



*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

*Supermarkets*

## Staff Paper Series

SUPERMARKET ANALYSIS:  
CUSTOMER SHOPPING ACTIVITY  
AND  
FROZEN FOOD DEPARTMENT PERFORMANCE

by

K. W. Kepner and A. E. Metz

Staff Paper 102

October 1978



GIANNINI FOUNDATION OF  
AGRICULTURAL ECONOMICS  
LIBRARY  
FEB 8 1980  
MITHRAMIN

# FOOD AND RESOURCE ECONOMICS DEPARTMENT

Institute of Food and Agricultural Sciences

University of Florida

Gainesville, Florida 32611

## Table of Contents

Introduction . . . . .	1
Total Supermarket Analysis . . . . .	4
Customer Profile . . . . .	5
Customer Shopping Pattern Results . . . . .	6
Total Store Shopping Survey . . . . .	10
Frozen Food Department Analysis . . . . .	11
Frozen Food Department Performance . . . . .	12
Frozen Food Shopping Patterns . . . . .	13
Management Implications . . . . .	16

## Introduction

On March 31-April 1, 1978, a research team from the University of Florida monitored customer shopping activity at Hitchcock's Foodway Supermarket in Alachua, Florida. In addition, shopping activity in the Frozen food department was studied in greater depth by observing 100 departmental shoppers. The specific objectives of this research were to:

- Provide management with information that can be used to more effectively and strategically merchandise the supermarket and frozen food department by:
  - quantifying how customer's shop Hitchcock's Foodway
  - developing a consumer profile of store shoppers
  - analyzing how customer's shop the frozen food department
- Provide the food industry and the University of Florida with total store shopping pattern and frozen food department information that can be used in future industry training programs.

To achieve these objectives, considerable information was obtained on the Hitchcock Foodway Supermarket. This report summarizes these data and suggests some of the implications for more effective management-merchandising decisions.

The research procedure involved tracking sixty (60) individual supermarket shopping cart customers on a total store layout diagram during the March 31-April 1, 1978 weekend. Observations were made regarding the shopping path followed, the location of purchased items, the location of items inspected but not purchased, and customer travel without the shopping cart. Also, data on shopping time, use of shopping list, and customer sex and age group classification were observed, Table-1.

A sample of one individual customer shopping diagram is reproduced in Figure-1. A composite shopping diagram was developed (Figure-2) and a computation was made of the percentage of shoppers that passed various supermarket locations (Figures-3 and 4). In addition the percentage of shoppers that purchased items from each aisle side, from the end of the aisles, and from selected store locations was computed, Figure-5.

The frozen food department was studied in greater detail. Shopping paths of a hundred (100) customers entering the frozen food department were analyzed and frozen food unit purchases by display case location were observed, Figures 6 to 8.

It is believed that this information can provide management with factual and valuable insights into new opportunities to more effectively merchandise and layout the studied supermarket. Furthermore, the data can also provide ideas for future supermarket planning activities.



