AN ANALYSIS OF THE CHRISTMAS TREE
MARKET IN KANSAS

by

JOEL STANFORD BRUMMEL

B. S., Kansas State University, 1965

_____

A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Horticulture and Forestry

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1967

Approved by:

Major Professor

LD
2668
T4
1967
B855
c. 2

TABLE OF CONTENTS

FIGURES

Fig. 1   The number of Douglas-fir sold by retailers in Kansas City and Wichita according to size in 1966.

Fig. 2   The number of Scotch pine sold by retailers in Kansas City and Wichita according to size in 1966.

Fig. 3   The species of trees sold by the retailers in Kansas City and Wichita in 1966.

Fig. 4   The average price paid and received for Douglas-fir by retailers according to size in Wichita and Kansas City in 1966.

Fig. 5   The average price paid and received for Scotch pine by retailers according to size in Wichita and Kansas City in 1966.

Fig. 6   Classes of regular occupations of retailers selling Christmas trees in Wichita and Kansas City in 1966.

Fig. 7   Classes of regular occupation of retailers selling Christmas trees in Wichita and Kansas City in 1966.

Fig. 8   Sources from which Wichita and Kansas City retailers obtain their trees.

Fig. 9   Time of year that retailers in Wichita and Kansas City ordered their trees for the 1967 Christmas season.

Fig. 10   Date on which retailers received their first shipment of trees in Wichita and Kansas City for the 1966 Christmas season.

Fig. 11   The number of Douglas-fir sold according to height by retailers in large, medium, and small classes of cities from southeastern Kansas in 1966.

Fig. 12   The number of Scotch pine sold according to height by retailers in large, medium, and small classes of cities from southeastern Kansas in 1966.

Fig. 13   The species of trees sold by retailers in the large, medium, and small classes of cities from southeastern Kansas in 1966.

Fig. 14   The average price paid and received for Douglas-fir according to size by retailers in the large cities in southeastern Kansas in 1966.

Fig. 15   The average price paid and received for Douglas-fir according to size by retailers in medium cities in southeastern Kansas in 1966.

INTRODUCTION:

The sale of Christmas trees in Kansas is a multimillion dollar enterprise at the retail level. The actual marketing of Christmas trees is highly competitive and very seasonal. The Christmas season traditionally begins the day after Thanksgiving and ends the day after New Year Day, however the sale of Christmas trees ends Christmas eve. Within the Christmas tree industry there may be several members involved in the marketing chain. The degree of coordination between the various members of the marketing chain is variable and, where there is a lack of coordination, inefficiencies such as left over trees result in reduced profits. The lack of a uniform and accepted grading system creates many inefficiencies. Also the degree of knowledge and experience of individuals representing the various members of the marketing chain are variable and results in inefficiencies for those who are not familiar with the techniques, responsibilities and risks of their job.

The marketing chain consists of four basic members: growers, wholesalers, retailers, and consumers. The Kansas Christmas tree growers have small operations which are side-lines to their regular occupation. Due to conflicts with their regular occupation, lack of production and market information, or indifference toward proper management the growers may be without a market for their trees or receive a low price for them.

The wholesalers consist of a wide variety of people who purchase trees from growers and other wholesalers and distribute them to other wholesalers or retailers without adding to the quality

of the trees. Wholesalers consist of jobbers, distributors, and chain stores.

The retailers buy their trees from either growers or wholesalers and sell them to the final consumers. There are a wide variety of people who retail Christmas trees each year as well as a wide variety of reasons for selling trees. The most common reasons for selling trees are to raise money for organizations, for personal profit, or as a "must item" for regular customers. The different motives for selling trees influences the techniques the retailers use to sell their trees.

The final consumers of Christmas trees are the home dwellers and the commercial institutions who put a tree up at their place of business or incorporate them into Christmas displays. Most consumers cannot identify the various species of trees or know the basic differences that exist among these species. Many consumers compensate for this lack of knowledge by relying on traditional species of trees used in the home.

Within the Christmas tree industry there are vast differences in the degree of knowledge and experience. Growers within the state are relatively inexperienced, not only in production methods but especially in marketing experience. On the other hand wholesalers are relatively well versed in the techniques of marketing. The principal objective of this study is to determine the various techniques and procedures for each member of the marketing chain as well as determine their responsibilities and risks. The purpose of this objective is to acquaint each member of the marketing chain with the other members in an attempt to

improve coordination of activities and therefore reduce much of
the inefficiencies and disorganization that exists in the Christ-
mas tree industry.

MATERIALS AND METHODS:

In order to carry out the analysis of the Christmas tree
market the problem was broken down into four study areas: the
growers, the large city market, the southeastern Kansas market,
and the choose and cut market. The large city market study was
comprised of a retailers and wholesalers survey of the Wichita
and Kansas City, Kansas, area. In the Kansas City area the sub-
urbs of Roeland Park, Mission and Merriam, north of U.S. High-
way 50 and 56 were included because it was felt that due to pop-
ulation stratification, a survey of strictly Kansas City proper
would give biased results. The total area surveyed had a popu-
lation of 175,000 people reported by the 1965 census. The Kansas
city area is made up of a large industrial complex surrounded by
residences of low to middle class people. Toward the suburbs
the area changes to residences of the middle and upper class
people with several large apartment complexes. The Wichita area
had a total population of 275,000 people as reported by the 1965
census which includes several areas of class stratification. The
retailers' survey (see Appendix I) was conducted by personal inter-
views by two Kansas State graduates working in the Kansas City
area. The wholesalers' survey (see Appendix II) was conducted by
both personal interviews by the principal investigator and by
mailed surveys.

The southeastern Kansas market study was conducted in a
15 county study region including Osage, Franklin, Miami, Coffey,
Anderson, Linn, Woodson, Allen, Bourbon, Wilson, Neosho, Crawford,
Montgomery, Labette and Cherokee counties. These counties were
chosen because of a study conducted by the Kansas State Extension
Service in cooperation with the Kansas Area Development Program (7)
which found that counties often have many common characteristics
and therefore form different study regions. These common charac-
teristics include such things as: population density, age distri-
bution, education level, size of town, use of land, type of farm
production, employment in agriculture and manufacturing, income,
and level of living index. This southeastern Kansas study region
was chosen because it includes a large area in the state where
the climatic factors are more ideal for growing Christmas trees.
Within this study region all the towns were classified into three
categories according to population: 0-1,000, 1000-5,000 and
5,000 or greater. A random sample of 37.5 percent of the total
number of towns was taken from each category. This gave a survey
sample of three cities: Ottawa, Chanute and Parsons, Kansas, in
the large population class, which had an average population of
11,800. Eight cities: Paola, Burlington, Humboldt, Erie, Fredonia,
Neodesha, Oswego and Pleasanton, in the medium population class,
which had an average population of 2,780; and 30 cities: Weir,
Scammon, Arcadia, Mulberry, Walnut, Hepler, Edna, Liberty, Tyro,
Elk City, Altoona, Benedict, Redfield, Uniontown, Moran, La Harp,
Neosho Falls, LeRoy, Gridley, Westphalia, Prescott, LaCygne, Parker,

Greely, Waverly, Williamsburg, Fontana, Carbondale, Colony, Harris,
in the small population class, which had an average population of
390.

    Within each town sampled a survey was taken of the homeowners
(see Appendix III), retailers and wholesalers. In order to de-
termine the homeowners to be interviewed, a random sample of the
various precincts within each city was taken within each chosen
precinct, a random sample was made to select a given street in
that precinct. From that street a predetermined number of house-
holds were interviewed starting at one end of the street and inter-
viewing every other house. In the smaller towns this procedure
was altered to interviewing every-other house on randomly selected
streets. Three hundred homeowners were sampled in each class of
cities. An average of one hundred homeowner surveys per city in
the large city class, 37.5 surveys per city in the medium city
class, and 10 surveys per city in the small city class. In actual
practice the number of surveys taken in each city varied from the
average number of surveys in respect to the variation of the
specific city's population to the average population of the class.
In each town a 100 percent survey of the retail outlets was taken
as well as a 100 percent survey of the wholesalers. The retail-
ers', wholesalers', and homeowners' survey was conducted by a
personal interview of the individuals by a resident of Garnett,
Kansas, and the principal investigator.

The growers study was conducted by mailing a survey (see Appendix IV) to the 47 growers who were members of the Kansas Christmas Tree Growers' Association before December of 1966. After December another survey (see Appendix V) was sent to the same growers. These 47 growers that belong to the association represent approximately 50 percent of the growers within the State.

The choose and cut market study was carried out by personal interviews (see Appendix VI) of the growers who marketed their trees by the choose and cut method.

The data that was gathered from these surveys were compiled for each question and analyzed by a contingency chi-square test statistic (5).

Contingency chi-square =

summation of $\dfrac{(\text{observed value} - \text{expected value})^2}{\text{expected value}}$

If a contingency chi-square is significant, it is concluded that different binomial populations were sampled without any restrictions on the parameter p. The actual computations of the data was done by an IBM 1620 computer.

REVIEW OF THE LITERATURE:

There has been much written on the subject of Christmas trees by various colleges and universities and in the "American Christmas Tree Growers' Journal." Much of the marketing information has been published from data collected in the large cities in the north central United States, particularly in the Lake States area. There are other publications which represent market situations in the east, south, mid-west, west and north-west regions of the

United States. Practically every state has published some infor-
mation on the growing and marketing of Christmas trees even though
much of it may be quite basic and general.

Mr. E. L. Klein[6]reported in his 1961 master's thesis that
more than half of the growers in his study received less than 10
percent of their total income from Christmas trees and that the
main occupation of the growers represented a wide diversification
of interest. This tendency for the growers to treat the raising
of Christmas trees as a hobby or side-line seems to exist through-
out the United States except for the Lake States. There a greater
proportion of the growers treat it as a full time business. How-
ever with a greater proportion of the growers producing Christmas
trees as a side-line, there is a tendency for them to be ineffi-
cient in their management.

In a study conducted by H. B. Sorensen and W. A. Smith[14]on
the wholesale market for Christmas trees in Texas, they reported
that there are several types of wholesalers. They include: ser-
vice wholesalers, distributors, chain stores, and cooperatives.
Out of this group service wholesalers represented the largest
number. Purchases were directly from the growers 43% of the time
with the rest of the purchases coming from service wholesalers,
sales agents for shippers, brokers, and distributors. They re-
ported various methods of figuring the wholesalers' markup; how-
ever the individual tree markup ranged from 20% to 25%.

Among retailers there is even greater variety than among
wholesalers. Mitchell and Quigley[9]in their publication, "Re-
tailing of Christmas Trees in Three Selected Ohio Markets,"

classified the type of retailers as; independent grocers, chain grocers, service stations, empty lots, and others. Roy C. Brundage[2] in his publication, "Consumer Preference for Christmas Trees and Natural Decorative Materials" broke the different type of retailers down further and included fruit and vegetable markets, non-food stores, Christmas tree growers' lots and nurseries. Still other publications include other break downs on the type of retail lots that exist. This variation is probably due to the traditional method of purchasing Christmas trees that exist in different locations throughout the United States. John K. Trocke[16] in his publication, "Marketing Christmas Trees," reports that as the Christmas tree industry develops in an area, the variation in retailers decreases. As regular retailers become established, the type of retailers also becomes established for that community. Also associated with this stabilization is an increase in the size of the retail operation.

