Plot and Equation



Drive-in Bank
(912)

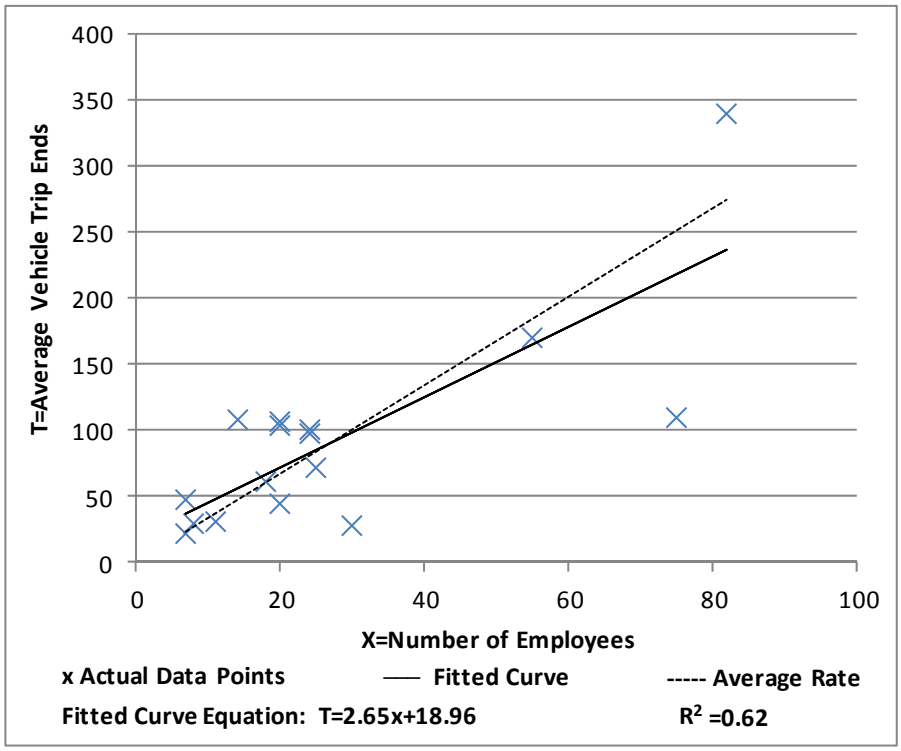
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	16
Average Number of Employees:	28
Directional Distribution:	52% entering, 48% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.34	0.93-7.71	1.63

Data Plot and Equation



Drive-in Bank
(912)

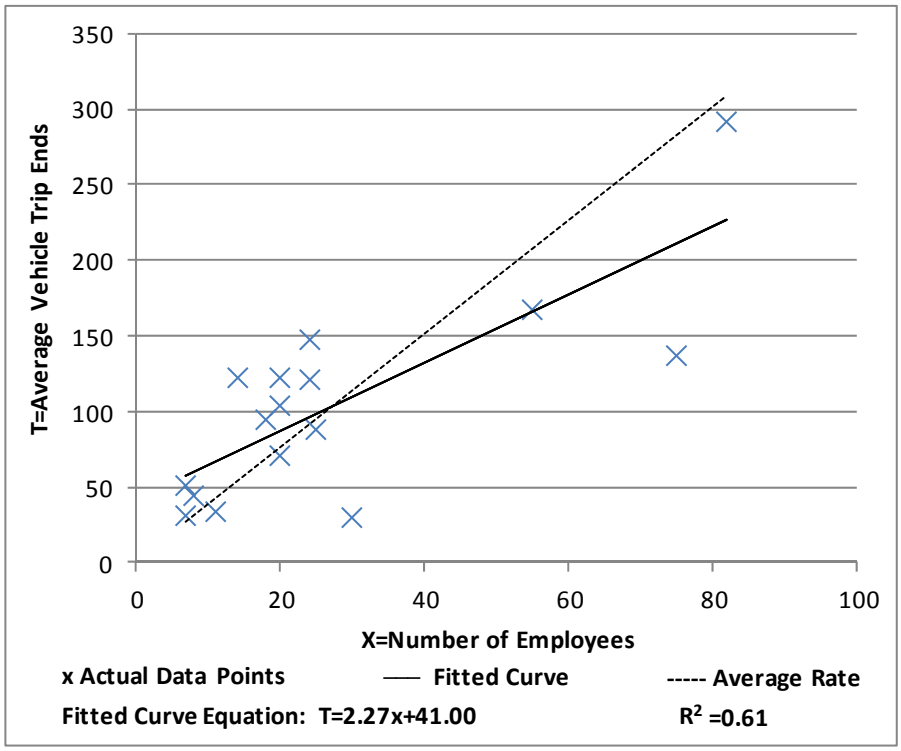
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	16
Average Number of Employees:	28
Directional Distribution:	48% entering, 52% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.76	1.00-8.71	1.87

Data Plot and Equation



Drive-in Bank
(912)

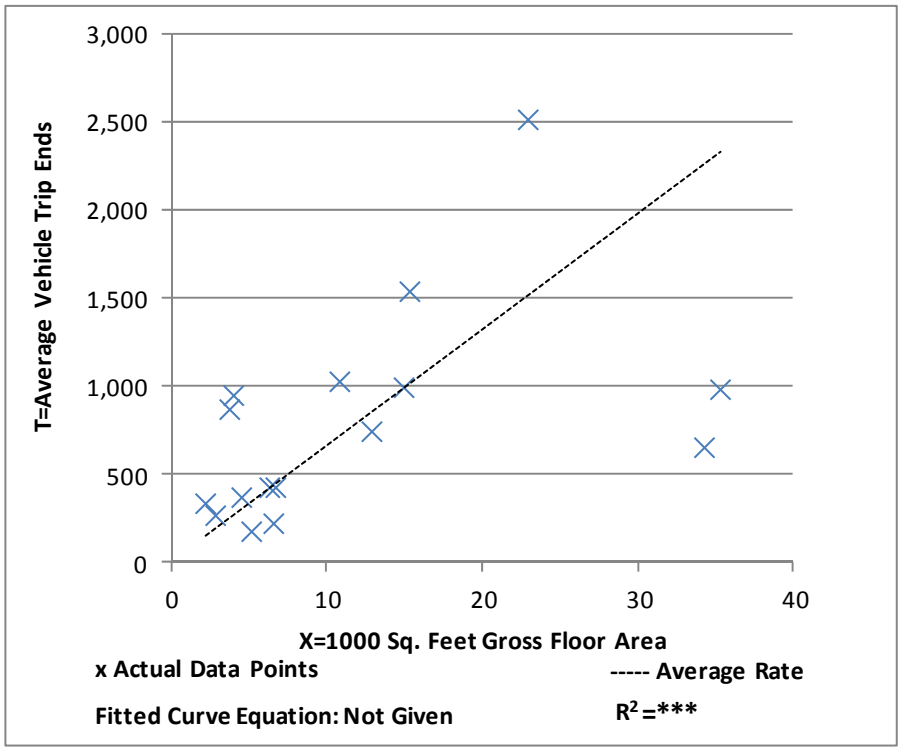
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	16
Average Number of 1000 Sq. Feet Gross Floor Area:	12
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
65.80	19.15-230.32	50.92

Data Plot and Equation



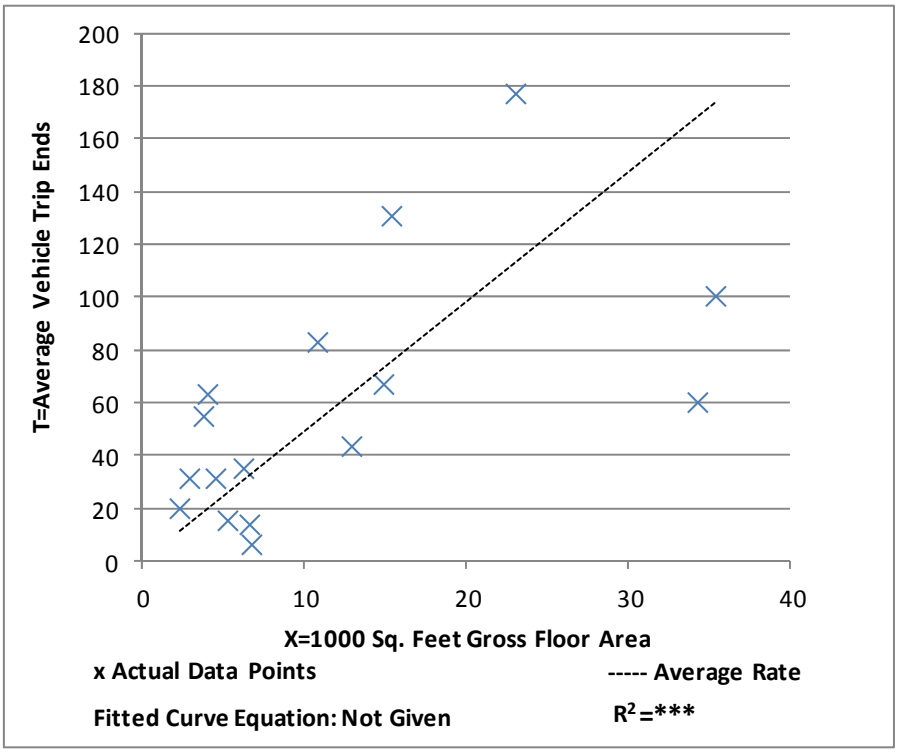
Drive-in Bank
(912)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	16
Average Number of 1000 Sq. Feet Gross Floor Area:	12
Directional Distribution:	62% entering, 38% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.92	0.89-15.40	3.54

Data Plot and Equation



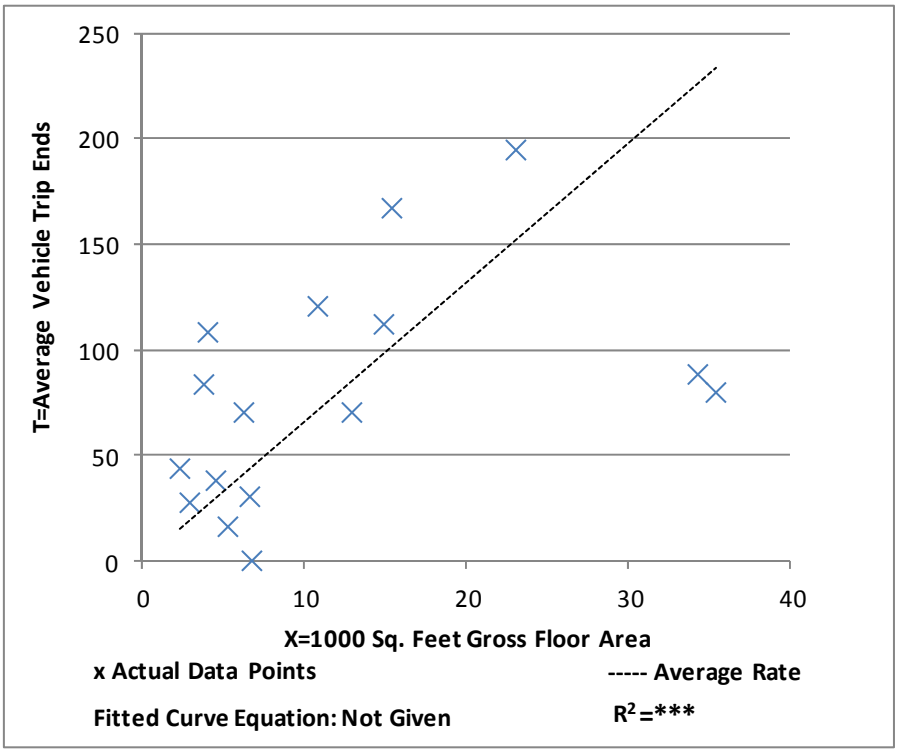
Drive-in Bank
(912)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	16
Average Number of 1000 Sq. Feet Gross Floor Area:	12
Directional Distribution:	44% entering, 56% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
6.61	0.00-26.41	5.59

Data Plot and Equation



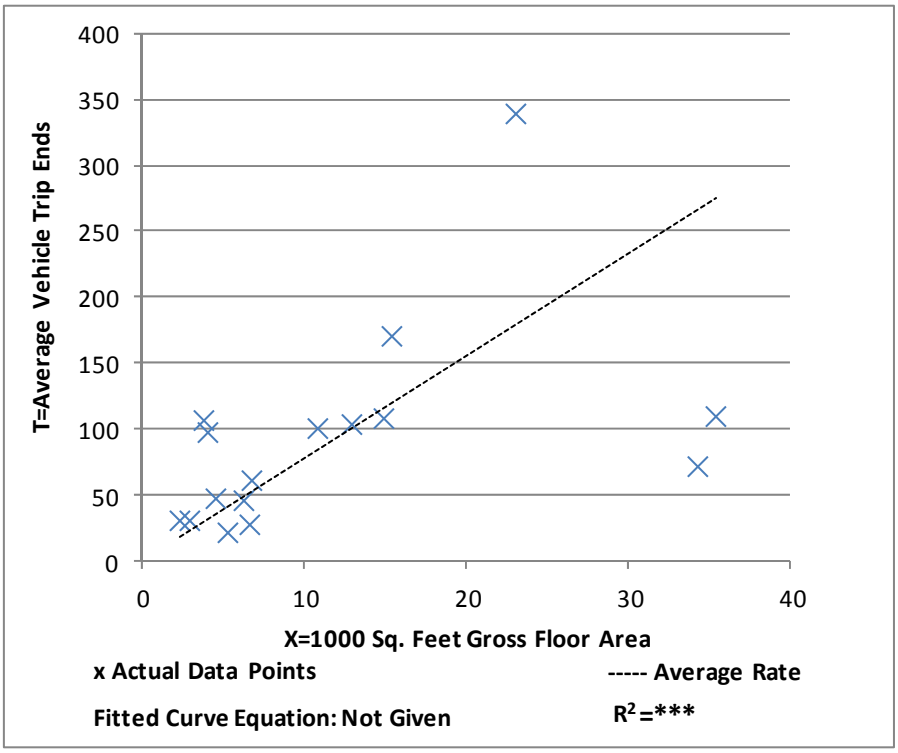
Drive-in Bank
(912)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	16
Average Number of 1000 Sq. Feet Gross Floor Area:	12
Directional Distribution:	52% entering, 48% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
7.77	2.07-27.97	6.02

Data Plot and Equation



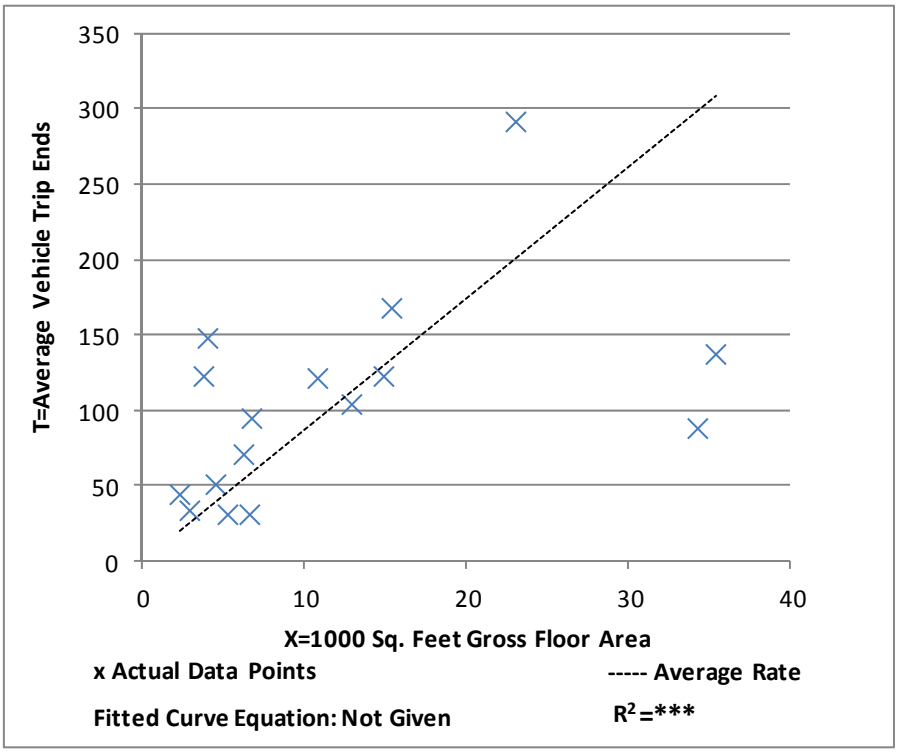
Drive-in Bank
(912)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	16
Average Number of 1000 Sq. Feet Gross Floor Area:	12
Directional Distribution:	48% entering, 52% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
8.73	2.57-35.94	7.06

Data Plot and Equation



Drive-in Bank
(912)

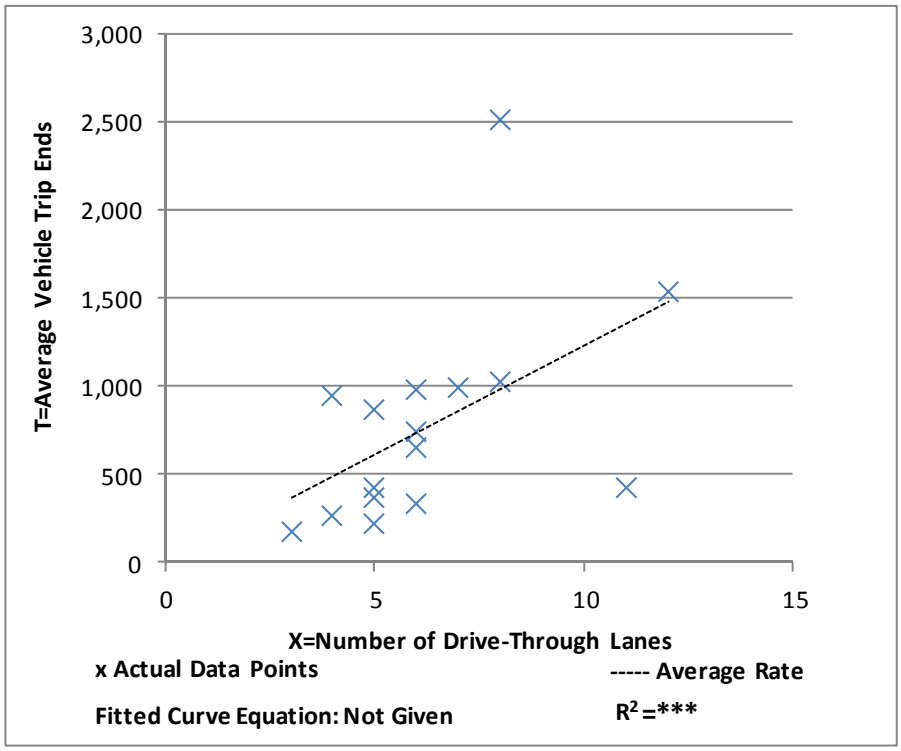
Average Vehicle Trip Ends vs:	**Drive-Through Lanes**
On a:	**Weekday**

Number of Studies:	16
Average Number of Drive-Through Lanes:	6
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Drive-Through Lanes

Average Rate	Range of Rates	Standard Deviation
123.30	38.36-314.25	76.70

Data Plot and Equation



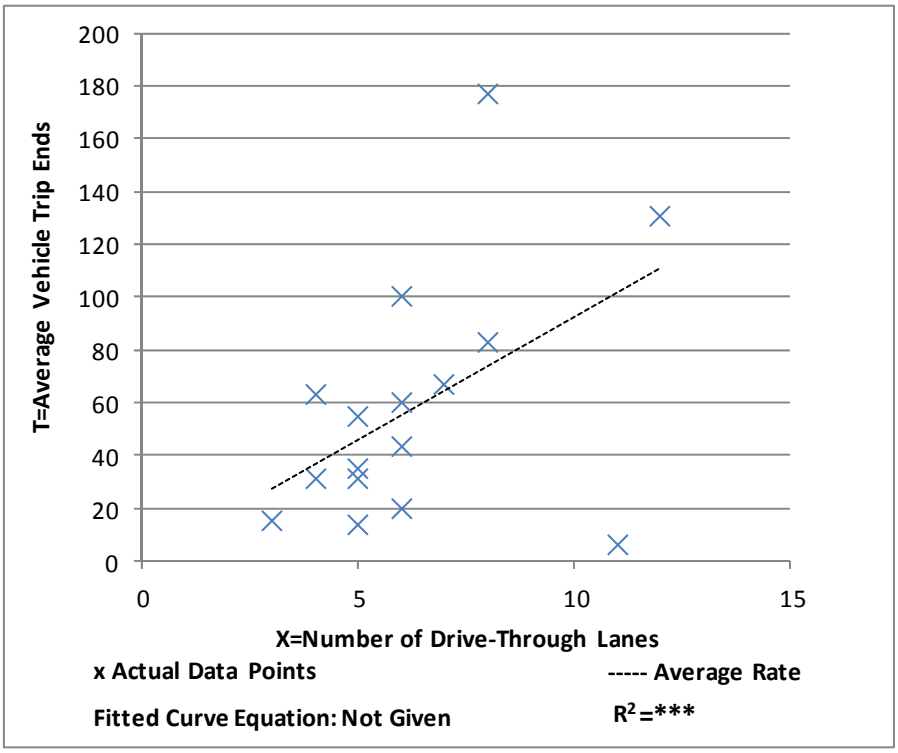
Drive-in Bank
(912)

Average Vehicle Trip Ends vs:	**Drive-Through Lanes**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	16
Average Number of Drive-Through Lanes:	6
Directional Distribution:	66% entering, 34% exiting

Trip Generation per Drive-Through Lanes

Average Rate	Range of Rates	Standard Deviation
9.22	0.55-22.13	5.93

Data Plot and Equation



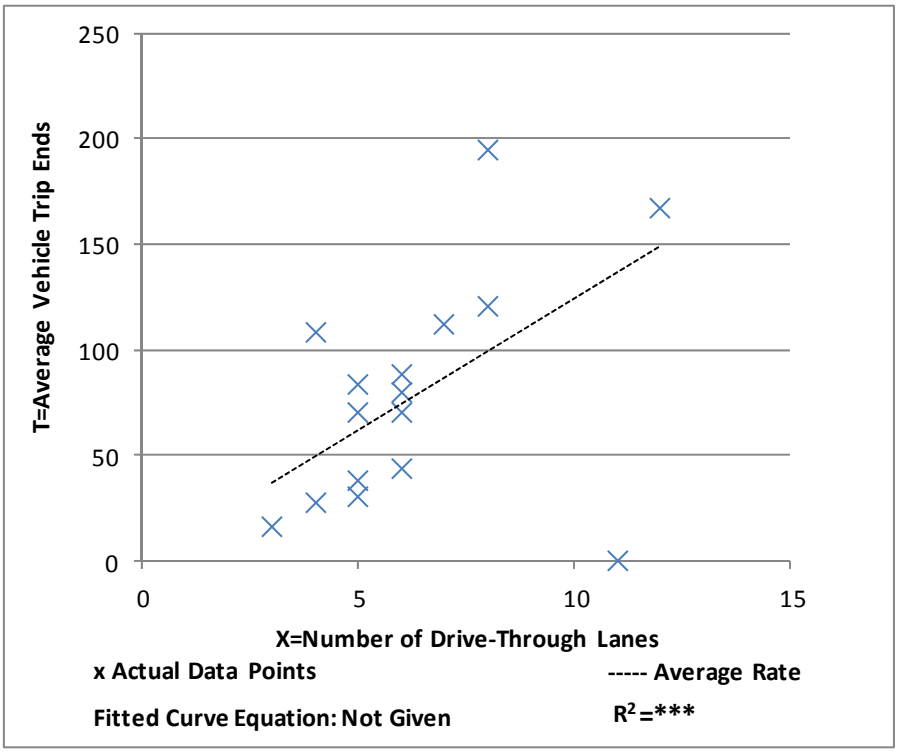
Drive-in Bank
(912)

Average Vehicle Trip Ends vs:	**Drive-Through Lanes**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	16
Average Number of Drive-Through Lanes:	6
Directional Distribution:	41% entering, 59% exiting

Trip Generation per Drive-Through Lanes

Average Rate	Range of Rates	Standard Deviation
12.39	0.00-27.00	7.12

Data Plot and Equation



Drive-in Bank
(912)

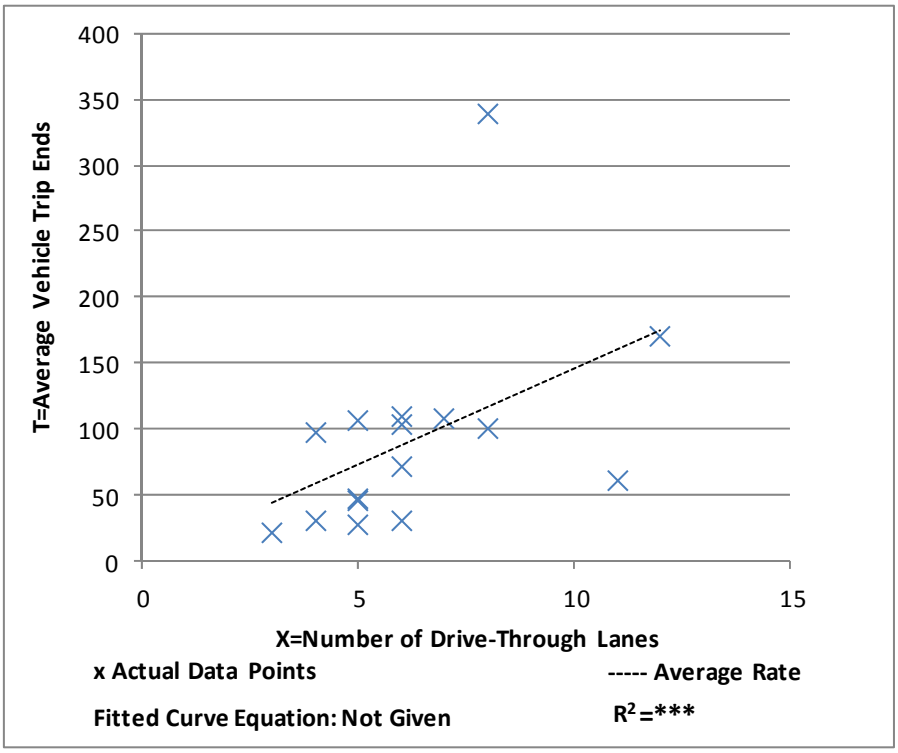
Average Vehicle Trip Ends vs:	**Drive-Through Lanes**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	16
Average Number of Drive-Through Lanes:	6
Directional Distribution:	52% entering, 48% exiting

Trip Generation per Drive-Through Lanes

Average Rate	Range of Rates	Standard Deviation
14.56	5.00-42.38	10.07

Data Plot and Equation



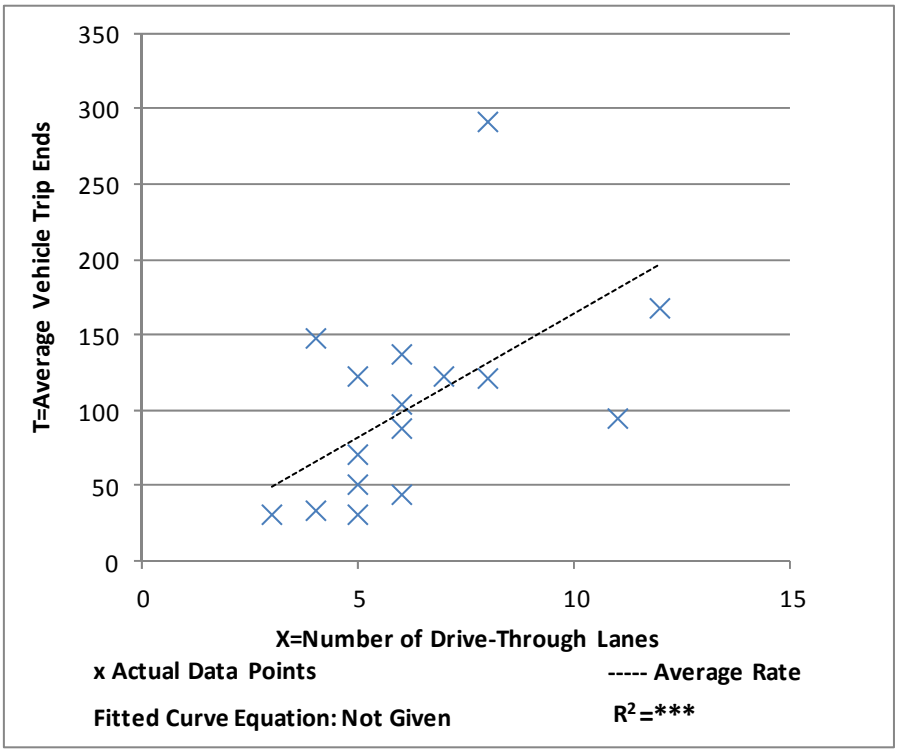
Drive-in Bank
(912)

Average Vehicle Trip Ends vs:	**Drive-Through Lanes**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	16
Average Number of Drive-Through Lanes:	6
Directional Distribution:	48% entering, 52% exiting

Trip Generation per Drive-Through Lanes

Average Rate	Range of Rates	Standard Deviation
16.37	6.00-36.75	9.14

Data Plot and Equation



Land Use: 932
High-Turnover (Sit-Down) Restaurant

Description

This land use consists of sit-down, full-service eating establishments with typical duration of stay of approximately one hour. This type of restaurant is usually moderately priced and frequently belongs to a restaurant chain. Generally, these restaurants serve lunch and dinner; they may also be open for breakfast and are sometimes open 24 hours per day. These restaurants typically do not take reservations. Patrons commonly wait to be seated, are served by a waiter/waitress, order from menus and pay for their meal after they eat. Some facilities contained within this land use may also contain a bar area for serving food and alcoholic drinks. Quality restaurant (Land Use 931), fast-food restaurant without drive-through window (Land Use 933), fast-food restaurant with drive-through window (Land Use 934) and fast-food restaurant with drive-through window and no indoor seating (Land Use 935) are related uses.