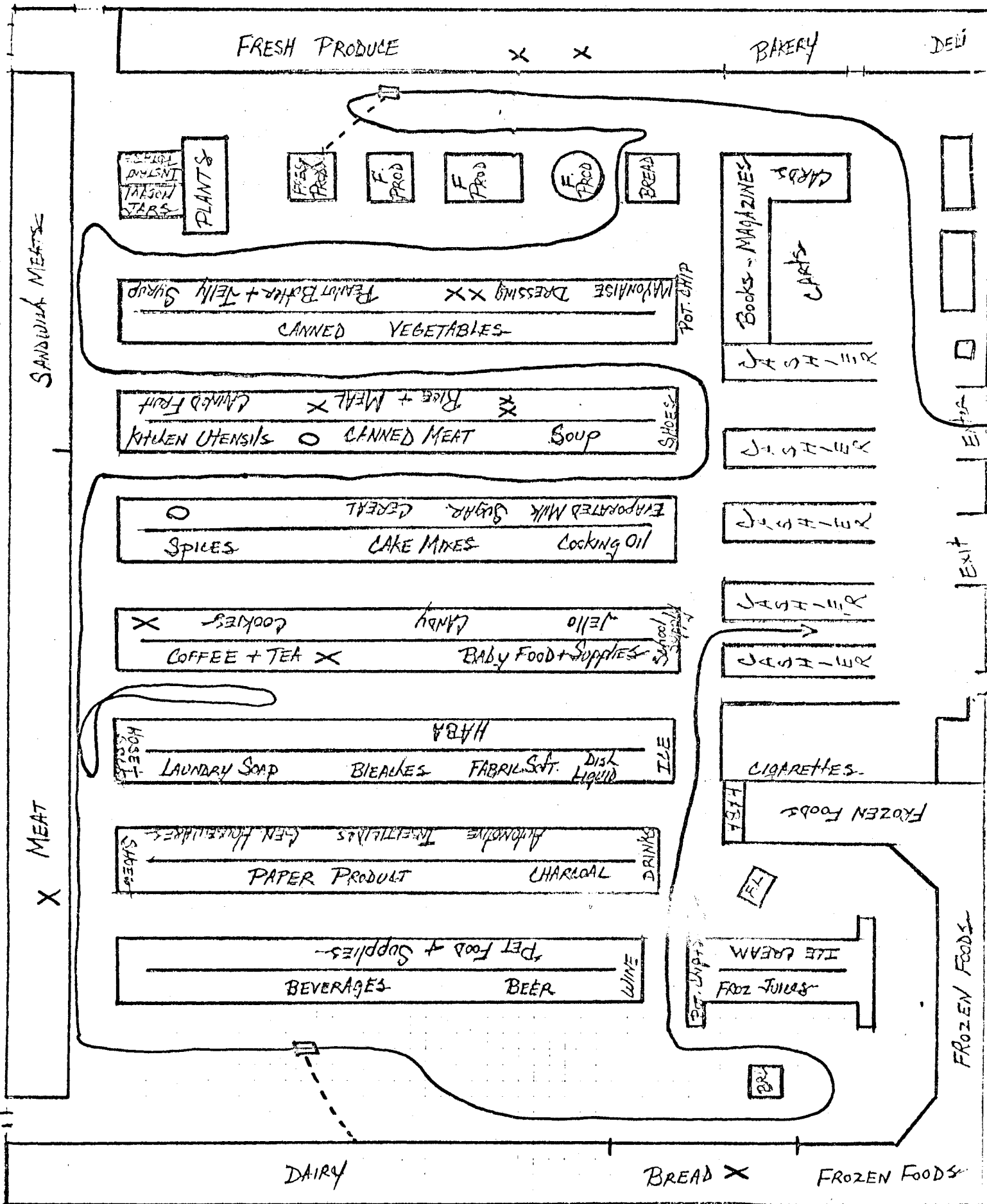


Figure-1. Sample Customer Shopping Diagram, Hitchcock's Foodway Supermarket, Alachua, Florida

Total Supermarket Analysis

-Customer Profile-

-Shopping Pattern Analysis-

Hitchcock's Foodway Supermarket

Table 1.--Customer profile for Hitchcock's Foodway\*

---

Average Shopping Time	16 minutes
Age Profile:	
> 30	16%
30-39	25%
40-49	18%
50-59	25%
60+	16%
Sex Profile:	
Male	21.7%
Female	71.7%
Couple	6.6%
Shopping List:	
Yes	26%
No	74%
Frozen Food Purchases:	
Yes	40%
No	60%

---

\*Based upon sample of sixty shopping cart customers during the March 31-April 1, 1978 weekend.