Trocke[16] reported that roughly 43% of the retailers purchased their tree directly from the growers whereas wholesalers, brokers, salesmen, and jobbers sold the remaining 57% of the trees. He stated that 45% of the retailers select their source of supply through personal contact over other methods such as recommendations by others, plantation visits, direct mail, growers catalogs, and magazine or newspaper ads. Once a retailer has established a good source of trees he usually continues to buy from the same source. Lee Paulsell[11] and Milford Nichols, in their bulletin, "Marketing of Christmas Trees," reported that retailers who deal through wholesalers may order their trees as early as January or February.

A salesman may call and settle the account for the Christmas season just past and take orders for the next year.

Mitchell[9] stated that the location of a retailers' lot was fixed by his occupation in many instances. However "private individuals" have an opportunity to vary their lot location. This gives them the opportunity to locate their lot in prime locations and improve their sales. He also reported that among the various types of retail lots there was some variation in the number of days which they were open. With the exception of grocery stores, practically all retailers were open nights and on Sunday.

Paulsell[11] reported that there was a great variation in the markup received by retailers. Retailers who treat Christmas trees as a "must item" for their customers take a very small markup. The range was from 20% to over 100%. Sorensen[14] stated that for exceptionally well-shaped trees this markup may range as high as 200% to 400%.

Reports as to the effectiveness of advertisement seem to vary. Brundage[2] reported that most consumers were not aware of the influence of advertisement with respect to the purchase of their tree. However B. F. Alvoid[1] in his bulletin, "Marketing Christmas Trees in Alabama," stated that the use of displays were very effective forms of advertisement along with newspaper ads. Other forms of advertisement used were radio, television, posters, bag stuffers, and pre-season coupons.

Much has been written about the consumer psychology of who, what, when, where, and why consumers buy the tree they do. A review of the literature from different areas of the United States

shows that the basic concepts are usually the same, however there are usually some variations as to the degree of their application. There are often differences between consumer preference and consumer acceptance. The difference being that what a consumer actually prefers is not always what he buys. Mitchell and Quigley[10] in their technical paper, "How Ohioans Choose Their Christmas Tree," verified that most consumers prefer a premium tree; however, when prices are considered many would purchase a lower grade tree if it were less expensive. This also applies to the price difference between different species, in that the consumer prefers a more expensive species but will often buy a less expensive species.

Paul Roth,[12] reporting on consumer preferences from unpublished data determined that there was a significant difference at the 5% level between three Kansas towns and the species of tree the families preferred. This data was collected in 1959 in Garden City, Wichita, and Manhattan. The species of trees from which the families selected from were balsam fir, Douglas-fir and Scotch pine, which were located in a permanent display. None of the trees used in the display were for sale and did not necessarily represent species that were traditionally sold in the town. In Garden City balsam fir was definitely the preferred species, while in Wichita Douglas-fir was the preferred species closely followed by Scotch pine. In Manhattan, Scotch pine was definitely the preferred species. In his article, "The Christmas Tree Industry in Retrospect and Prospect," A. M. Sowder[15] reported that on the national level a trend in Christmas tree preference has shifted from Douglas-fir and balsam fir in 1948 to

Scotch pine in 1962. Lentz[8] in his article, "the Business of
Growing Christmas Trees--Trends and Marketing," predicted that
by 1973 consumers will still prefer Scotch pine; however, in the
eastern United States there was a definite trend toward white pine,
Austrian pine and Colorado blue spruce which will cut into the
Scotch pine market.

In regards to the grade preferred, Roth[12] found that there
was an effect due to the city sampled and the species of tree pre-
ferred. In all cases the U. S. Premium grade was preferred over
the U. S. #1 and the U. S. #2 was the least preferred. However
the percentage of people that preferred the U. S. #1 grade varied
considerably from town to town and from species to species.
Paulsell[11] reported that most consumers recognized the quality
of a premium tree or lack of quality in a cull tree; however,
many people are not informed or particular enough to recognize
minor differences between the top two U.S.D.A. grades.

Roth[12] found that among the three cities sampled the people
had a definite color preference. However the exact color preferred
was affected by both the town in which the sample was taken and
the species of tree preferred. In both Wichita and Manhattan the
natural green color was preferred whereas in Garden City the dark
green was definitely the preferred color. In all cities the
glossy green and the light green were least preferred. Paulsell[11]
reported that in Missouri 88% of the people liked a dark green
tree over a light green tree and that 97% preferred a natural
tree to a painted tree. Considering the intermediate case where
trees are sprayed with a green colorant, Trocke[16] found that

consumer preference varied from 68% to 75% in favor of the
sprayed trees in the two cities he sampled.

Roth[12] reported that the most preferred tree height was
5-6 foot height; however this varied significantly at the 5%
level between cities. In Manhattan the greatest percentage of
people preferred a height of over 6 feet whereas in Garden City
the greatest percentage of people preferred a height of less than
5 feet. The species of tree preferred had little or no effect
on the height of tree preferred.

In regards to the preference of form, Roth[12] compared
forms of the slender Douglas-fir, the flaring base of the eastern
redcedar, the medium taper of the Scotch pine, and the rounded
top of the arborvitae. Considering the three cities together
the narrow taper of the Douglas-fir was most popular however
both the cities in which the samples were taken and the species
of trees preferred had an effect on the preference of form. The
species of tree preferred had the greatest effect on the pre-
ferred form. Those who preferred the Douglas-fir also preferred
the narrow taper. The same occured with Scotch pine. Those
who preferred this species also preferred the more medium taper.

Reporting on the consumers' buying patterns, Paulsell[11]
stated that peak dates when people buy their tree will vary some-
what from one year to another, depending on when the weekends
occur prior to Christmas. Brundage[2] reported the heaviest buy-
ing period was from December 10-19. In most cases buyers do not
shop around and 70% of the consumers purchased their tree at
the first stop. In urban areas 33% of the families bought their

tree at the same place as the previous year. Paulsell[11] stated this figure to be as high as 45%. He also stated that in St. Louis 65% of the consumers bought trees from dealers not on their normal marketing routes. Brundage[2] reported that 63% of the consumers in his sample located their tree in front of a window while 34% located it in a corner of a room. The location of a tree can have an effect on the quality of a tree since the bad side of a tree can be placed in the corner.

While the home dweller consumes the largest percentage of Christmas trees, the institutional portion of the market is very important. The institutional market consists of schools, public offices, stores, offices organizations, and other places of business. In unpublished data gathered in 1959, Paul Roth[13] reported on the institutional market in Garden City, Kingman and Manhattan. In 1964 this same study was repeated in Manhattan. Considering the three cities, there was a significant variation at the 5% level on the percentage of institutions that displayed trees. Manhattan had the highest percentage with 33.1% of the institutions displaying a tree; while Kingman was the lowest with only 16.8%. Comparing the results from the city of Manhattan alone in 1959 and 1964, there was no reason to suspect that the percentage of institutions putting up a tree changed.

In all three cities the greatest percentage of trees are bought in comparison to being received as a gift or cut down in the country. Again there was an effect due to the city sampled on how the tree was obtained. Roth's data showed a significant variation at the 5% level between the cities and the date on

which the institutions buy their trees. In Manhattan only 16.1%
of the trees are bought after December 16 whereas in Kingman 43.9%
were bought after December 16. Between the various classes of in-
stitutions there was considerable variation in the date which
they put their tree up. Also in Manhattan there was significant
variation at the 5% level between 1959 and 1964 and the date in
which the tree was put up. In 1959, 16.1% of the trees were up
after December 16 whereas in 1964 only 8.7% of the trees were
put up after December 16, thus pointing out a trend toward pur-
chasing of trees earlier.

The greatest percentage of trees bought by institutions
were the unpainted, natural type tree. Again the cities sampled
had an effect on the type of tree bought. In Kingman 92.2% of
the trees bought were of the unpainted, natural type with the
remaining being either painted, flocked, artificial, balled-and-
burlapped or Halvorsen trees. Garden City had the lowest per-
centage of unpainted, natural trees with 68.7%. In Manhattan
there was no reason to suspect that there was a change in the
trend to use unpainted, natural trees over the five year period.

Christmas trees that are used in the home are most generally
in the four to six foot size class, however among the cities
sampled there was significant variation at the 5% level in rela-
tion to the size of the tree used by the institutions. Both
Kingman and Manhattan used predominately four to six foot trees
whereas Garden City had its highest percentage of trees in the
three foot or less size and its next highest percentage of trees
in the seven foot or greater size.

The cities that were sampled had a significant effect at the 5% level on the species of tree bought. In all cities Douglas-fir was bought the greatest percent of the time but this varied from 83.0% in Kingman to 65.1% in Garden City. Other species of trees that were bought included: Scotch pine, Austrian pine, white pine, ponderosa pine, red pine, balsam fir, eastern redcedar, and halvorsen spruce. In Manhattan there was a significant variation in the species of trees being bought over the 1959-1964 period. Douglas-fir decreased from 66.0% in 1959 to 60.6% in 1964 while the pines increased from 10.9% in 1959 to 20.7% in 1964 thus reflecting the national trend toward pines.

The prices paid for trees in Manhattan remained stable over the five year period from 1959-1964. Also there was no reason to suspect that the cities sampled had any effect on the price paid for trees. Fifty-seven percent of the trees bought by the institutions cost less than $2.50 while only 7.3% of the trees cost more than $6.00. The remaining 37.7% of the trees cost between $2.50 and $6.00.

SURVEY RESULTS:

Large City Retailers

When comparing Wichita to Kansas City there was a definite effect on the species and size of the tree purchased by the city in which the sample was taken. This was evident by testing the three hypotheses:

Ho: (The cities sampled had no effect on the size
      of Douglas-fir sold by the retailers.)

Ho: (The cities sampled had no effect on the size
      of Scotch pine sold by the retailers.)

Ho: (The cities sampled had no effect on the species
      of trees sold by the retailers.)

All three hypotheses were rejected as shown by the results of
the following respective contingency chi-square test statistics:

calculated X_3^2 (228.663) is greater than tabular X_3^2 (5.991)

calculated X_3^2 (453.890) is greater than tabular X_3^2 (5.991)

calculated X_3^2 (8,355.880) is greater than tabular X_3^2 (5.991)

Figures 1-3 shows the variation that existed between the two
cities and the size and species of trees that were sold by the
retailers.

Fig. 1 The number of Douglas-fir sold by retailers in
         Kansas City and Wichita according to size in 1966.

size	Wichita		Kansas City	
	number	% of total	number	% of total
2-3 feet	468	4.4	251	9.7
3-4 feet	2,210	20.8	759	29.3
5-6 feet	5,602	52.8	1,130	43.6
7-8 feet	2,331	22.0	449	17.4
Total	10,611	100.0	2,589	100.0

Fig. 2   The number of Scotch pine sold by retailers in
         Kansas City and Wichita according to size in 1966.

size	Wichita		Kansas City	
	number	% of total	number	% of total
3-4 feet	145	2.9	627	7.8
4-5 feet	1,110	22.3	2,848	35.4
5-6 feet	2,742	55.1	3,467	43.0
6-7 feet	983	19.7	1,123	13.8
Total	4,980	100.0	8,065	100.0

Fig. 3   The species of trees sold by the retailers in
         Kansas City and Wichita in 1966

species	Wichita		Kansas City	
	number	% of total	number	% of total
Douglas-fir	10,695	60.5	2,588	19.9
Scotch pine	5,130	29.0	8,065	62.0
White pine	0	0.0	2,085	16.1
Other	1,850	10.5	265	2.0
Total	17,675	100.0	13,003	100.0

There was insufficient price data gathered from the Kansas
City area to make an effective statistical comparison between the
prices that retailers paid and received for their trees in Wichita
and Kansas City. However upon general observation they seemed
comparable. Figure 4-5 shows the average prices for the total
of both cities.

