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# The Food Industry Center's 2002 Supermarket Annual Report

# **The 2002 Supermarket Panel Annual Report**

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Finally, we thank the individual owners store managers/directors and others who participated in the 2002 Panel. By sharing their time and knowledge, they have made this unique, in-depth view of the supermarket industry at the store level possible.

# **The 2002 Supermarket Panel**

## **Executive Summary**

The Supermarket Panel collects data annually from individual supermarkets on store characteristics, operations, and performance. The Panel was established in 1998 by the Food Industry Center as the basis for ongoing study of the supermarket industry. It is unique because the unit of analysis is the individual store and the same stores are tracked over time. This makes it possible to analyze how changes in technologies, business practices, and competitive forces are transforming the industry.

The 2002 Supermarket Panel consists of 866 stores selected at random from the nearly 32,000 supermarkets in the U.S. or invited to participate through their affiliation with two cooperating retail companies and IGA. These 866 stores are a representative cross section of the industry, including stores from all formats that belong to ownership groups ranging from single stores to the country's largest chains.

Key findings from the 2002 Supermarket Panel include:

- Location, competitive environment, and store characteristics have important impacts on performance.
  - Stores located in areas with higher population density and higher median household income have significantly higher levels of sales per square foot. (Table 11.2)
  - Price and quality leadership in the local market have important links with superior performance. (Table 11.2)
  - Approximately half of the supermarket population recognizes significant competition from a supercenter, up from about one-third of stores in the 2001 Panel. (Table 9.3)
  - After controlling for store format, increases in selling area have a significant negative association with sales per square foot. (Table 11.2)
  - Stores in self distributing groups have higher productivity for both selling area and labor. (Table 11.2)





- Supply chain initiatives are having a significant impact.
  - The industry is rapidly approaching 100% adoption of Internet/Intranet links to corporate headquarters and/or key suppliers, with the adoption rate for all stores doubling in just three years. (Figure 3.1)
  - Adoption rates for other supply chain technologies and practices continue to increase significantly for all stores, but there are large differences in adoption levels for wholesaler-supplied and self-distributing stores. (Figures 3.2 - 3.5)
  - Stores in ownership groups with more than 750 stores have very high rates of adoption for electronic transmission of movement data and electronic receipt of invoices. (Table 3.1)
- Supercenter/hypermarket stores differ dramatically from other stores in almost every management area.
  - They have notably high adoption rates for three key decision sharing technologies: vendor managed inventory, scan-based trading, and use of scanner data for automatic inventory refill. (Table 3.3)
  - They stand out in their emphasis on training for key employees – store managers, grocery department managers, and scanning coordinators. They also make much greater use of incentive based compensation and offer more comprehensive packages of non-cash benefits. (Table 4.2)
  - Supercenter/hypermarket stores are more likely than other stores to offer services based on information technology – customer self-scanning, Internet ordering, and a customer web site. (Table 8.2)

### **The 2003 Supermarket Panel**

We will continue expanding the size of the Panel in 2003. This will increase the accuracy of the industry profile and make it possible to examine emerging trends in greater detail.

We are piloting new research efforts that will build on and complement the Panel. These include an online customer satisfaction survey that can be customized for individual stores and a coordinated set of survey instruments designed to assess human resource practices and employee satisfaction. Both of these new efforts will benefit from being linked to the detailed store level information provided by the Panel. At the same time, they will add to the value of the core Panel by collecting information on critical factors beyond store characteristics, operating practices, and performance.

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# The 2002 Supermarket Panel

## Annual Report

### 1. Introduction

This report summarizes findings from the 2002 Supermarket Panel, which includes 866 stores that are a representative cross-section of the supermarket industry. The Food Industry Center established the Supermarket Panel in 1998 as the basis for ongoing study of the supermarket industry. Since 2000 the core of the Panel has been a random sample of stores drawn from the approximately 32,000 supermarkets in the U.S. that accept food stamps.

The Panel is comprised of individual stores that provide information annually on store characteristics, operations, and performance. The Panel has two overall objectives:

1. Provide timely, useful information for the industry through benchmark reports and annual summaries.
2. Be a ready source of longitudinal, cross-section data for research on current and emerging issues.

The Panel is unique because the unit of analysis is the individual store and the same stores are tracked over time. This makes it possible to trace the impacts of new technologies and business practices as they are adopted.

Information provided by the 866 Panel stores is the basis for the in-depth view of the industry presented here. In general, these findings highlight significant relationships among store characteristics, business practices, and performance, but they should not be interpreted as cause and effect relationships.

The remainder of this report begins with a brief description of the data collection procedures for the 2002 Supermarket Panel and a descriptive profile of the participating stores. The descriptive profile includes breakdowns by size of store ownership group and format.

• **866 stores participated in the 2002 Supermarket Panel.**

Each participating store in the 2002 Panel received a confidential benchmark report comparing it to peer stores similar in format and selling area. Index scores for six key management areas – supply chain, human resources, food handling, environmental practices, quality assurance, and service offerings – were an important feature of the benchmark report. Sections 3 through 8 present detailed findings on store practices and performance related to these six key management areas. For four of the six management areas, we look more closely at key trends and relationships that help put detailed descriptive information in perspective.