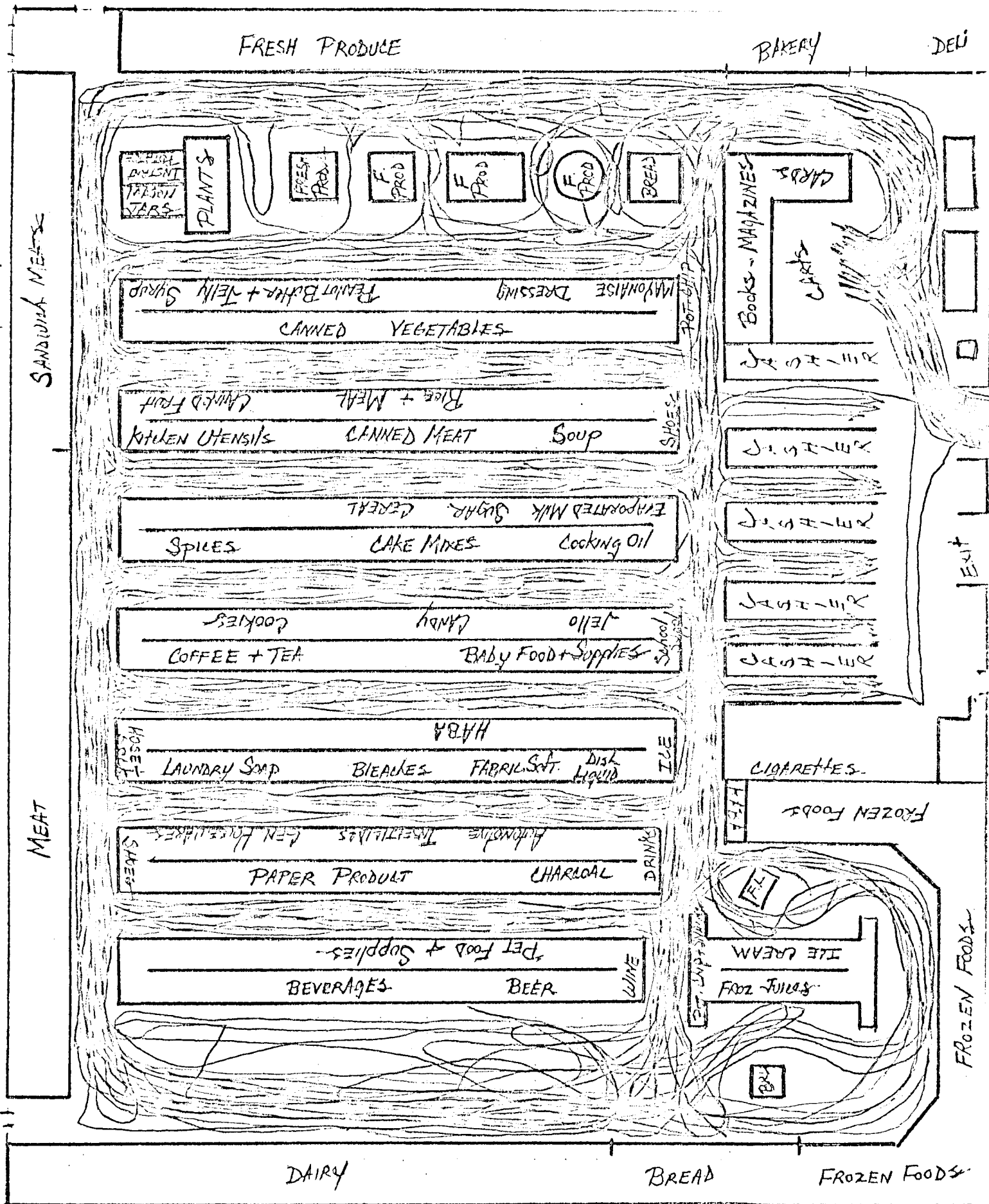


Figure-2. Total Supermarket Shopping Diagram, Composite Shopping Patterns of Thirty Customers, Hitchcock's Foodway Supermarket, Alachua, Florida.