Fig. 4 The average prices paid and received for Douglas-fir
according to size in Wichita and Kansas City in
1966

size	Price Paid average price	range*	Price Received average price	range*	Average** cost Markup
2-3 feet	$0.61	$0.10	$1.13	$0.31	85.0%
3-4 feet	1.03	0.75	2.15	1.51	109.7%
5-6 feet	1.52	1.02	3.14	2.36	106.5%
7-8 feet	2.30	2.30	4.27	4.91	85.7%

* Range equals the lowest price subtracted from the highest price.
** Average cost markup equals the difference between the price
received and the price paid divided by the price paid.

Fig. 5 The average price paid and received for Scotch pine
by retailers according to size in Wichita and Kansas
City in 1966.

size	Price Paid average price	range	Price Received average price	range	Average cost Mark-up
3-4 feet	$ *	$ *	$3.33	$3.00	*
4-5 feet	2.15	0.30	4.16	3.00	93.5%
5-6 feet	2.53	1.25	5.54	3.51	119.2%
6-7 feet	2.65	1.25	6.78	5.01	154.0%

* insufficient data

    Within Kansas City and Wichita there are a variety of classes

of retailers who are in business. Figure 1 shows the various

classes of retailers and the number that were sampled in each class

from each city.

Fig. 6 Classes of retailers selling Christmas trees
in Wichita and Kansas City in 1966.

class of retailer	Wichita		Kansas City	
	number	% of total	number	% of total
national & regional grocery store chains	7	33.4	2	6.9
local grocery store chain	0	00.0	4	13.8
independent grocery store	1	4.8	13	44.9
private individual	4	19.0	4	13.8
service and youth organizations	4	19.0	3	10.3
others*	5	23.8	3	10.3
Total	21	100.0	29	100.0

* Churches, nurseries, department stores, and gas stations.

Testing the hypothesis that the city sampled has little or no
effect on the class of retailers in each city with the contingency
chi-square test statistic, the hypothesis was rejected:

calculated X_3^2 (15.736) is greater than tabular X_3^2 (7.815)

Therefore conclude that the individual city does have an effect
on the class of retailers within that city.

The location of the retail lots were principally at the
place of business of the retailer. Totaling both cities, 58% were
located at their place of business, 6% were located in shopping
centers, 28% were located in vacant lots, and 6% were located at
churches. There was no reason to suspect that the cities sampled
had an effect on the location of the retail lot at the 5% level
of significance.

Retailers reported several reasons for selling Christmas
trees. When the results from Wichita and Kansas City were
totaled, 40% of the retailers stated they were selling trees for
a profit, 22% felt that selling trees was a "must item" for their

regular customers, 20% were raising money for an organization, and 18% of the retailers sold their trees to make a profit and as a "must item" for their customers.

In Wichita the retailers have been selling Christmas trees for an average of 7.95 years whereas in Kansas City the retailers have been selling trees for an average of 14.31 years.

Testing the hypothesis that the cities had no effect on the class of regular occupation of the retailers selling Christmas trees with the contingency chi-square test statistic resulted in rejection of the hypothesis.

calculated X_2^2 (13.210) is greater than tabular X_2^2 (5.991) Figure 7 shows the results of the variation of the regular occupations between cities.

Fig. 7   Classes of regular occupations of retailers selling Christmas trees in Wichita and Kansas City in 1966

class of occupation	Wichita		Kansas City	
	number	% of total	number	% of total
grocery store manager	8	38.1	20	69.0
white collar worker	11	52.4	2	6.9
blue collar worker	2	9.5	7	24.1
Total	21	100.0	29	100.0

Most retailers do not feel that selling Christmas trees conflicts with their regular occupation. The hypothesis that the cities sampled had no affect on the opinion that the selling trees conflicts with the retailers regular occupation was rejected.

calculated X_1^2 (4.256) is greater then tabular X_1^2 (3.841) In Wichita 28.6% of the retailers felt that selling Christmas trees conflicted with their regular occupation whereas in Kansas

City only 6.9% felt there was a conflict.

Figure 8 shows the different sources from which retailers
in Wichita and Kansas City obtained their trees. There was no
statistical difference shown between the sources from which
Wichita and Kansas City retailers obtained their trees.

Fig. 8 Sources from which Wichita and Kansas City retailers
obtained their trees.

source	number of retailers	% of total
local wholesaler	15	27.3
out-of-state wholesalers	2	3.6
local growers	3	5.5
out-of-state growers	17	30.9
grew their own	1	1.8
chain store	17	30.9
Total	55	100.0

The time of the year that retailers ordered their trees for
the next season varies throughout the whole year (Fig. 9). Using
the contingency chi-square test statistic, it was shown that the
city sampled had an effect on the time of year the trees were
ordered.

calculated X_2^2 (16.102) is greater than tabular X_2^2 (5.991)

Fig. 9 Time of year that retailers in Wichita and Kansas
City ordered their trees for the 1967 Christmas season

time period	Wichita number	Wichita % of total	Kansas City number	Kansas City % of total
Jan.-Apr.	10	47.7	2	6.9
May-Aug.	7	33.3	6	20.7
Sept.-Dec.	4	19.0	21	72.4
Total	21	100.0	29	100.0

When ordering trees, most retailers in both Wichita and Kansas
City order by height of tree alone. In instances where the retailer

specificly ordered and paid for a higher quality grade of tree,
the actual standard for grading the trees is left up to the
supplier of the trees. In more instances it is the suppliers'
reputation as a grader which establishes the different levels of
quality rather than an established grade of trees.

Totaling the data from both Wichita and Kansas City, 46%
of the retailers were not aware of the standard U.S.D.A. grading
system, however 66% of the retailers reported that they would
prefer their trees graded. The two cities had little or no effect
on the answers they gave to the question concerning grading.

The date in which the retailers got their first shipment of
trees varied considerably (Fig. 10). Testing the hypothesis
that the cities sampled had no effect on the date the retailers
received their first shipment of trees resulted in the hypothesis
being rejected at the 5% level of signifinance.

calculated X_2^2 (13.250) is greater than tabulated X_2^2 (5.991)

Fig. 10 Date on which retailers received their first shipment
of trees in Wichita and Kansas City for the 1966 Christmas
season

date	Wichita		Kansas City	
	number	% of total	number	% of total
before Dec. 1	15	71.5	6	20.6
Dec. 1 - 4	6	28.5	21	72.5
after Dec. 4	0	00.0	2	6.9
Total	21	100.0	29	100.0

Forty percent of the total number of retailers in Wichita and
Kansas City received more than one shipment of trees with the re-
maining 60% of the retailers only receiving one shipment. When
asked what type of shipping arrangement they preferred, 42% of the

total retailers preferred more than one shipment while the re-
maining 58% preferred to receive only one shipment.

Fifty-four percent of the retailers from both Wichita and
Kansas City were aware that Kansas is growing Christmas trees,
while 46% of the retailers were not aware of Kansas grown trees.
However only 10% of these retailers have had the opportunity to
compare Kansas grown trees with the trees they are presently
selling.

Considering the time that the retailers stayed open, 90%
of the total number of retailers remained open seven days a week
while only 10% remained open only six days a week. There was no
reason to suspect that the cities sampled had any effect on the
number of days the retailers remained open. There was a
significant effect at the 5% level with the cities sampled on
the time that they opened for business in the morning. In
Wichita 19% of the retailers opened their lots before 8:00 a.m.
as compared to 65.5% in Kansas City. Eighty one percent of the
Wichita retailers opened after 8:00 a.m. as compared to 34.5% in
Kansas City. Considering all the retailers as a total, 18%
closed before 8:00 p.m. and the remaining 82% closed after 8:00 p.m.
Eight percent of the total number of retailers worked less than
10 hours while 52% worked between 10 and 12 hours and 40% worked
more than 12 hours. There was no reason to suspect that the cities
sampled affected the closing time or the number of hours that the
retailers worked.

Fifty percent of the total number of retailers advertised
their trees. The different types of advertisement that were used

included radio, newspaper ads, television, church bulletins, and displays in front of the lot. The two cities sampled had little or no effect on the number of retailers that advertised their trees.

Among the total number of retailers only 18% handled flocked or painted trees. The cities sampled had little or no effect on the number of retailers that handled flocked or painted trees.

Southeastern Kansas Retailers:

In the southeastern Kansas market study the large cities (population of 5,000 or greater) had an average of eight retail outlets per city. The medium towns (population between 1,000 and 5,000) had an average of four retail outlets per town and the small towns (population of less than 1,000) had an average of .5 retail outlets per town.

The population size of the cities sampled had an effect on the size and species of tree purchased. This was evident by testing the following hypotheses:

Ho: (The size of a city had no effect on the size of Douglas-fir sold by retailers.)

calculated X_6^2 (39.491) is greater than tabular X_6^2 (16.812)

Ho: (The size of a city had no effect on the size of Scotch pine sold by retailers.)

alpha = 0.05 calculated X_2^2 (5.448) is less than tabular X_2^2 (5.991)

alpha = 0.10 calculated X_2^2 (5.44) is greater than tabular X_2^2 (4.420)

Ho: (The size of a city had no effect on the species of tree sold by the retailers.)

calculated X_2^2 (67.968) is greater than tabular X_2^2 (5.991)

The first and third hypotheses were rejected, concluding that there was a difference between the size of a city sampled and

the species of tree being sold by the retailers. The second
hypothesis was accepted at the 5% level of significance, con-
cluding that there is no reason to suspect that the size of a
city influenced the size of Scotch pine being sold by retailers.
However, when this hypothesis was tested at the 10% level of
significance it was rejected, concluding that there is a dif-
ference in the size of Scotch pine being sold by retailers in
cities of different size classes. When testing the effect of
the city size on the size of Scotch pine the 4-5 feet and 5-6
feet size class were combined because of lack of data in the
medium and small city classes. Figures 11-13 show the variation
that existed between the sizes of cities and the size and
species of trees that were sold by the retailers.