Source Numbers

1, 2, 3, 4, 5

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

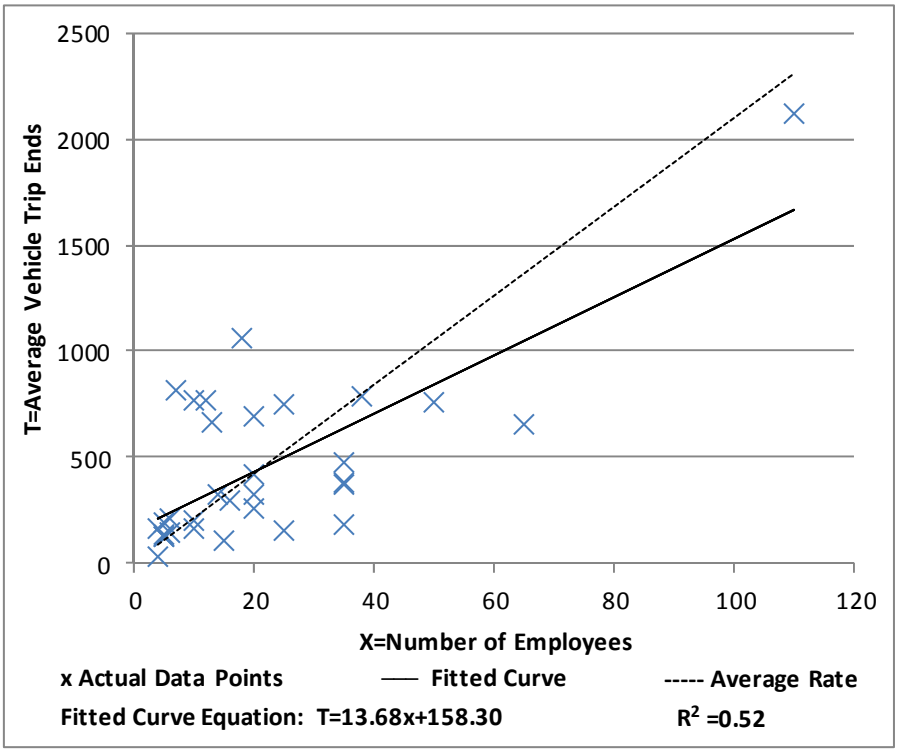
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday**

Number of Studies:	32
Average Number of Employees:	22
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
20.94	5.20-117.00	17.69

Data Plot and Equation



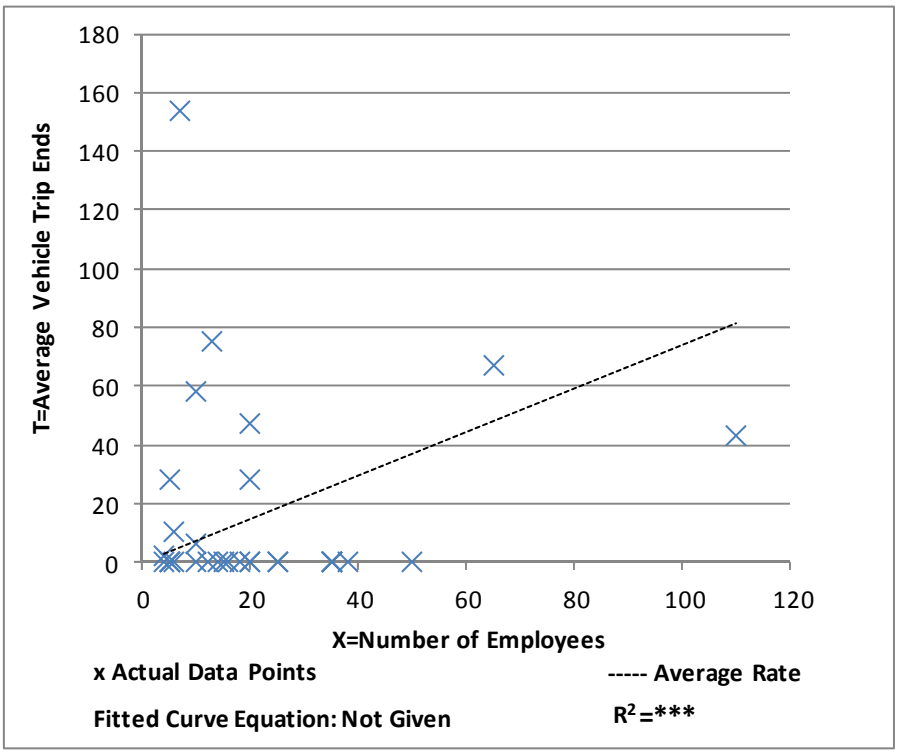
High-Turnover (Sit-Down) Restaurant
(932)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	32
Average Number of Employees:	22
Directional Distribution:	25% entering, 75% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.74	0.00-22.00	2.53

Data Plot and Equation



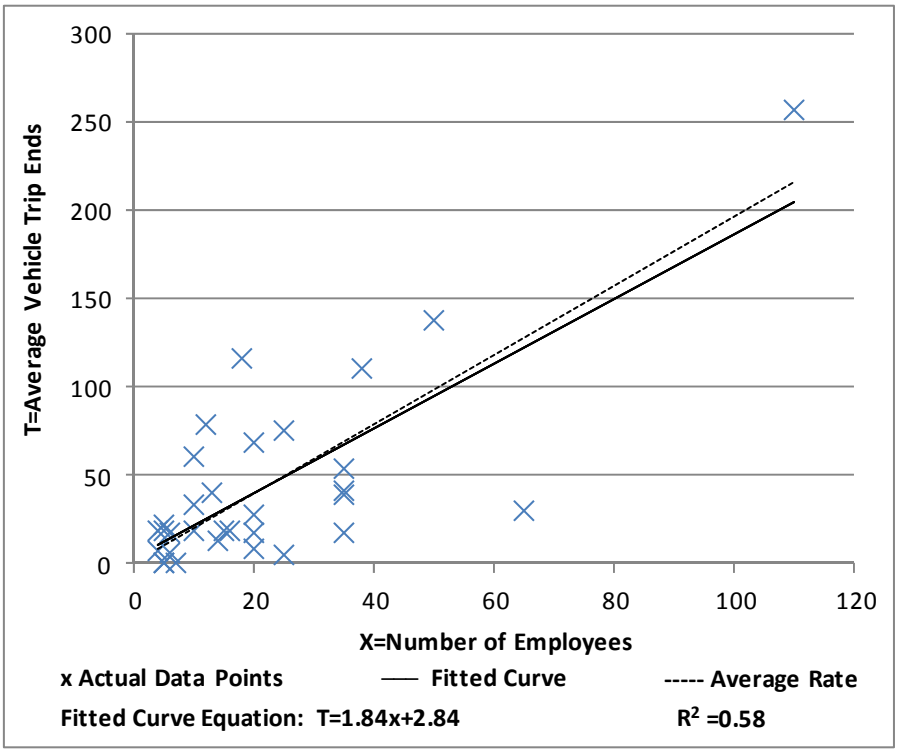
High-Turnover (Sit-Down) Restaurant
(932)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	32
Average Number of Employees:	22
Directional Distribution:	62% entering, 38% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.97	0.00-6.58	1.55

Data Plot and Equation



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

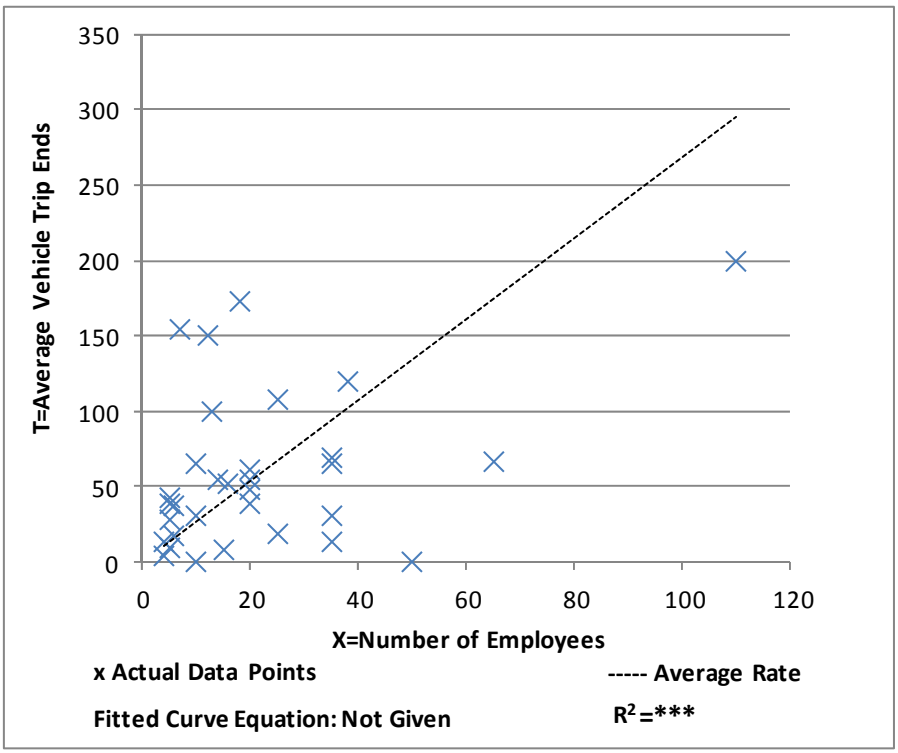
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	32
Average Number of Employees:	21.8
Directional Distribution:	59% entering, 41% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.68	0.00-22.00	3.24

Data Plot and Equation



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

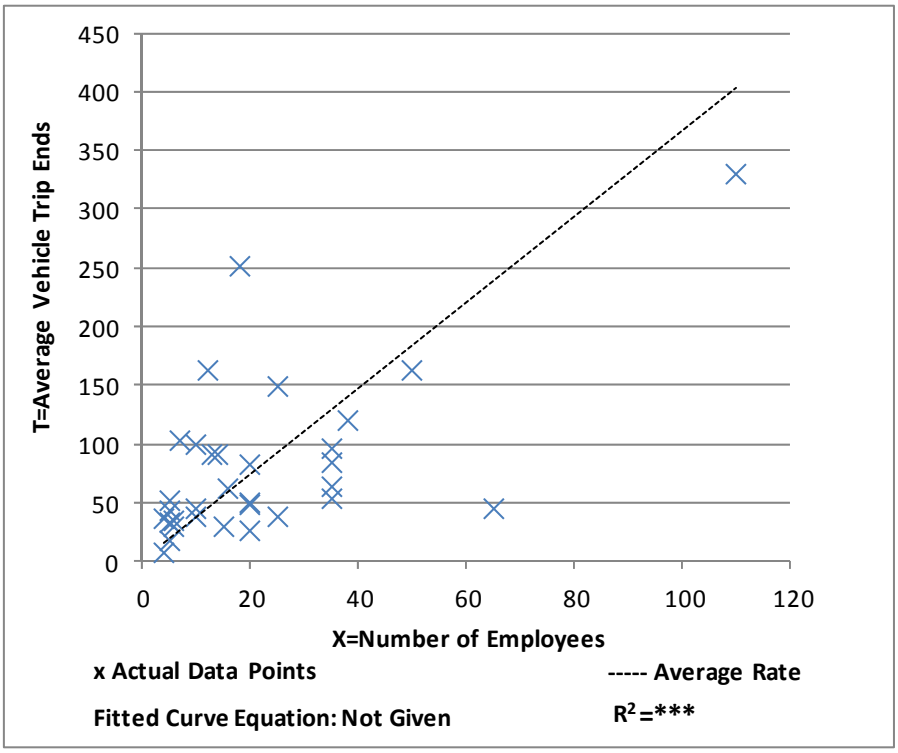
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	32
Average Number of Employees:	22
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.67	0.69-14.71	3.18

Data Plot and Equation



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

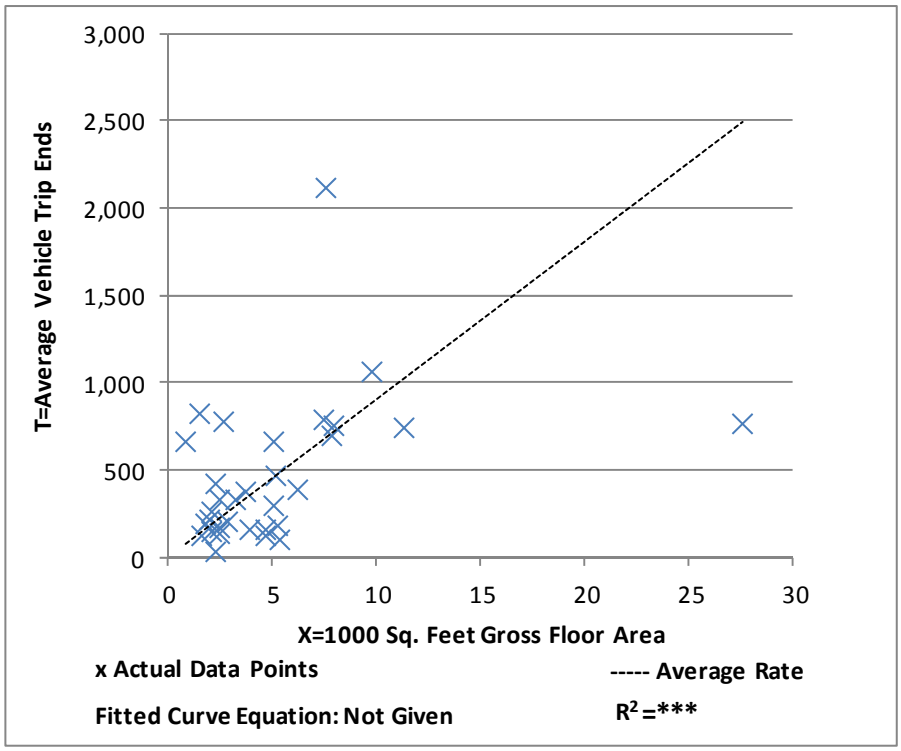
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday

Number of Studies:	32
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
90.55	13.04-742.41	94.01

Data Plot and Equation



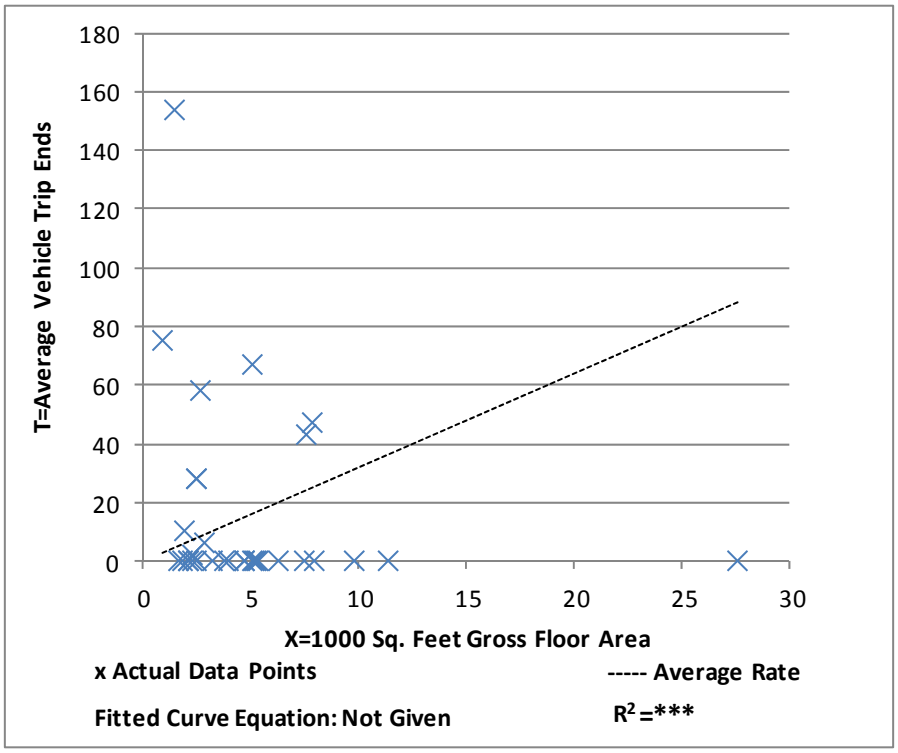
High-Turnover (Sit-Down) Restaurant
(932)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	32
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	14% entering, 86% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.21	0.00-102.39	12.52

Data Plot and Equation



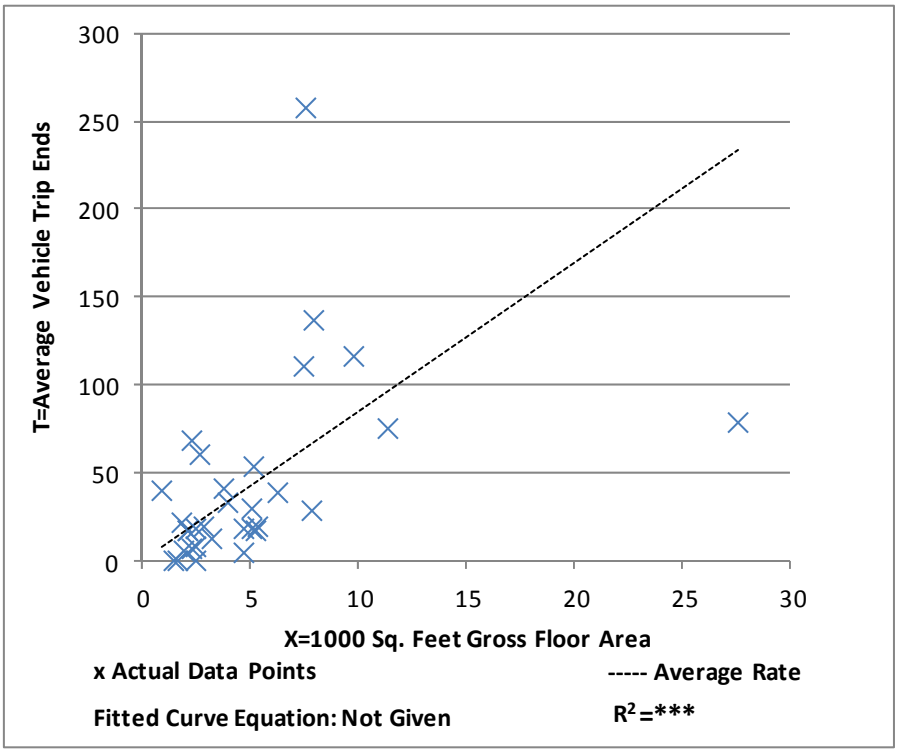
High-Turnover (Sit-Down) Restaurant
(932)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	32
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	57% entering, 43% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
8.50	0.00-44.99	8.66

Data Plot and Equation



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

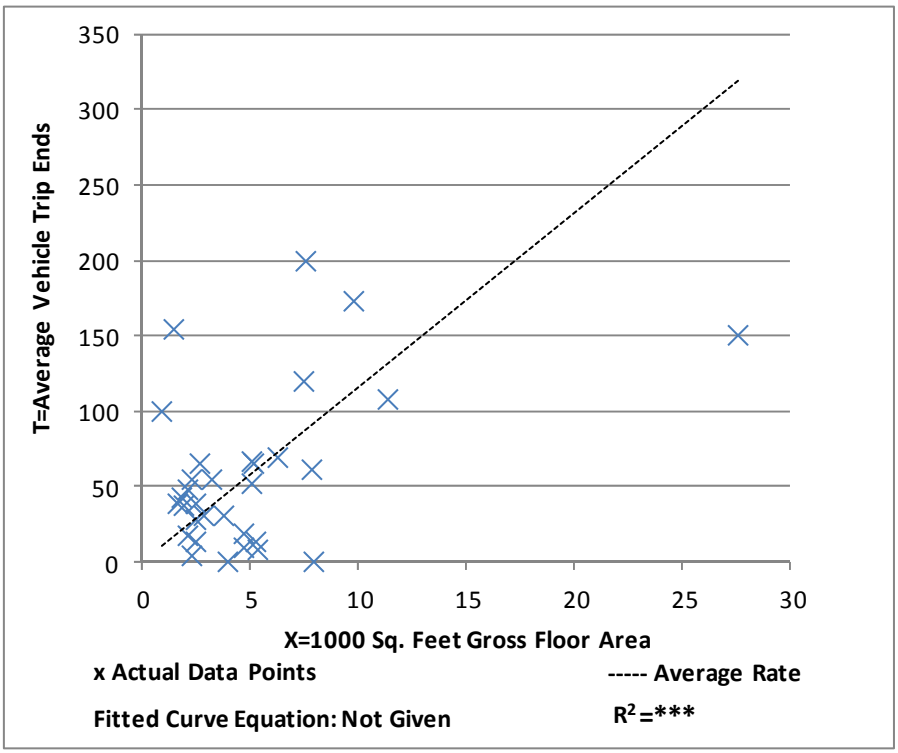
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	32
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	59% entering, 41% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
11.60	0.00-112.49	14.13

Data Plot and Equation



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

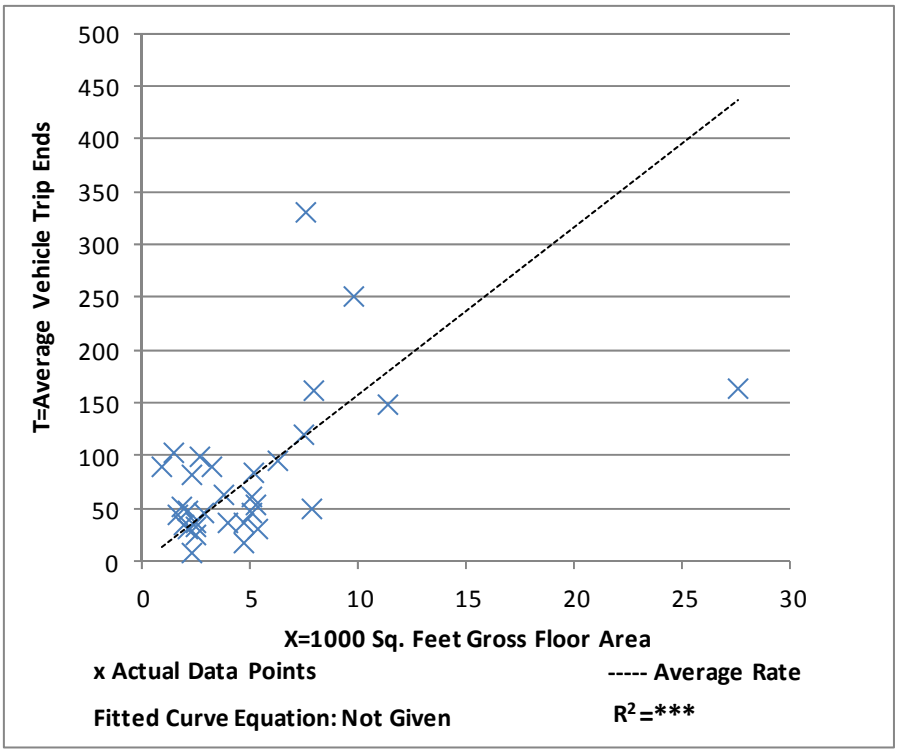
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	32
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	53% entering, 47% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
15.87	3.04-101.24	13.35

Data Plot and Equation



Land Use: 933
Fast-Food Restaurant without Drive-Through Window

Description

This land use includes fast-food restaurants without drive-through windows. This type of restaurant is characterized by a large carry-out clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours per day) and high turnover rates for eat-in customers. These limited-service eating establishments do not provide table service. Patrons generally order at a cash register and pay before they eat. High-turnover (sit-down) restaurant (Land Use 932), fast-food restaurant with drive-through window (Land Use 934) and fast-food restaurant with drive-through window and no indoor seating (Land Use 935) are related uses.

Source Numbers

2, 3, 4

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

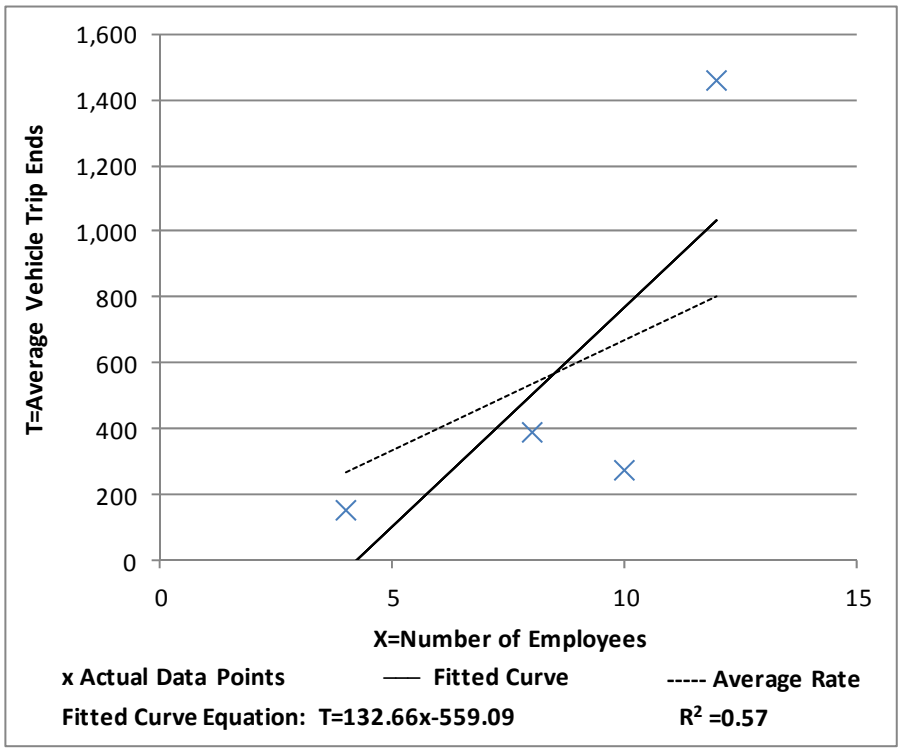
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 4
Average Number of Employees: 9
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
66.88	27.40-121.50	48.43

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



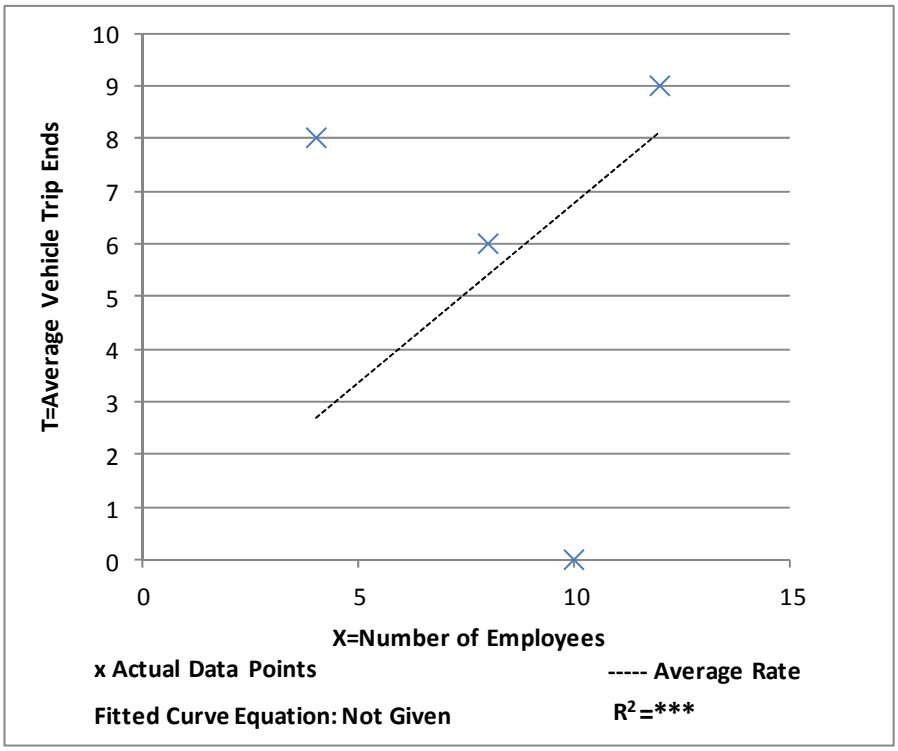
Fast-Food Restaurant without Drive-Through Window
(933)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	4
Average Number of Employees:	9
Directional Distribution:	43% entering, 57% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
0.68	0.00-2.00	0.69

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



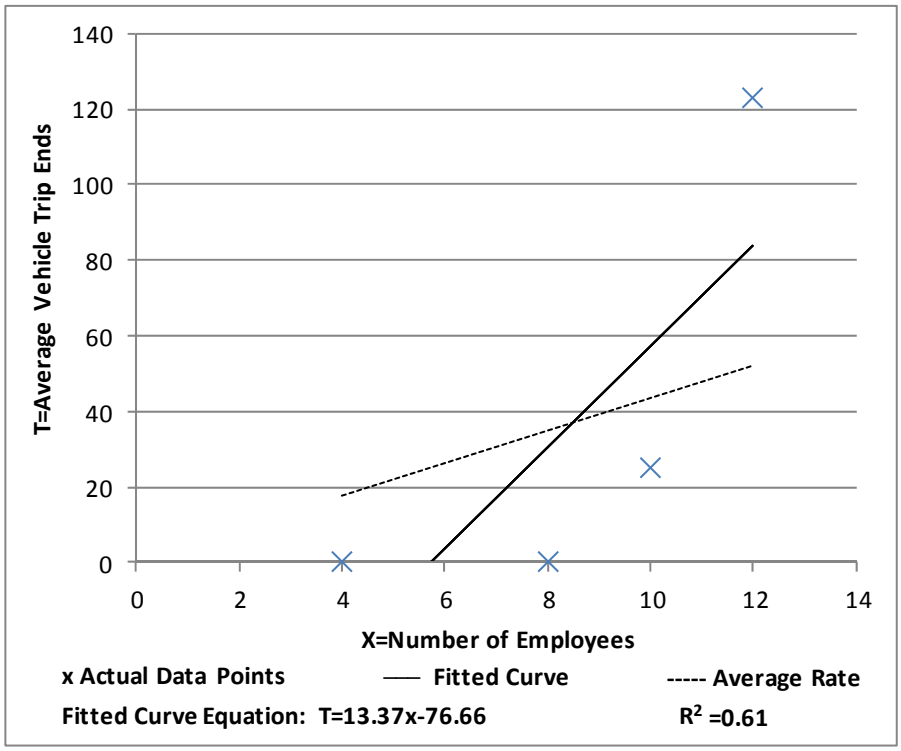
Fast-Food Restaurant without Drive-Through Window
(933)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	4
Average Number of Employees:	9
Directional Distribution:	31% entering, 69% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.35	0.00-10.25	5.27

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



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

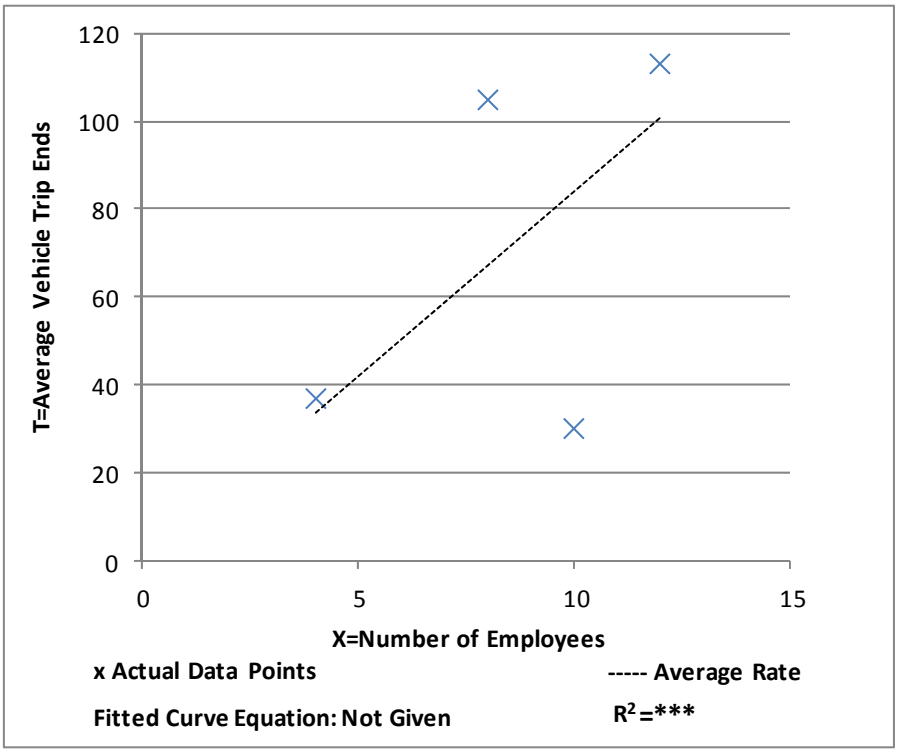
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	4
Average Number of Employees:	9
Directional Distribution:	55% entering, 45% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
8.38	3.00-13.13	4.45