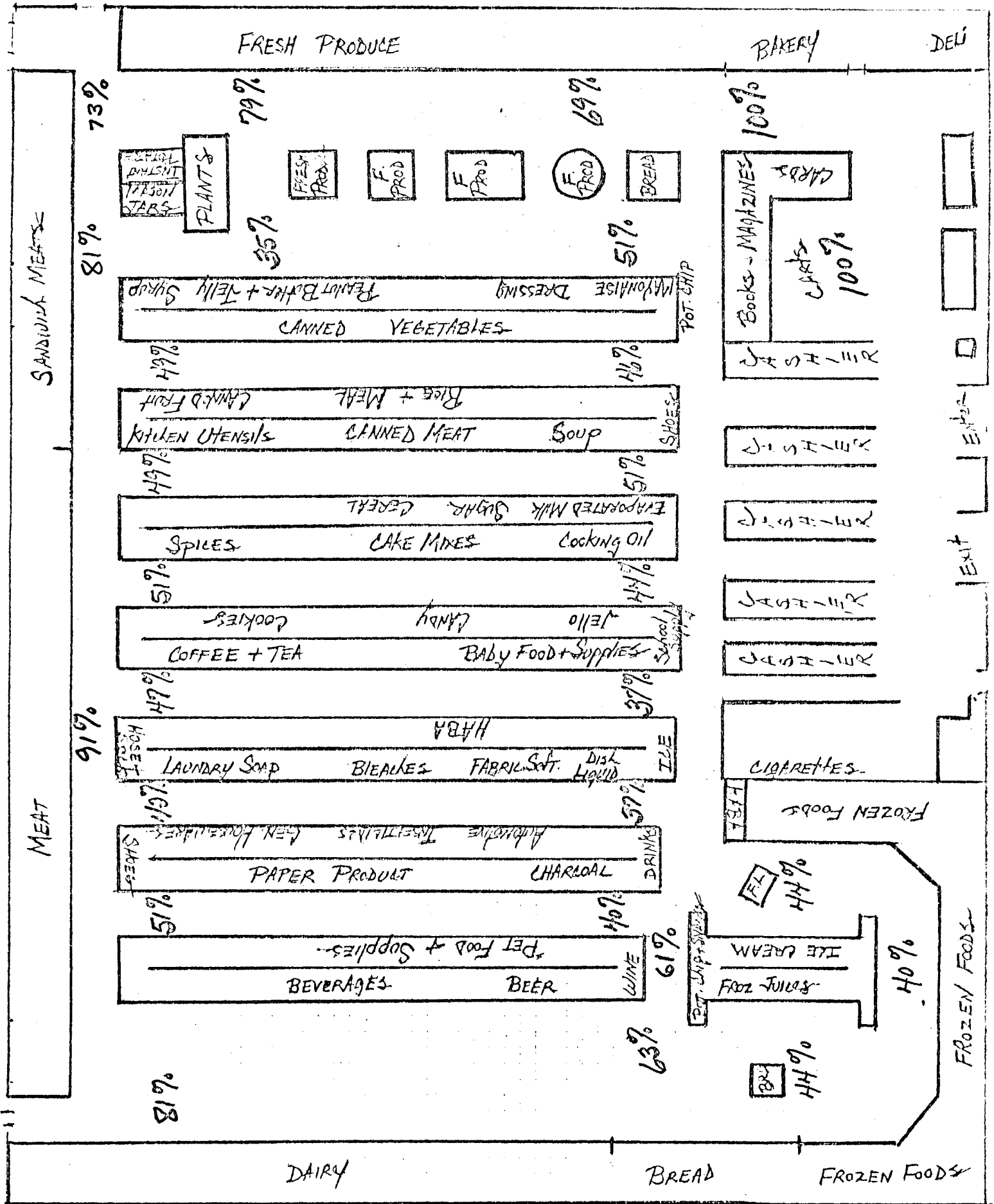


Figure-3. Percent of Shoppers Passing Selected Supermarket Locations, Hitchcock's Foodway Supermarket, Alachua, Florida.