Fig. 11   The number of Douglas-fir sold according to height by
retailers in large, medium and small classes of cities
from southeastern Kansas in 1966.

size	Large Cities		Medium Cities		Small Cities	
	number	% of total	number	% of total	number	% of total
2-3 feet	574	12.4	320	12.7	32	8.8
3-4 feet	1,029	22.4	592	23.6	92	25.4
5-6 feet	2,299	50.2	1,276	50.7	320	60.8
7-8 feet	687	15.0	327	13.0	18	5.0
Total	4,589	100.0	2,515	100.0	362	100.0

Fig. 12   The number of Scotch pine sold according to height by
retailers in large, medium and small classes of cities
from southeastern Kansas in 1966.

size	Large Cities		Medium Cities		Small Cities	
	number	% of total	number	% of total	number	% of total
4-5 feet	112	11.3	0	0.0	0	0.0
5-6 feet	748	76.7	493	91.5	4	100.0
6-7 feet	118	12.0	45	8.5	0	0.0
Total	978	100.0	538	100.0	4	100.0

Fig. 13   The species of tree sold by retailers in the large, medium,
and small classes of cities from southeastern Kansas in
1966.

species	Large Cities		Medium Cities		Small Cities	
	number	% of total	number	% of total	number	% of total
Douglas-fir	4,580	82.5	2,515	82.5	362	99.0
Scotch pine	978	17.5	538	17.5	4	1.0
Total	5,567	100.0	3,053	100.0	366	100.0

The price paid for trees and price received for trees by re-
tailers in the various cities from southeastern Kansas were sta-
tistically analyzed by an analysis of variance test statistic for
each species of tree at each height. In every instance the cal-
culated F value was less than one, concluding that there was no
reason to suspect a difference between the size of a city and the
price paid and the price received for the trees. However, within
each class of cities there was a wide variation in the price paid
and the price received. This variation caused the "within sample
variation" of the analysis of variance to be large, thus leading
to the non-significant conclusion for each test. It is still
possible to compare the prices paid and received for trees from
the various classes of cities by averages; however, it can not be
said that there is a significant difference between the classes

of cities. Figure 14-17 compares the average prices paid and received for the trees in the various classes of cities.

Fig. 14 The average price paid and received for Douglas-fir according to size by retailers in the large cities of southeastern Kansas in 1966.

size	Price Paid average price	range	Price Received average price	range	Average Cost Markup
2-3 feet	68¢	30¢	$1.20	77¢	76.5%
3-4 feet	93¢	34¢	1.55	$1.13	65.9%
5-6 feet	$1.41	39¢	2.24	2.06	59.3%
7-8 feet	1.85	20¢	3.33	2.60	80.1%

Fig. 15 The average price paid and received for Douglas-fir according to size by retailers in medium cities of southeastern Kansas in 1966.

size	Price Paid average price	range	Price Received average price	range	Average Cost Markup
2-3 feet	68¢	10¢	98¢	21¢	43.2%
3-4 feet	94¢	20¢	$1.36	30¢	43.7%
5-6 feet	$1.46	36¢	1.88	75¢	29.1%
7-8 feet	2.01	48¢	2.47	98¢	22.6%

Fig. 16 The average price paid and received for Douglas-fir according to size by retailers in small cities of southeastern Kansas in 1966.

size	Price Paid average price	range	Price Received average price	range	Average Cost Markup
3-4 feet	96¢	13¢	$1.25	54¢	29.1%
5-6 feet	$1.46	19¢	1.84	$1.10	25.7%

Fig. 17 The average price paid and received for 5-6 feet Scotch pine by retailers in large and medium size cities of southeastern Kansas.

class	Price Paid average price	range	Price Received average price	range	Average Cost Markup
large cities	$2.80	90¢	$5.11	$3.00	82.2%
medium cities	3.02	$1.04	4.56	2.35	51.0%

Testing the hypotheses that the size of cities sampled
affected the various techniques and procedures of retailing
Christmas trees in southeastern Kansas proved to be non-significant
except for two questions. There was a significant difference in
the opening and closing time of the retailers from one city class
to another using the contingency chi-square test statistic at the
5% level of significance. Also the number of hours that the re-
tailers remained open was affected by the class of city. Figures
18-19 shows the variation between city class and opening and clos-
ing times and the number of hours worked by retailers.

Fig. 18 Opening and closing times for retail Christmas tree
         lots in large, medium and small class cities in south-
         eastern Kansas in 1966.

opening time	Large Cities number	% of total	Medium Cities number	% of total	Small Cities number	% of total
befor 8:00 a.m.	20	80.0	10	38.5	13	100.0
after 8:00 a.m.	5	20.0	16	61.5	0	0.0
Total	25	100.0	26	100.0	13	100.0
closing time						
before 8:00 p.m.	13	52.0	20	77.0	13	100.0
after 8:00 p.m.	12	48.0	6	23.0	0	0.0
Total	25	100.0	26	100.0	13	100.0

Fig. 19 Number of hours that retailers remained open in large,
         medium and small cities in southeastern Kansas in 1966.

hours open for business	Large Cities number	% of total	Medium Cities number	% of total	Small Cities number	% of total
less than 10	1	4.0	2	7.7	0	0.0
10-12	12	48.0	15	57.7	13	100.0
more than 12	12	48.0	9	34.6	0	0.0
Total	25	100.0	26	100.0	13	100.0

The size of the cities sampled had no significant affect on
the rest of the information gathered from the three classes of cities

in southeastern Kansas. Therefore all the data gathered in south-
eastern Kansas was combined to form one population. This was com-
pared with the data collected from retailers in Wichita and Kansas
City in order to determine whether or not there was a significant
difference between the retailers from the large cities such as
Wichita and Kansas City and retailers in the southeastern Kansas
area.

With the contingency chi-square test statistic it was shown
that there was a significant variation in the class of retail lot
between Wichita and Kansas City. Therefore to test for a signif-
icant difference in the classes of retailers between the south-
eastern Kansas area and the large city area, the southeastern
Kansas area was tested separately with both Wichita and Kansas
City. In both instances the hypotheses were rejected.

Ho: (The southeastern Kansas study area and the Wichita
  area had no effect on the classes of retail lots.)

calculated X^2_3 (35.126) is greater than tabular X^2_3 (7.815)

Ho: (The southeastern Kansas study area and the Kansas City
  area had no effect on the classes of retail lots.)

calculated X^2_3 (12.754) is greater than tabular X^2_3 (7.815)

Figure 20 shows the variation between retailers within the south-
eastern Kansas area while Fig. 6 shows the variation between
Wichita and Kansas City.

Fig. 20 Classes of retailers selling Christmas
trees in southeastern Kansas area in 1966.

class of retailer	number	% of total
national and regional grocery store chains	21	32.8
local grocery store chains	8	12.5
independent grocery stores	31	48.5
others*	4	6.2
*private lots, Jaycees, Boy Scouts and churches		
Total	64	100.0

Testing the hypothesis that both Wichita and Kansas City

combined and the southeastern Kansas area had little or no effect

on the retailers' purpose for selling Christmas trees was rejected.

calculated X_3^2 (15.067) is greater than tabular X_3^2 (7.815)

Figure 21 shows the variation that exists between the purpose for

selling trees and the two study areas.

Fig. 21 Purpose for selling Christmas trees in the
large city area and southeastern Kansas in 1966.

purpose	Large Cities		southeastern Kansas area	
	number	% of total	number	% of total
a "must item" for regular customers	11	22.0	32	50.0
raise money for an organization	10	20.0	2	3.1
personal profit	20	40.0	17	26.6
both personal profits and a "must" item"	9	18.0	13	20.3
Total	50	100.0	64	100.0

In order to test the significance of the southeastern Kansas

area and the large city area on the date which the retailers order

their trees two separate tests were made. This is because there

was significant variation between Wichita and Kansas City which

made up the large city area.

Ho: (The southeastern Kansas area and Wichita have little

or no effect on the time of year the retailers order their
trees.)

calculated X_2^2 (5.225) is less than tabular X_2^2 (5.991)

Ho: (The southeastern Kansas Area and Kansas City have little
   or no effect on the time of year the retailers order their
   trees.)

calculated X_2^2 (10.950) is greater than tabular X_2^2 (5.991)

Therefore accept the first hypothesis and reject the second and
conclude that southeastern Kansas area and Wichita have a non-
significant effect on the time of year retailers order their
trees whereas with Kansas City there is a significant effect.
However when the Wichita and southeastern Kansas area are tested
at the 10% level of significance the hypothesis is rejected.
Figure 22 shows the variation that exists in southeastern Kansas
whereas Fig. 9 has already shown the variation that exists be-
tween Wichita and Kansas City.

Fig. 22   Time of year that retailers in the southeastern
          Kansas area order their trees for the 1967
          Christmas season.

time period	number	% of total
Jan.-Apr.	26	40.6
May-Aug.	10	15.6
Sept.-Dec.	28	43.8
Total	64	100.0

Southeastern Kansas Homeowners

Using the contingency chi-square test statistic at the 5%
level of significance, the hypothesis that the size of the city
class had no effect on whether a homeowner did or did not buy a
Christmas tree was rejected.

calculated X_2^2 (7.884) is greater than tabular X_2^2 (5.991)

Figure 23 shows the variation between the various classes of
cities in respect to whether or not they bought a Christmas tree.

Fig. 23   Comparison of homeowners that did and did not buy
a Christmas tree in the large, medium and small
classes of cities in southeastern Kansas in 1966.

	Large Cities		Medium Cities		Small Cities	
	number	% of total	number	% of total	number	% of total
did buy a tree	187	62.4	191	63.7	160	53.4
did not buy a tree	113	37.6	109	36.3	140	46.6
Total	300	100.0	300	100.0	300	100.0

Among those homeowners that did not buy a tree there was a
significant effect of the class of city sampled on the reason for
not buying a tree. This was predominately due to the number of
older, retired people who were alone at Christmas or went to
their children's home.

calculated X_4^2 (25.385) is greater than tabular X_4^2 (13.277)
Figure 24 shows the variation that existed between the classes of
cities in regards to why the homeowner did not put a tree up.

Fig. 24   Reasons for not putting up a tree in the large,
medium, and small classes of cities in south-
eastern Kansas in 1966.

reason	Large Cities		Medium Cities		Small Cities	
	number	% of total	number	% of total	number	% of total
alone	92	81.4	79	72.5	125	89.3
not at home	16	14.2	28	25.7	6	4.3
other	5	4.4	2	1.8	9	6.4
Total	113	100.0	109	100.0	140	100.0

Among those homeowners that did put up a tree at Christmas
the effect of the classes of cities sampled was non-significant
as to whether the homeowner put up a natural or artificial tree.
Considering the entire southeastern Kansas area 65.4% put up a
natural tree while the remaining 34.6% put up artificial trees.

Among the homeowners that put up an artificial tree the effect of the classes of cities sampled was non-significant in regard to height of the tree, location of the tree, date when the tree was put up, number of persons in the family, and the number of years they have had the tree. Considering the whole southeastern Kansas study area, 33.4% put up an artificial tree that was 3-4 feet in height, 15.6% had a tree 4-5 feet in height and 51.0% had a tree 5-6 feet in height. Eighty percent of the homeowners with artificial trees located their tree in a window while the remaining 20% put it in a corner of a room. Figure 25 shows the variation between the dates on which the homeowners put up their artificial tree.

Fig. 25 Dates that homeowners with artificial trees put up their tree in southeastern Kansas in 1966.

date	number	% of total
December 1-4	6	3.2
December 5-8	7	3.9
December 9-11	103	55.4
December 12-15	36	19.3
December 16-18	28	15.0
December 19-25	6	3.2
Total	186	100.0

Among the homeowners that put up artificial trees, 60.8% of the families consisted of only one or two people while the remaining 39.2% of the homeowners were families of three or more people. Figure 26 shows the number of years that homeowners with artificial trees have had their tree.