In Section 9 we examine how supercenter/hypermarket stores differ from other supermarkets, and we present an updated analysis of the impacts of competition from supercenters. In Section 10 we explore the characteristics of top performing stores, updating an analysis first presented in the *Annual Report* for the 2001 Panel. Then in Section 11 we present a more comprehensive analysis of drivers for key measures of store performance, using regression analysis to measure relationships between performance and individual store characteristics while controlling for other factors. Finally, this report concludes with a brief look ahead to the 2003 Panel.

## 2. A Descriptive Profile of the Panel

Data collection procedures for the 2002 Panel are described in detail in Appendix A. The population for the Panel was defined as the 31,838 establishments classified as supermarkets on a USDA list of the 151,999 establishments in the United States that accept food stamps. All 405 randomly selected stores that participated in the 2001 Panel were included in the sample for 2002. Of these, nine stores had either ceased operations or declined to participate again, leaving 396 randomly selected stores that had previously participated in the Panel. Prior to the initiation of data collection, the Food Industry Center and IGA agreed to send the 2002 Panel to all IGA affiliated stores in the United States. The IGA stores were removed from the population list before an additional 1,604 stores were drawn at random from the remaining 30,916 stores in the population, yielding a total random sample of 2000 stores.

- **The population for the Panel was the 31,838 stores defined as supermarkets by USDA.**

In addition to IGA, two major retailers also established working relationships with the Food Industry Center that made it possible to include some or all of their stores in the Panel. Inclusion of stores from IGA and these two retailers increased the total sample size for the 2002 Panel to 3,901 stores.<sup>1</sup>

Data collection, coding, and entry were administered and performed by the Minnesota Center for Survey Research (MCSR). In November 2001 MCSR personnel telephoned each of the 2,000 stores in the “core sample” constructed prior to inclusion of the stores from IGA and the two major retailers. The calls confirmed the store address and the name and title of the manager, so that all subsequent communication could be addressed to the person in charge at the individual location. This could be the owner, manager, or store director, depending on the individual organization, but respondents will be referred to as store managers henceforth.

In early January 2002 each store manager in the core sample received a letter introducing the Panel and indicating that his or her store had been randomly selected for participation. The letter indicated that each participating store would receive a confidential benchmark report. This was the only incentive offered for participation. In mid-January 2002,

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<sup>1</sup>As explained in Appendix A, sampling weights are used to correct for more intensive sampling in these retail groups.

Panel data booklets were mailed to the stores in the core sample. This mailing was followed by post card reminders and a second mailing of the data booklets to stores that had not responded. Data collection for these stores ended in mid-March 2002.

Data collection procedures were similar for the IGA stores and the stores of the two affiliated food retail companies. Managers of these stores also received letters from their corporate headquarters, encouraging them to complete the Panel data booklet and explaining that their store data and benchmark reports would also be available to their parent organization. All mailings to these stores were conducted by MCSR.<sup>2</sup>

Data were coded, edited, key punched, and cleaned by MCSR personnel in April. In early June a confidential benchmark report was prepared for each participating store, comparing it to a group of peer stores similar in format and size.<sup>3</sup>

- **The overall response rate was 22.2%.**

Of the 3,901 stores in the overall sample, 866 returned useable data booklets. This represents an overall response rate of 22.2%. Response rates differed by ownership group size and by region. To correct for these response imbalances, the population, sample, and respondents were grouped into strata defined by ownership group size and region; and frequency weights were constructed for use in the statistical analysis of the Panel data.<sup>4</sup> Unless noted otherwise, all analyses in this report are based on weighted data.

### **Ownership Group Size and Store Format**

Two significant changes were made in data collection and preparation procedures for the 2002 Panel. First, ownership group size measures based on manager responses were checked against data from the population database and, in many cases, modified to reflect verifiable information on group size. Second, store format assignments were based on store characteristics rather than on respondents' selection from a list of possible formats.

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<sup>2</sup> IGA and the two affiliated food retail companies were given access only to data from their own stores.

<sup>3</sup> See Appendix B for a sample benchmark report.

<sup>4</sup> See Appendix A for details on response rates by ownership strata and region, a description of procedures for constructing frequency weights, and a table of the frequency weights.

Ownership group size is defined in this report as the number of stores owned by the company that owns the store managed by the respondent. An ownership group may include stores with several distinct names and formats. For example, a single company could own eighty stores that operate under three different names. Manager responses to the question about group size often differ widely for stores known to be in the same ownership group, especially for ownership groups made up of formerly independent chains. Also, managers of independently owned stores that share a common name with other independent stores sometimes report the number of stores with a common name rather than the number of stores under common ownership. This year ownership group sizes were adjusted to reflect externally available, verifiable information. This means stores known to be in the same ownership group all have the same ownership group size.

- **Ownership group size is defined as the number of stores owned by the company that owns the store managed by the respondent. An ownership group may include stores with several distinct names and formats.**

Ownership group size adjustments were made by Robert King and Elaine Jacobson, the only researchers who had access to store names.<sup>5</sup> Adjusted ownership group sizes were used to classify stores by ownership group size and are used in some of the analyses in this report. Because these adjusted group size figures could be used by others to infer the identity of some stores participating in the Panel, they are not included in the data set used by other Food Industry Center researchers.