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



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

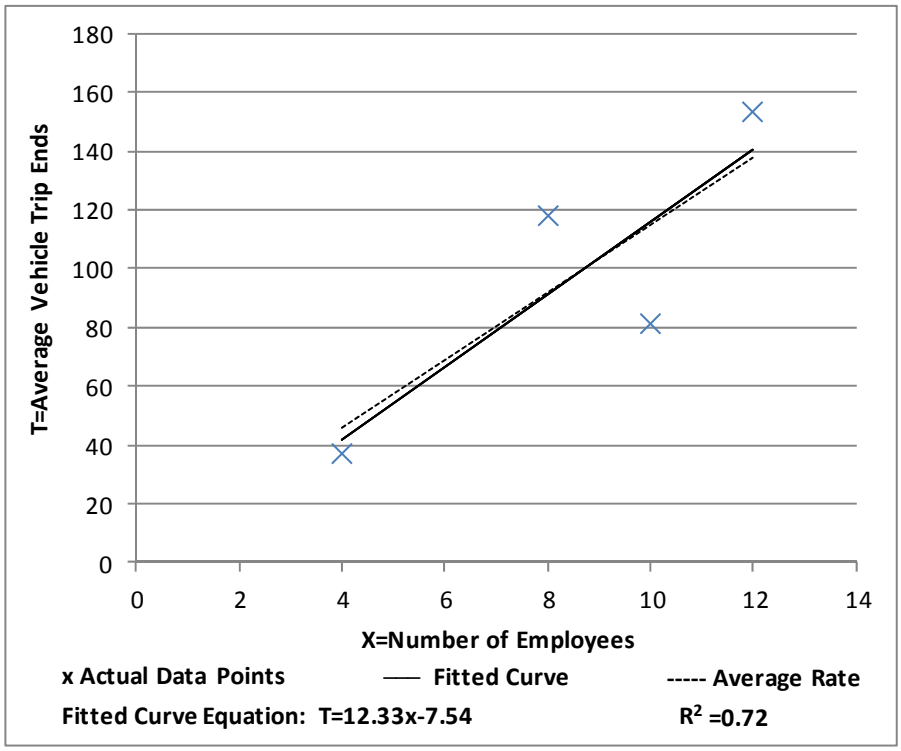
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	4
Average Number of Employees:	9
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
11.44	8.10-14.75	3.13

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



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

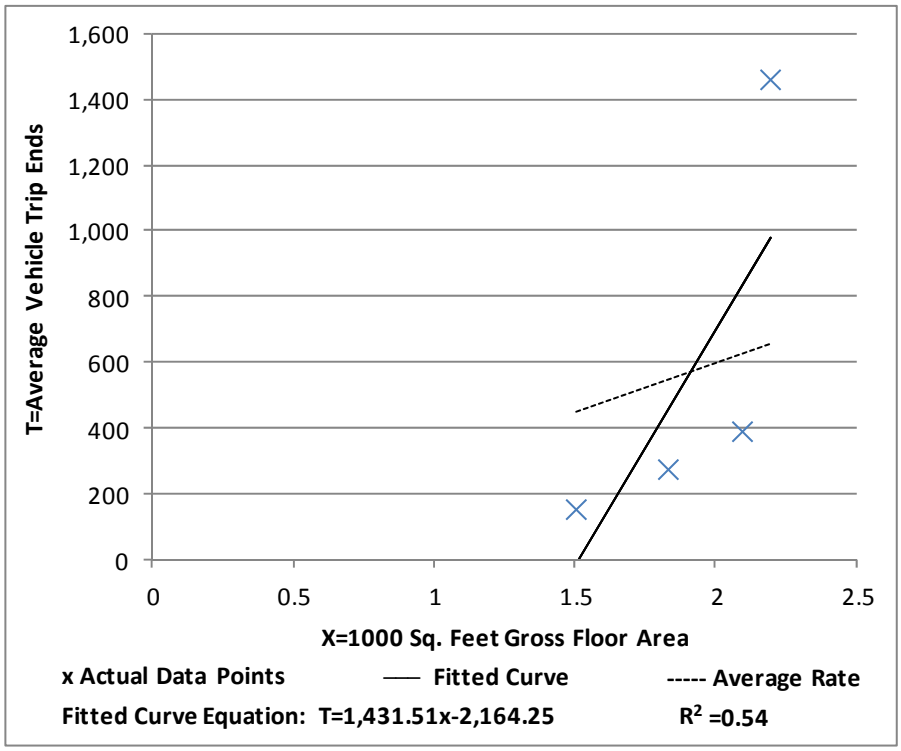
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	2
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
297.80	99.73-663.93	271.65

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



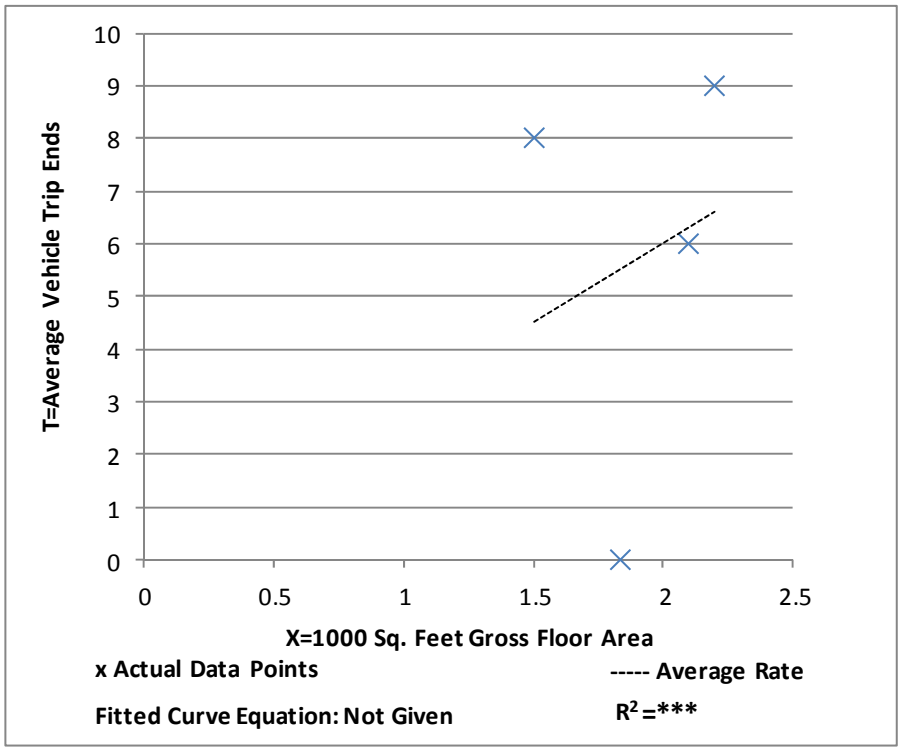
Fast-Food Restaurant without Drive-Through Window
(933)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	2
Directional Distribution:	45% entering, 55% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.01	0.00-5.32	2.19

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



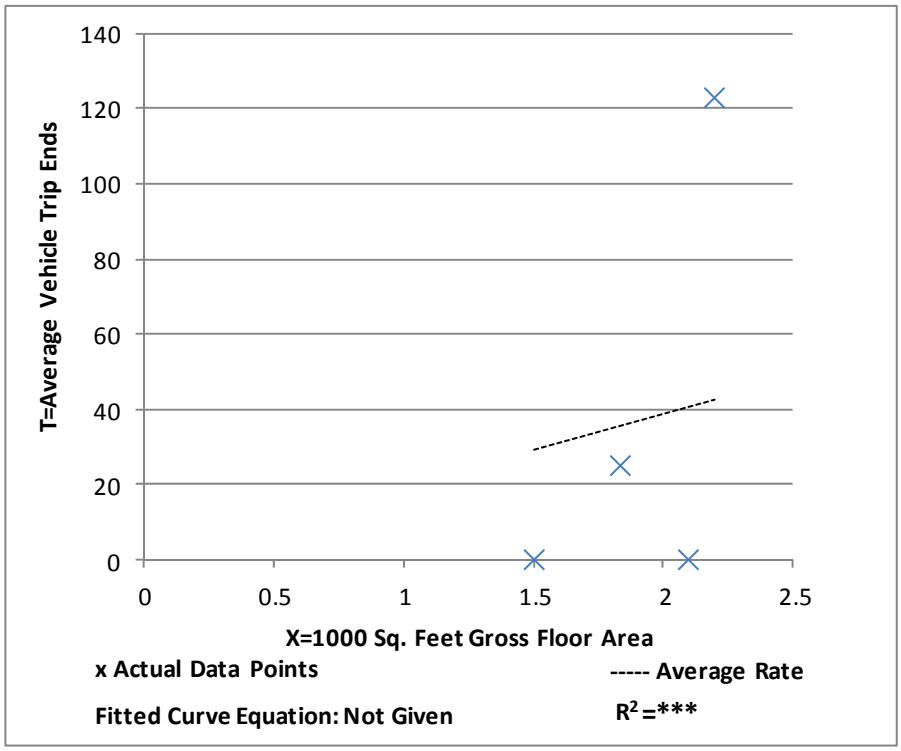
Fast-Food Restaurant without Drive-Through Window
(933)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	2
Directional Distribution:	25% entering, 75% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
19.38	0.00-56.01	27.69

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



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

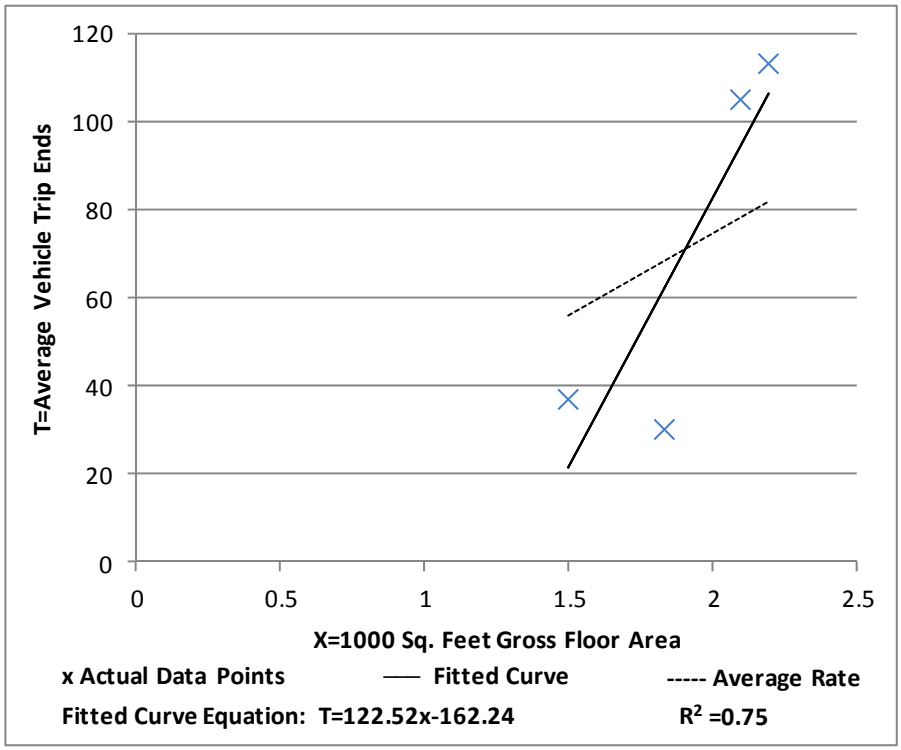
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	2
Directional Distribution:	55% entering, 45% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
37.32	16.34-51.46	17.92

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



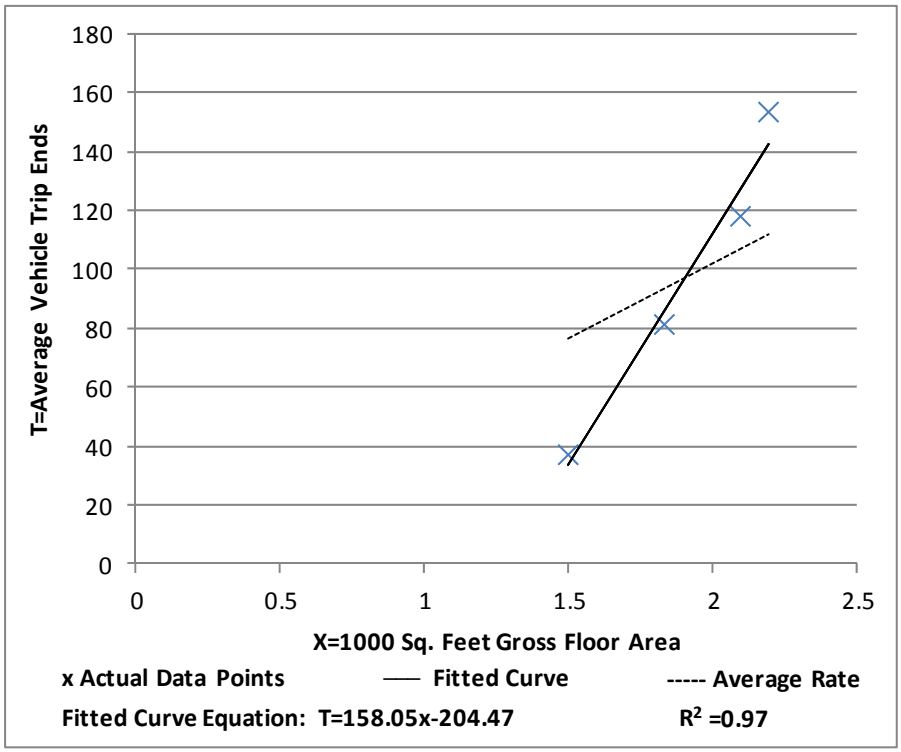
Fast-Food Restaurant without Drive-Through Window
(933)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator
Number of Studies:	4
Average Number of 1000 Sq. Feet Gross Floor Area:	2
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
50.94	24.60-69.67	18.55

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Land Use: 934
Fast-Food Restaurant with Drive-Through Window

Description

This category includes fast-food restaurants with drive-through windows. This type of restaurant is characterized by a large drive-through clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours per day) and high turnover rates for eat-in customers. These limited-service eating establishments do not provide table service. Non-drive-through patrons generally order at a cash register and pay before they eat. High-turnover (sit-down) restaurant (Land Use 932), fast-food restaurant without drive-through window (Land Use 933) and fast-food restaurant with drive-through window and no indoor seating (Land Use 935) are related uses.

Source Numbers

2, 3, 4, 5

Fast-Food Restaurant with Drive-Through Window
(934)

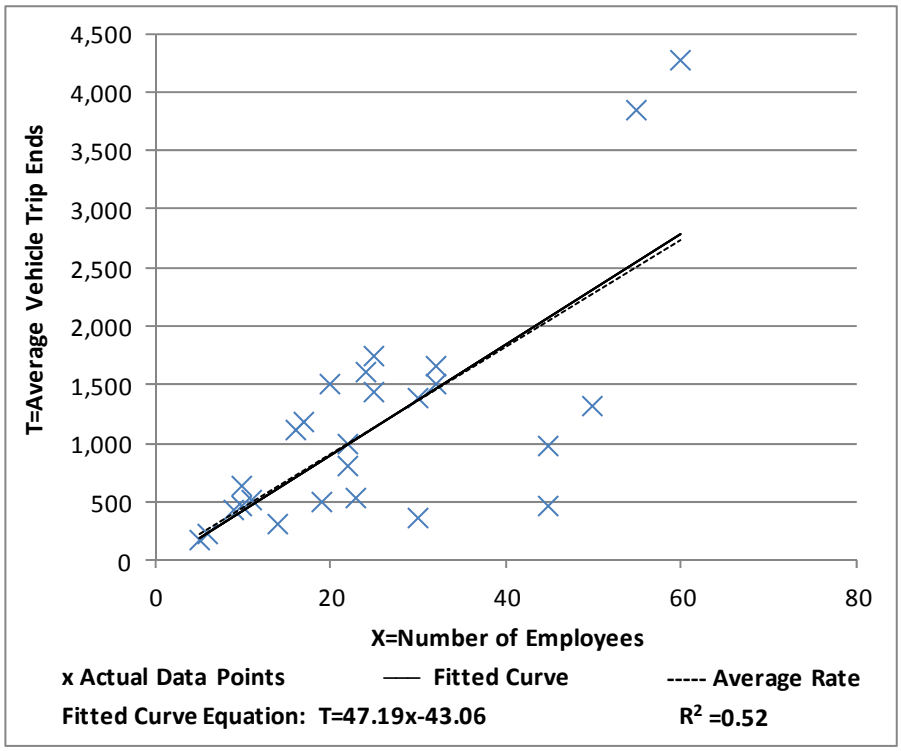
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 26
Average Number of Employees: 25
Directional Distribution: 51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
45.49	10.27-74.85	22.15

Data Plot and Equation



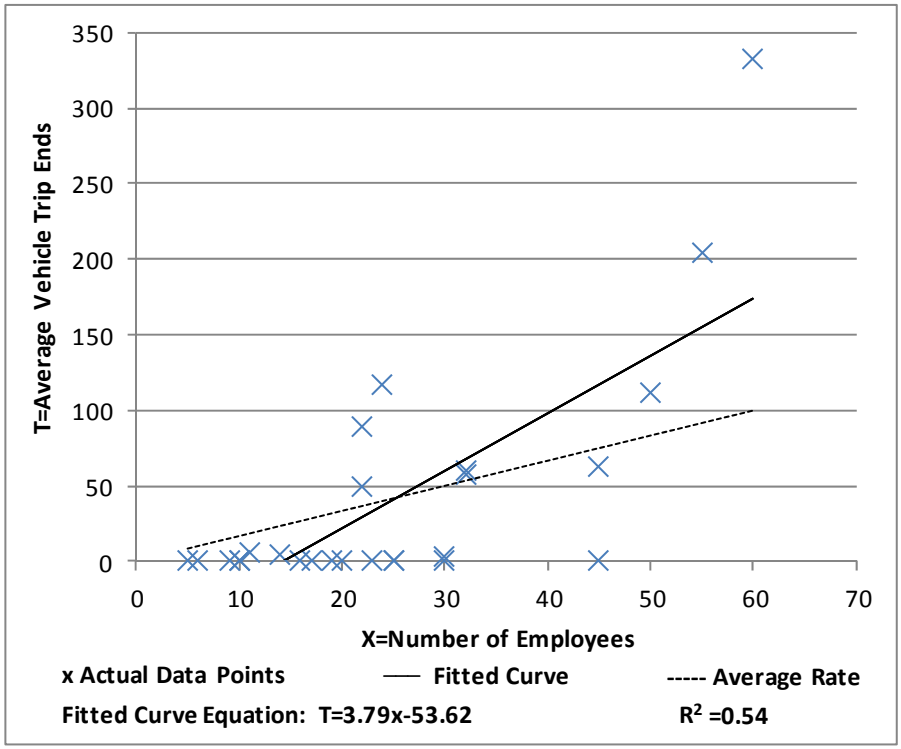
Fast-Food Restaurant with Drive-Through Window
(934)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	26
Average Number of Employees:	25
Directional Distribution:	36% entering, 64% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.67	0.00-5.53	1.95

Data Plot and Equation



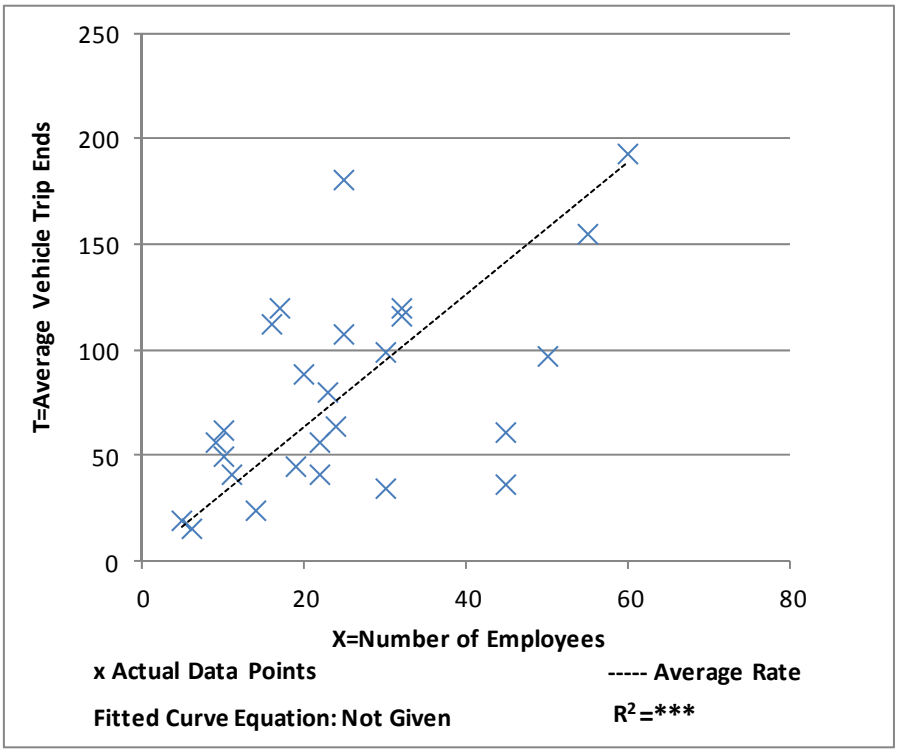
Fast-Food Restaurant with Drive-Through Window
(934)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	26
Average Number of Employees:	25
Directional Distribution:	54% entering, 46% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
3.15	0.80-7.20	1.74

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

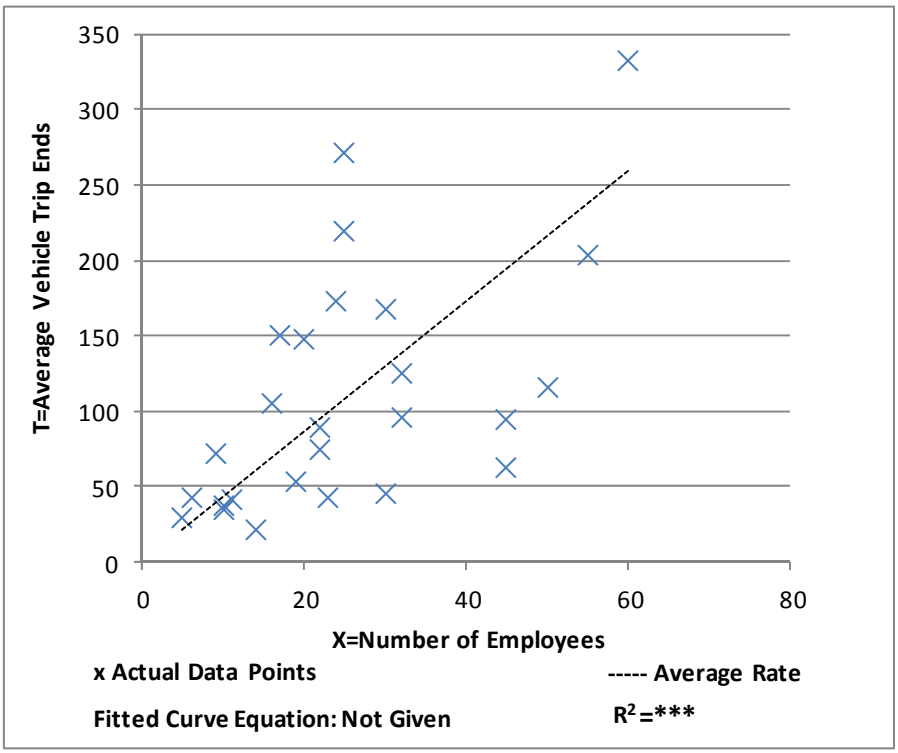
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	26
Average Number of Employees:	25
Directional Distribution:	56% entering, 44% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.33	1.40-10.84	2.57

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

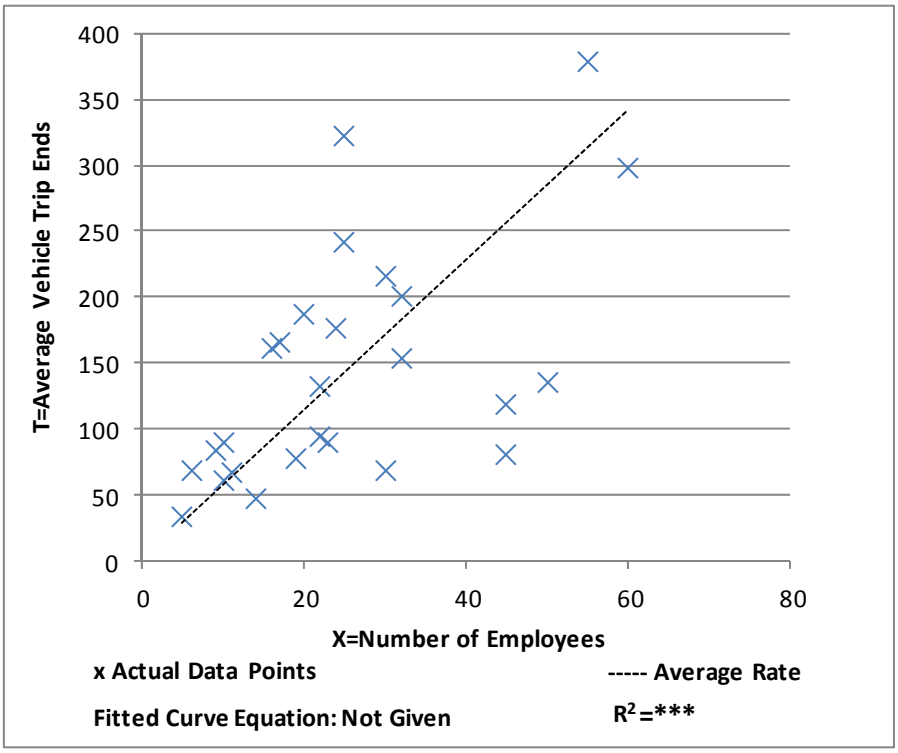
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	26
Average Number of Employees:	25
Directional Distribution:	53% entering, 47% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
5.70	1.78-12.88	2.94

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

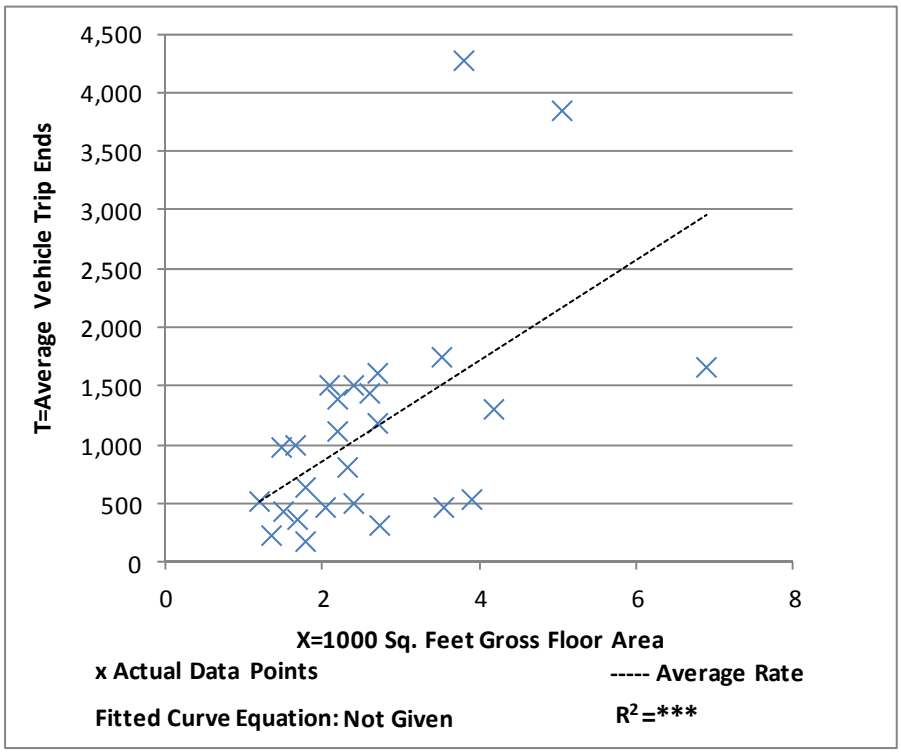
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	26
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
427.90	98.89-1,122.37	270.31

Data Plot and Equation



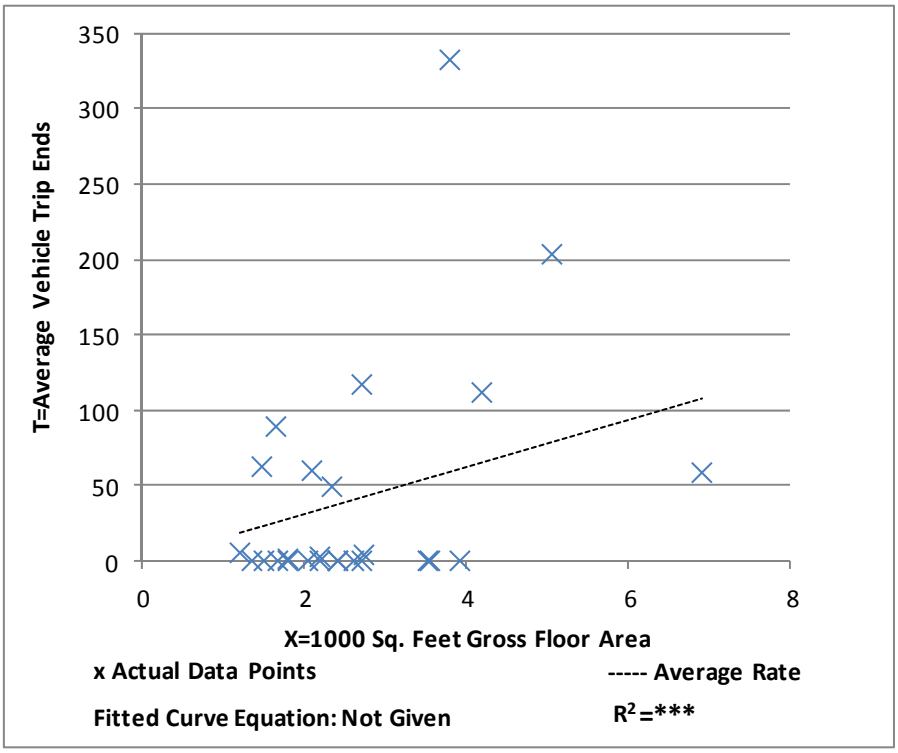
Fast-Food Restaurant with Drive-Through Window
(934)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	26
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	32% entering, 68% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
15.71	0.00-87.37	24.12

Data Plot and Equation



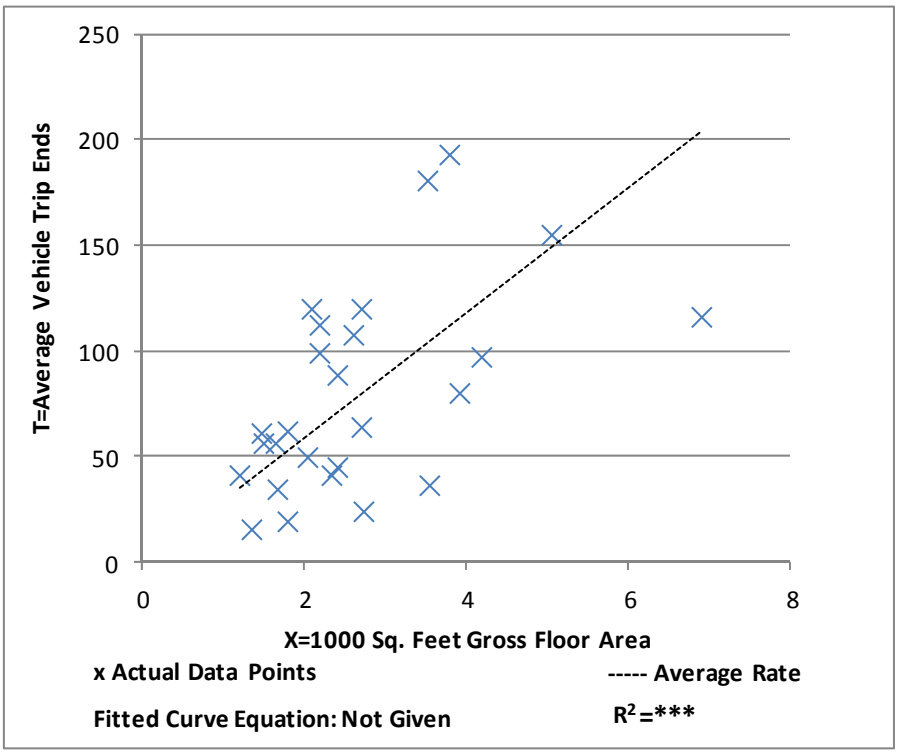
Fast-Food Restaurant with Drive-Through Window
(934)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	26
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	54% entering, 46% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
29.64	8.77-57.14	14.56