Fig 26 Number of years that southeastern Kansas homeowners
with artificial trees have had their tree.

years	number	% of total
1	13	10.0
2	22	16.9
3	30	23.1
4	35	26.9
5	20	15.4
6 or greater	10	7.7
Total	130	100.0

There was a significant effect of the classes of cities
sampled on the species of trees that were put up by homeowners
who used natural trees (Fig. 27).

calculated X_4^2 (32.712) is greater than tabular X_4^2 (9.4888)

Fig. 27 Species of trees put up by homeowners in large, medium
and small cities in southeastern Kansas in 1966.

species	Large Cities		Medium Cities		Small Cities	
	number	% of total	number	% of total	number	% of total
Douglas-fir	62	47.7	60	50.8	46	45.0
Scotch pine	54	41.6	36	30.5	17	16.7
Eastern redcedar	14	10.7	22	18.7	39	38.3
Total	130	100.0	118	100.0	102	100.0

The various classes of cities sampled had a significant effect
on the size of tree that was put up by the homeowners (Fig. 28.)

calculated X_8^2 (23.697) is greater than tabular X_8^2 (15.507)

Fig. 28 Height of natural Christmas trees put up by homeowners
in large, medium, and small cities in southeastern
Kansas in 1966.

height	Large Cities		Medium Cities		Small Cities	
	number	% of total	number	% of total	number	% of total
3-4 feet	15	11.6	17	14.4	27	26.5
4-5 feet	16	12.3	16	13.5	21	20.6
5-6 feet	43	33.1	50	42.4	34	33.3
6-7 feet	42	32.3	25	21.2	13	12.7
7 or greater ft	14	10.7	10	8.5	7	6.9
Total	130	100.0	118	100.0	102	100.0

The location of a tree in a home is important because the quality of a tree can vary with the location. A poorer quality tree can be placed in a corner or along one side of a room with the bad side of the tree against the wall. However, a tree that is placed in a window will be seen from both sides; therefore it should be of better quality. The size of city sampled had a **significant** effect on the location of the tree in the home (Fig. 29). calculated X_4^2 (21.282) is greater than tabular X_4^2 (9.488)

Fig. 29   Location of the tree in the home for large, medium and small cities in southeastern Kansas in 1966.

location	Large Cities number	% of total	Medium Cities number	% of total	Small Cities number	% of total
in a window	103	79.3	65	55.1	77	75.5
in a corner	22	16.9	47	39.8	24	23.5
along one side of a room	5	3.8	6	5.1	1	1.0
Total	130	100.0	118	100.0	102	100.0

Whether a person waters a tree after they put it up contributes to the length of time it remains fresh. The freshness of a tree is inversely related to the dropping of its needles and the degree of becoming a fire hazard. When the homeowners were asked if they watered their tree, 88% of all the homeowners in southeastern Kansas replied that they did and 12% replied that they did not water their trees. The effect of the classes of cities sampled was non-significant in regards to this question.

The source from which homeowners obtained their tree was significantly different from one class of city to another (Fig. 30). calculated X_6^2 (43.118) is greater than tabular X_6^2 (12.592)

Fig. 30   Source from which homeowners in large, medium and
          small cities in southeastern Kansas obtained their
          tree in 1966.

source	Large Cities		Medium Cities		Small Cities	
	number	% of total	number	% of total	number	% of total
grocery stores	92	70.7	71	60.2	57	55.9
country side	11	8.5	22	18.6	38	37.3
Kansas grower	10	7.7	2	1.7	4	3.9
other*	17	13.1	23	19.5	3	2.9

* service organizations, private lots, Boy Scouts, churches and
  nurseries.

Total	130	100.0	118	100.0	102	100.0

The various classes of cities sampled had a significant

effect on the date which the homeowners put their tree up (Fig. 31).

calculated X^2_{10} (22.048) is greater than tabular X^2_{10} (18.307)

Fig. 31   The dates which homeowners in large, medium and small

          cities in southeastern Kansas put up their tree in 1966.

date	Large Cities		Medium Cities		Small Cities	
	number	% of total	number	% of total	number	% of total
December 1-4	5	3.8	2	1.7	3	2.9
December 5-8	6	4.6	4	3.4	6	5.9
December 9-11	42	32.4	26	21.4	35	34.3
December 12-15	25	19.2	28	24.9	30	29.4
December 16-18	40	30.8	33	28.2	22	21.6
December 19-25	12	9.2	25	21.4	6	5.9
Total	130	100.0	118	100.0	102	100.0

The time of day that most sales are made can be very impor-

tant for the retailer who does not combine selling of Christmas

trees with his regular store operation.   The size of the town

sampled had a significant effect on when the homeowners purchased

their tree (Fig. 32).

calculated X^2_8 (31.604) is greater than tabular X^2_8 (15.507)

Fig. 32   Approximate time of day that homeowners in large, medium
          and small cities in southeastern Kansas purchased their
          trees in 1966.

time of day	Large Cities number	% of total	Medium Cities number	% of total	Small Cities number	% of total
10:00-12:00 a.m.	10	7.7	4	3.4	13	12.7
12:00- 2:00 p.m.	21	16.2	29	24.6	11	10.8
2:00- 4:00 p.m.	33	25.4	43	36.4	34	33.3
4:00- 6:00 p.m.	44	33.9	32	27.1	42	41.3
6:00- 8:00 p.m.	22	16.8	10	8.5	2	1.9
Total	130	100.0	118	100.0	102	100.0

When shopping for Christmas trees, 80% of the homeowners in
southeastern Kansas bought their trees at the first Christmas tree
lot at which they stopped. Thirteen percent of the homeowners
stopped at two lots and 7% stopped at three or more lots before
they bought their tree. Among the 20% of homeowners that stopped
at more than one lot there was a significant effect of the size
of the city sampled on the reason why they stopped at more than
one lot (Fig. 33).

calculated X_4^2 (14.167) is greater than tabular X_4^2 (9.488)

Fig.   33   Reasons homeowners in large, medium and small cities in
            southeastern Kansas shopped at more than one Christmas
            tree lot in 1966.

reasons	Large Cities number	% of total	Medium Cities number	% of total	Small Cities number	% of total
better quality	24	82.8	9	53.0	3	30.0
desired species	4	13.8	2	11.7	4	40.0
better price	1	3.4	6	35.3	3	30.0
Total	29	100.0	17	100.0	10	100.0

When asked whether or not they had bought their tree at the same
location before, 63.4% of the homeowners in southeastern Kansas said
they had while 36.6% of the homeowners replied that they had not.
Seventy-eight percent of the homeowners in southeastern Kansas re-
ported that they were not aware of any advertisement put out by
the store in which they bought their tree had advertised.

The size of the cities sampled had a non-significant effect on the homeowners buying their trees at the same location before and their awareness of advertisement.

Wholesalers

There were 20 wholesalers surveyed that supplied trees for retailers in both the large city study area and the southeastern Kansas study area. These 20 wholesalers had been in business selling Christmas trees for an average of 32.4 years. Figures 34-35 shows the type of wholesalers that were in business and their regular occupation.

Fig. 34   Type of wholesalers serving retailers in Kansas in 1966.

type	number	% of total
shipper-distributer	2	10.0
grower-distributer	2	10.0
distributer	11	55.0
broker	1	5.0
chain stores	4	20.0
Total	20	100.0

Fig. 35   Occupation of wholesalers serving retailers in Kansas in 1966.

occupation	number	% of total
grocery produce warehouses	12	60.0
nurseries	4	20.0
growers	2	10.0
businessmen	2	10.0
Total	20	100.0

Figures 34-39 shows the total number of trees handled and the price paid and received from the surveyed wholesalers for Douglas-fir and Scotch pine.

Fig. 36   Number of Douglas-fir bought by surveyed whole-
          salers according to size in 1966.

	2-3 feet	3-4 feet	5-6 feet	7-8 feet	10 feet	12 feet
total	6,362	14,496	29,386	5,198	537	109
average	707	1,208	2,099	433	78	22
% of total	11.3	25.9	52.5	9.2	0.9	0.2

Fig. 37   Number of Scotch pine bought by surveyed whole-
          salers according to size in 1966.

	3-4 feet	4-5 feet	5-6 feet	6-7 feet	7-8 feet
total	1,097	8,884	23,784	4,578	1,298
average	364	1,111	1,586	382	216
% of total	2.7	22.4	60.0	11.5	3.2

Fig. 38   The average price paid and received for Douglas-
          fir by the surveyed wholesalers in 1966.

size	Price Paid average price	range	Price Received average price	range	Average Cost Markup
2-3 feet	55¢	4¢	65¢	12¢	18.2%
3-4 feet	73¢	6¢	87¢	18¢	19.2%
5-6 feet	$1.13	19¢	$1.32	23¢	16.8%
7-8 feet	1.50	21¢	1.76	31¢	17.3%
10 feet	2.24	18¢	2.59	56¢	15.6%
12 feet	4.62	35¢	5.80	80¢	25.5%

Fig. 39   The average price paid and received for Scotch
          pine by the surveyed wholesalers in 1966.

size	Price Paid average price	range	Price Received average price	range	Average Cost Markup
4-5 feet	$2.03	25¢	$2.56	90¢	26.1%
5-6 feet	2.22	$1.15	2.94	$1.00	32.4%
6-7 feet	2.39	1.20	3.11	1.25	30.1%
7-8 feet	3.57	.95¢	4.07	1.29	14.0%

In addition to the cost of the trees, the wholesalers have
to pay for the transportation costs. Most of the Douglas-fir that
are shipped by rail to Kansas come from the Northwest wheras the
Scotch pine are predominately shipped by rail to Kansas from the
Lake States. The actual cost per tree is difficult to compute

because the number of trees per load will vary according to the
percentage of large and small trees and the distance traveled.
Figure 38 shows the average rail cost per bale for Douglas-fir
shipped from the Northwest and the average rail cost per tree for
Scotch pine shipped in from the Lake States. The loads for both
species consisted of mixed sizes of trees in which the percentages
of tall and short trees were roughly the same.

Fig. 40 Freight costs for Douglas-fir shipped from the Northwest
and Scotch pine shipped from the Lake States to wholesalers in
Kansas in 1966.

species	average number of bales or trees per car	average cost per car	average cost per bale or tree
Douglas-fir	875	$742.87	84.9¢
Scotch pine	903	405.39	44.9¢
Total	1,778	----	---

Growers

Among the 47 Christmas tree growers who were sent a survey
22 replied to the preseason survey. Figure 41 lists the major
occupations for the growers.

Fig. 41 Major occupations of grower

occupations	number	% of total
retired	2	12.5
professional	2	12.5
white collar	7	43.8
blue collar (non-farmer	1	6.2
farmer	4	25.0
Total	16	100.0

Growing Christmas trees in Kansas is a relatively new enter-
prise. Since the trees are grown on a six to eight year rota-
tion, most of the growers have not marketed any of their trees
yet. Figure 42 shows the year that the growers began their

Christmas tree operation.

Fig. 42 The year that growers started their plantation.

year	number of growers	% of total	year	number of growers	% of total
1966	4	21.7	1961	1	4.3
1965	2	8.7	1960	1	4.3
1964	10	43.5	1959	1	4.3
1963	2	8.7	1958	0	0.0
1962	0	0.0	1959	1	4.3
Total	--	--		22	100.0

There is a trend toward changing the source from which a grower purchases his planting stock the longer the grower is in business (Fig. 43).