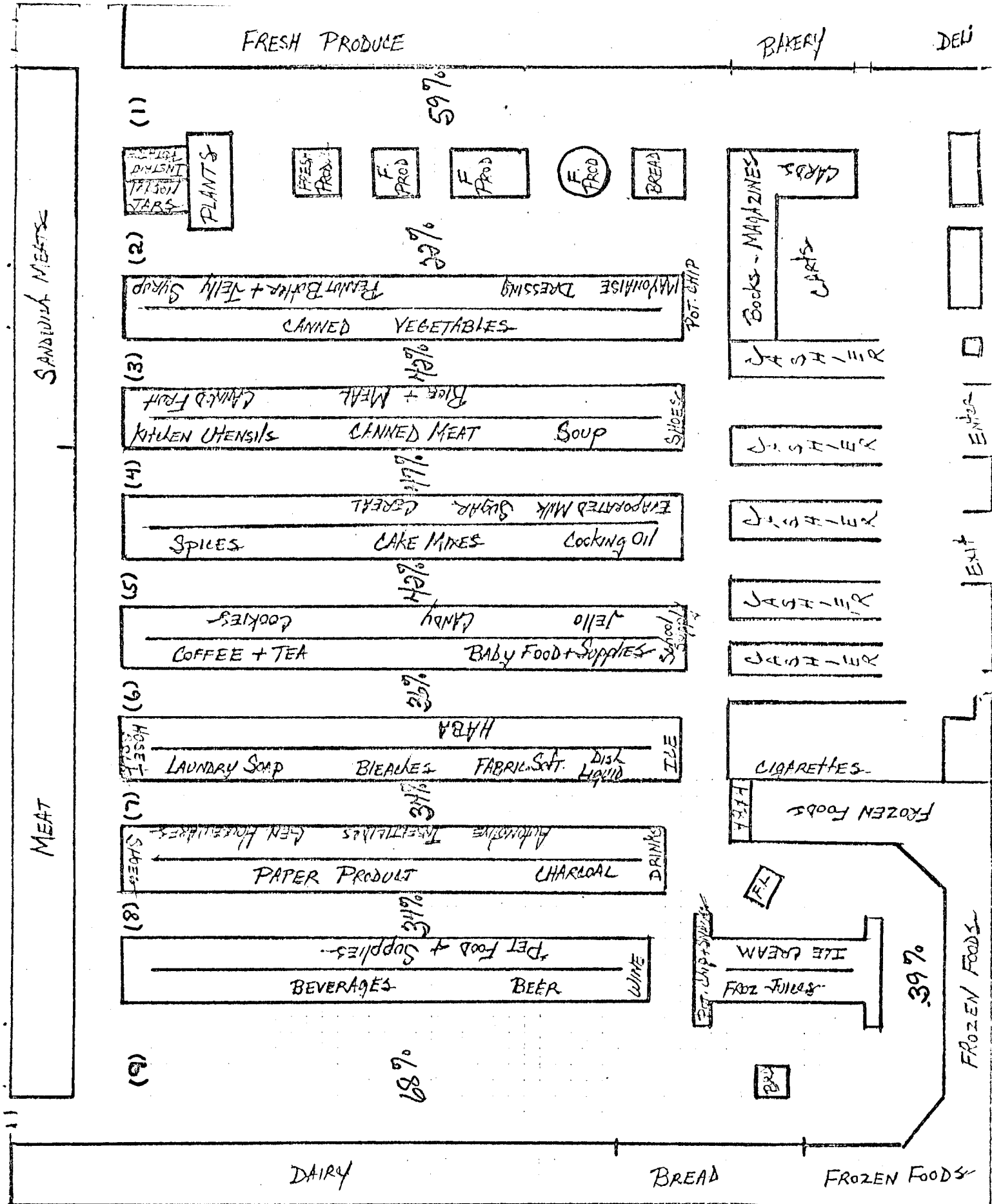