Data Plot and Equation



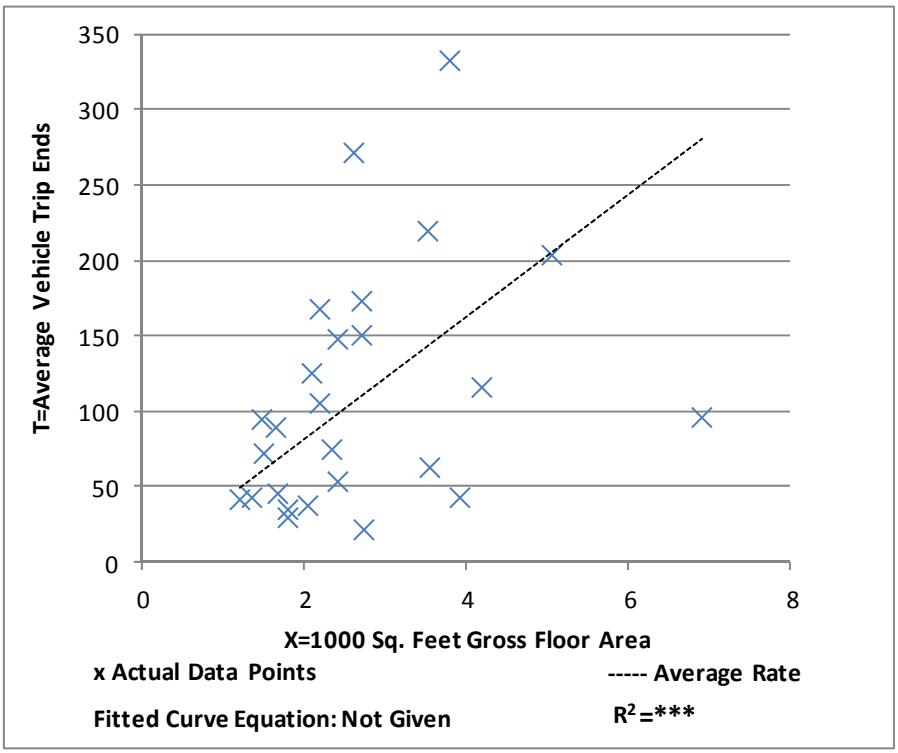
Fast-Food Restaurant with Drive-Through Window
(934)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	26
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	56% entering, 44% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
40.73	8.04-104.19	26.46

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

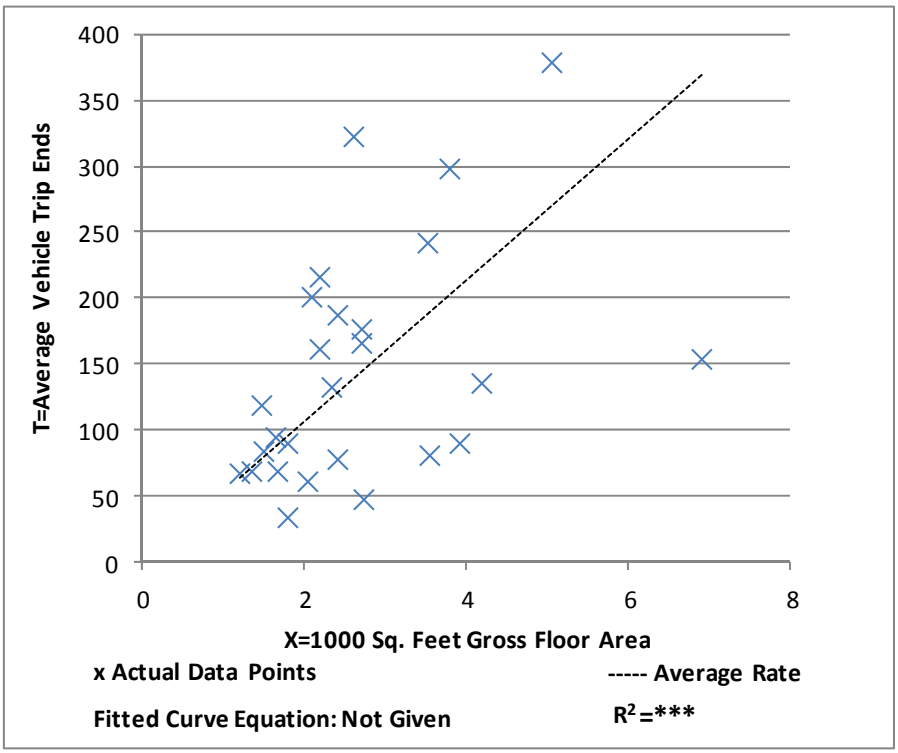
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	26
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	52% entering, 48% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
53.60	17.17-123.80	28.58

Data Plot and Equation



Land Use: 935
Fast-Food Restaurant with Drive-Through Window and No Indoor Seating

Description

This category includes fast-food restaurants with drive-through service only. These facilities typically have very small building areas and may provide a limited amount of outside seating. These limited-service eating establishments usually do no provide table service. High-turnover (sit-down) restaurant (Land Use 932), fast-food restaurant without drive-through window (Land Use 933) and fast-food restaurant with drive-through window (Land Use 934) are related uses.

Source Numbers

2, 3, 4, 5

Fast-Food Restaurant with Drive-Through Window and No Indoor Seating
(935)

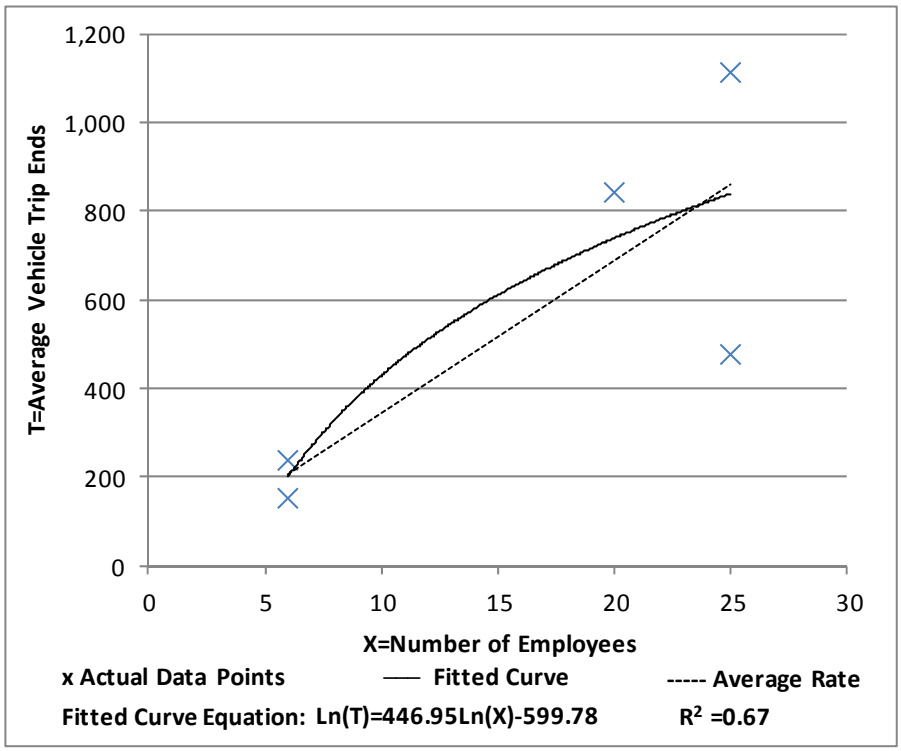
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday**

Number of Studies:	5
Average Number of Employees:	16
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
34.38	19.04-44.60	13.03

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



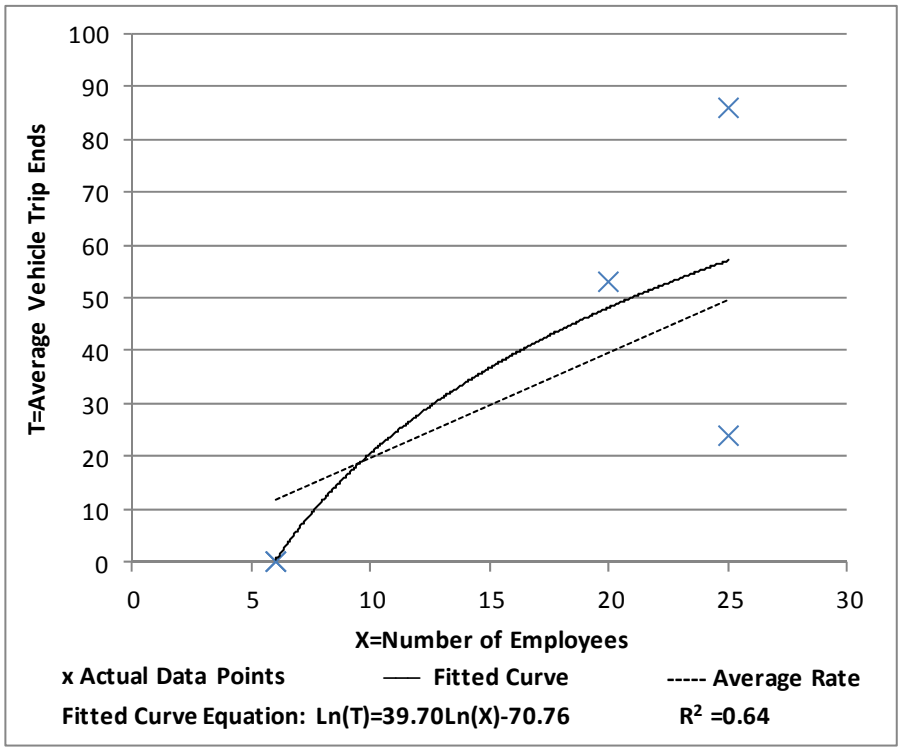
Fast-Food Restaurant with Drive-Through Window and No Indoor Seating
(935)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	5
Average Number of Employees:	16
Directional Distribution:	41% entering, 59% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.99	0.00-3.44	1.49

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



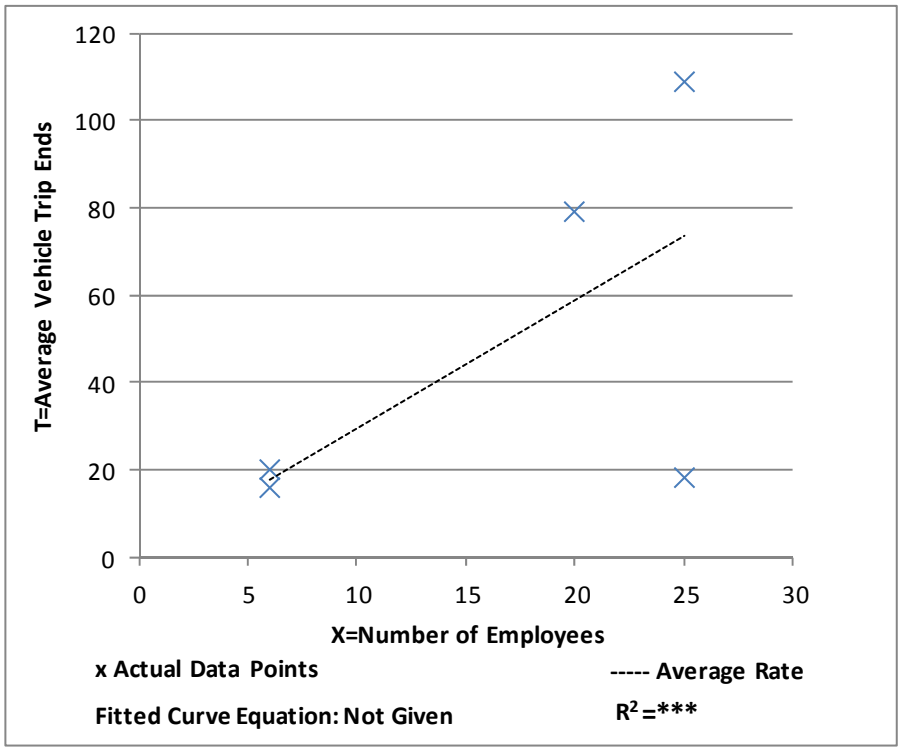
Fast-Food Restaurant with Drive-Through Window and No Indoor Seating
(935)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	5
Average Number of Employees:	16
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
2.95	0.72-4.36	1.79

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Fast-Food Restaurant with Drive-Through Window and No Indoor Seating
(935)

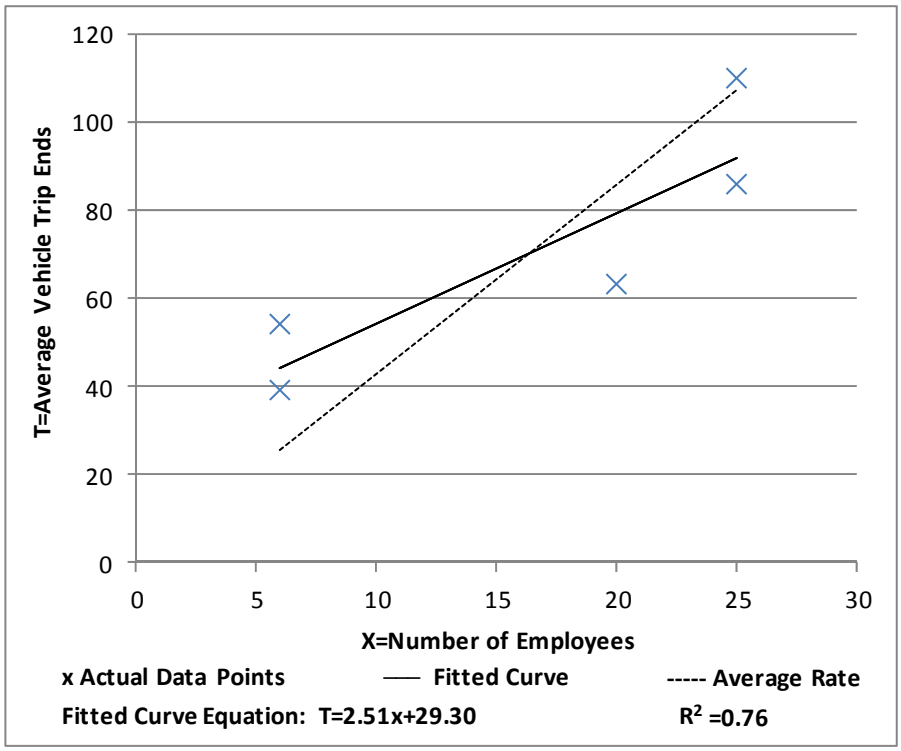
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	5
Average Number of Employees:	16
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
4.29	3.15-9.00	1.84

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Fast-Food Restaurant with Drive-Through Window and No Indoor Seating
(935)

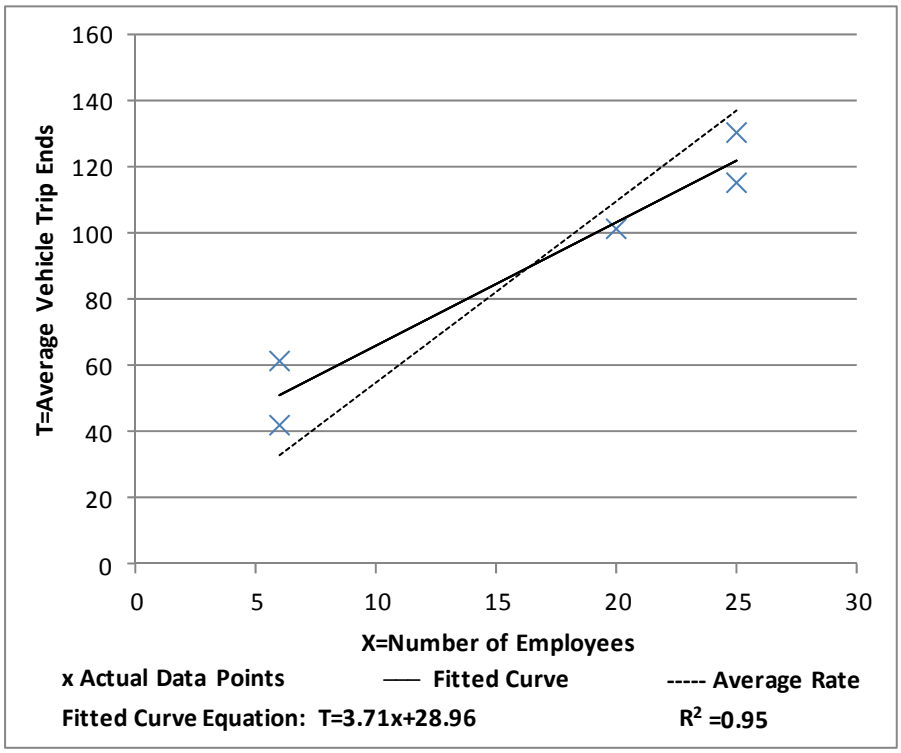
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	5
Average Number of Employees:	16
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
5.48	4.60-10.17	1.67

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Fast-Food Restaurant with Drive-Through Window and No Indoor Seating
(935)

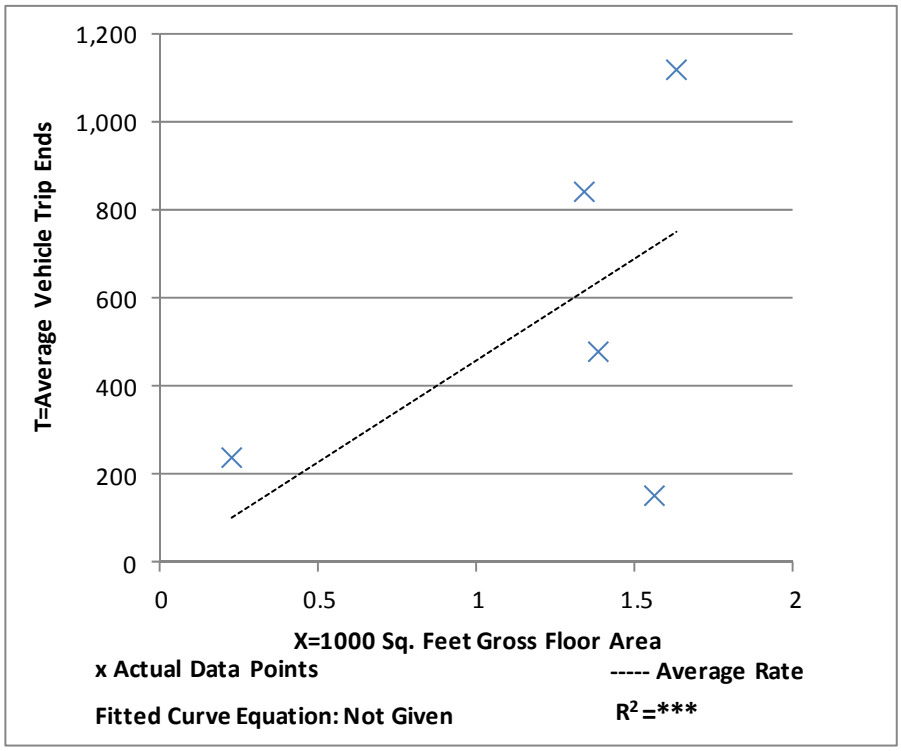
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	1
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
459.20	95.91-1,053.57	300.74

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



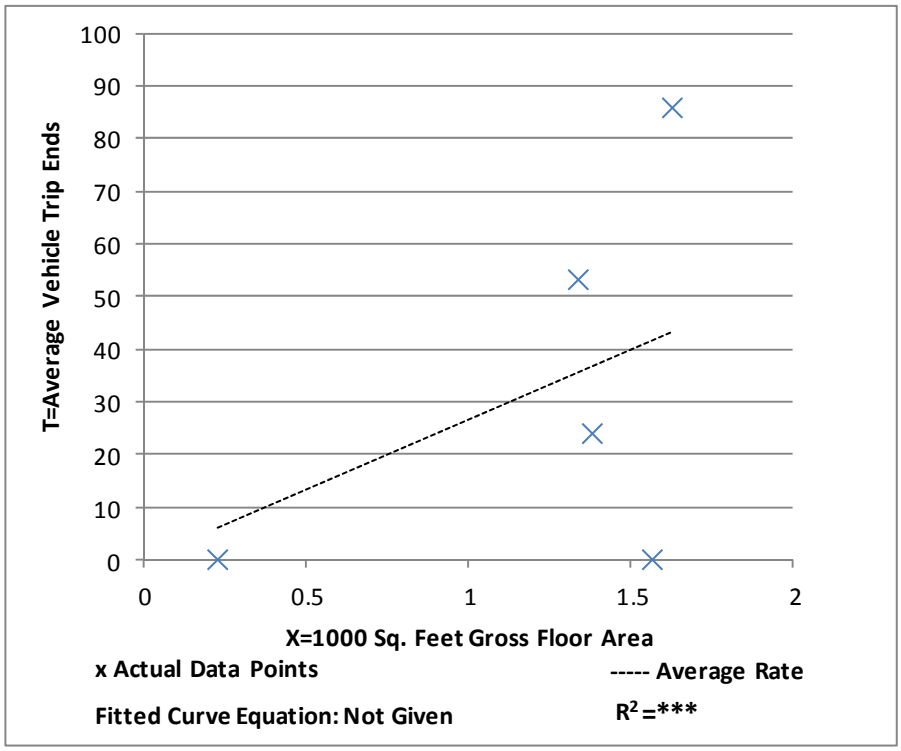
Fast-Food Restaurant with Drive-Through Window and No Indoor Seating
(935)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	1
Directional Distribution:	34% entering, 66% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
26.55	0.00-52.79	24.09

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



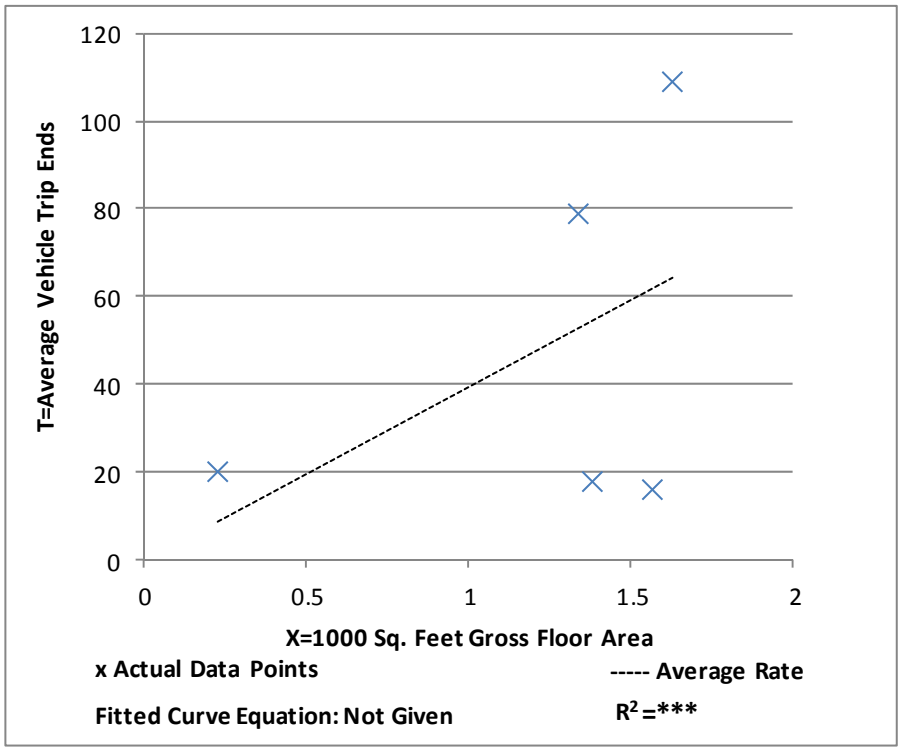
Fast-Food Restaurant with Drive-Through Window and No Indoor Seating
(935)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	1
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
39.42	10.23-89.29	31.28

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Fast-Food Restaurant with Drive-Through Window and No Indoor Seating
(935)

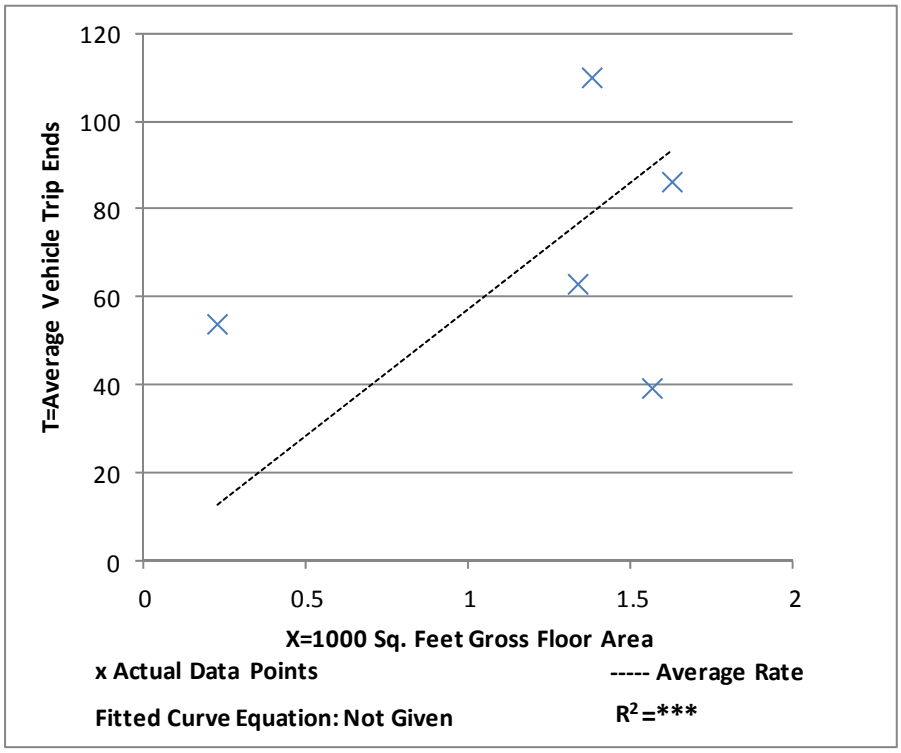
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	1
Directional Distribution:	49% entering, 51% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
57.34	24.94-241.07	46.29

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Fast-Food Restaurant with Drive-Through Window and No Indoor Seating
(935)

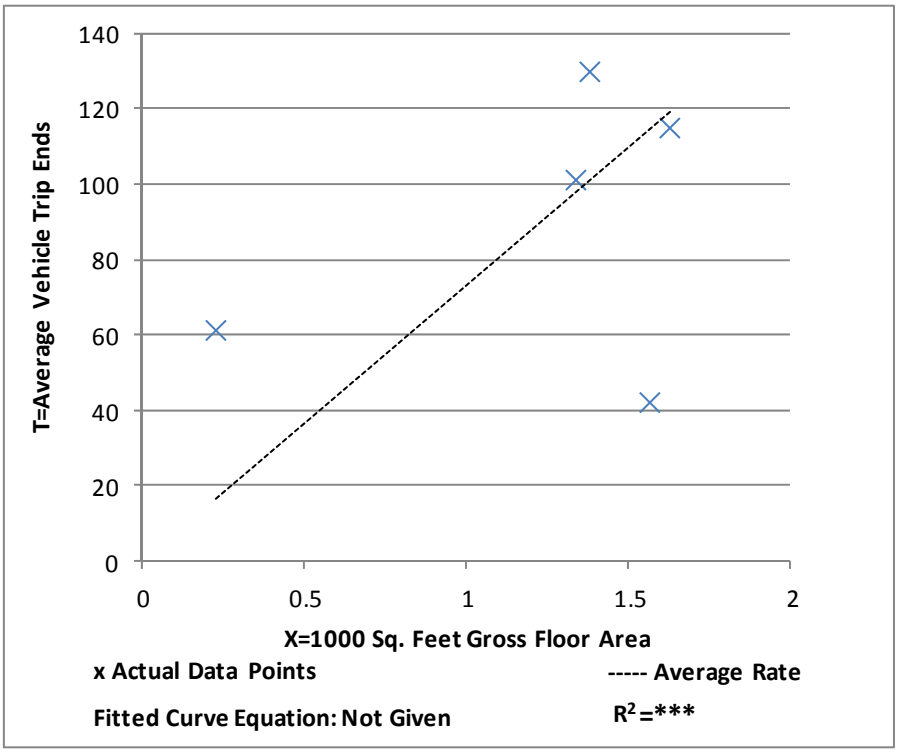
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	5
Average Number of 1000 Sq. Feet Gross Floor Area:	1
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
73.14	26.85-272.32	52.33

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Land Use: 943
Automobile Parts and Service Center

Description

Automobile parts and service centers sell automobile parts for do-it-yourself maintenance and repair including tires, batteries, oil and sparks plugs. The stores may also sell automobile parts to retailers and repair facilities. Automobile parts and service centers also provide a full array of on-site services for various automobiles. These facilities provide centralized cashiering and maintain long hours 7 days per week. Automobile parts and service centers are sometimes found as separate parcels within a retail complex. Automobile parts sales (Land Use 843), tire store (Land Use 848), tire superstore (Land Use 849), quick lubrication vehicle shop (Land Use 941) and automobile care center (Land Use 942) are related uses.