Fig. 43 Source of Planting stock

source	number of growers	average number of years growers are in production
KSU tree distribution program	15	2.53 years
KSU & commercial nursery	4	4.00 years
commercial nursery	3	6.33 years
Total	22	----

The increased interest in growing Christmas trees is not only shown by the increase in the number of growers but by the increase in the number of trees planted over the years. Figure 44 shows the number of trees planted over the years by the growers who replied to the survey. This figure was then projected for all the growers in the state. This was arrived at by taking into consideration all the growers who obtained their trees through the KSU tree distribution program and commercial nurseries.

Fig. 44 Number of trees planted by Kansas growers by species from
1962-1966.

year	number planted	present number	survival percent	projected present number
1966				
Scotch pine	70,030	39,390	56.2	178,045
Austrian pine	6,516	5,163	79.2	23,468
other species*	6,600	2,370	**	10,772
1965				
Scotch pine	73,500	48,590	61.4	213,256
Austrian pine	1,800	1,550	75.6	6,802
other	2,700	800	**	3,511
1964				
Scotch pine	52,600	31,620	55.9	140,313
Austrian pine	1,200	775	64.6	3,439
other	1,300	1,155	**	5,125
1963				
Scotch pine	18,200	11,100	59.3	48,100
Austrian pine	3,300	2,100	60.0	9,100
other	1,000	0	**	0
1962				
Scotch pine	8,500	4,200	***	17,850
Austrian pine	3,800	300	***	1,275
other	1,500	300	**	0

* white pine, ponderosa pine, red pine, pinyon pine, Douglas-fir,
  Fraiser fir, balsam fir, Colorado blue spruce, and eastern
  redcedar.
** Not given because of the wide variety of species represented
  which makes the survival percentage meaningless.
***Not given because many have been harvested.

The same growers that received a preseason survey were also
sent a postseason survey. Twenty-nine growers replied to this
survey. Out of the 29 growers that replied, only six reported
harvesting trees in the 1966 season. These six growers marketed
270 trees through wholesalers, 130 trees through retailers, and
2,385 trees through a choose and cut operation.

In regards to future Christmas tree planting the 26 growers
indicated that they would plant 113,700 Scotch pine, 11,300 Austrian
pine and 3,800 trees of other species in 1967. After 1967 many of
of the growers were indefinite as to what their planting procedure
would be.

DISCUSSION:

The difference between the retailers in Kansas City and
Wichita seems to indicate that retailers in Kansas City have be-
come more stabilized and reflects the demands of the very large
urban areas. In Kansas City the retailers have been in busi-
ness twice as long as in Wichita on the average. Also in Kansas
City there is less variation among the different classes of re-
tailers selling trees.

The establishment of a city produce market has greatly in-
fluenced the retailers in Kansas City. The produce warehouses
have become established as wholesalers which supply predominately
independent grocery stores. This is in contrast to Wichita which
has no city market and sells Christmas trees through predominately
national or regional grocery store chains. This influences the
way Christmas trees are sold in that chain grocery stores tend
to treat the sale of Christmas trees more as a "must item" for
their customers whereas independent grocers tend to treat the
sale of Christmas trees as a profit item. This difference in
attitude has resulted in greater consumption of white pine in
Kansas City as predicted by Lentz[8] because the profit motive
causes retailers to respond to consumers preference more rapidly.
Being close to a large number of wholesalers has also affected the
time when retailers in Kansas City order their trees and receive
their first shipment. Wichita retailers order their trees
earlier and receive their first shipment earlier. However in
Kansas City, retailers are able to order their trees later in the
season and do not receive their first shipment of trees until the

first week in December, approximately a week later than Wichita
retailers. This is a definite advantage for the Kansas City re-
tailers since the majority of Christmas tree sales are not made
until two weeks before Christmas.

In regard to prices, the retailers from both Kansas City
and Wichita have a greater price range for price paid and price
received as the height of the tree increases. Also for each
specific height of tree sold there is a greater price range for
the price received. This again points out the effect of the
various attitudes toward selling trees. The lots which look at
retailing of Christmas trees as a "must item" take a much smaller
markup, however those who sell Christmas trees with a profit
motive try for a much higher markup.

Using the average price received Fig. 45 shows the total
amount of dollars spent on Christmas trees in Wichita and Kansas
City. This was based on the assumption that the retailers sur-
veyed, represented one-tenth of the retailers in each city sampled.

Fig. 45 Total amount of dollars spent on Christmas
         trees in Wichita and Kansas City in 1966.

	Wichita	Kansas City
dollars spent for Douglas-fir	$332,430	81,200
dollars spent for Scotch pine	140,820	210,575
dollars spent for White pine	0	45,625
total dollars spent	473,250	337,400
Minus 5% overcut	23,700	16,700
net dollars spent on trees	450,550	320,700
dollars spent per individual for Christmas trees	$1.63	$1.81

Although the analysis of variance indicates that there is
no statistical difference between retailers of different sized
cities in southeastern Kansas, the average cost markup is pro-
gressively higher for the larger city populations. This tends

to indicate that retailers in the larger city can either buy their trees at a lower price, sell them for a higher price or both. However, since the analysis of variance indicated that this is not true because of such a large variation within each city, it indicates that the variation in average cost markup is, in effect not due to the size of the city sampled but due to the variation in the different types of retailers. In the small towns the re- tailers are predominately small independent grocery stores who have a small volume of business. Because of the distance from the wholesaler and small volume of business they have to pay a higher price for their trees. The economies of the small towns are such that the customers will do without a tree or cut an eastern redcedar from the countryside before paying a high price for a Christmas tree. In the medium and large size cities there are a greater variety of retailers selling Christmas trees for a greater variety of reasons. As the cities become larger there are a greater number of retailers who are selling Christmas trees for profits for either themselves or an organization, therefore the larger cities have a higher average cost markup. Also the large city retailers sell a greater proportion of Scotch pine which traditionally have a higher average cost markup over Douglas-fir.

Using the average price received Fig. 46 shows the total amount of dollars spent on Christmas trees in large, medium and small cities.

Fig. 46   Total amount of dollars spent on Christmas trees in
          large, medium and small cities in southeastern Kansas
          in 1966.

	Large Cities	Medium Cities	Small Cities
dollars spent for Douglas-Fir	$11,165	$4,325	$620
dollars spent for Scotch pine	5,411	2,583	14
total dollars spent	$16,576	$7,908	$634
dollars spent per individual for Christmas trees	46¢	35¢	5¢

What was said about the difference in average cost markup
between the size of cities in southeastern Kansas can also be
said when comparing the southeastern Kansas area to the larger
cities such as Wichita and Kansas City.

Within the southeastern Kansas study area, there was a sig-
nificant difference in the effect of the size of a town and the
homeowners. The homeowner from the large city class reacted much
in the same manner as did homeowners from the larger metropolitan
areas. The homeowners from the medium city class and even more
so with the small city class tend to be more rural in nature.
Tradition has an important influence on the buying habits of
homeowners in regard to Christmas trees. Most rural homeowners
have traditionally cut an eastern redcedar from the countryside
for their Christmas tree and as these homeowners have moved from
the farm to the neighboring small and medium class cities they
have carried this tradition with them.

The economies of the small and medium classes of cities
have an effect on the homeowner's buying habits with their re-
spective cities. Most of these communities economies are based
on services rendered to the neighboring farms and residences
of the respective community with very little manufacturing.

Because of lack of job opportunities many of the younger people move away to the larger cities leaving behind the older and re-tired people. These people cannot afford to spend much for a Christmas tree that they will have in their home for less than two weeks on the average. Also, they are often not motivated to put up a tree since their children are gone. This influenced the quality, size and species of trees that homeowners buy in the medium and small class cities.

Although approximately one-third of the homeowners in south-eastern Kansas put up an artificial tree, there are signs that the use of artificial trees is decreasing. Figure 26 indicates that over the past four years there has been a decrease in the percentage of homeowners buying artificial trees. Also while interviewing the homeowners, many of them that had an artificial tree indicated that when their present tree wore out they would not replace it with another artificial tree but go back to the natural tree. The aesthete value of having a natural tree in the home is quite high, especially with the housewife who, in most instances, picks out the tree. The artificial tree will always have a bearing on the Christmas tree trade because of certain advantages. Although the initial investment may be high, with proper care the tree will last from four to seven years. It is much less of a fire hazard and it will not shed its needles. It is also much more convenient to put up and take down each year than a natural tree. In recent years the quality of arti-ficial trees has increased considerably. With these advantages, the artificial trees tend to be more ideally suited for older

people and homeowners in communities that are so small they do
not have a Christmas tree retailer.

Competition is much more keen among the wholesalers. The
narrow price paid and price received range reflect this. However
most wholesalers are associated with the grocery produce ware-
house through which they have direct contact with the retail
grocery store outlet. Immediately after the Christmas season most
grocery store retail outlets submit an order for next year's Christ-
mas trees to the produce warehouse with which they are affiliated.
The produce warehouse totals the sum of all their orders, projects
for any expected new store and orders the trees. Other whole-
salers who distribute to retailers that do not order their trees
until late in the season must rely on their experience to order
the correct amount of trees. Among the wholesalers surveyed
they had an average of 35 years of experience, which was the
highest average for any group of individuals dealing with
Christmas trees.

Growing Christmas trees in Kansas is a relatively new enter-
prise. Figuring six to eight years before a tree reaches a
market height of six feet, approximately 83% of the growers have
not been in business long enough to market any of their trees.
Within the next three years 70% of the present growers will have
trees on the market. This tremendous increase in production
should not have the effect of over supplying the market if
growers are familiar with the various markets available to them.
Besides becoming familiar with the various markets available to
them in their locality, growers should concentrate on growing a

a quality tree. This is very important because Kansas growers
will have to take the market from markets already established by
out-of-state growers.

One of the best markets available to the grower is the
choose and cut method, where the consumer buys their tree di-
rectly from the grower. Buying their tree from the grower has
the aesthete value of a-day-in-the country for the consumer.
By selling their trees through the choose and cut method, the
grower receives the full value of the tree. Average price re-
ceived by Kansas choose and cut growers was a dollar per foot
of tree for Scotch pine.

Selling Christmas trees by the choose and cut method has
certain limitations and additional risks and responsibilities.
The number of trees that can be marketed by this method is limited
by the size of the urban population within approximately 25 miles
of the plantation. This method of marketing requires the grower
to produce a premium tree. Extra facilities are needed to
accommodate the customer such as parking facilities, trans-
portation to and from the plantation, and a place to transact
the sale. There is also an additional labor requirement since
one or more attendants must be present to assist the customers.
With the presence of customers on the plantation, additional in-
surance requirements are needed to protect the grower against
liability suits.

Growers may market their trees through a retailer, however
this includes another member in the marketing chain. The average
price received varies between 47¢-60¢ per foot for Scotch pine

depending on the size of the town in which the tree is located. These prices include delivery to the retailer. Marketing the trees through a retailer will require the grower to make contact with the retailer. A definite written agreement should be made between the retailer as to price and who will select the trees to be cut, cut the trees, and transport the trees. A certain portion of the total price should be paid as a down payment when the agreement is made with the remainder due at the time of delivery. If a grower chooses to market his trees through retailers he sacrifices a portion of the total consumer price for the convenience of being able to establish marketing orders early in the year (over 56% of the retailers order their trees before August) and deliver their trees quickly during the Christmas season.