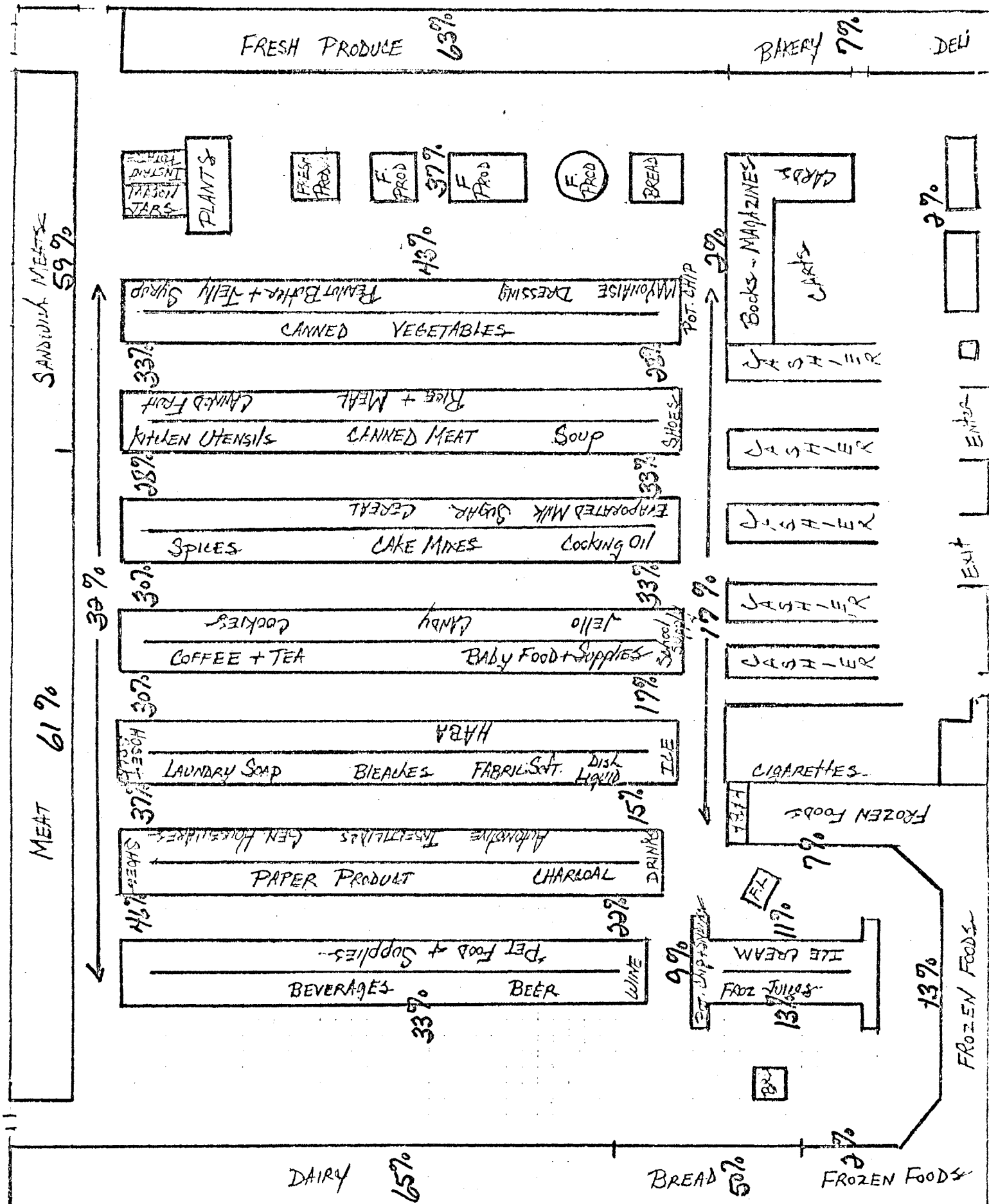