In previous years, store format classifications were based on respondent selection of a format from a list of possible formats. In some cases there appeared to be confusion about format definitions, and in 2001 a significant number of respondents did not choose a format for their stores. In order to prepare benchmark reports for these stores, formats had to be assigned on the basis of store characteristics. In 2002 all store format classifications were based on store characteristics. Definitions for the six formats used in the report this year are presented in Table 2.1.

- **Stores were grouped into six formats based on store characteristics.**

### **Comparison of Panel Store Characteristics to Findings from Other Studies**

*The Food Marketing Industry Speaks* published by the Food Marketing Institute and the *Annual Report of the Grocery Industry* published by *Progressive Grocer* are widely read annual studies of the supermarket industry. Both provide comprehensive overviews of conditions,

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<sup>5</sup>Access to store names is needed to prepare benchmark reports.

**Table 2.1 Store Format Definitions**

<b>Format</b>	<b>Selling Area (square feet)</b>	<b>Bagging</b>	<b>Pharmacy</b>	<b>Percent of Sales from Grocery</b>
<b>Conventional</b>	<b>Up to 25,000</b>	<b>Yes or No</b>	<b>No</b>	<b>-</b>
	<b>or 25,001 to 40,000</b>	<b>Yes</b>	<b>No</b>	<b>-</b>
<b>Superstore</b>	<b>More than 40,000</b>	<b>Yes</b>	<b>No</b>	<b>-</b>
<b>Food/Drug Combination</b>	<b>20,000 to 75,000</b>	<b>Yes</b>	<b>Yes</b>	<b>-</b>
	<b>or 75,000 to 100,000</b>	<b>Yes</b>	<b>Yes</b>	<b>More than 30%</b>
<b>Warehouse</b>	<b>25,001 to 100,000</b>	<b>No</b>	<b>No</b>	<b>-</b>
<b>Super Warehouse</b>	<b>25,001 to 100,000</b>	<b>No</b>	<b>Yes</b>	<b>-</b>
<b>Supercenter/Hypermarket</b>	<b>75,000 to 100,000</b>	<b>Yes</b>	<b>Yes</b>	<b>Up to 30%</b>
	<b>or More than 100,000</b>	<b>Yes or No</b>	<b>Yes</b>	<b>-</b>

issues, and trends in the industry, though neither collects detailed data at the individual store level. Table 2.2 compares median store characteristics for the 2002 Supermarket Panel with figures presented in *Speaks, 2002* and *Progressive Grocer's 69<sup>th</sup> Annual Report of the Grocery Industry*. Relative to industry-wide figures reported in *Speaks*, stores in the Panel are, on average, smaller and less efficient with regard to utilization of space and labor. Panel stores have slightly higher inventory turnover and report lower gross profit as a percentage of sales. Fewer direct comparisons are possible between median characteristics for the Panel and those reported by *Progressive Grocer*. Median store selling area and weekly sales per full-time equivalent employee are similar for the two studies, though both figures are slightly higher for the Panel stores. On the other hand, median annual sales and weekly sales per square foot are slightly more than ten percent lower for the Panel stores.

Differences in industry-wide median characteristics reported in these three studies are largely attributable to differences in survey objectives, timing, and methodology. Each study provides useful information, and having three distinct perspectives gives stakeholders a more complete view of the industry.

- **Differences in industry-wide characteristics reported in the Panel, *Speaks*, and *Progressive Grocer* are largely attributable to differences in survey objectives, timing, and methodology.**

**Table 2.2 Median Store Characteristics for U.S. Supermarkets**

<b>Characteristic</b>	<b>Median Store Characteristics</b>		
	<b>Supermarket Panel</b>	<b><i>Speaks</i><sup>1</sup></b>	<b><i>Progressive Grocer</i><sup>2</sup></b>
<b>Selling Area</b>	<b>29,000 square feet</b>	<b>44,000 square feet</b>	<b>28,400 square feet</b>
<b>Annual Store Sales</b>	<b>\$10,920,000</b>	<b>–</b>	<b>\$12,300,000</b>
<b>Weekly Store Sales</b>	<b>\$210,000</b>	<b>\$368,779</b>	<b>–</b>
<b>Annual Sales Growth</b>	<b>10%</b>	<b>2.2%</b>	<b>–</b>
<b>Sales per Transaction</b>	<b>\$21.33</b>	<b>\$25.66</b>	<b>–</b>
<b>Weekly Sales per Square Foot of Selling Area</b>	<b>\$7.50</b>	<b>\$10.83</b>	<b>\$8.33</b>
<b>Sales per Labor Hour</b>	<b>\$118.18</b>	<b>\$130.00</b>	<b>–</b>
<b>Weekly Sales per Full-time Equivalent Employee</b>	<b>\$3,545<sup>3</sup></b>	<b>–</b>	<b>\$3,380</b>
<b>Annual Inventory Turns</b>	<b>16</b>	<b>14</b>	<b>–</b>
<b>Gross Profit as a Percent of Sales</b>	<b>24.0%</b>	<b>27.7%</b>	<b>–</b>
<b>Payroll as a Percent of Sales</b>	<b>10.0%</b>	<b>11.0%</b>	<b>–</b>

<sup>1</sup> Source: *The Food Marketing Industry Speaks, 2002*, Food Marketing Institute, 2002.