Growers may market their trees through a wholesaler however this requires that the growers take a further decrease in the total consumers price. Wholesalers paid an average of 44¢ per foot for Scotch pine. Marketing trees through a wholesaler has the added convenience of being able to market all the marketable trees a grower can produce through one individual. The same type of market agreement should be made with the wholesalers as with the retailers.

Since there is a six year waiting period before growers can grow the type of Christmas tree consumers demand, a grower must be alert for indications of change in consumer preference. At the present, Scotch pine is the preferred species and the species most commonly grown, however there are indications that white

pine, Austrian pine and red pine are increasing in preference. Lantz[8] reported this trend in the eastern U.S. Also in Kansas City white pine has made noteable increases in preference. Therefore growers should plant an increasing percentage of these species as the trends become more clear.

CONCLUSION:

The size of a town has an influence on the methods and techniques of selling Christmas trees as well as an influence on the buying habits of the residences. The small towns have a rural background which influences the species bought since many of the farmers utilize the eastern redcedar in their pastures for Christmas trees. The retailers of Christmas trees in the small towns are traditionally small independent grocers. They tend to consider the sale of Christmas trees as a "must item" for their regular customers and take a small markup. As the size of the town increases the type of retailers become more varied and so do their reasons for selling trees. More retailers use the sale of Christmas trees to raise money for an organization or for personal profits and increase their markup. In the larger cities the retailers are able to offer a greater variety of species of trees and sell a greater proportion of the more expensive species of trees.

Although approximately one-third of the homeowners in southeastern Kansas have artificial Christmas trees there is a trend back toward natural Christmas trees because of their aesthetic value. Artificial trees will always be a part of the market because of certain advantages: durability, ease of handling, lack of shedding

needles and representing less of a fire hazard. These advantages are most attractive to older, retired people and residents of communities where Christmas trees are not sold.

Most wholesalers supplying trees to Kansas retailers are associated with the grocery produce industry. As a group, the wholesalers have a greater average number of years experience than any other group of individuals associated with the Christmas tree industry. Their average markup is approximately 17% which is much smaller than the retailers however they have a much larger volume of business with less overhead.

The Kansas Christmas tree growers will have a substantial increase in supply of marketable trees within the next three years. This increase in supply should not result in a surplus if the growers produce a quality tree and know and understand the three basic methods of marketing their trees. The choose and cut method offers the growers the greatest return for their money, however it also requires more responsibilities and risks. Also the potential market is limited to the size of the urban population within approximately 25 miles of the plantation. Marketing their trees through a retailer requires less responsibilities and risks; however, the growers receive less for their trees. In turn, the growers have still less responsibilities and risks when they market their trees through a wholesaler; however, they also receive a still smaller portion of the consumers final price.

Appendix I

Retail Lot Questionnaire

General Information:

1. Classification of retail lot.
   a.____ chain grocery stores
   b.____ independent grocery stores
   c.____ service club or charity
   d.____ youth club
   e.____ department or variety stores
   f.____ garden or floral nursery
   g.____ private independent lot
   h.____ other (explain)_____

2. Location of the lot:
   a.____ shopping center
   b.____ place of business
   c.____ vacant lot
   d.____ lodge or organization's grounds
   e.____ residential lawn
   f.____ other (explain)_____

3. Purpose of selling trees:
   a.____ a "must item" for regular customers
   b.____ raise money for an organization
   c.____ personal profit
   d.____ other (explain)_____

Experience of the Manager:

1. How long have you been selling Christmas trees?_____; in this city?_____; at this location?_____.

2. What is your regular occupation?_____

3. Does selling Christmas trees conflict with your regular occupation?____yes____no.

Purchasing Christmas Trees:

1. In order to purchase trees do you contact the seller____or does the seller contact you____?

2. From what source or sources did you purchase your trees?
   a.____ local wholesaler
   b.____ out-of-state wholesaler
   c.____ local grower
   d.____ out-of-state grower
   e.____ grew your own
   f.____ chain store
   g.____ other (explain)

Name of source   address

_____

_____

3. In what way did you select your supplier?
   a.____personal contact   d.____direct mail
   b.____recommendations by others e.____growers' catalog
   c.____visitation to the plantationf.____magazine ads or news-
                                          paper ads

4. When do you order your trees?
   ____Jan., ____Feb., ____Mar., ____Apr., ____May, ____June,
   ____July, ____Aug., ____Sept., ____Oct., ____Nov., ____Dec.

5. Are you aware of the date that the trees you purchased were
   cut ____yes____no.

6. Do you specify that your trees be sheared? ____yes ____no.

7. Type of grading system used to purchase trees?
   a.____U.S.D.A. grades   c.____height alone
   b.____arbitrary values of quality d.____none
         and height

8. a. Are you aware that there is a standard U.S.D.A. grading
      system?____yes____no.
   b. Would you prefer to buy trees by U.S.D.A. grades___Yes___no

9. When do you receive your first shipment of trees?_____

10. Do you receive more than one shipment?____yes____no.

11. Would you prefer to receive more than one shipment?___yes___no.

12. Number of trees bought
    species   3'-4   4'-5'   5'-6'   6'-7'   7' or greater
    _____
    _____
    _____

13. How are trees which you purchased shipped?
    a.____rail   b.____truck   c.____both

Kansas Grown Trees:

1. Were you aware of Kansas grown trees?____yes____no.

2. Have you had the opportunity to compare Kansas grown trees with
   out-of-state trees?____yes____no.

3. What percent of the trees you handle are Kansas grown?_____

4. In your opinion rank the following factors regarding Kansas
   grown trees:
   a. quality: ___excellent, ___good, ___fair, ___poor, ___mixed
   b. supply: ___excellent, ___good, ___fair, ___poor, ___mixed
   c. selling ability: ___excellent, ___good, ___fair, ___poor, ___mixed.

5. What is your main comment concerning Kansas grown trees:_____
   _____

Pricing:

1. What is the price you paid for your trees:

species		height			
	3'-4'	4'-5'	5'-6'	6'-7'	7'-8'
Premium					
#1					
#2					
Cull					
Premium					
#1					
#2					
Cull					

2. Do you get a discount on large orders?_____yes _____no.

3. Mark the factors respectively 1, 2, and 3 which you consider
   most important in pricing the tree to the customer.
   a.___height   d.___cost
   b.___grade   e.___competition
   c.___species   f.___what the market can bear

4. What day of the week are you open for business?_____

5. What hours are you open? _____

6. Do you advertise your trees? ____yes ____no How?
   a.___radio   e.___newspaper, along with regular
   b.___television   merchandise
   c.___posters   f.___displays in front of lot
   d.___handbills   g.___other (explain)

7. Price received for your trees?

species		height			
	3'-4	4'-5	5'-6'	6'7'	7'-8'
Premium					
#1					
#2					
Cull					
Premium					
#1					
#2					
Cull					

8. Do you cut your prices at the end of the season in order to get
   rid of surplus trees? ____yes ____no.

9. What is your usual percent of trees left over at the end of the season? _____

10. What is your practice of disposing of unsold trees at the end of the season? _____

Ornamental Trees:

1. Do you handle flocked or painted trees? _____yes _____no.

2. Price paid by customer:

treatment	3'-4'	4'-5'	5'-6	7'-8'
painted				
flocked				

3. What colors do you use?
   a.____white   c.____pink   e.____silver
   b.____blue   d.____green   f.____other_____

4. Do you do the flocking and painting or do you hire someone to do it? a.____yourself   b.____someone else

5. What percent of the trees you sell are flocked or painted? _____

6. Do you sell artificial trees? ____yes ____no.

7. Do you sell balled-and-burlapped or living trees? ____yes____no.

8. Do you sell other Christmas items such as:
   a.____lights and decorations   d.____wreaths
   b.____holly   e.____pine cones
   c.____tree boughs   f.____tree stands

_____
Recorder

Retail Lot Information:

Name _____

Address _____

_____

Appendix II

Wholesaler Questionnaire

1. How long have you been a wholesaler?_____. How long have you
   operated in this city?_____.

2. When do you order your trees? (check before the month)
   ____Jan., ____Feb., ____Mar., ____Apr., ____May, ____June.,
   ____July, ____Aug., ____Sept.,____Oct., ____Nov., ____Dec.

3. Cost-price information

	cost you pay per bundle	Douglas-fir transportation cost per bundle	your total cost per bundle	your wholesale price/bundle
2-3 feet				
3-4 feet				
5-6 feet				
7-8 feet				
10 feet				
12 feet				
14 feet				
		Scotch Pine		
3-4 feet				
4-5 feet				
5-6 feet				
7-8 feet				
		Other Species		

4. How many trees do you get in a box car or truck and what is the
   cost?

species	transportation cost/load	(check one)
		____rail ____truck
		____rail ____truck
		____rail ____truck

5. What is your main factor which you consider when you price your
   trees to the retailer?
   a.____grade and size   d.____fixed-percent markup over cost
   b.____species   e.____strictly warehouse handling charge
   c.____competition   f.____what the market can bear

6. How many retailers do you supply and what type of retailers
   are they?
   number
   a.____chain grocery stores   f.____service blubs or charity
   b.____independent grocery stores g.____youth groups
   c.____garden or floral nurseries h.____department or variety stores
   d.____others (explain_____

7. Were you aware of Kansas grown trees? _____yes _____no.

8. Have you had the opportunity to compare Kansas grown trees with
   out-of-state trees? _____yes _____no.

9. What is your main comments concerning Kansas grown trees?
   _____
   _____
   _____

10. What percent of the trees you handle are Kansas grown?_____

11. In your present operation, what would be the potential percent-
age increase of Kansas grown trees if size, quality, and supply
were equal to imported trees?_____

                         Name_____

                         Address_____

                         _____

Appendix III

Homeowner Questionnaire

1. a. Did you buy or plan to buy a Christmas tree this year?__Yes__no.
   b. If no, will any tree be decorated or displayed in the home?
      ___yes ___no.

2. Reason for not buying a Christmas tree. _____
   _____

3. Did you buy more than one tree? (number _____)

4. What type of tree did you buy?
   a. ____natural tree   d. ____painted tree
   b. ____artificial tree   e. ____balled-and burlapped
   c. ____flocked tree   or living tree

5. What species of tree is it?
   a. ____pine   c. ____fir   e. ____Other
   b. ____spruce   d. ____cedar   f. ____Unknown

6. What is the height of your tree?
   ___3'-4, ___4'-5, ___5'-6, ___6'-7', ___7' or greater.

7. Where do you have your tree located?
   a.____in front of a window   c. ____along one side of a room
   b____in a corner of a room   d. ____outside

8. Do you water your tree after it has been decorated? ___yes ___no.

9. Where did you get your tree?
   a.___chain grocery store   f.___garden or floral nursery
   b.___independent grocery store   g.___private independent lot
   c.___service club or charity   h.___department or variety store
   d.___youth club   i.___cut it yourself in the country
   e.___received it as a gift   j.___other (explain) _____

10. What price did you pay for your tree? _____

11. When did you purchase your tree?
    Dec.___1-4, ___5-8, ___9-11, ___12-15, ___16-18, ___19-23,
    ___23 or later.

12. Approximately what time of day did you purchase your tree?
    ___8-10 a.m.,___10-12 a.m.,___12-2 p.m.,___2-4 p.m.,___4-6 p.m.,
    ___6-8 p.m.___8:00 or later.