Figure-4. Percent of Customers Shopping Entire Aisle, Hitchcock's Foodway Supermarket, Alachua, Florida.



## Total Store Shopping Survey

The shopping pattern analysis of greatest interest is Figure-4 which shows the percentage of customers that shopped each supermarket aisle. This is because the objective of supermarket merchandising is to get shoppers past as much merchandise as possible. Previous customer shopping pattern work suggests that at least 70 percent of the supermarket's customers should shop the peripheral aisles and 40 percent the store's interior aisles. Therefore, of particular concern are aisles one, 59 percent shopping; aisle two with only 22 percent shopping; aisle six, 36 percent shopping; aisle seven with 34 percent shopping; aisle eight, with 34 percent shopping, and the frozen food aisle with 39 percent shopping.

Data on the percentage of shoppers buying from each aisle side, from the ends of the front and rear grocery aisles, and from other selected store locations are shown by Figure-5. Of particular concern are those three aisle sides where less than 25 percent of the customers purchased and the peripheral frozen food aisle with 22 percent accumulated purchasers. Also, it should be noted that only 17 percent of the shoppers purchased items from the aisle ends at the front of the supermarket.

Frozen Food Department Analysis

Hitchcock's Foodway Supermarket

## Frozen Food Department Performance

The Frozen food department was selected for in-depth study and analysis. The results of this special study are summarized on the following pages. Data were obtained by observing a hundred shoppers in the frozen food aisle. The results of these customer shopping observations are summarized in Figures 6 to 8.