Source Numbers

1, 2, 3, 4, 5

Automobile Parts and Service Center
(943)

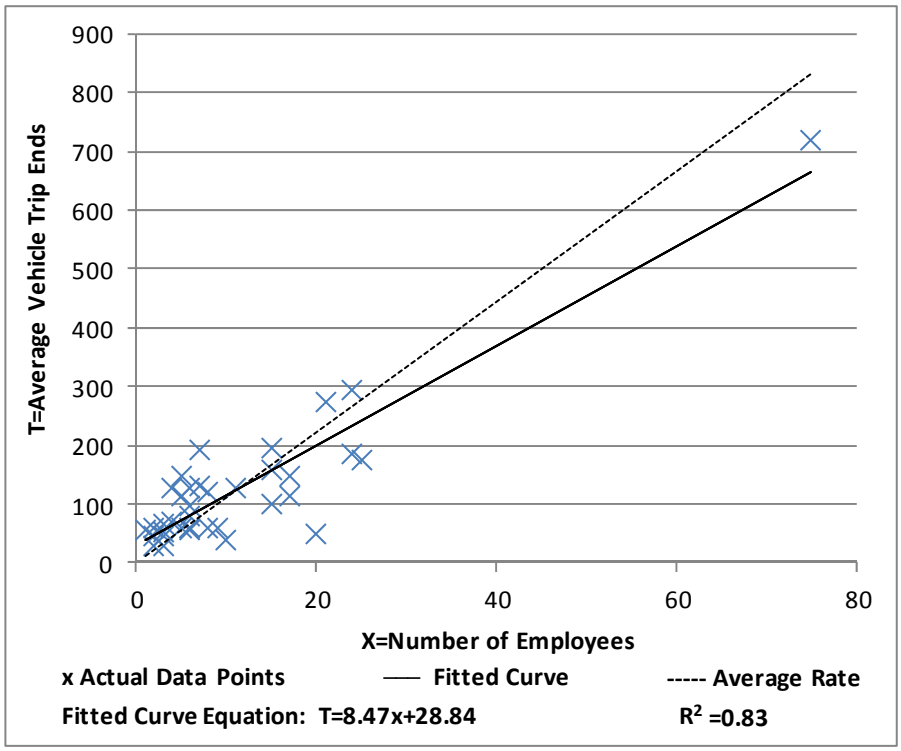
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies:	37
Average Number of Employees:	11
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
11.10	2.40-56.00	6.30

Data Plot and Equation



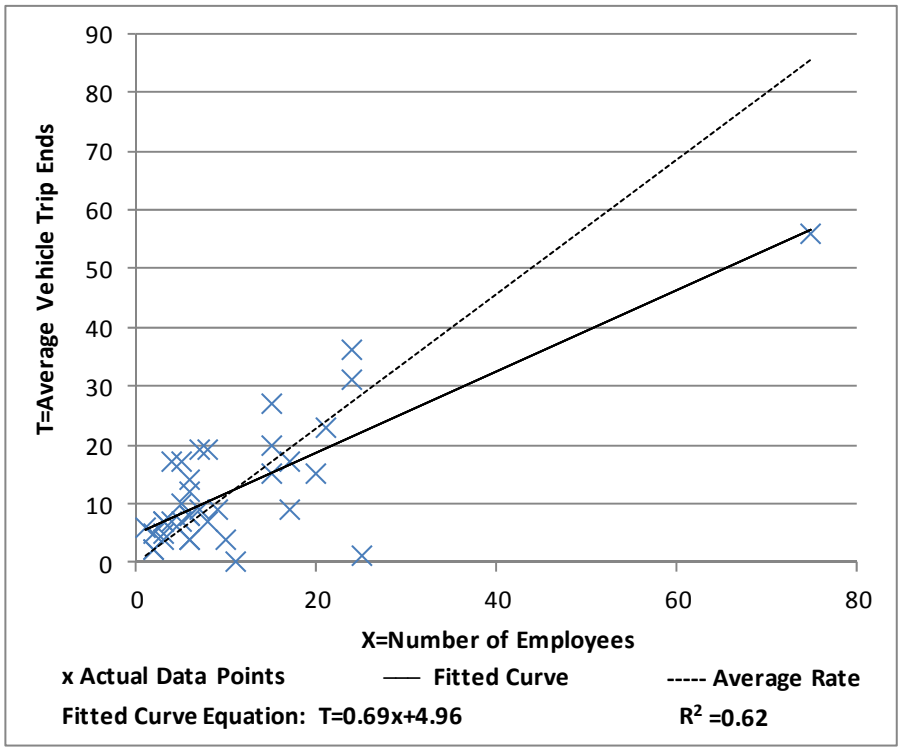
Automobile Parts and Service Center
(943)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	37
Average Number of Employees:	11
Directional Distribution:	71% entering, 29% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.14	0.00-6.00	0.79

Data Plot and Equation



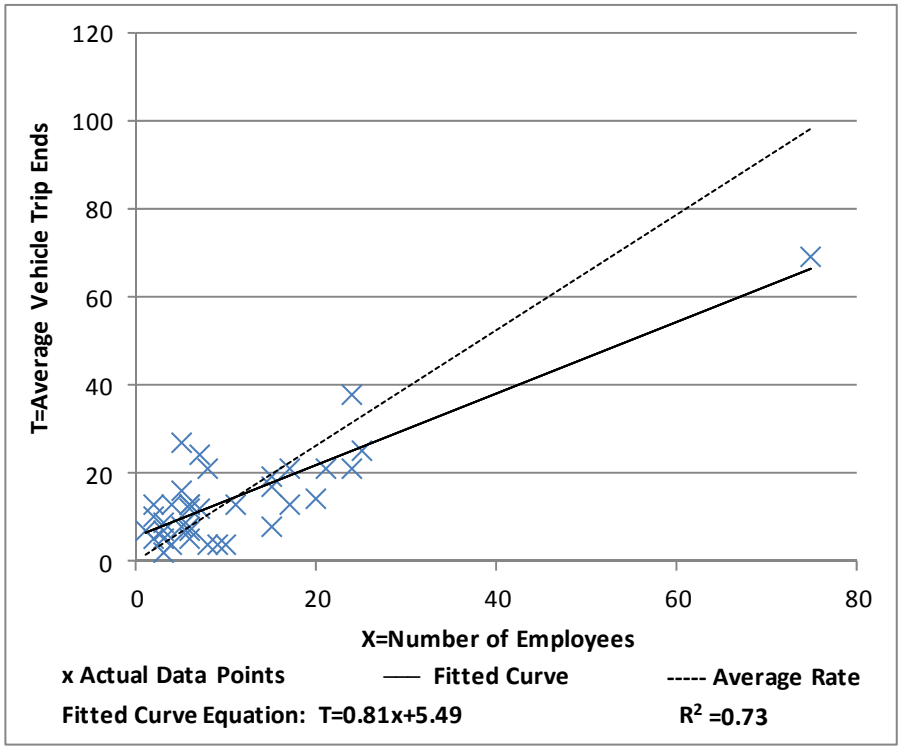
Automobile Parts and Service Center
(943)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	37
Average Number of Employees:	11
Directional Distribution:	38% entering, 62% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.31	0.40-7.00	0.99

Data Plot and Equation



Automobile Parts and Service Center
(943)

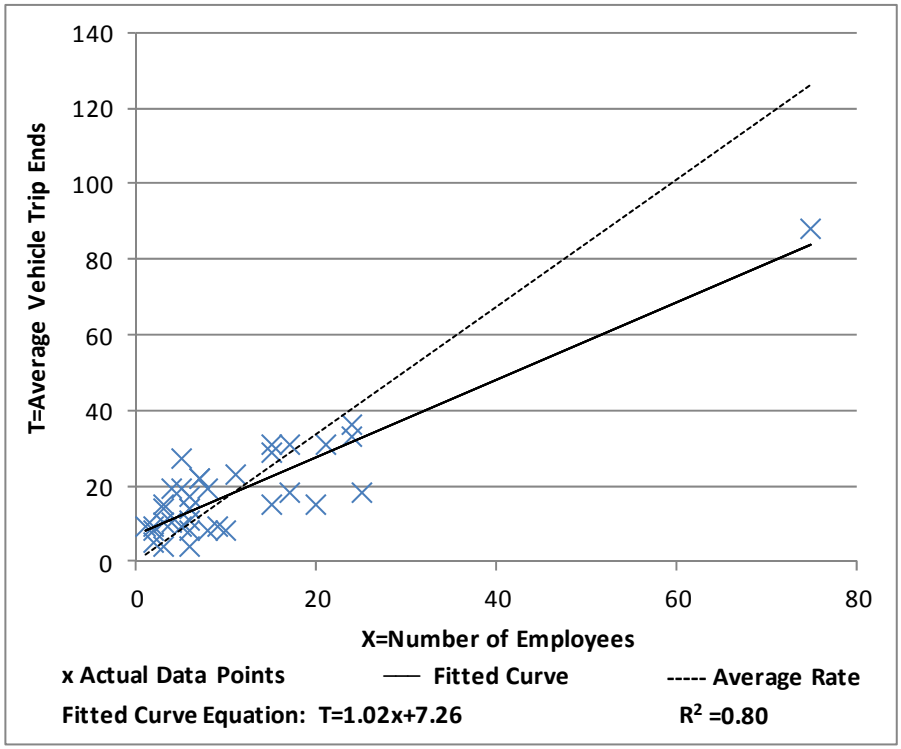
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	37
Average Number of Employees:	11
Directional Distribution:	57% entering, 43% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.68	0.67-9.00	1.07

Data Plot and Equation



Automobile Parts and Service Center
(943)

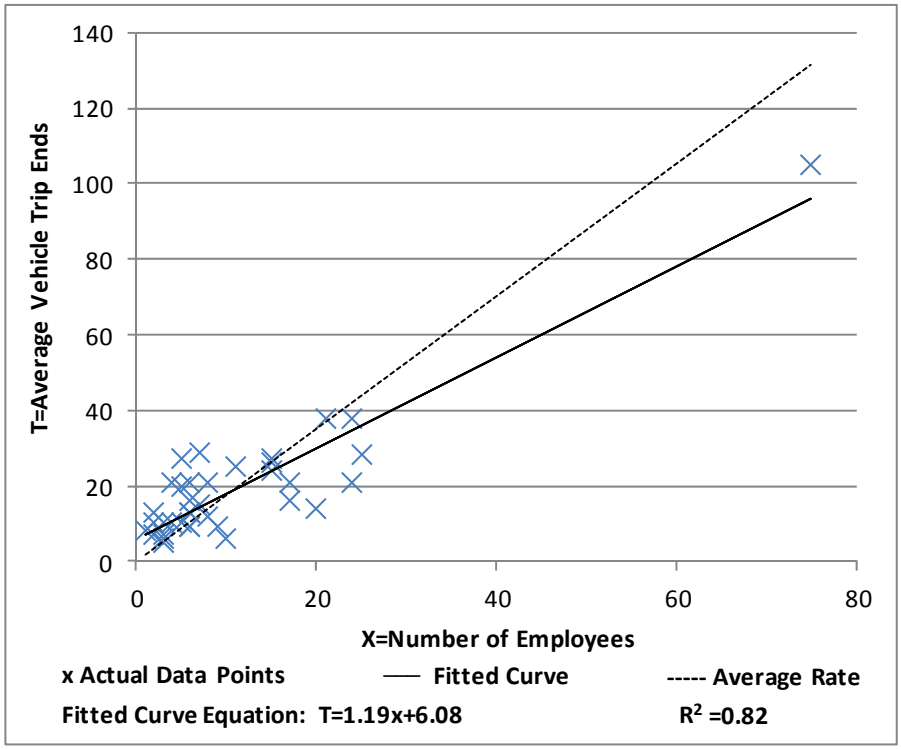
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	37
Average Number of Employees:	11
Directional Distribution:	45% entering, 55% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
1.75	0.60-8.00	1.07

Data Plot and Equation



Automobile Parts and Service Center
(943)

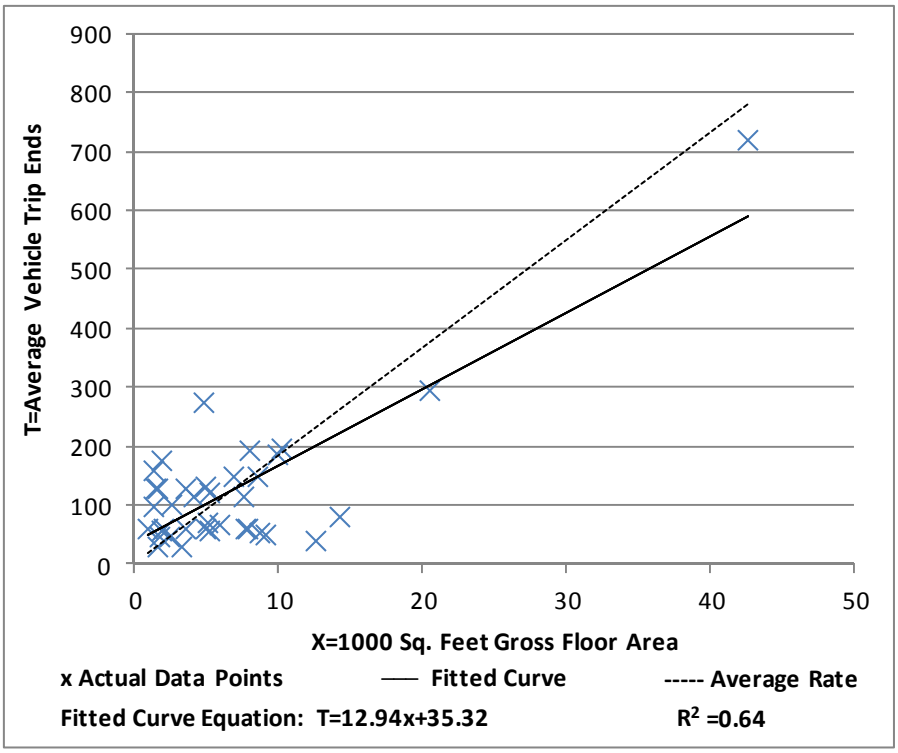
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday

Number of Studies:	37
Average Number of 1000 Sq. Feet Gross Floor Area:	7
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
18.22	3.00-113.51	16.53

Data Plot and Equation



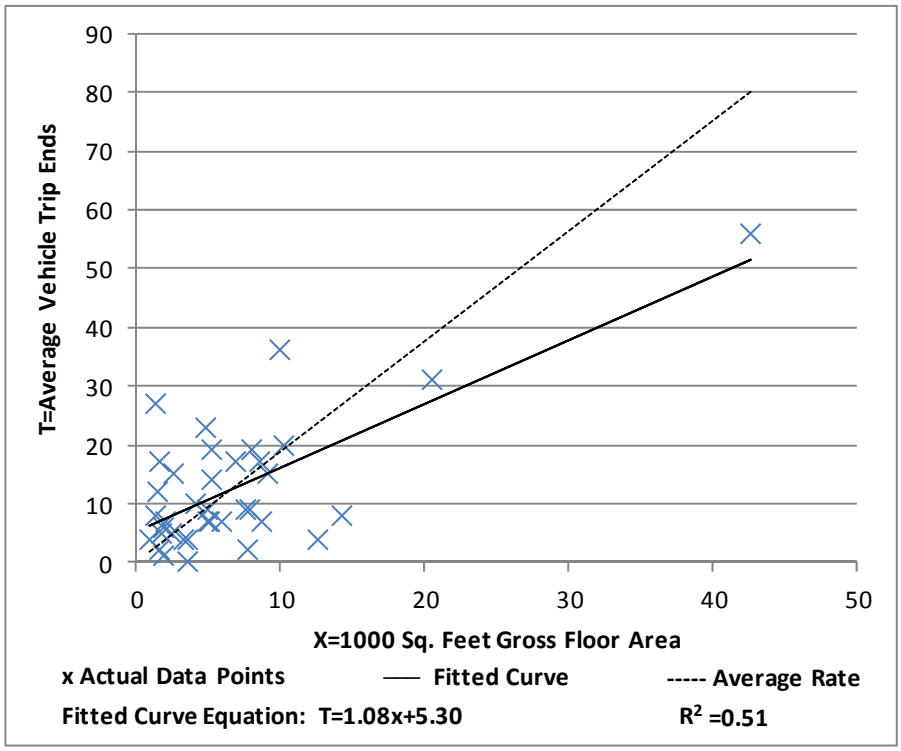
Automobile Parts and Service Center
(943)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	37
Average Number of 1000 Sq. Feet Gross Floor Area:	7
Directional Distribution:	73% entering, 27% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.87	0.00-19.40	1.98

Data Plot and Equation



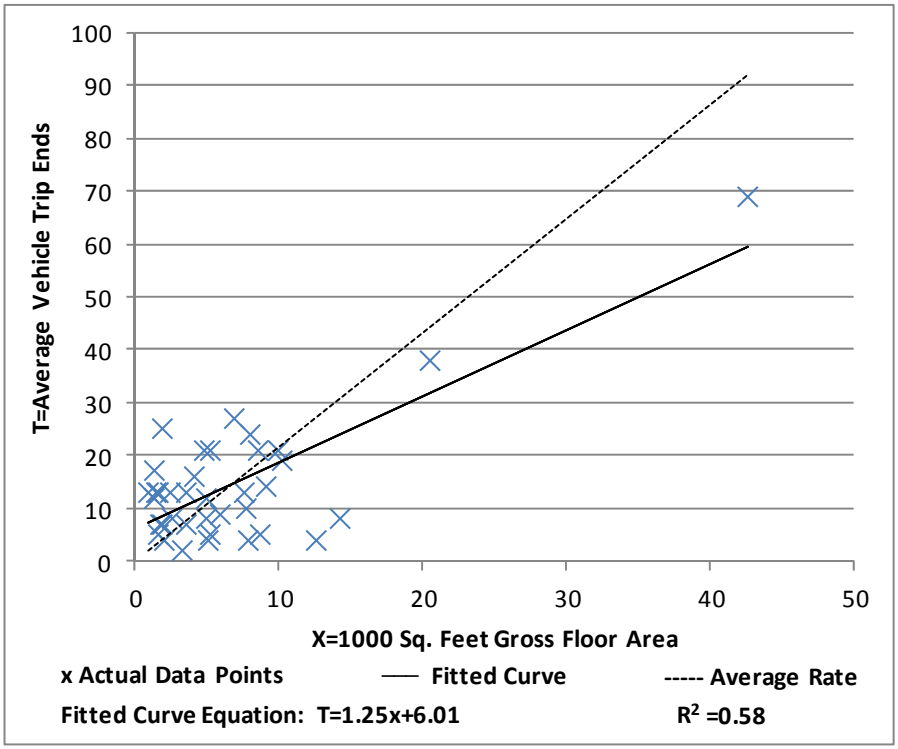
Automobile Parts and Service Center
(943)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	37
Average Number of 1000 Sq. Feet Gross Floor Area:	7
Directional Distribution:	33% entering, 67% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.15	0.32-13.54	2.04

Data Plot and Equation



Automobile Parts and Service Center
(943)

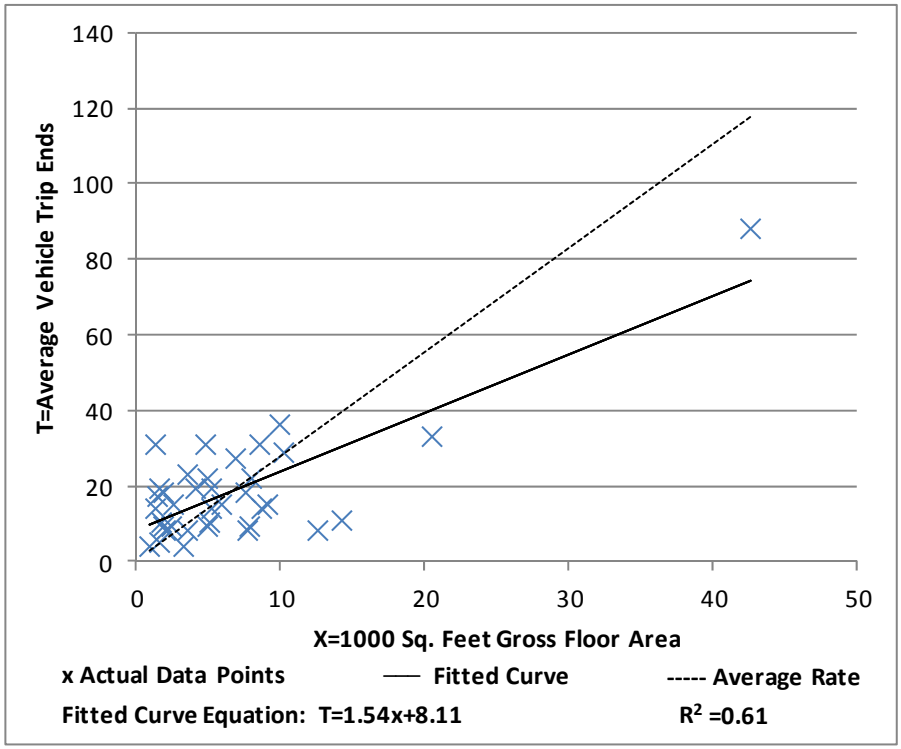
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	37
Average Number of 1000 Sq. Feet Gross Floor Area:	7
Directional Distribution:	57% entering, 43% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.76	0.63-22.27	2.45

Data Plot and Equation



Automobile Parts and Service Center
(943)

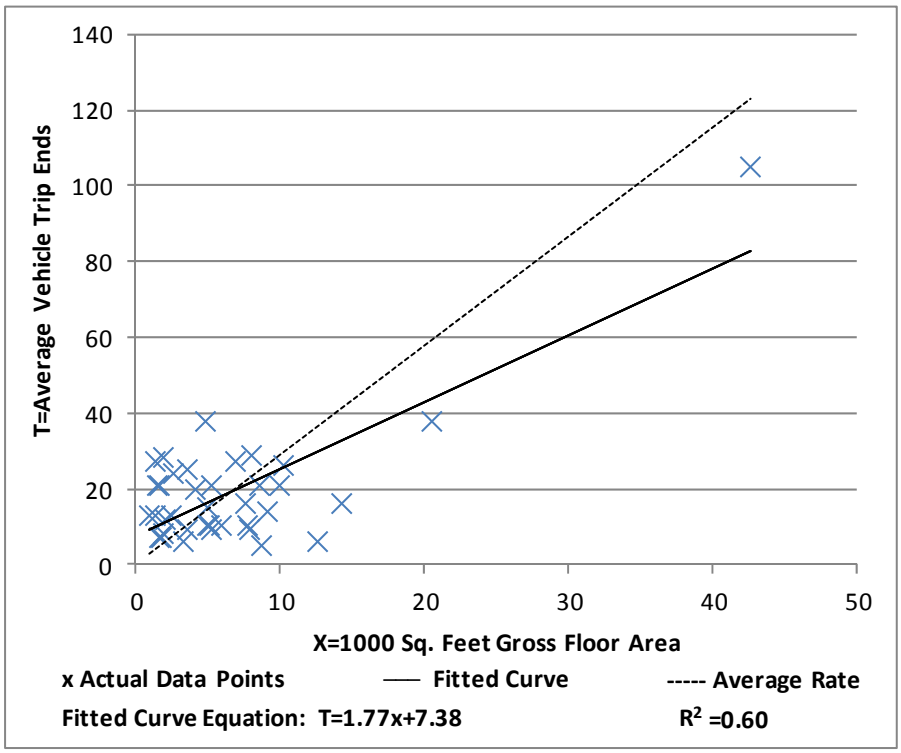
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	37
Average Number of 1000 Sq. Feet Gross Floor Area:	7
Directional Distribution:	46% entering, 54% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.87	0.47-19.40	2.79

Data Plot and Equation



Land Use: 944
Gasoline/Service Station

Description

This land use includes gasoline/service stations where the primary business is the fueling of motor vehicles. These service stations may also have ancillary facilities for servicing and repairing motor vehicles. Service stations are generally located at intersections or interchanges. Service stations with convenience stores and car washes are not included in this land use. Convenience market with gasoline pumps (Land Use 853), gasoline/service station with convenience market (Land Use 945), gasoline/service station with convenience market and car wash (Land Use 946) and truck-stop (Land Use 950) are related uses.

Source Numbers

2, 4

Gasoline/Service Station
(944)

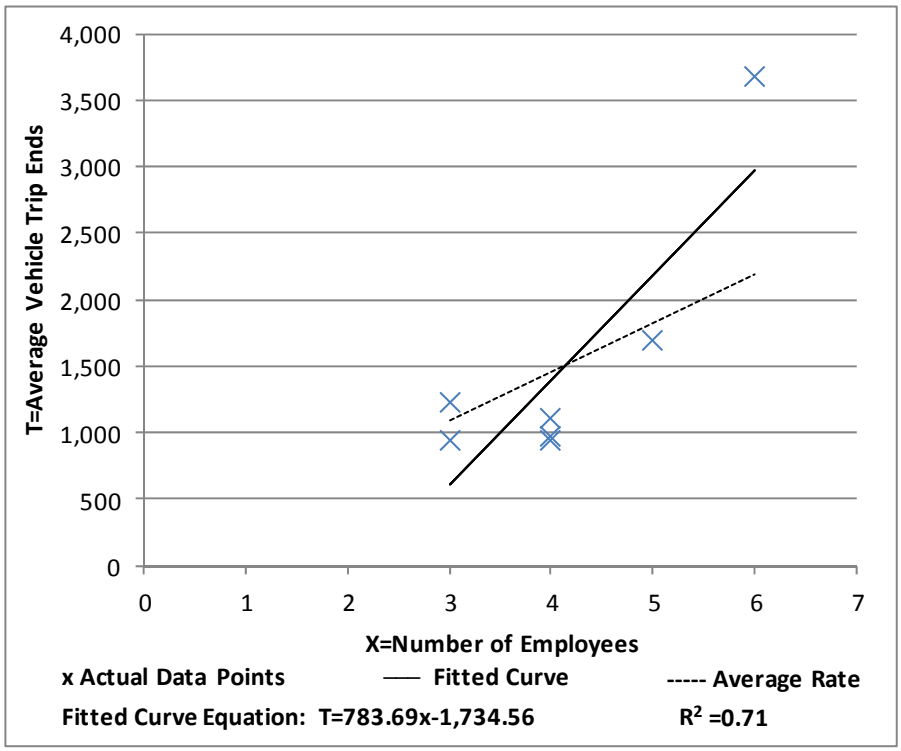
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 7
Average Number of Employees: 4
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
365.00	237.50-613.33	148.33

Data Plot and Equation



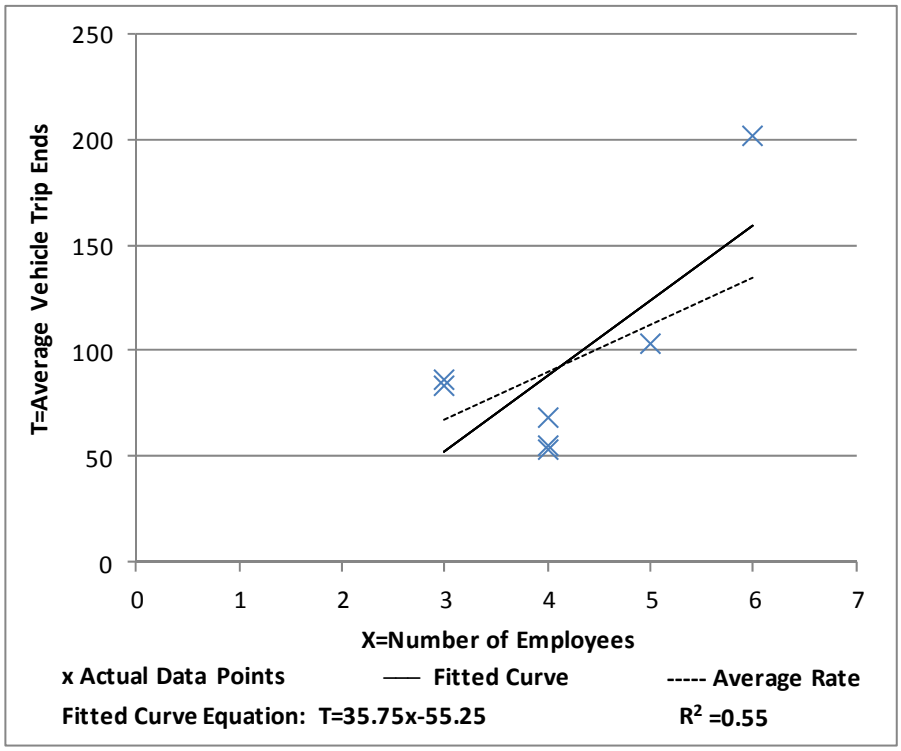
Gasoline/Service Station
(944)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of Employees:	4
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
22.41	13.25-33.67	8.38

Data Plot and Equation



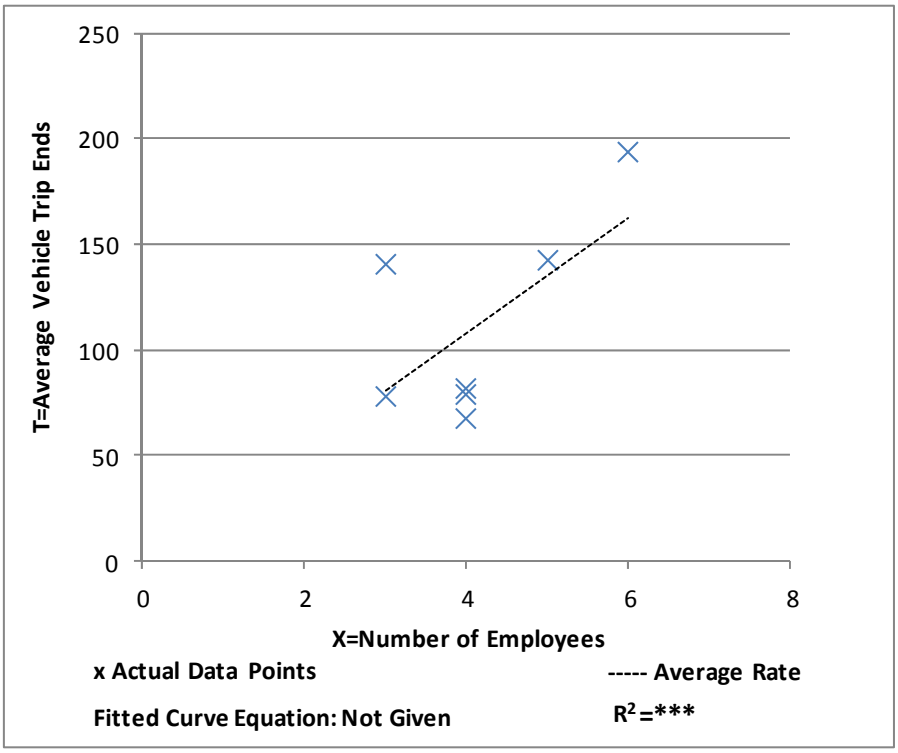
Gasoline/Service Station
(944)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of Employees:	4
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
27.00	16.75-47.00	9.42

Data Plot and Equation



Gasoline/Service Station
(944)

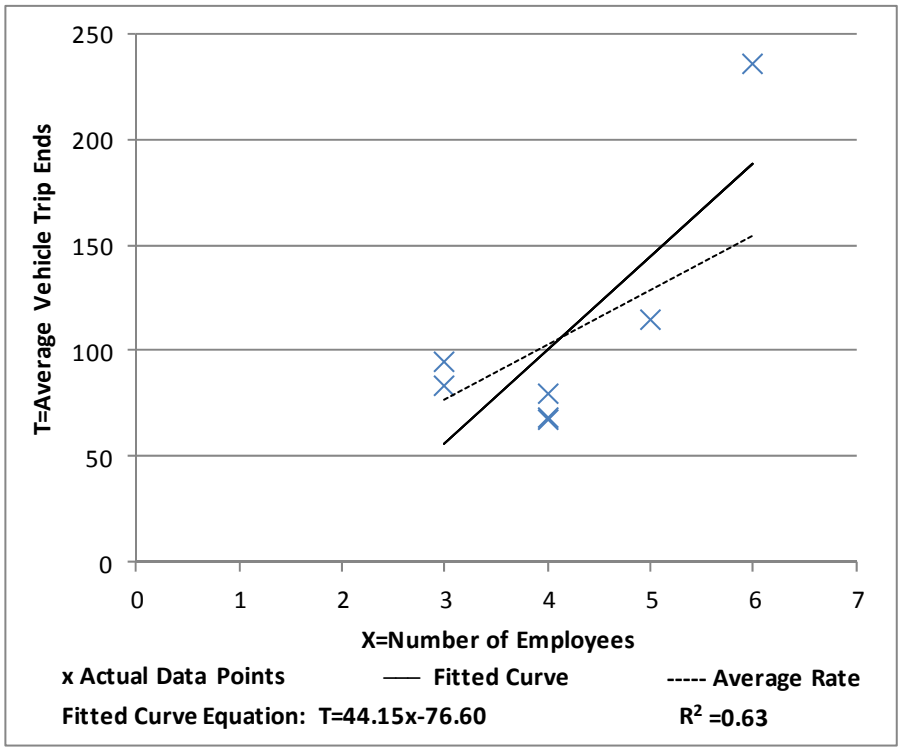
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	4
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
25.66	16.75-39.33	9.06

Data Plot and Equation



Gasoline/Service Station
(944)

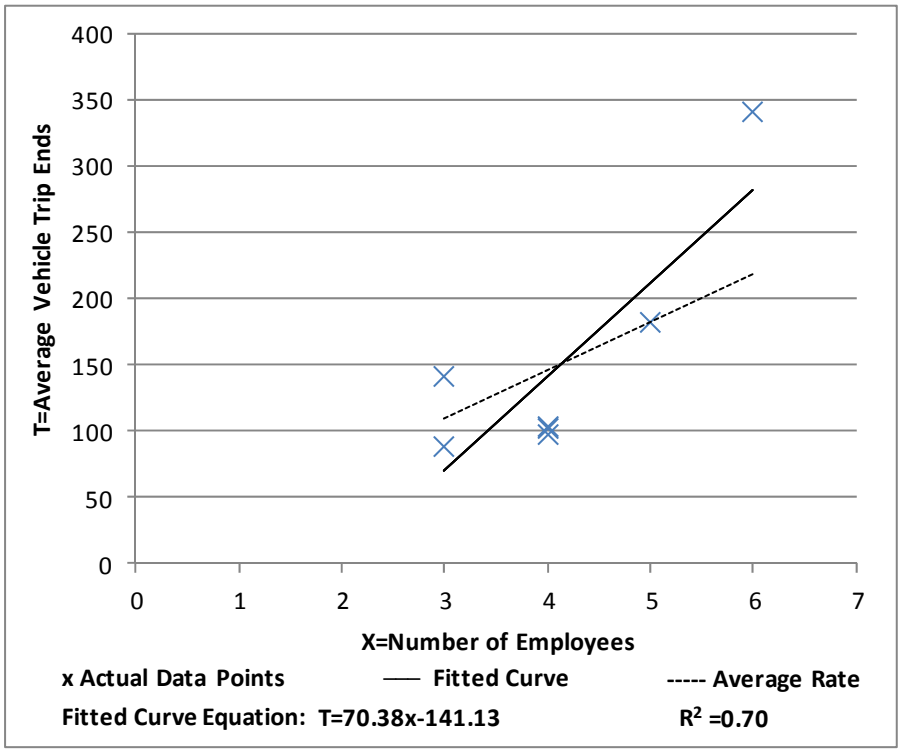
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Employees:	4
Directional Distribution:	53% entering, 47% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
36.31	24.25-56.67	13.47