13. When you go out to purchase a tree who goes along?
    a. ____husband   c. ____children   e. ____other friends
    b. ____wife   d. ____the family   and relatives

14. Who makes the final decision as to which tree you will buy?
    a.____husband   c.____children   e.____friends
    b.____wife   d.____the family jointly

15. When looking for a tree do you shop at:
    a.____one lot   b.____two lots   c.____three lots or more

16. Reasons for going to more than one lot.
    a.____poor quality   c.____to shop for a better **price**
    b.____to get desired species   d.____other (explain)_____

17. Mark respectively either 1, 2, and 3 the main points taken
    into consideration when you buy a Christmas tree.
    a.____price   c.____shape   e.____density
    b.____size   d.____color   f.____personal relationship
                                        with seller

18. Considering the lot at which you bought your tree, was the lo-
    cation of the lot:
    a.____along regular traveled routes
    b.____in a shopping center regularily frequented
    c.____in a section of town very seldomly frequented
    d.____outside of town
    e.____other (explain)_____

19. What was the distance from the tree lot to your home?
    a.____0-3 miles   c.____6-10 miles
    b.____3-6 miles   d.____10 miles or greater

20. Have you bought your Christmas tree at the same location for
    more than one year? ____yes ____no. How many years?_____

21. Were you aware of any of the advertisement which was presented
    by the lot in which you bought your tree? ___yes ___no In what
    form?
    a.____radio   e.____newspaper ads
    b.____television   f.____displays in front of the lot
    c.____posters   g.____other (explain)_____
    d.____handbills   _____

22. How were the trees displayed at the lot?
    a. standing separately according to ___size or ___species
    b.____laying in a pile   c.____leaning against one another

23. Which of these methods would you prefer that they be displayed?
    a. standing separately according to ___size, or___species
    b.____laying in a pile   c.____leaning against one another

24. Are you aware of the location from which your tree was grown?
    ___yes___no. Was it grown in Kansas____, out-of-state___, _____
    unknown

Would you prefer a locally grown tree over an imported tree if they were of equal quality? ____yes ____no.

25. Are you aware that a fresh-cut, nautral grown tree is generally less of a fire hazard? ____yes ____no.

26. Are you satisfied with the selection of tree you made? ____yes ____no.

27. What would be your main criticism of the tree you have?_____
_____

28. How many people are there in your family?_____

Appendix IV

Producers Preseason Survey

1. Planting and survival schedule:

year planted	species planted	no. of trees in original planting	lst. year survival	no. of trees replanted	no. of trees surviving at the present
1966					
1965					
1964					
1963					
1962					
1961					
1960					
1959					
1958					
1957					

2. Describe your procedure for preparing the ground before planting?
_____

3. From what source do you get your planting stock?_____

4. Describe your method of shearing (equipment used, time of shearing, etc.)_____

5. Describe your procedure for controling grass and weeds between the rows._____

6. Have you ever used a colorant on your off color trees?__yes__no.

7. What is your harvesting procedure?
   a.____removal of all trees in a block
   b.____removal of only marketable trees in a block
   c.____other (explain)_____

8. Method used to sell trees?
   a.____sell to wholesalers   d.____choose and cut
   b.____sell to retailers   e.____door to door
   c.____sell on consignment   f.____other (explain)_____

9. How do you price your trees?
   a.____by number, height, and grade   c.____by number and height
   b.____by lump sum for complete block d.____other (explain)_____

10. What type of grading system do you use?
    a.____U.S.D.A. standards   c.____by number and height
    b.____buyers grading system   d.____other (explain)_____

11. Do you make any sort of written purchase contract with the
    buyer? ___yes ___no. Describe the terms:_____
    _____
    _____

12. Do you advertise your trees? ___yes ___no. In what way do you
    advertise?_____

13. Do you package your trees before you sell them? ___yes ___no.
    If so by what method?
    a.____twine tie   c.____plastic netting
    b.____plastic sleeve   d.____other (explain)_____

14. What is your major occupation?_____

15. What percent of your total income does your Christmas tree
    enterprise represent?
    a.____0% 10%   d.____50%-75%
    b.____10%-15%   e.____75%-90%
    c.____25%-50%   f.____90%-100%

Appendix V

Producers Postseason Survey

1. Actual number of trees sold in 1966:

species	wholesaler	retailer	choose and cut	door to door	total

2. Price received for trees sold in 1966:

species	wholesaler	retailer	choose and cut	door to door	tptal

3. Did you sell as many trees as you expected?___yes ___no.

4. What do you feel is the main reason for not selling as many trees as you expected?_____

5. Did you receive the price you expected? ___yes ___no.

6. In regard to the future, what change in your marketing proced-ure do you plan to make?_____

7. In regard to the future, how many trees do you expect to plant?

year	species	number of trees	year	species	number of trees
1967			1970		
1968			1971		
1969			1972		

Appendix VI

Choose and Cut Growers Survey

Grower's Background-

1. How long have you been growing Christmas trees?_____

2. How Long have you been marketing your trees by the choose and cut method?_____

3. What percent of your Christmas tree crop is marketed through the choose and cut method?_____

4. What percent does your Christmas tree operation represent of your total income?_____

Facilities:

1. What do you have for parking facilities? (size of lot, type of surface, etc.)_____
_____

2. What equipment do you use to take the people to the plantation, cut the tree, haul the tree back to the car and load it in the car?_____
_____

3. How much additional temporary labor have you had to hire?____
_____

4. What are their duties?_____
_____

5. What do you pay such employees per hour?_____

6. What facilities do you have for actually conducting the sales of the trees?_____

Management:

1. Describe your procedure for determining the price for each tree and how do you display the price to the customer?_____
_____

2. Do you practice preseason tagging of trees?_____

3. When do you open your plantation for preseason tagging?_____
_____

4. What method do you use for the identification of tagged trees?
_____

5. Do you have the customers pay a certain amount to lay-away trees that they tag?____, If so how much do they pay?_____

6. During the Christmas season who actually cuts the tree down: the customer or the attendant?_____

7. What type of liability insurance policy do you have to provide coverage for your employees and customers_____
_____

8. Approximately how much does this cost?_____

9. Have you established any policies concerning protection against the hazard of fire, such as not allowing smoking in among the trees?_____

10. What additional managerial practices concerning growing of the trees has the choose and cut method of marketing presented?____
_____

Advertising and Promotion?

1. What are the different methods which you use to advertise during the preseason and Christmas season?_____
_____

2. How much does this advertisement cost?_____

3. Do you feel that your present advertising program is adequate?
____yes____no.

4. During the year what additional promotional projects do you sponsor, such as taking part in fairs, parages, etc.?_____
_____

5. From past experience approximately how far does the average customer travel to get to your plantation?_____

6. Do you sell any other items other than Christmas trees along with your operation_____

REFERENCES

(1) Alvoid, B. F. 1957. Marketing Christmas trees in Alabama.
     Polytechnic Institute. Bulletin 309.

(2) Brundage, Roy C. 1958. Consumer preference for Christmas trees
     and natural decorative materials. Purdue University. Agri-
     cultural Experiment Station, Lafayette, Indiana. Research
     Bulletin 669.

(3) Carter, Rany and Cathy. August 1965. Carters House of Christmas.
     American Christmas Tree Growers' Journal. page 9.

(4) Conklin, Melvin J. 1961. The homeowner market for Pacific
     Northwest Christmas trees. Agricultural Experiment Station,
     Oregon State University. Corallis, Oregon. Miscellaneous
     Paper 122.

(5) Fryer, H. C. 1966. Concepts and methods of experimental stat-
     istics. Allan and Bacon Inc. Boston.

(6) Klein, E. L. 1961. An analysis of the Christmas tree industry
     in Pennsylvania. M.S. Thesis. Pennsylvania State University.

(7) Knox, John W. and Leo L. cram. 1962. Kansas area development.
     Extension Service. Kansas State University, Manhattan, Kansas.

(8) Lentz, Austin N. February 1964.The business of growing Christ-
     mas trees--trend and marketing. American Christmas Tree Growers'
     Journal. page 20.

(9) Mitchell, G. H. and K. L. Quigley, 1960. Retailing of Christmas
     trees in three selected Ohio markets. Ohio Agricultural Exper-
     iment Station. Wooster, Ohio. Research Circular 81.

(10) Mitchell, G. H. and K. L. Quigley. 1959. How Ohioans choose their Christmas trees. Ohio Agricultural Station. Wooster, Ohio. Technical Paper 163.

(11) Paulsell, Lee K. and J. Milford Nichols. 1958. Marketing Christmas trees in Missouri. Agricultural Experiment Station. University of Missouri. Columbia, Missouri. Bulletin 719.

(12) Roth, Paul. 1959. Unpublished data collected on consumer preference.

(13) Roth, Paul, 1959. Unpublished data collected on institutional markets.

(14) Sowder, A. M. August 1964. The Christmas tree industry in retrospect and prospect. American Christmas Tree Growers' Journal. page 6.

(15) Sorensen, H. B. and W. A. Smith. 1964. Texas wholesale market for Christmas trees. Texas A & M University. Texas Agricultural Experiment Station, College Station, Texas. B-1021.

(16) Trocke, John K. 1966. Marketing Christmas trees. Cooperative Extension Service. Michigan State University. East Lansing, Michigan. Extension Bulletin 535.

(17) Harlow, William M. and Ellwood S. Harran. 1958. Textbook of Dendrology. Fourth Edition. McGraw-Hill Book Company, Inc.

AN ANALYSIS OF THE CHRISTMAS TREE
MARKET IN KANSAS

by

JOEL STANFORD BRUMMEL

B. S., Kansas State University, 1965

————————————————

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Horticulture and Forestry

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1967

The analysis of the Christmas tree market in Kansas was broken down into four study areas: the growers, the large city market, the southeastern Kansas market, and the choose and cut market. Within the large city market a survey of the various retailers and wholesalers in Wichita and Kansas City was taken.

The southeastern Kansas market study was comprised of surveys of the homeowners, retailers, and wholesalers. The cities that were sampled within the southeastern Kansas area were stratified into three classes. The small city class was comprised of cities with a population from 0-1,000. The medium city class contained cities with a population between 1,000 and 5,000 and the large city class was made up of cities with a population over 5,000.

The growers within the state were sampled by a survey mailed to members of the Kansas Christmas Tree Growers' Association. The choose and cut operators were personally interviewed by the principal investigator.

There was a significant variation in the techniques and procedures of retailers selling Christmas trees between the different sizes of towns. This was due to a combination of economic factors and social traditions between cities and the variation of retailers within cities. The variation in the retailers is reflected by the variation in attitudes for selling Christmas trees. Retailers who sell Christmas trees strictly as a "must item" for their regular customers take a much smaller markup than retailers who are motivated by profits.

Families in smaller cities have a more rural background and do not spend as much per capita as the larger city families. This

affects the species bought and the price paid for a Christmas tree.

Although approximately one-third of the homeowners in southeastern Kansas have artificial Christmas trees, there is a trend back toward natural trees. Artificial trees will always be a part of the market because of certain advantages such as durability, ease of handling, lack of shedding needles and they represent less of a fire hazard.

The growers of Kansas Christmas trees will have a substantial increase in supply within the next three years. This increase in supply will not result in a surplus if the growers produce a quality tree and know and understand the three basic methods of marketing their trees through choose and cut operation, retailers and wholesalers.