<sup>2</sup> Source: 69<sup>th</sup> *Annual Report of the Grocery Industry*, special supplement to *Progressive Grocer*, April 2002.

<sup>3</sup> Calculated assuming a thirty hour work week for a full-time employee.

### **Stores Grouped by Ownership Group Size**

Control over a larger group of stores can be the basis for efficiency gains in procurement, distribution, advertising, employee training, and implementation of new technologies. However, the associated cost savings may be more apparent at the corporate level than in individual stores. Table 2.3 shows median characteristics and performance measures for stores in five ownership group size categories that range from single store independents to groups with more than 750 stores. As noted above, ownership group size is based on common ownership, and many large groups include stores with several different names.

**Table 2.3 Descriptive Profile of the Panel for Stores Grouped by Ownership Group Size**

	Single Store	2-10 Stores	11-50 Stores	51-750 Stores	>750 Stores
<b>NUMBER OF STORES REPRESENTED</b>	<b>5,549 (266)</b>	<b>4,517 (175)</b>	<b>5,277 (89)</b>	<b>8,168 (243)</b>	<b>8,914 (94)</b>
<b>STORE AND MARKET CHARACTERISTICS</b>					
• Median Selling Area (sq. ft.)	12,000	17,000	30,000	35,000	40,000
• Median Store Age (years)	37	32	19	13	15
• Mean Ownership Store Group Size (Stores)	1	4	25	278	1,571
• Percent Wholesaler Supplied	100	94	81	11	-
• Percent Located in an SMSA	49	64	60	80	66
<b>MEDIAN PERFORMANCE MEASURES</b>					
• Weekly Sales	\$77,000	\$117,307	\$240,000	\$300,000	\$328,000
• Weekly Sales per Square Foot	\$7.10	\$7.14	\$7.17	\$8.80	\$7.80
• Sales per Labor Hour	\$87.24	\$100.00	\$118.61	\$128.48	\$135.85
• Sales per Transaction	\$14.57	\$17.19	\$20.59	\$25.00	\$23.57
• Annual Inventory Turns	17.0	18.0	14.0	17.0	16.0
• Percent Employee Turnover	38.1	46.2	42.9	38.7	40.4
• Gross Profit as a Percent of Sales	24.0	24.8	23.4	24.5	24.6
• Payroll as a Percent of Sales	10.8	10.1	9.6	9.9	9.5
• Annual Percentage Sales Growth	1.9	2.1	0.8	2.1	1.0
<b>NUMBER OF STORES BY FORMAT</b>					
• Conventional	5,284	3,776	2,774	2,970	2,939
• Superstore	65	288	520	528	368
• Food/Drug Combo	98	453	1,290	3,579	4,938
• Warehouse	37	-	453	294	-
• Super Warehouse	65	-	240	359	164
• Supercenter/Hypermarket	-	-	-	438	505
<b>NUMBER OF STORES BY REGION</b>					
• Northeast	1,244	887	756	2,768	1,250
• South	1,324	1,246	1,196	2,400	4,100
• Midwest	2,030	1,366	1,976	2,228	960
• West	951	1,018	1,349	772	2,604



The number of stores represented in each category is determined by summing the frequency weights across stores and is an estimate of the total number of stores nationally in the group size. The smaller number in parentheses is the actual number of Panel stores in the group size category prior to weighting. For example, the 266 single store independents in the 2002 Panel represent an estimated 5,549 single store independents nation-wide.

For almost every characteristic and performance measure, there are striking differences in stores across these group size categories. Often, however, there are not consistent trends across categories. Nearly all stores in groups of ten or fewer stores are wholesaler supplied, as are 80% of the stores in groups with from 11 to 50 stores. As group size increases beyond 50 stores, however, the parent company is increasingly likely to operate its own distribution system. Stores in ownership groups with fewer than ten stores tend to be much smaller and older, and single store independents are considerably less likely to be in a metropolitan area.

For four key median performance measures – weekly sales per square foot, sales per labor hour, sales per transaction, and payroll as a percent of sales – stores in the two largest ownership group size categories clearly outperform single store operators and stores in ownership groups of 2 - 10 stores. Stores in groups of 11 - 50 stores have intermediate median values for sales per labor hour and sales per transaction. Their median weekly sales per square foot is similar to that for stores in smaller groups, while their median payroll as a percent of sales is similar to that for stores in larger groups. This suggests that stores in this ownership group size category are more heterogeneous than stores in smaller or larger groups.

- **Stores in ownership groups with 11 to 50 stores are more heterogeneous than stores in smaller or larger groups.**

Median gross profit as a percent of sales is similar across all group sizes with the exception of groups of 11 - 50 stores which have notably lower gross margins. This may be attributable to the fact there is a higher percentage of warehouse and super warehouse stores in this category – formats that traditionally base their competitive strategy on low prices and so are expected to have lower gross profits. Finally, annual inventory turnover, employee turnover, and annual sales growth vary considerably across ownership group size categories but show no consistent trend with changes in group size.