Data Plot and Equation



Gasoline/Service Station
(944)

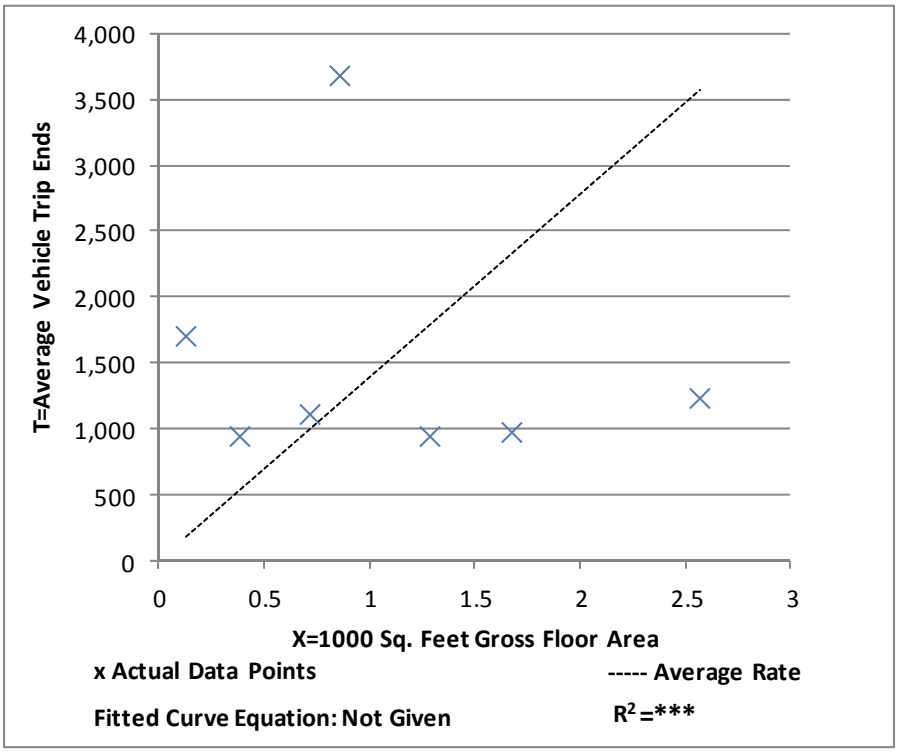
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	1
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1,386.20	477.82-13,281.25	2,217.15

Data Plot and Equation



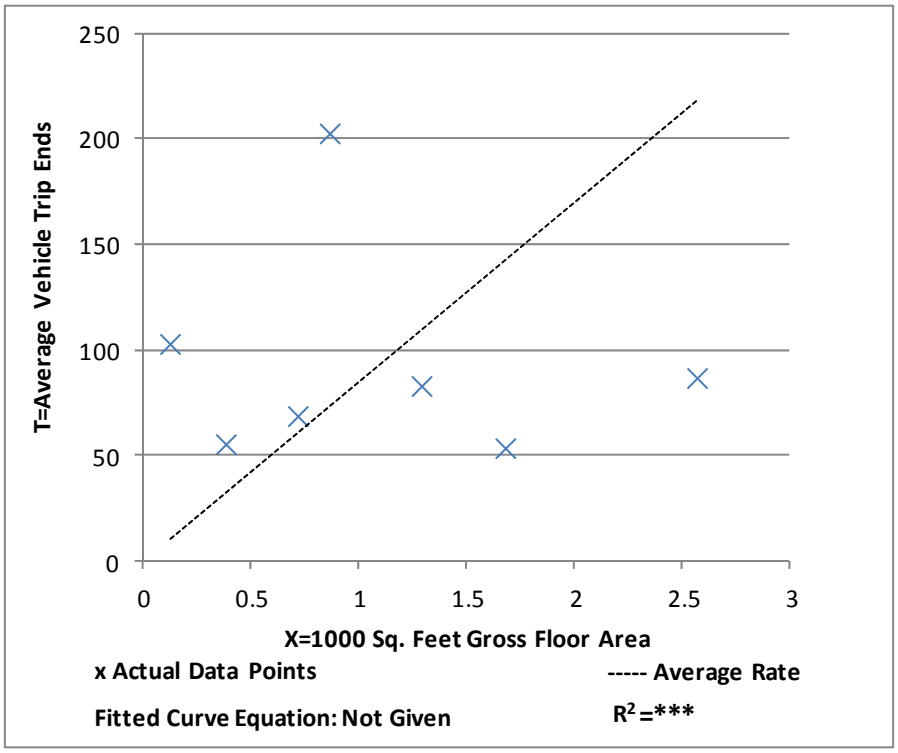
Gasoline/Service Station
(944)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	1
Directional Distribution:	48% entering, 52% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
85.12	31.55-804.69	128.47

Data Plot and Equation



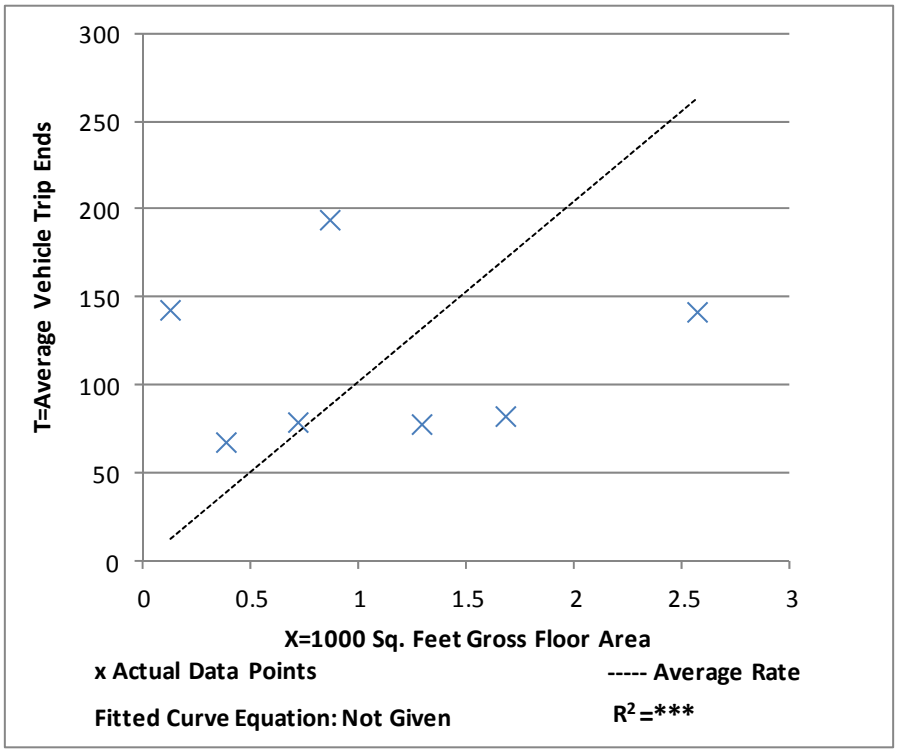
Gasoline/Service Station
(944)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	1
Directional Distribution:	52% entering, 48% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
102.54	48.81-1,109.38	162.13

Data Plot and Equation



Gasoline/Service Station
(944)

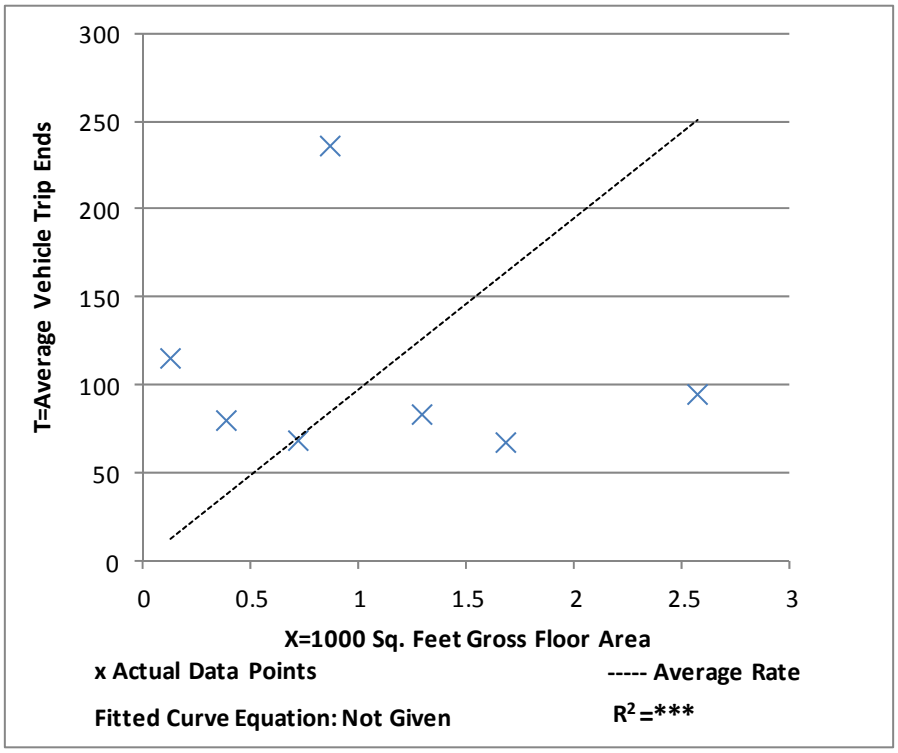
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	1
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
97.43	36.96-898.44	147.19

Data Plot and Equation



Gasoline/Service Station
(944)

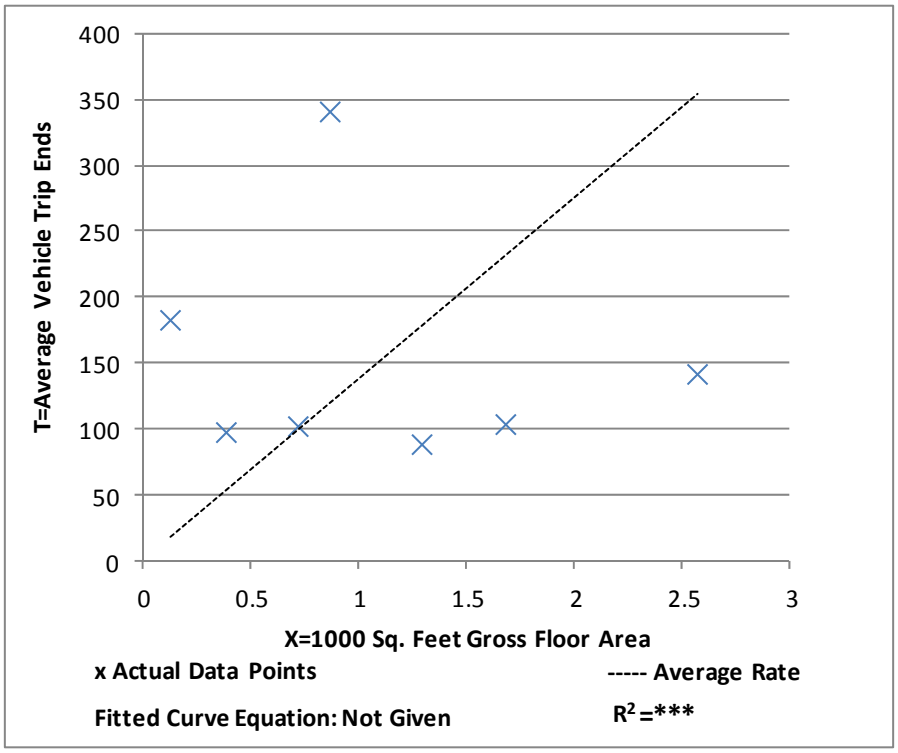
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of 1000 Sq. Feet Gross Floor Area:	1
Directional Distribution:	53% entering, 47% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
137.90	54.86-1,421.88	226.04

Data Plot and Equation



Gasoline/Service Station
(944)

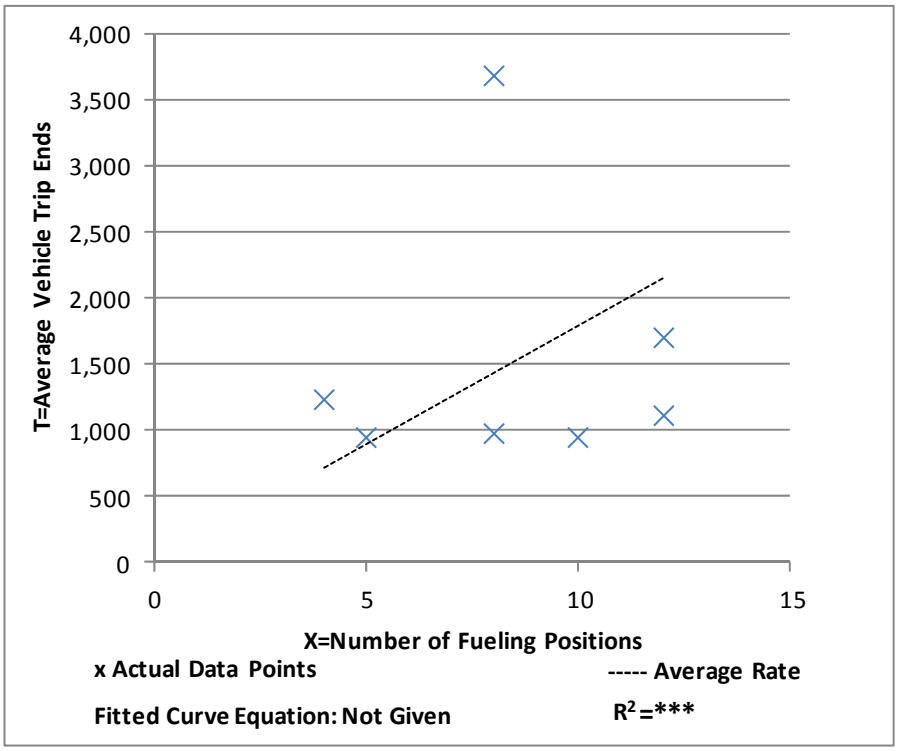
Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday**

Number of Studies:	7
Average Number of Fueling Positions:	8
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
179.41	92.25-460.00	134.88

Data Plot and Equation



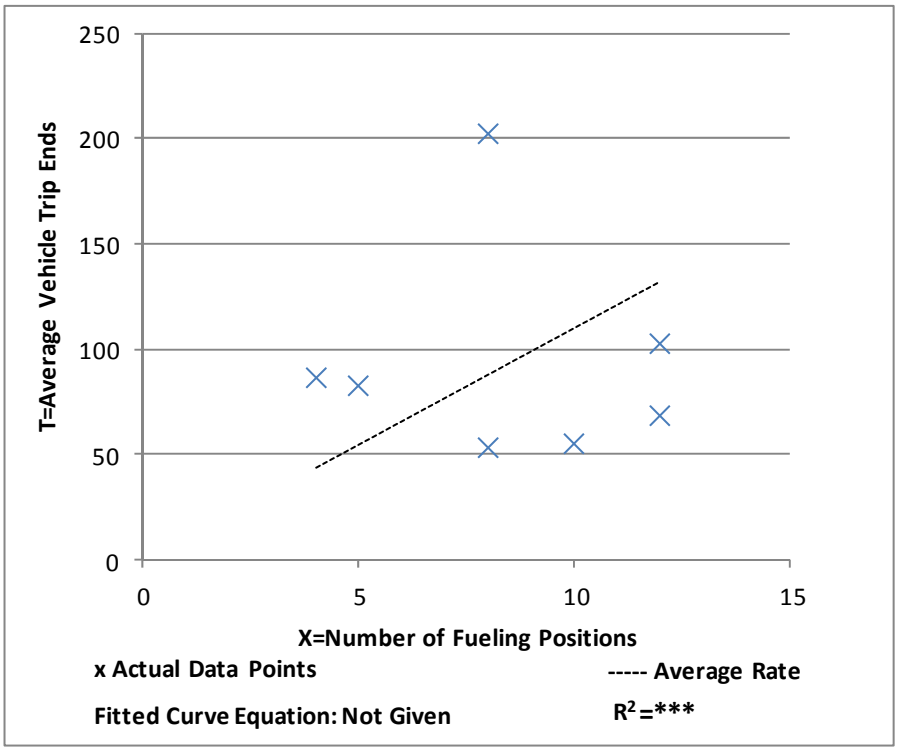
Gasoline/Service Station
(944)

Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	7
Average Number of Fueling Positions:	8
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
11.02	5.50-25.25	7.90

Data Plot and Equation



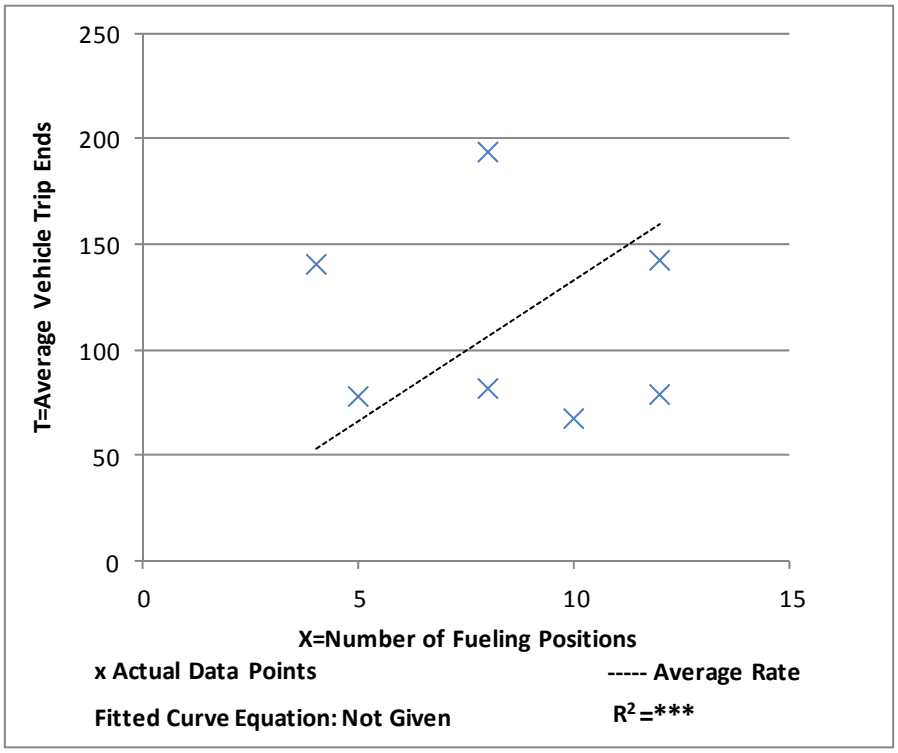
Gasoline/Service Station
(944)

Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	7
Average Number of Fueling Positions:	8
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
13.27	6.58-35.25	8.97

Data Plot and Equation



Gasoline/Service Station
(944)

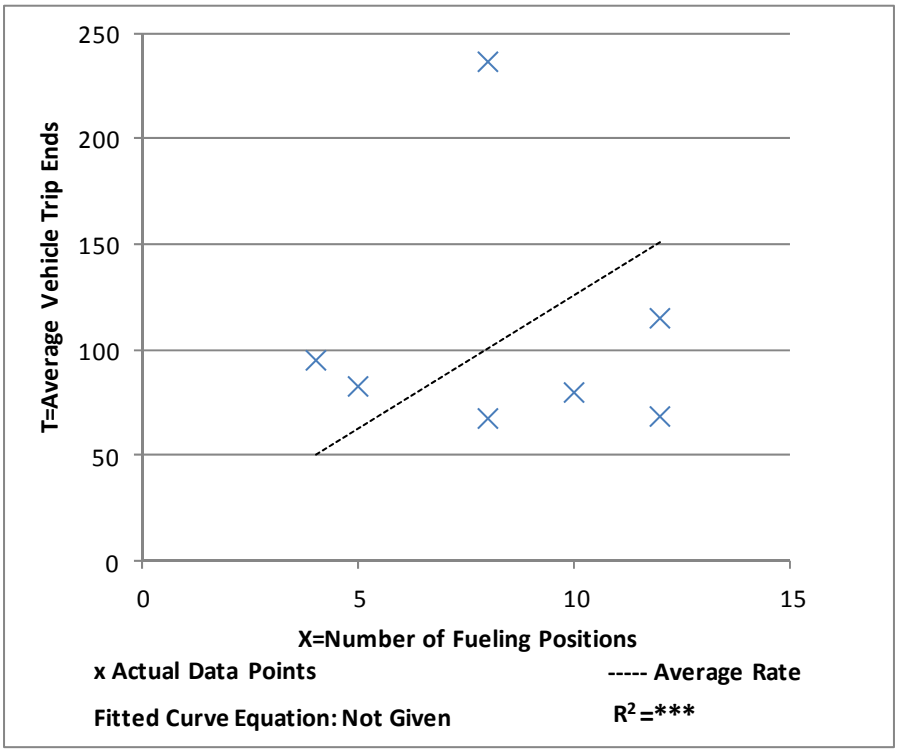
Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Fueling Positions:	8
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
12.61	5.67-29.50	8.87

Data Plot and Equation



Gasoline/Service Station
(944)

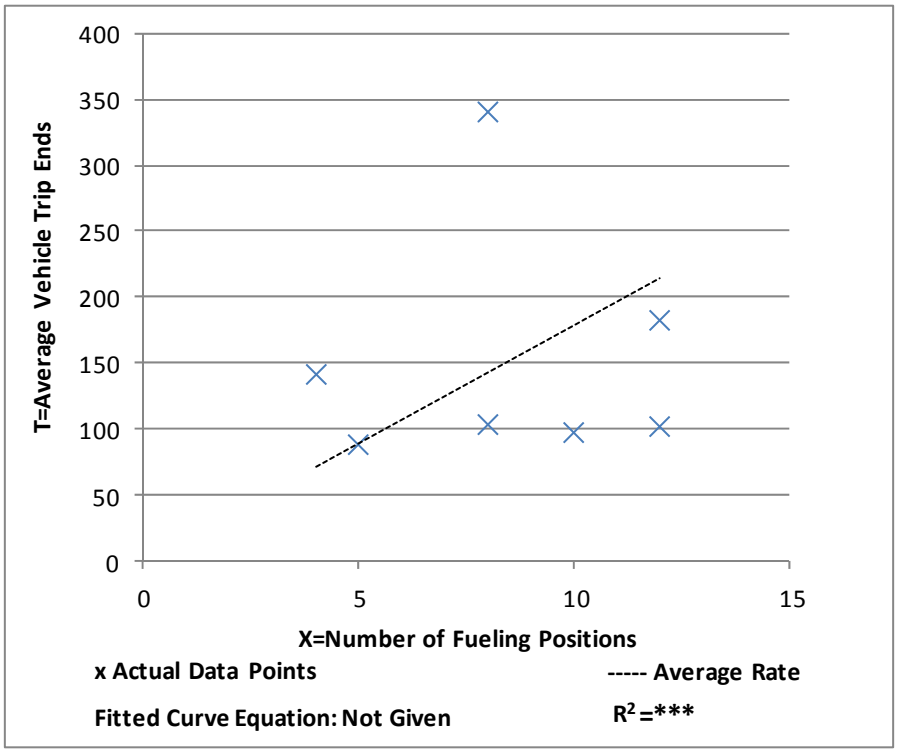
Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	7
Average Number of Fueling Positions:	8
Directional Distribution:	53% entering, 47% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
17.85	8.50-42.50	12.76

Data Plot and Equation



Land Use: 945
Gasoline/Service Station with Convenience Market

Description

This land use includes gasoline/service stations with convenience markets where the primary business is the fueling of motor vehicles. These service stations may also have ancillary facilities for servicing and repairing motor vehicles. Some commonly sold convenience items are newspapers, coffee or other beverages and snack items that are usually consumed in the car. These service stations are generally located at intersections or interchanges. This land use does not include stations with car washes. Convenience market (open 24 hours) (Land Use 851), convenience market (open 15-16 hours) (Land Use 852), convenience market with gasoline pumps (Land Use 853), gasoline/service station (Land Use 944), gasoline/service station with convenience market and car wash (Land Use 946) and truck stop (Land Use 950) are related uses.

Source Numbers

1, 2, 4, 5

Gasoline/Service Station with Convenience Market
(945)

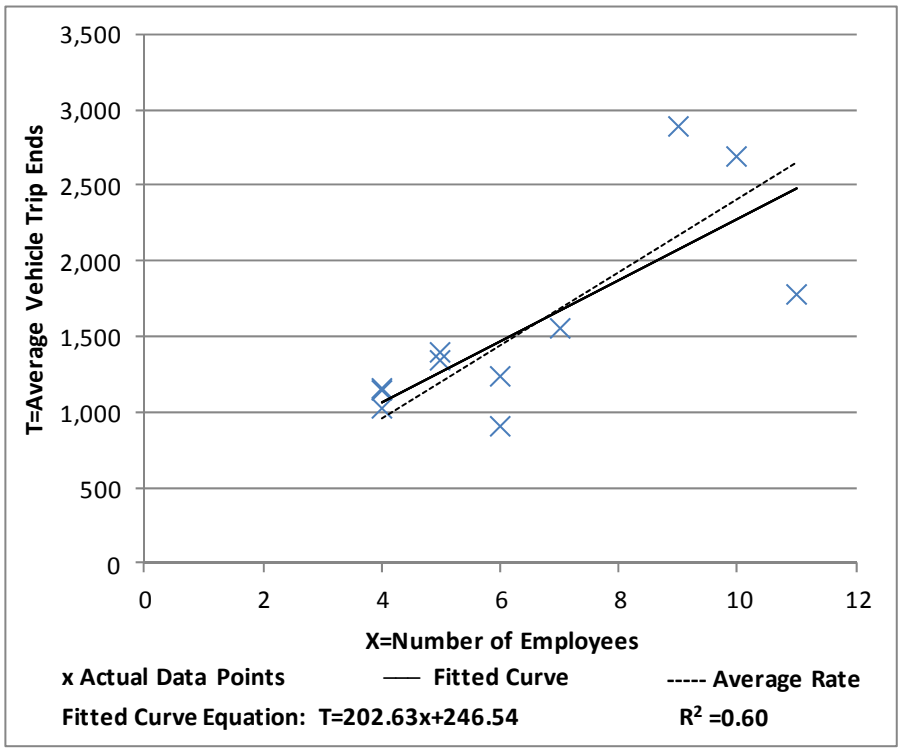
Average Vehicle Trip Ends vs: Employees
On a: Weekday

Number of Studies: 11
Average Number of Employees: 6
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
240.83	151.17-321.00	58.99

Data Plot and Equation



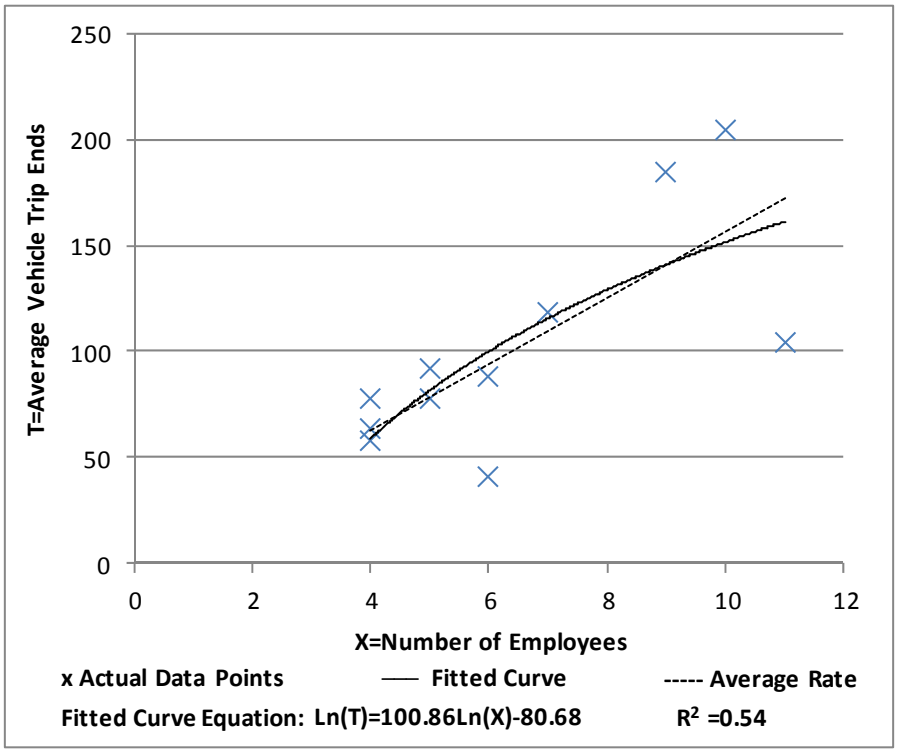
Gasoline/Service Station with Convenience Market
(945)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	11
Average Number of Employees:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
15.63	6.83-20.56	4.77

Data Plot and Equation



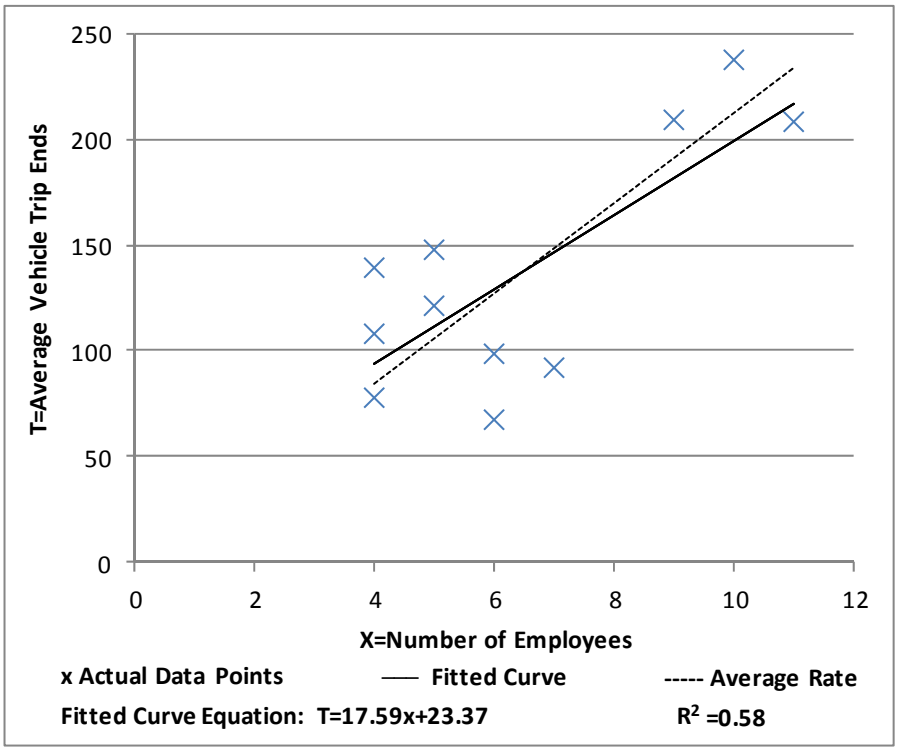
Gasoline/Service Station with Convenience Market
(945)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	11
Average Number of Employees:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
21.21	11.17-34.75	6.42

Data Plot and Equation



Gasoline/Service Station with Convenience Market
(945)