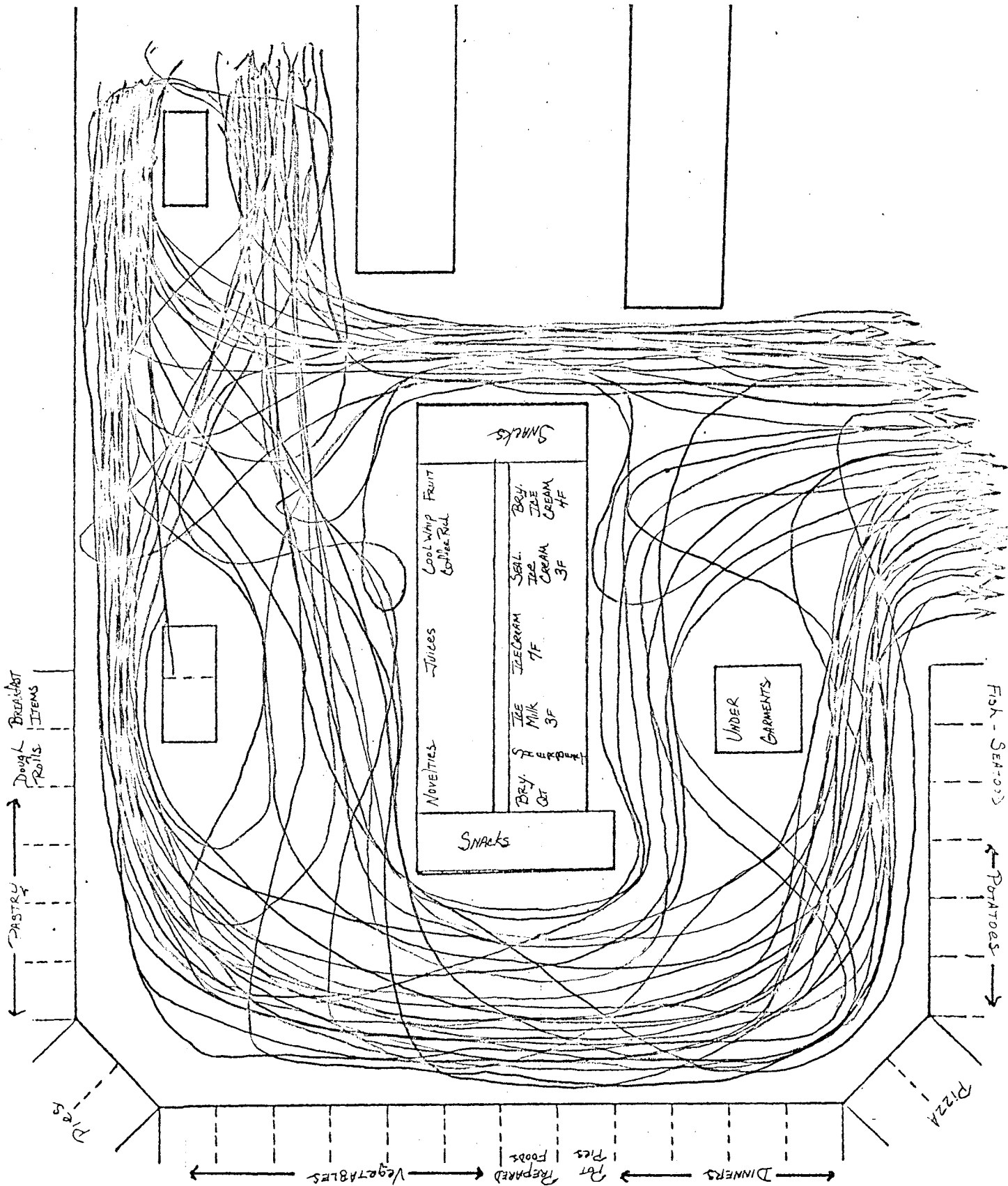


Figure 6. Composite Frozen Food Department Shopping Diagram, Fifty Department Shoppers, Hitchcock's Foodway Supermarket, Alachua, Florida.





Management Implications

Hitchcock's Foodway Supermarket

## Management Implications

### Some Preliminary Observations-Total Store:

1. The extent to which the island produce displays split the traffic flow down the first aisle is strongly evident. Only 59 percent of the customers pass the entire length of this aisle. Furthermore, only 22 percent pass the entire length of the second aisle. The shoppers using the produce islands for cross aisles is dramatically shown in Figure-2. Therefore, the number of shoppers reaching the southwest corner of the supermarket is somewhat low, 73 percent.
2. The last three interior grocery aisles (#6, #7, and #8) have relatively low customer exposure as only about 35 percent of the shoppers pass the entire length of these aisles. Merchandising and layout activity to improve this exposure might be considered.
3. The pull of the dairy department in the last aisle is evident by the fact that 81 percent of the shoppers pass the far southeast corner. Furthermore, the concentration of shoppers to the dairy side of the aisle is shown by Figure-3.
4. The lack of shopper traffic in the frozen food corner is shown by all the store traffic pattern diagrams. It is difficult to get customers to shop corners yet because frozen foods is a high fixed cost department, customer exposure to this display area is important. It is believed that frozen food departments should receive at least exposure to 60 percent of a supermarket's customers.
5. The cross aisle prior to entering the frozen food department is partly responsible for low customer exposure to frozen as 61 percent of the shoppers use it as a passageway, Figure-3.

Some Preliminary Observations - Frozen Food Department:

1. The percentage of shoppers passing the frozen food department, approximately 40-45 percent, is somewhat below that obtainable for a peripherally located department.
2. The percentage of shoppers buying at least one frozen food item, 40 percent, is reasonably consistent with nationally reported data even though departmental exposure is somewhat low.
3. Alternative ways to improve customer shopping traffic in the frozen food corner need to be explored. Possibilities include blocking the cross passage in the last aisle of the store, moving the private label bread to the last position on the bread rack, and utilizing a stronger in-store promotional program.