Relative to results for the 2001 Panel, weekly sales per square foot and sales per labor hour are slightly higher for the 2002 Panel. Median levels for sales per transaction, annual inventory turns, gross profit as a percent of sales, and payroll as a percent of sales are largely unchanged from 2001 to 2002. On the other hand, median levels for employee turnover and sales growth are generally lower for the 2002 Panel.

Figures in the two sections at the bottom of Table 2.3 provide information on the distribution of stores by format and region within each group size category. These are estimates for the entire population based on actual responses and frequency weights. With regard to format, it is noteworthy that the percentage of conventional stores falls steadily as ownership group size increases and that all of the supercenter/hypermarket stores in the 2002 Panel are in the two largest ownership group size categories. With respect to region, it is noteworthy that 40% of stores in the South are in groups with more than 750 stores, while 40% of stores in the Midwest are in groups of 10 or fewer stores. This illustrates the considerable difference in ownership concentration across regions.

- **40% of stores in the South are in groups with more than 750 stores, while 40% of stores in the Midwest are in groups with 10 or fewer stores.**

### **Stores Grouped by Format**

Supermarket formats are changing to better respond to customers' desire for cost savings, convenience, quality, variety, and service. Table 2.4 shows median store characteristics and performance measures for stores grouped into the six format categories defined in Table 2.1: conventional, superstore, food/drug combination, warehouse, super warehouse, and supercenter/hypermarket. In the top row of Table 2.4, numbers of stores represented are estimates for the entire population, while numbers in parentheses are actual numbers of stores in the 2002 Panel.

Before looking more closely at Table 2.4, readers should note that there are only fifteen stores in the supercenter/hypermarket format category. Based on the frequency weights used in this analysis, these stores represent a total of 943 stores nation-wide. This is a small number of stores, and it almost certainly under-represents the total number of stores in this format. Given the industry-wide interest in supercenters, however, and the fact that the fifteen Panel stores in this format come from several companies, we decided to retain supercenter/hypermarket stores as a distinct format category.

**Table 2.4 Descriptive Profile of the Panel for Stores Grouped by Format**

	<b>CON</b>	<b>SS</b>	<b>FD COMBO</b>	<b>WH</b>	<b>SWH</b>	<b>SC/HY</b>
<b>NUMBER OF STORES REPRESENTED</b>	<b>17,743 (547)</b>	<b>1,769 (34)</b>	<b>10,358 (201)</b>	<b>784 (30)</b>	<b>828 (41)</b>	<b>943 (15)</b>
<b>STORE AND MARKET CHARACTERISTICS</b>						
• Median Selling Area (sq. ft.)	19,000	48,000	40,000	37,500	55,000	139,000
• Median Store Age (years)	27	15	15	15	15	7
• Mean Ownership Group Size (Stores)	299	379	895	79	512	731
• Percent Wholesaler Supplied	64	42	16	47	52	45
• Percent Located in an SMSA	54	91	76	90	90	70
<b>MEDIAN PERFORMANCE MEASURES</b>						
• Weekly Sales	\$125,000	\$243,000	\$350,000	\$450,000	\$575,000	\$1,000,000
• Weekly Sales per Square Foot	\$7.40	\$4.88	\$7.73	\$12.14	\$6.94	\$8.06
• Sales per Labor Hour	\$104.07	\$118.18	\$123.86	\$154.87	\$150.33	\$138.69
• Sales per Transaction	\$18.00	\$22.50	\$24.17	\$26.50	\$27.84	\$35.71
• Annual Inventory Turns	16.0	21.0	16.0	15.0	14.0	10.0
• Percent Employee Turnover	39.3	46.4	39.1	54.7	42.1	48.2
• Gross Profit as a Percent of Sales	24.0	27.9	24.3	20.6	21.5	24.6
• Payroll as a Percent of Sales	10.0	10.0	10.4	7.4	7.8	8.0
• Annual Percentage Sales Growth	2.0	0.0	1.3	-2.3	1.9	3.1
<b>NUMBER OF STORES BY STORE GROUP SIZE</b>						
• Single Store	5,284	65	98	37	65	0
• 2 - 10 Stores	3,776	288	453	0	0	0
• 11 - 50 Stores	2,774	520	1,290	453	240	0
• 51 - 750 Stores	2,970	528	3,579	294	359	438
• > 750 Stores	2,939	368	4,938	0	164	505
<b>NUMBER OF STORES BY REGION</b>						
• Northeast	3,650	594	2,084	125	327	125
• South	6,000	618	3,248	0	0	400
• Midwest	4,862	296	2,424	229	417	250
• West	3,151	259	2,602	430	84	168

CON = Conventional  
SS = Superstore

FD COMBO = Food/Drug Combination  
WH = Warehouse

SWH = Super Warehouse  
SC/HY = Supercenter/Hypermarket

As expected, the supercenter/hypermarket stores are much larger and newer than stores in all other formats. Relative to stores in other formats, those in the conventional category are smaller, older, more likely to be wholesaler supplied, and less likely to be located in a metropolitan area. Superstore, food/drug combination, warehouse, and super warehouse stores are fairly similar in size and have identical median ages. Food/drug combination stores differ considerably from stores in the other three formats with respect to their larger mean ownership group size and their smaller percentage of stores that are wholesaler supplied.