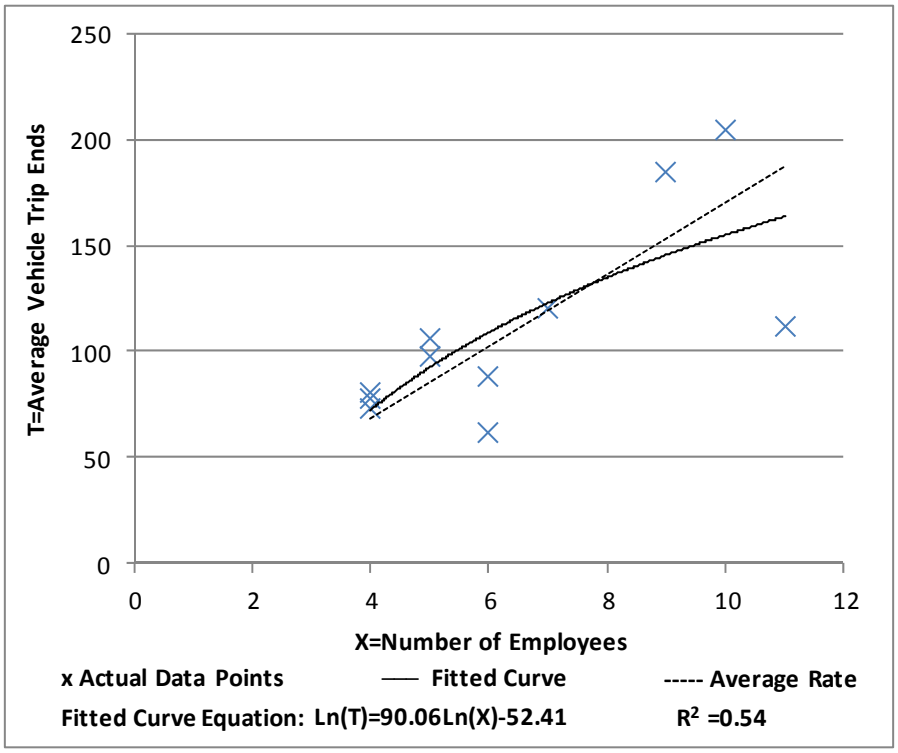
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	11
Average Number of Employees:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
17.00	10.18-21.20	4.41

Data Plot and Equation



Gasoline/Service Station with Convenience Market
(945)

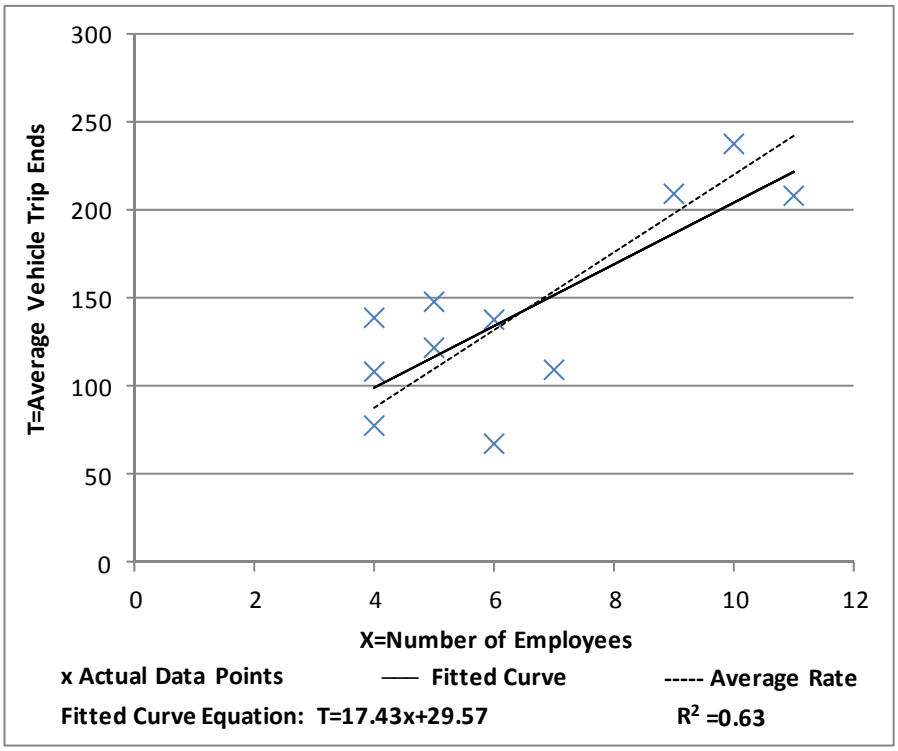
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	11
Average Number of Employees:	6
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
22.01	11.17-34.75	5.93

Data Plot and Equation



Gasoline/Service Station with Convenience Market
(945)

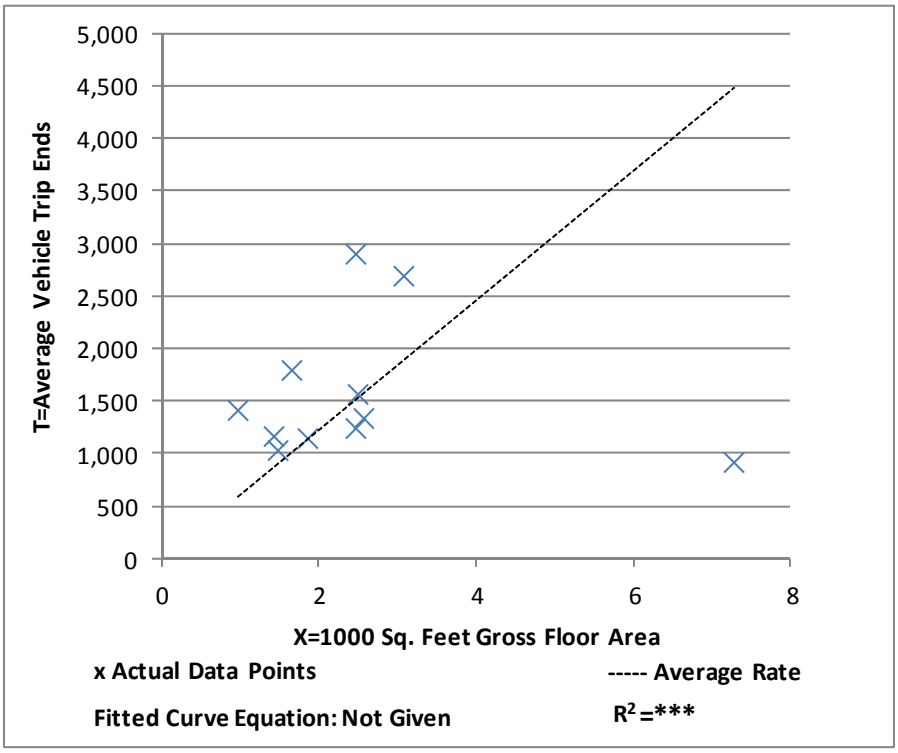
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday

Number of Studies:	11
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
613.57	124.42-1,444.21	397.26

Data Plot and Equation



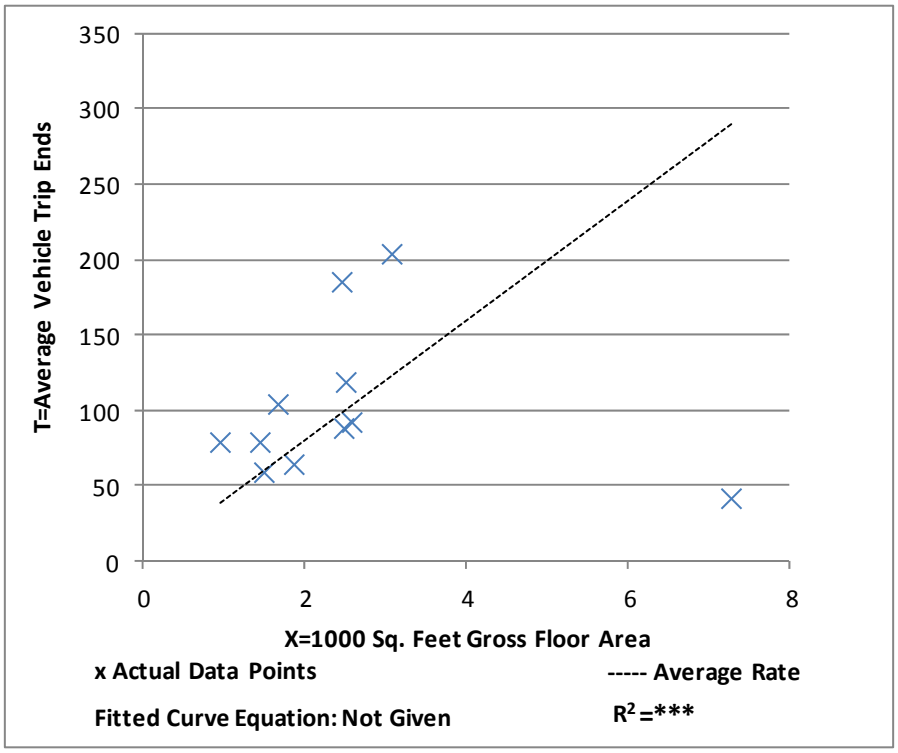
Gasoline/Service Station with Convenience Market
(945)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	11
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	52% entering, 48% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
39.83	5.62-80.58	26.23

Data Plot and Equation



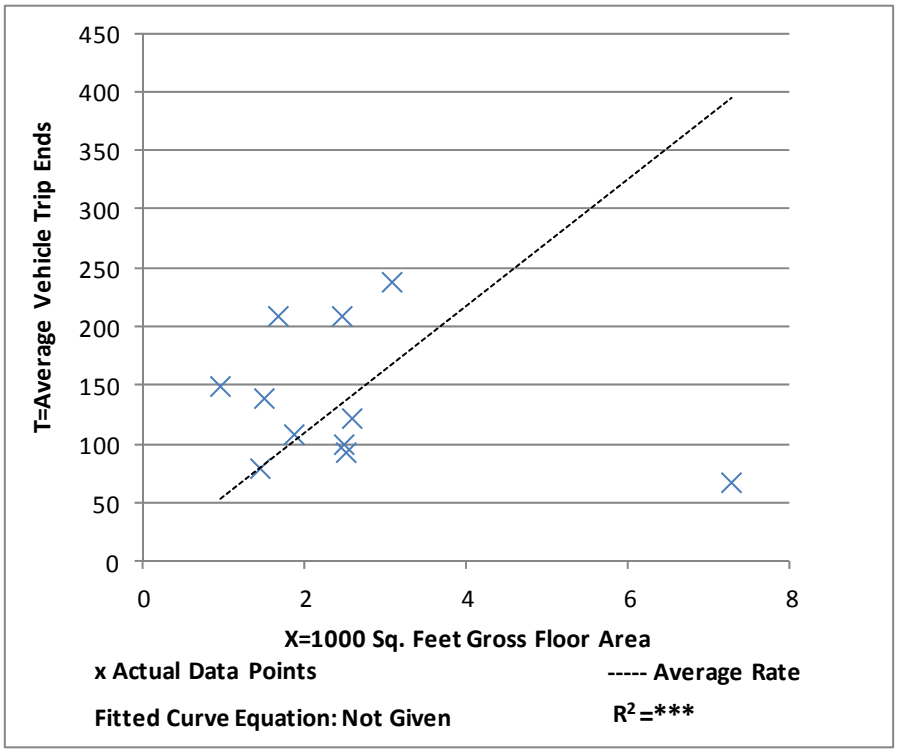
Gasoline/Service Station with Convenience Market
(945)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	11
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	52% entering, 48% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
54.04	9.19-152.89	40.62

Data Plot and Equation



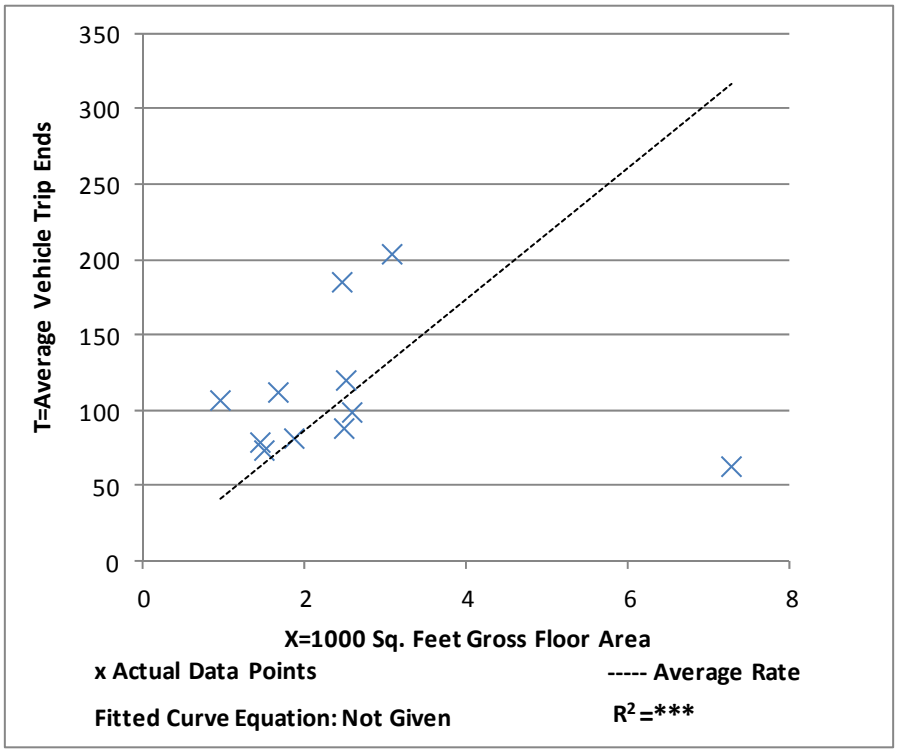
Gasoline/Service Station with Convenience Market
(945)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator
Number of Studies:	11
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
43.31	8.50-109.50	27.65

Data Plot and Equation



Gasoline/Service Station with Convenience Market
(945)

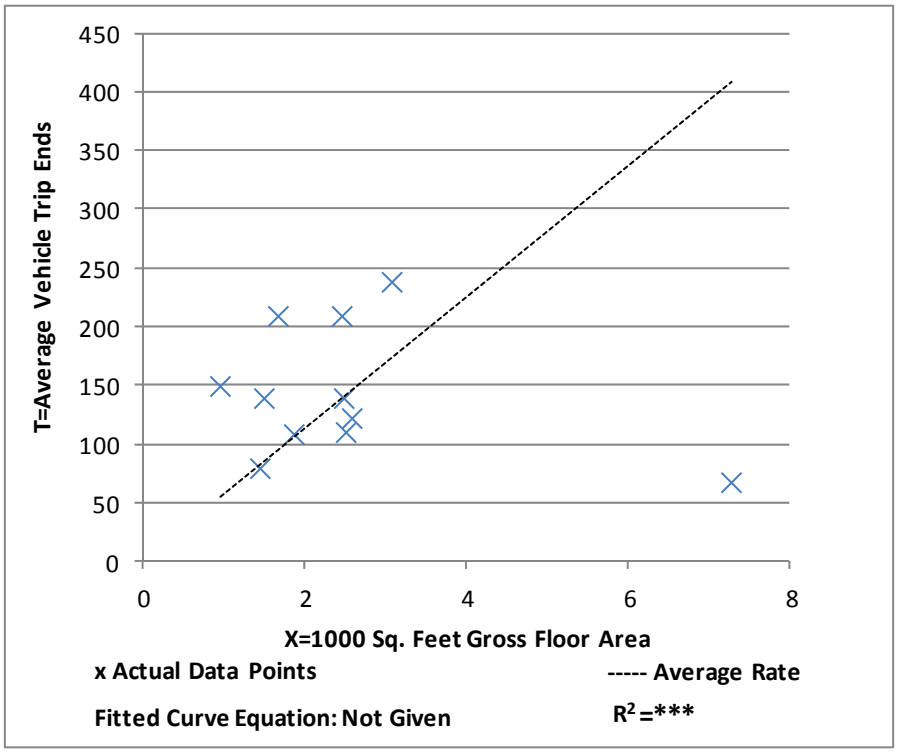
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	11
Average Number of 1000 Sq. Feet Gross Floor Area:	3
Directional Distribution:	52% entering, 48% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
56.09	9.19-152.89	40.06

Data Plot and Equation



Gasoline/Service Station with Convenience Market
(945)

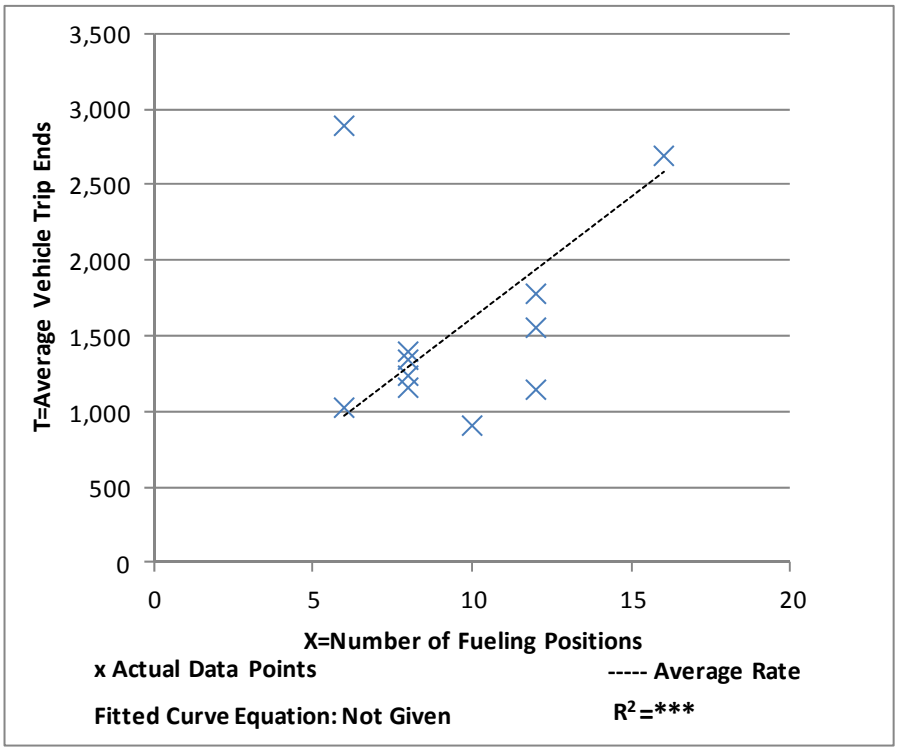
Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday**

Number of Studies:	11
Average Number of Fueling Positions:	10
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
161.31	90.70-481.50	87.89

Data Plot and Equation



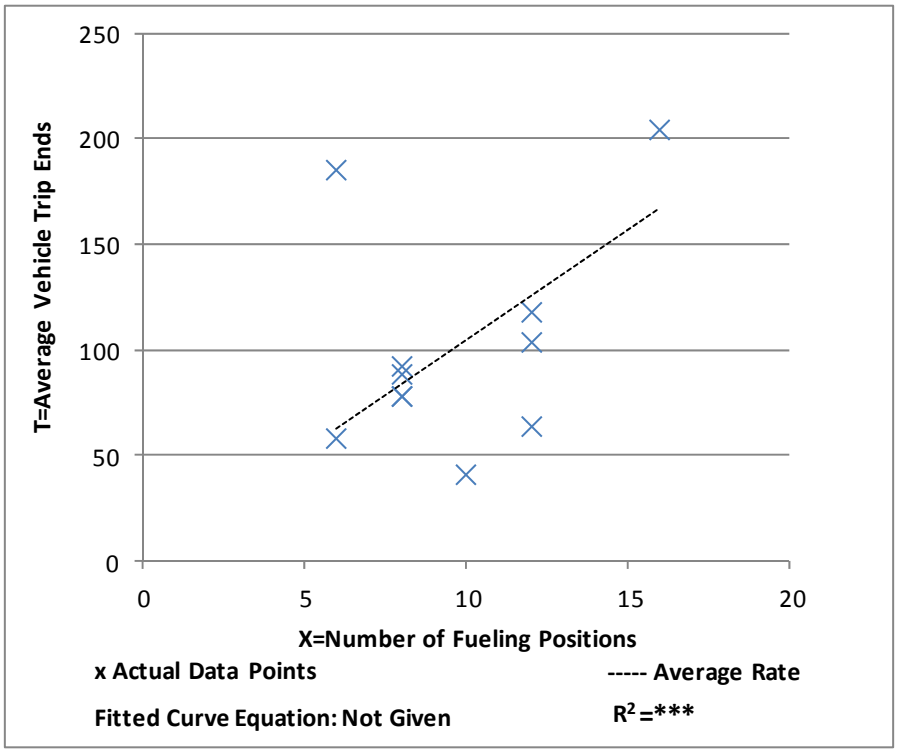
Gasoline/Service Station with Convenience Market
(945)

Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	11
Average Number of Fueling Positions:	10
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
10.47	4.10-30.83	5.93

Data Plot and Equation



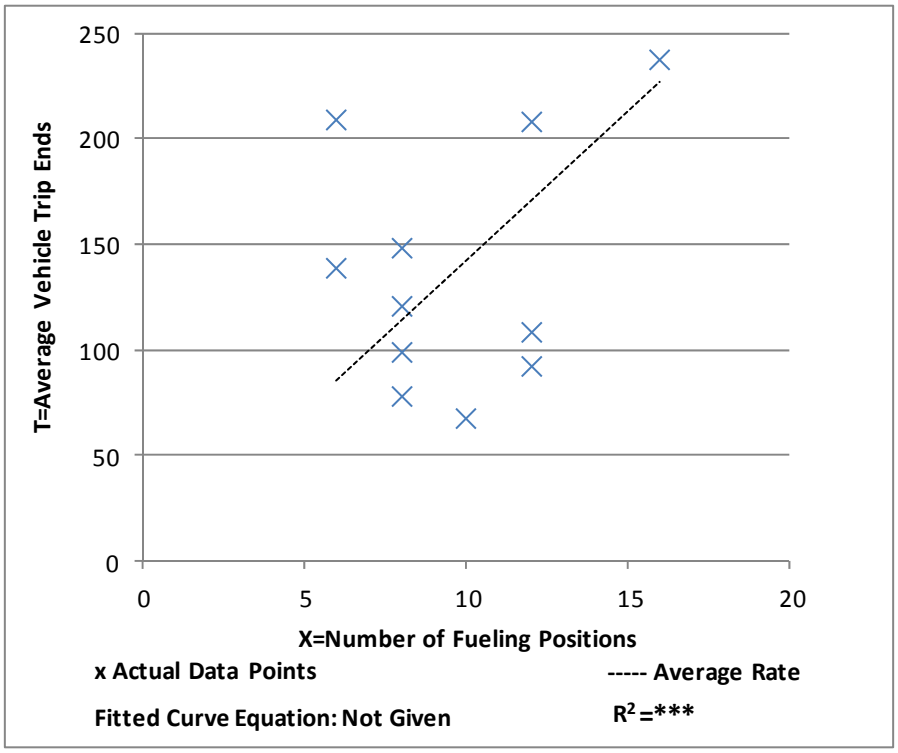
Gasoline/Service Station with Convenience Market
(945)

Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	11
Average Number of Fueling Positions:	10
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
14.21	6.70-34.83	7.16

Data Plot and Equation



Gasoline/Service Station with Convenience Market
(945)

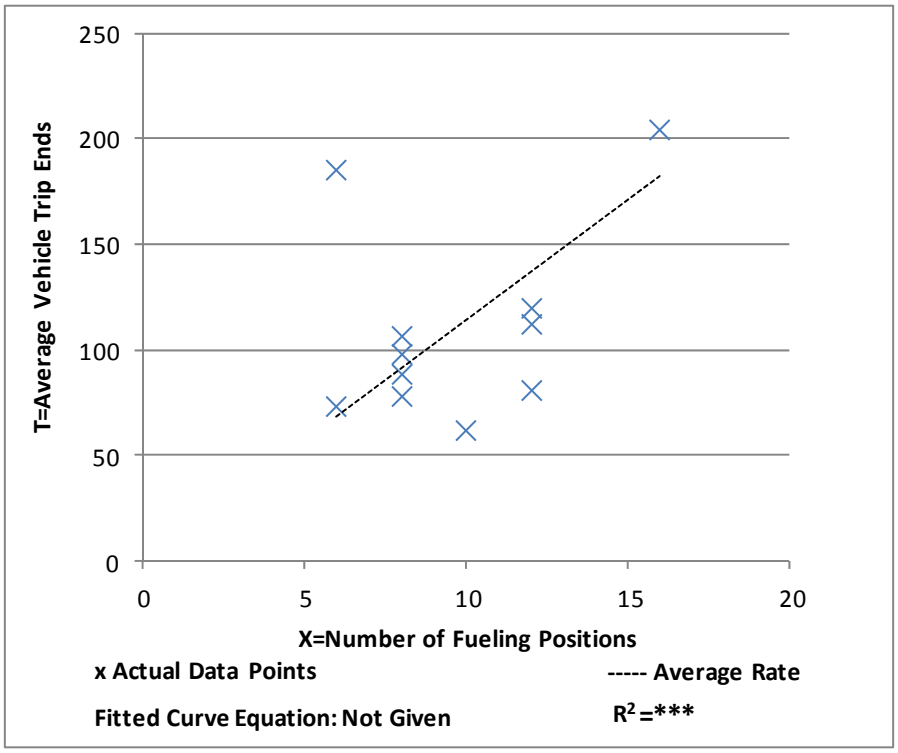
Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	11
Average Number of Fueling Positions:	10
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
11.39	6.20-30.83	5.57

Data Plot and Equation



Gasoline/Service Station with Convenience Market
(945)

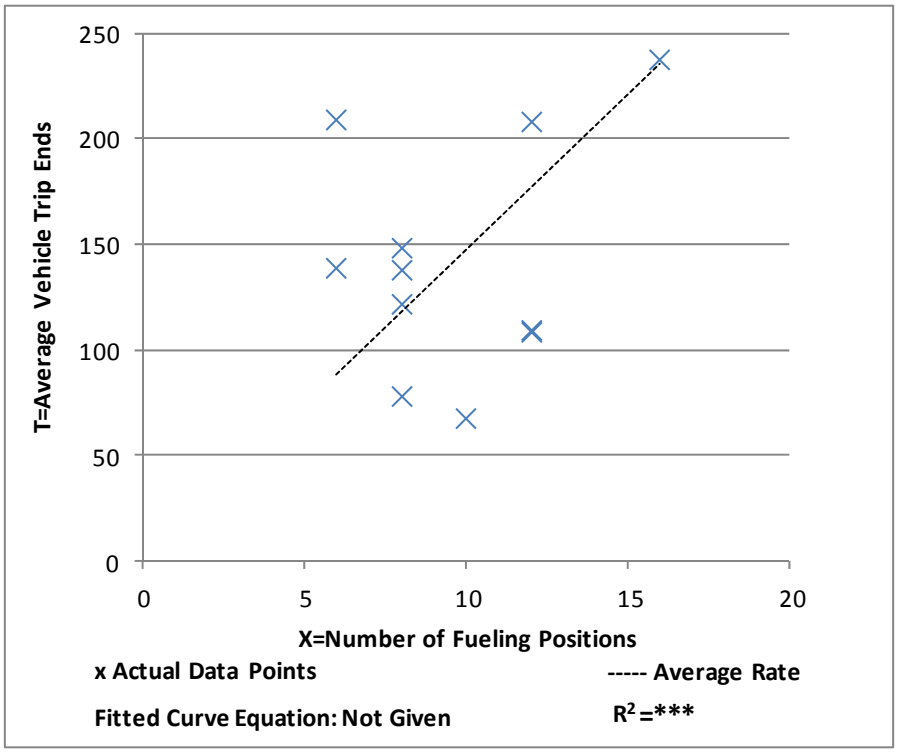
Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	11
Average Number of Fueling Positions:	10
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
14.75	6.70-34.83	7.03

Data Plot and Equation



Land Use: 946
Gasoline/Service Station with Convenience Market and Car Wash

Description

This land use includes gasoline/service stations with convenience markets and car washes where the primary business is the fueling of motor vehicles. They may also have ancillary facilities for servicing and repairing motor vehicles. These service stations are generally located at intersections or interchanges. Convenience market (Open 24 hours) (Land Use 851), convenience market (open 15-16 hours) (Land Use 852), convenience market with gasoline pumps (Land Use 853), gasoline/service station (Land Use 944) and gasoline/service station with convenience market (Land Use 945) are related uses.