- **Warehouse and super warehouse stores are noteworthy for their high labor productivity and low gross margins.**

Turning to the median performance measures in the middle of the Table 2.4, conventional stores have the lowest sales per labor hour and sales per transaction, but they are comparable to stores in other formats for sales per square foot, annual inventory turns, gross margin as a percent of sales, and payroll as a percent of sales. Median sales per square foot is surprisingly low for superstores. On the other hand, these stores have strong median values for annual inventory turns and gross margin as a percent of sales. Warehouse and super warehouse stores are noteworthy for their high levels of labor productivity – high sales per labor hour and low payroll as a percent of sales – and for their low median gross profit as a percent of sales. Warehouse stores also have the highest median sales per square foot. Finally, the supercenter/hypermarket stores have solid levels of performance in all areas except annual inventory turns and have the highest median sales growth rate.

### **Continuing and New Stores in the Supermarket Panel**

Of the 866 stores in the 2002 Panel, 258 were part of the 2001 Panel and 608 were participating in the Panel for the first time. Because data for the continuing stores will be used later in this report to gain deeper insights on relationships between changes in operating practices and store performance, it is useful here to examine similarities and differences between continuing and new stores in the Panel. Table 2.5 shows median store characteristics and performance measures for these two groups.

- **Overall, there are no striking, systematic differences between continuing and new stores in the 2002 Panel.**

Stores in the two groups are remarkably similar with regard to median selling area, store age, sales per square foot, annual inventory turns, and payroll as a percent of sales. The mean ownership group size is slightly lower and the percentage that are wholesaler supplied is slightly higher for continuing stores. Continuing stores also have lower median labor turnover and slightly higher median sales growth. Overall, there are no striking, systematic differences between the continuing and new stores.

**Table 2.5 Descriptive Profile for Continuing and New Stores in the 2002 Supermarket Panel**

	<u>Median Store Characteristics</u>	
	Stores that First Participated in the Panel Prior to 2002	Stores that First Participated in the Panel in 2002
<b>NUMBER OF STORES REPRESENTED</b>	<b>12,933 (258)</b>	<b>19,410 (608)</b>
<b>STORE AND MARKET CHARACTERISTICS</b>		
• Median Selling Area (sq. ft.)	28,000	30,000
• Median Store Age (years)	22	20
• Mean Ownership Group Size (Stores)	426	560
• Percent Wholesaler Supplied	54	41
• Percent Located in an SMSA	61	69
<b>MEDIAN PERFORMANCE MEASURES</b>		
• Weekly Sales	\$212,000	\$200,000
• Weekly Sales per Square Foot	\$7.50	\$7.48
• Sales per Labor Hour	\$115.38	\$120.00
• Sales per Transaction	\$22.41	\$20.79
• Annual Inventory Turns	17.0	16.0
• Percent Employee Turnover	37.0	44.0
• Gross Profit as a Percent of Sales	24.0	25.0
• Payroll as a Percent of Sales	10.0	10.0
• Annual Percentage Sales Growth	2.2	1.6
<b>NUMBER OF STORES BY STORE GROUP SIZE</b>		
• Single Store	2,586	2,963
• 2 - 10 Stores	1,865	2,652
• 11 - 50 Stores	2,473	2,724
• 51 - 750 Stores	3,143	5,023
• > 750 Stores	2,866	6,048
<b>NUMBER OF STORES BY FORMAT</b>		
• Conventional	7,337	10,326
• Superstore	591	1,176
• Food/Drug Combination	4,022	6,336
• Warehouse	203	581
• Super Warehouse	680	148
• Supercenter/Hypermarket	100	843

### 3. Supply Chain Practices

Supply chain management initiatives are having profound impacts throughout the food system. New technologies and business practices are being developed and implemented to reduce inefficiencies and improve coordination through electronic transmission of orders, invoices, and movement data; through data and decision sharing; and through more effective use of information technology in store operations.

The Supply Chain score is designed to serve as an indicator of a store's ability to participate in and contribute to supply chain initiatives. This score has two equally weighted components: the technology component and the decision sharing component. The technology component measures a store's adoption of twelve store-level technologies related to supply chain management:

1. Internet/Intranet links to corporate headquarters and/or key suppliers
2. Electronic transmission of movement data to headquarters or key suppliers
3. Electronic receipt of invoices from primary warehouse
4. Electronic receipt of invoices from DSD vendors
5. Electronic transmission of orders to vendors/suppliers (e.g., Telxon, Web, EDI)
6. Vendor managed inventory (orders for non-DSD items generated by vendor based on store movement data)
7. Scan-based trading (payment to vendor triggered by sale to consumer)
8. Scanning data used for automatic inventory refill
9. Product movement analysis/Category management
10. Shelf-space allocation plan-o-grams
11. Electronic shelf tags
12. Frequent shopper/Loyalty card program

The first five of these technologies facilitate the flow of data and information between the store and its suppliers. Increasingly, these business-to-business linkages are based on Internet protocols rather than proprietary electronic data interchange systems. The next three – vendor managed inventory, scan-based trading, and computer assisted ordering – are technology-based business practices that facilitate decision sharing with trading partners. Finally, the last four technologies – product

movement analysis, plan-o-grams, electronic shelf tags, and frequent shopper programs – all support product assortment, pricing, and merchandising decisions at the store level. These twelve technologies are equally weighted, and the score for the technology component is simply the percent of technologies adopted.

The decision sharing component of the Supply Chain score measures the extent to which parties outside the store are involved in store-level decisions in five key activities:

- Pricing
- Advertising
- Space allocation
- Display merchandising
- Promotions.

Store managers were asked who has primary responsibility for decisions in each of these areas for four products: apples, dry cereal, direct store delivery (DSD) snacks, and fluid milk. The score for this component is the percent of these twenty decisions (five for each of four products) for which someone outside the store has primary responsibility.

### **Supply Chain Practices for Stores Grouped by Store Group Size**

Table 3.1 shows mean supply chain scores and technology adoption rates for stores in the five ownership group size categories that range from single store independents to groups with more than 750 stores. In the top row of the table, numbers of stores represented are estimates for the entire population, while numbers in parentheses are actual non-weighted numbers of stores in the Panel. The mean Supply Chain score increases steadily with ownership group size, as does the technology component.

Use rates for individual technologies are shown in the lower portion of the table. More than half of the stores in each ownership group size category have Internet/Intranet links to headquarters or key suppliers, indicating that adoption of this basic enabling technology for other e-commerce applications is progressing well. Adoption rates are generally lower for the other four technologies that facilitate the flow of data and information between the store and its suppliers. Here it is noteworthy that stores in ownership groups with more than 750 stores have very high rates of adoption for electronic transmission of movement data and electronic receipt of invoices from both their primary warehouse and DSD vendors. In contrast, stores in the two smallest ownership group

- **The mean Supply Chain score increases steadily with ownership group size, as does adoption of supply chain technologies.**

- **Stores in ownership groups with more than 750 stores have very high rates of adoption for electronic transmission of movement data and electronic receipt of invoices.**

**Table 3.1 Supply Chain Practices for Stores Grouped by Ownership Group Size: Technology Adoption**

	Single Store	2-10 Stores	11- 50 Stores	51 - 750 Stores	> 750 Stores
NUMBER OF STORES REPRESENTED: SC Score	5,497 (262)	4,446 (173)	5,007 (85)	8,157 (240)	8,914 (94)
<b>MEAN SUPPLY CHAIN SCORE</b>	<b>28</b>	<b>40</b>	<b>66</b>	<b>69</b>	<b>80</b>
• Technology Component	33	39	55	62	69
• Decision Sharing Component	24	42	79	77	92
<b>USE OF TECHNOLOGY (Percentages)</b>					
• Data Sharing Technologies					
– Internet/Intranet link to corporate headquarters and/or key suppliers	54	59	78	81	90
– Electronic transmission of movement data to headquarters or key suppliers	33	41	85	82	90
– Electronic receipt of invoices from primary warehouse	25	37	55	65	89
– Electronic receipt of invoices from DSD vendors	18	24	58	77	88
– Electronic transmission of orders to vendors/suppliers	75	85	78	83	77
• Decision Sharing Practices and Technologies					
– Vendor managed inventory	18	21	18	40	38
– Scanned-based trading (payment to vendor triggered by sale to consumer)	12	18	26	32	34
– Scanning data used for automatic inventory refill	2	3	4	27	33
• Technologies that Support Product Assortment, Pricing, and Merchandising Decisions					
– Product movement analysis/Category management	76	76	86	94	94
– Electronic shelf tags	20	37	27	23	33
– Shelf-space allocation plan-o-grams	49	50	83	88	96
– Frequent shopper/Loyalty card program	13	15	41	50	66



size categories have relatively low adoption rates for these technologies. These important data sharing technologies – which may yield significant cost savings at the distribution center level – are being adopted more rapidly when the store and distribution center are under common ownership. Finally, use of electronic transmission of orders is lower than expected and shows no consistent pattern across group sizes.<sup>1</sup>

There is also an upward trend across group sizes for use rates of vendor managed inventory, scan-based trading, and use of scanner data for automatic inventory refill. Overall adoption rates for these decision sharing technologies are lower than those for the five data sharing technologies. Stores in the two largest ownership group size categories have considerably higher adoption rates for vendor managed inventory and use of scanner data for automatic inventory refill than stores in smaller groups. These technologies are complex and have large fixed costs in systems and training that may pose a challenge for smaller companies. Also, some benefits from using these technologies may be realized at the distribution center rather than in the store. This makes them more attractive for self-distributing companies.

Among the four product assortment, pricing, and merchandising technologies, differences in use rates are small for product movement analysis and electronic shelf tags. In contrast, stores in groups with more than ten stores are much more likely than stores in smaller groups to use plan-o-gram software and to offer a frequent shopper program.