Source Numbers

3, 4, 5

Gasoline/Service Station with Convenience Market and Car Wash
(946)

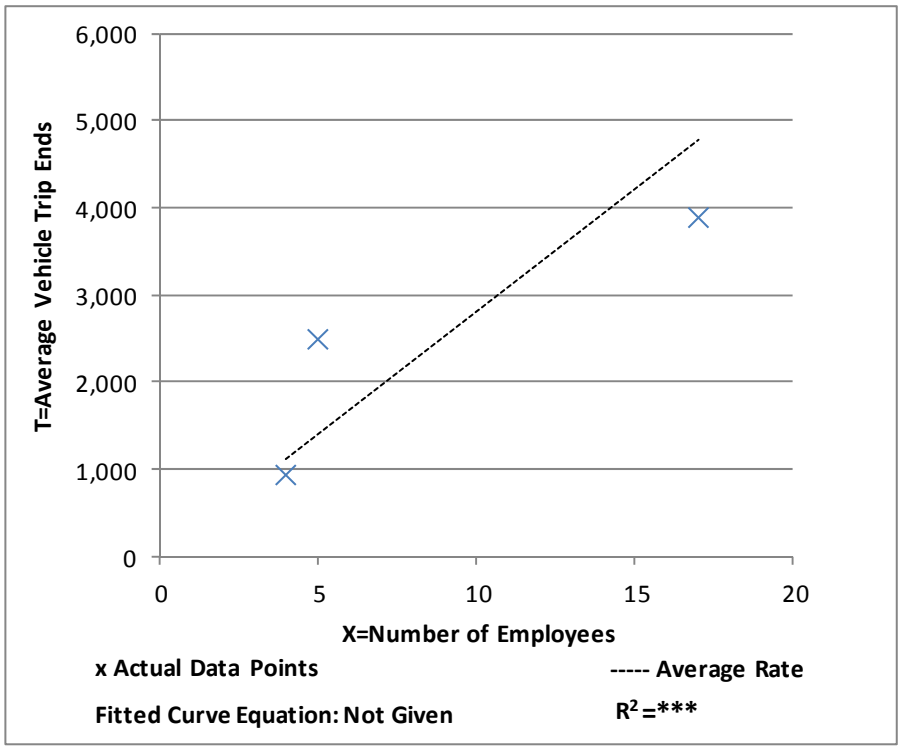
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday**

Number of Studies:	3
Average Number of Employees:	9
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
280.85	228.82-497.40	147.70

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



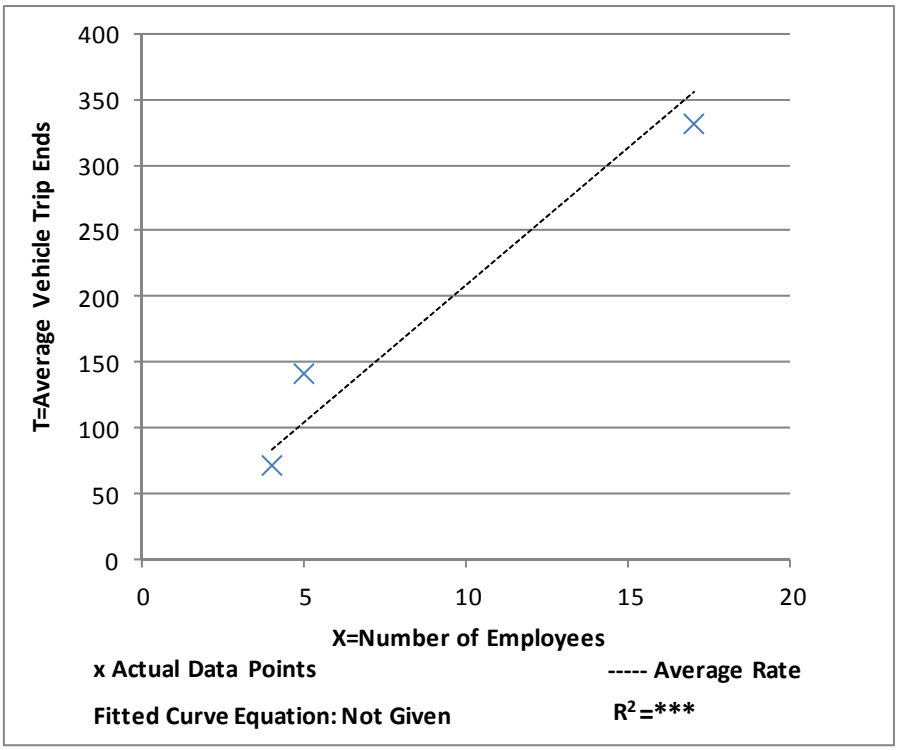
Gasoline/Service Station with Convenience Market and Car Wash
(946)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	3
Average Number of Employees:	9
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
20.92	17.75-28.40	5.17

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



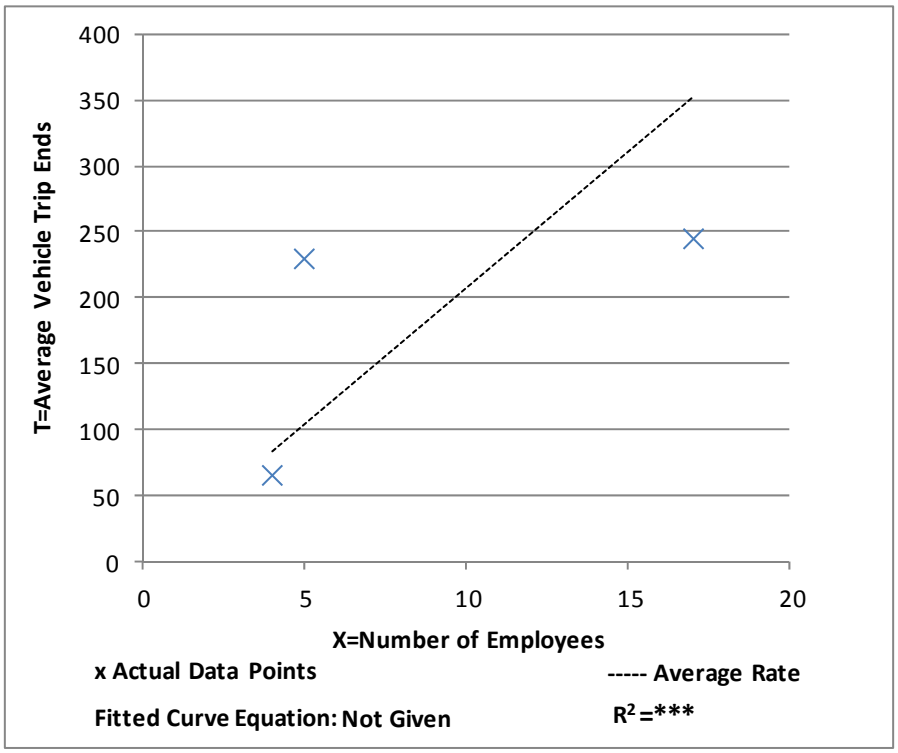
Gasoline/Service Station with Convenience Market and Car Wash
(946)

Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	3
Average Number of Employees:	9
Directional Distribution:	49% entering, 51% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
20.73	14.41-45.80	17.12

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Gasoline/Service Station with Convenience Market and Car Wash
(946)

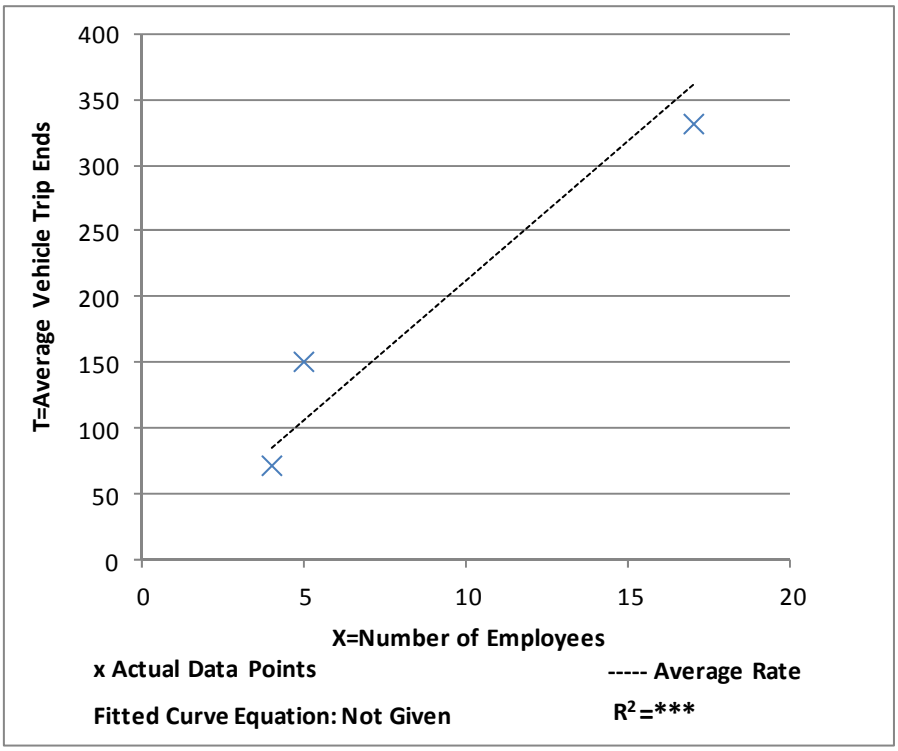
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	3
Average Number of Employees:	9
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
21.27	17.75-30.20	6.15

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Gasoline/Service Station with Convenience Market and Car Wash
(946)

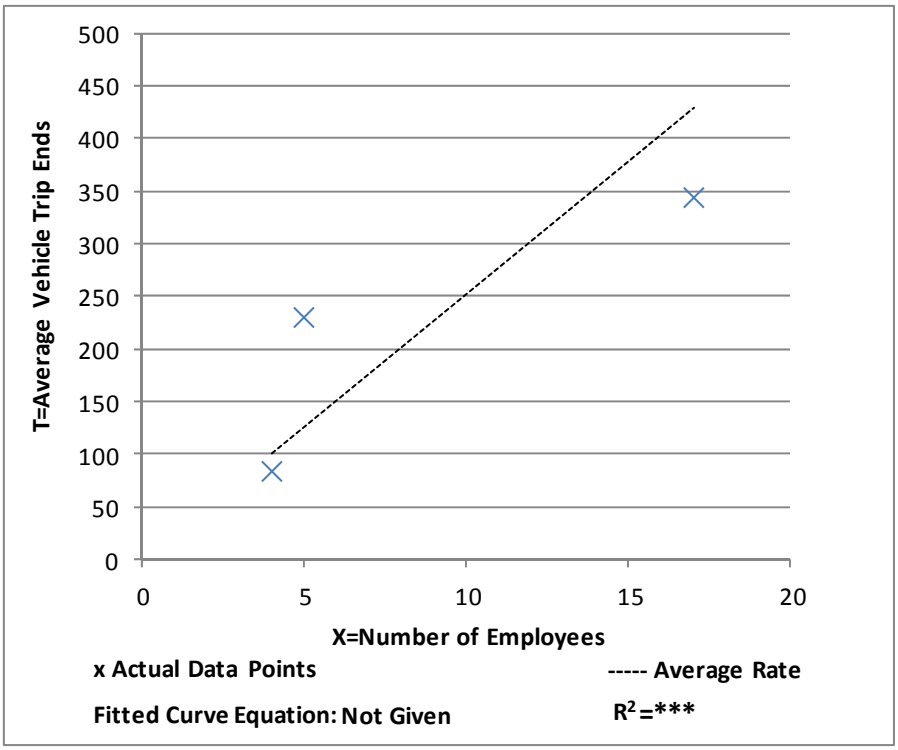
Average Vehicle Trip Ends vs:	**Employees**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	3
Average Number of Employees:	9
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Employees

Average Rate	Range of Rates	Standard Deviation
25.27	20.24-45.80	14.01

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Gasoline/Service Station with Convenience Market and Car Wash
(946)

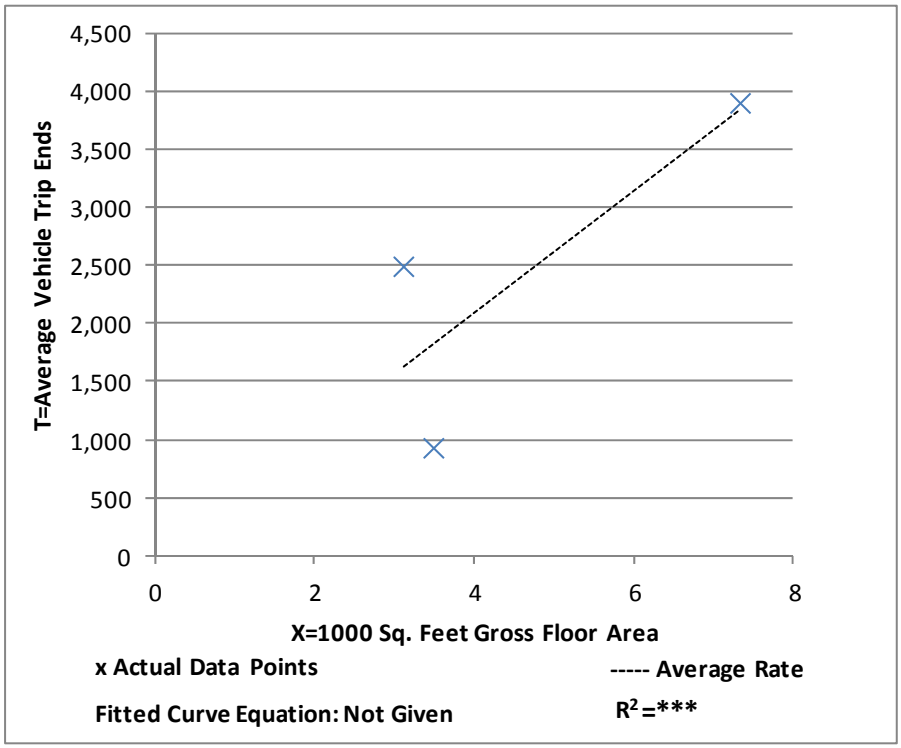
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday**

Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
522.92	263.68-797.12	234.89

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



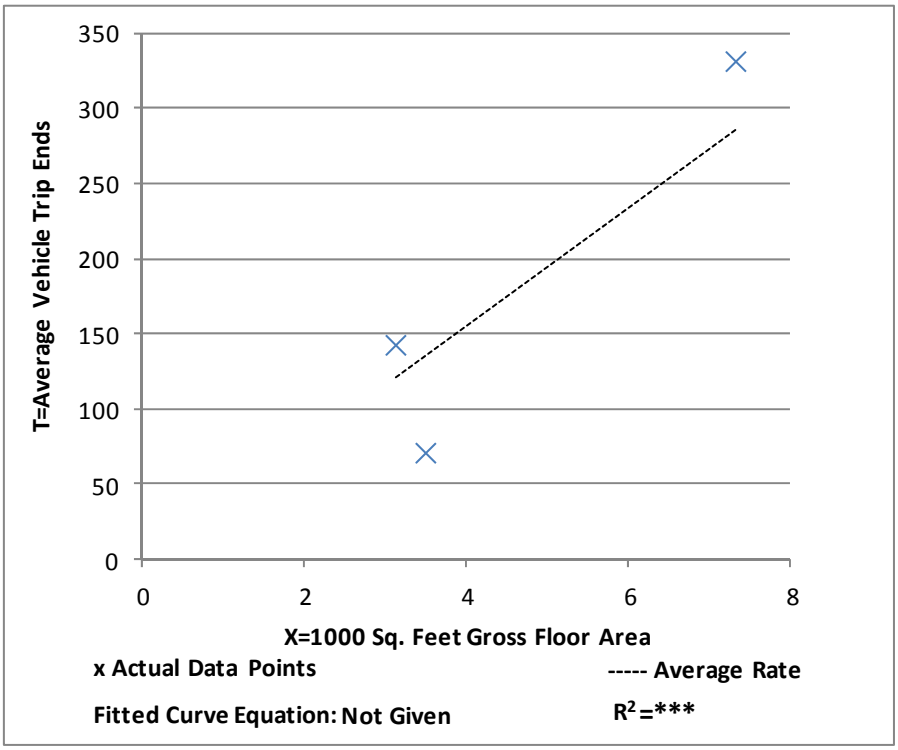
Gasoline/Service Station with Convenience Market and Car Wash
(946)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
38.96	20.24-45.51	13.87

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



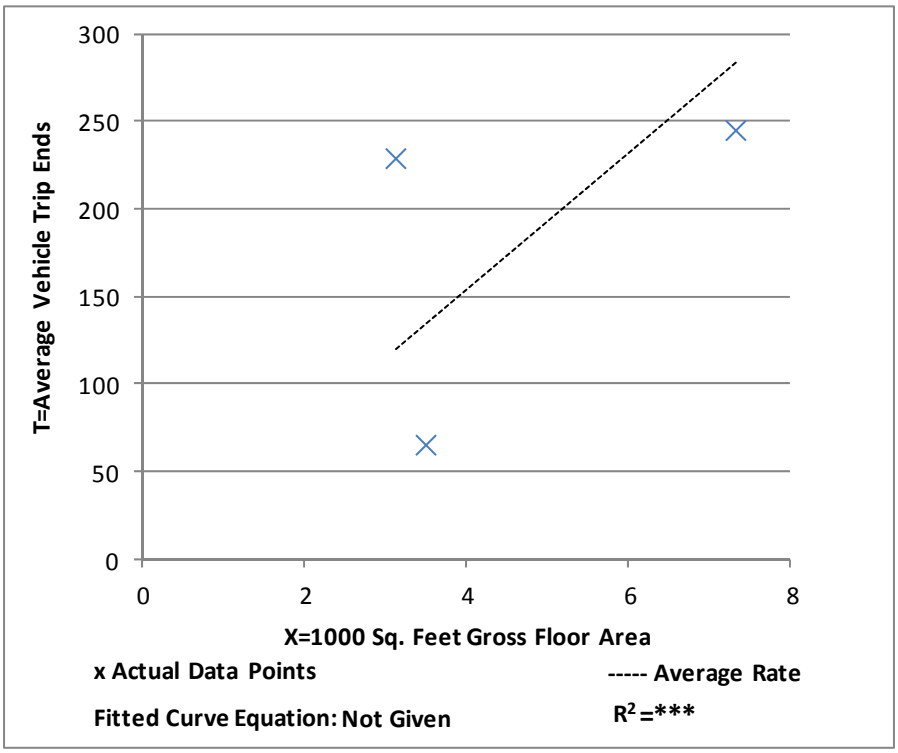
Gasoline/Service Station with Convenience Market and Car Wash
(946)

Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
38.60	18.53-73.40	25.13

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Gasoline/Service Station with Convenience Market and Car Wash
(946)

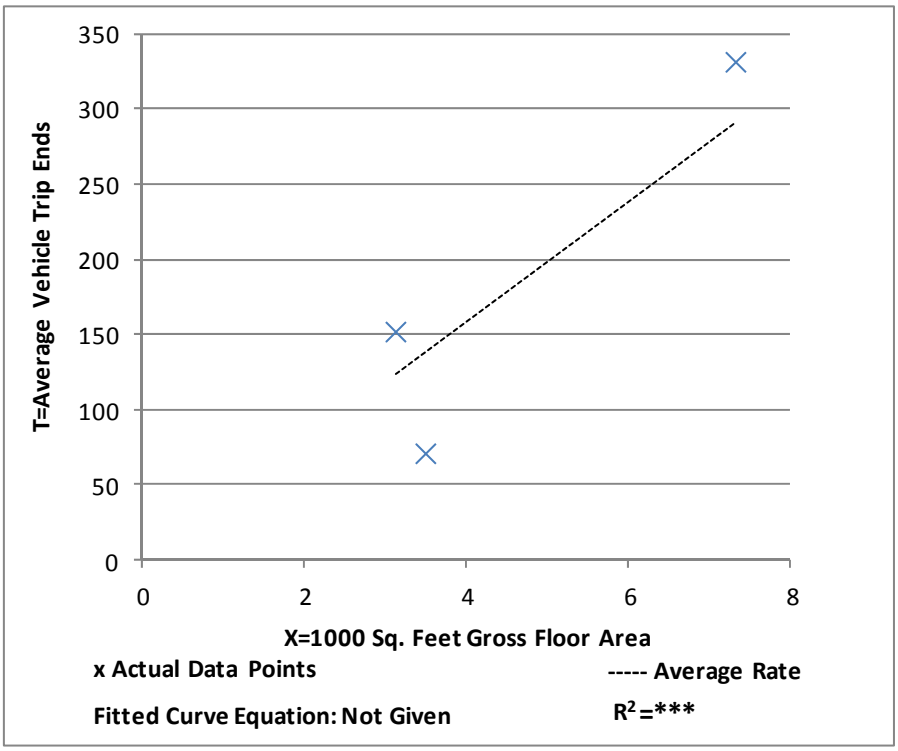
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
39.60	20.24-48.40	14.44

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Gasoline/Service Station with Convenience Market and Car Wash
(946)

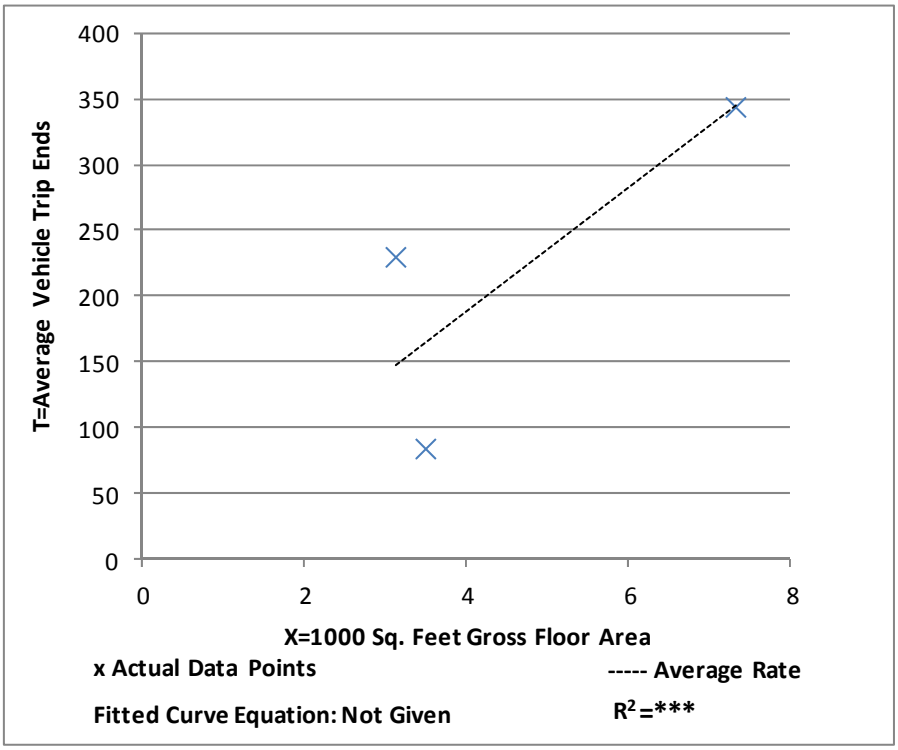
Average Vehicle Trip Ends vs:	**1000 Sq. Feet Gross Floor Area**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	3
Average Number of 1000 Sq. Feet Gross Floor Area:	5
Directional Distribution:	50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
47.05	23.95-73.40	21.76

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Gasoline/Service Station with Convenience Market and Car Wash
(946)

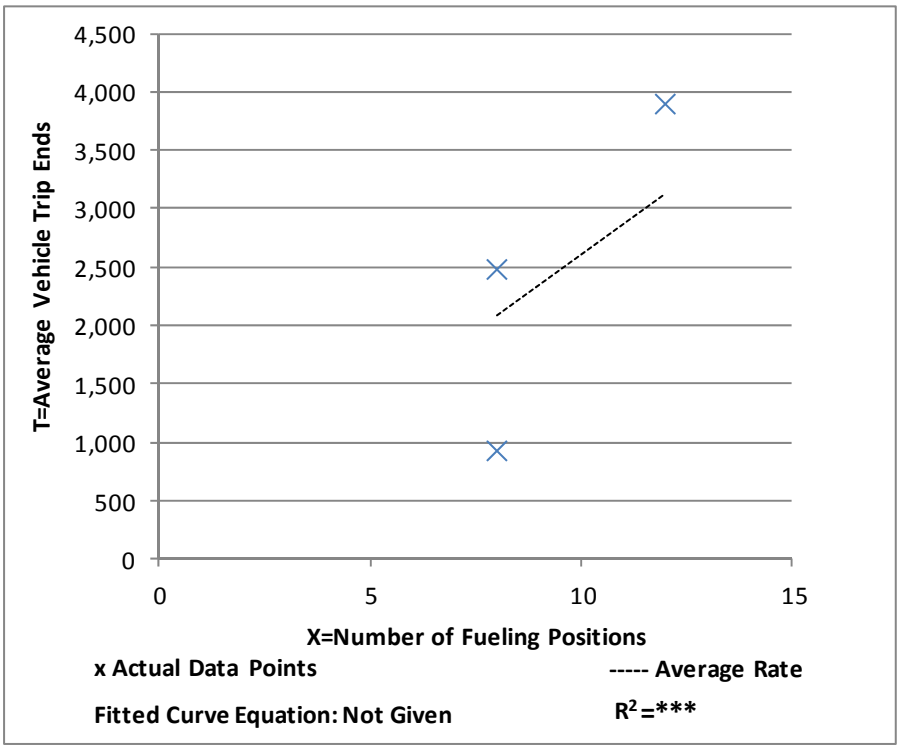
Average Vehicle Trip Ends vs: Fueling Positions
On a: Weekday

Number of Studies:	3
Average Number of Fueling Positions:	9
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
260.79	115.63-324.17	113.81

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



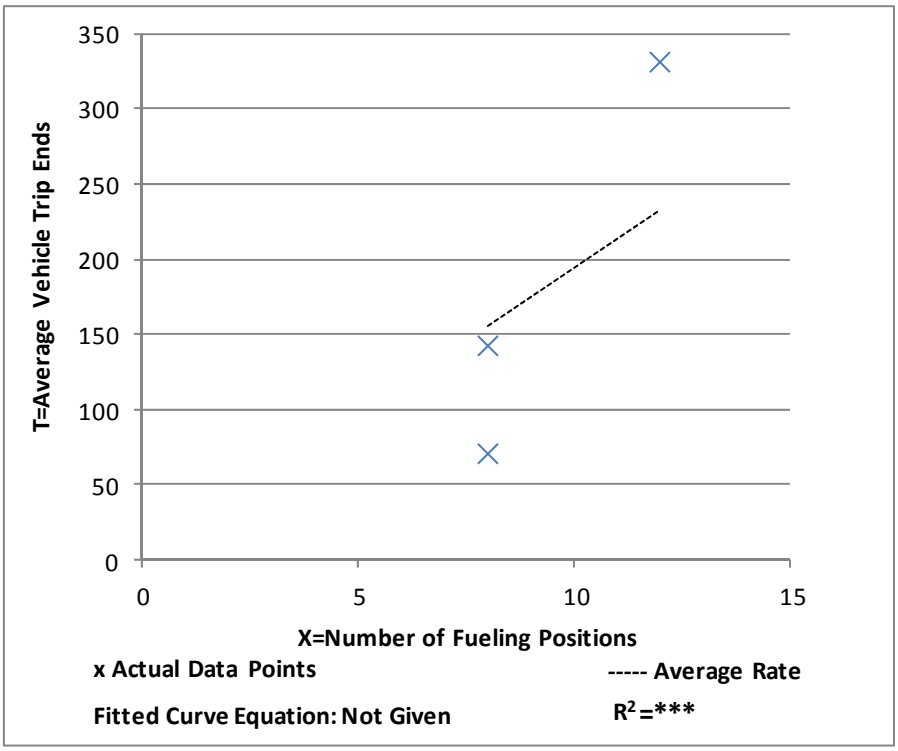
Gasoline/Service Station with Convenience Market and Car Wash
(946)

Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Number of Studies:	3
Average Number of Fueling Positions:	9
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
19.43	8.88-27.58	9.67

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



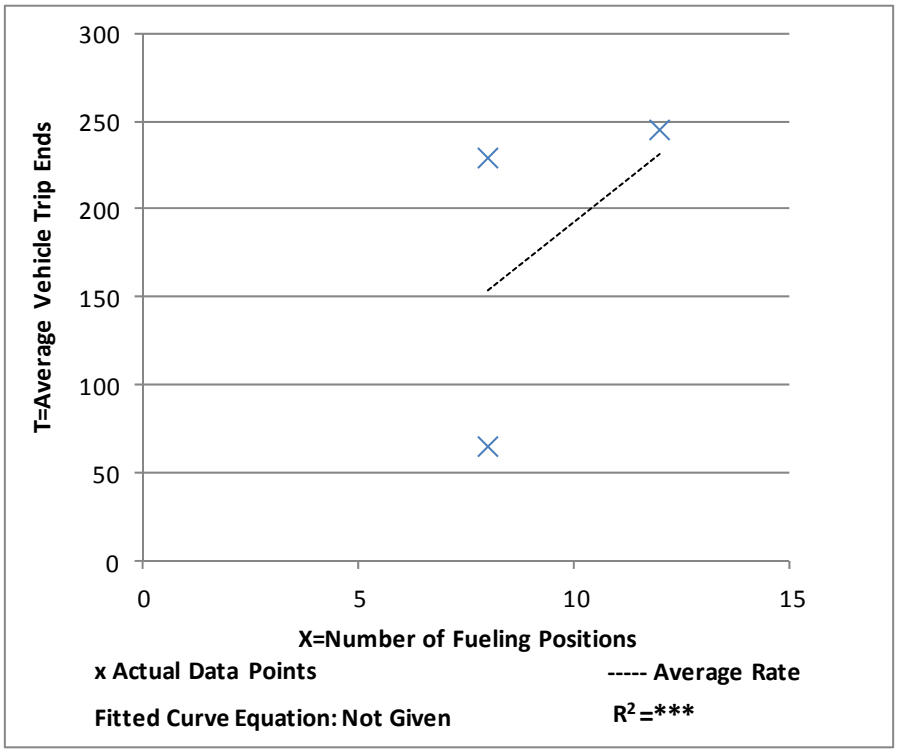
Gasoline/Service Station with Convenience Market and Car Wash
(946)

Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Number of Studies:	3
Average Number of Fueling Positions:	9
Directional Distribution:	51% entering, 49% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
19.25	8.13-28.63	9.67

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***



Gasoline/Service Station with Convenience Market and Car Wash
(946)

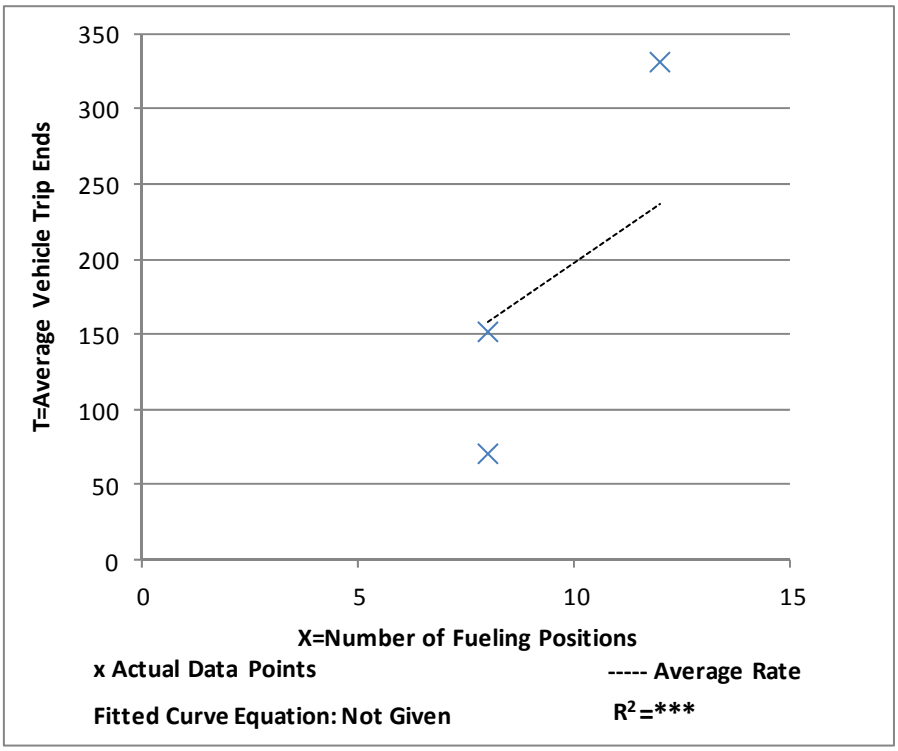
Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	A.M. Peak Hour of Generator

Number of Studies:	3
Average Number of Fueling Positions:	9
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
19.75	8.88-27.58	9.61

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***

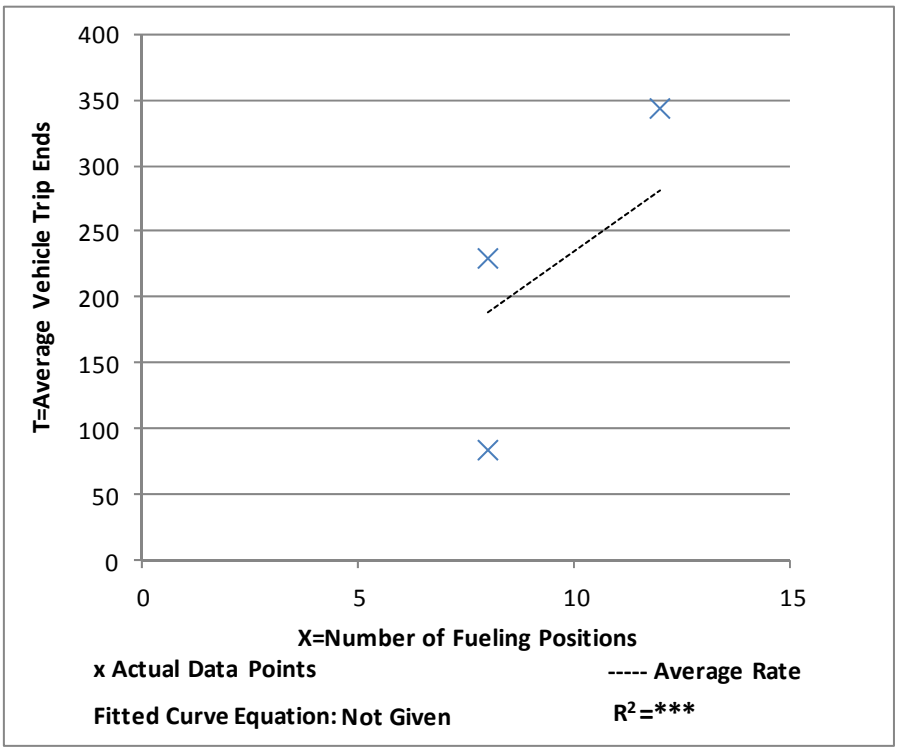


Gasoline/Service Station with Convenience Market and Car Wash
(946)

Average Vehicle Trip Ends vs:	**Fueling Positions**
On a:	**Weekday,**
	P.M. Peak Hour of Generator

Number of Studies:	3
Average Number of Fueling Positions:	9
Directional Distribution:	50% entering, 50% exiting

Trip Generation per Fueling Positions

Average Rate	Range of Rates	Standard Deviation
23.46	10.50-28.67	10.15

Data Plot and Equation ***Caution—Use Carefully—Small Sample Size***