Table 3.2 shows how decision sharing changes across ownership group sizes in the five decision areas for each of the four products. Rates of decision sharing are consistently higher for stores in ownership groups with more than ten stores. Among the decision areas, it is not surprising that advertising and promotions have the highest rates of decision sharing within each ownership group size category, while display merchandising has the lowest. Among the four products, none has consistently higher or lower rates of decision sharing within an ownership group size. Finally, it is striking that primary decision responsibility for all twenty decision area/product combinations rests outside the store for more than seventy percent of stores in the largest ownership group size category.

- **Important data sharing technologies are being adopted at a higher rate when the store and distribution center are under common ownership.**

- **Rates of decision sharing are consistently higher for stores in ownership groups with more than ten stores.**

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<sup>1</sup> The wording of this question may have caused some confusion. We consider transmission of order data through a dial-up connection to be electronic transmission, and we believe nearly all stores use at least this technology for electronic transmission of orders.

**Table 3.2 Supply Chain Practices for Stores Grouped by Ownership Group Size: Decision Sharing**

	Single Store	2 -10 Stores	11 - 50 Stores	51 - 750 Stores	> 750 Stores
<b>DECISION SHARING WITH PARTIES OUTSIDE THE STORE (Percentages)</b>					
<b><u>APPLES</u></b>					
• Pricing	19	48	93	85	96
• Advertising	46	73	93	92	99
• Space Allocation	3	12	63	59	85
• Display Merchandising	2	8	29	39	75
• Promotions	34	59	91	85	96
<b><u>DRY CEREAL</u></b>					
• Pricing	37	59	96	85	95
• Advertising	52	75	95	92	99
• Space Allocation	8	23	74	74	92
• Display Merchandising	3	5	29	44	73
• Promotions	39	63	80	85	94
<b><u>DSD SNACKS</u></b>					
• Pricing	28	51	91	86	97
• Advertising	45	63	95	94	99
• Space Allocation	15	29	82	75	93
• Display Merchandising	25	29	54	52	80
• Promotions	44	55	86	83	99
<b><u>FLUID MILK</u></b>					
• Pricing	10	45	86	85	94
• Advertising	33	57	93	91	99
• Space Allocation	4	15	70	74	93
• Display Merchandising	8	12	48	59	79
• Promotions	34	49	88	84	95

### Supply Chain Practices for Stores Grouped by Format

Tables 3.3 and 3.4 show detailed information on Supply Chain score components for stores grouped by format. In the top row of the table, numbers of stores represented are estimates for the entire population, while numbers in parentheses are actual non-weighted numbers of stores in the Panel. Supercenter/hypermarket stores have the highest mean score for the technology component and, along with super warehouse stores, for the decision sharing component. Conventional stores have the lowest average scores for both components. These patterns are not surprising, since supercenter/hypermarket and super warehouse stores are often part of larger, self-distributing groups.

Turning to individual technologies and practices, supercenter/hypermarket stores are especially noteworthy for their high adoption rates for the three decision sharing technologies: vendor managed inventory, scan-based trading, and use of scanner data for automatic inventory refill. This may be due to the fact that these stores have a much broader, more complex product mix, which makes decision sharing more valuable for inventory management and ordering decisions. For vendor managed inventory and use of scanner data for automatic inventory refill, it is also possible that these stores have transferred expertise gained from experience with non-food items such as apparel and housewares. Supercenter/hypermarket stores are also leaders in adoption of electronic shelf tags – a labor saving technology that increases in value with the number of items stocked in the store.

- **Supercenter/hypermarket stores are especially noteworthy for their high adoption rates for the three decision sharing technologies: vendor managed inventory, scan-based trading, and use of scanner data for automatic inventory refill.**

Despite their high adoption rates for decision sharing technologies, supercenter/hypermarket stores do not consistently have the highest rates of reliance on parties outside the store for the decisions represented in Table 3.4. In general, however, stores in all formats other than conventional are more likely than not to shift responsibility for these decisions outside the store.

### Store Characteristics and Performance Measures for Stores Grouped by Supply Chain Score

Table 3.5 shows store characteristics and performance measures for stores grouped into quartiles based on the Supply Chain score. Mean scores range from 26 for stores in the lowest quartile to 87 for those in the highest. The range of mean scores is especially dramatic for the decision sharing component.

**Table 3.3 Supply Chain Practices for Stores Grouped by Format: Technology Adoption**

	CON	SS	FD COMBO	WH	SWH	SC/HY
NUMBER OF STORES REPRESENTED: SC Score	17345 (533)	1769 (34)	10352 (200)	784 (30)	828 (41)	943 (15)
<b>MEAN SUPPLY CHAIN SCORE</b>	<b>51</b>	<b>70</b>	<b>72</b>	<b>73</b>	<b>72</b>	<b>85</b>
• Technology Component	47	56	64	64	56	81
• Decision Sharing Component	55	83	81	83	89	89
<b>USE OF TECHNOLOGY (Percentages)</b>						
• Data Sharing Technologies						
– Internet/Intranet link to corporate headquarters and/or key suppliers	67	77	85	89	81	100
– Electronic transmission of movement data to headquarters or key suppliers	59	75	85	100	83	89
– Electronic receipt of invoices from primary warehouse	48	63	73	85	73	91
– Electronic receipt of invoices from DSD vendors	43	73	83	83	60	67
– Electronic transmission of orders to vendors/suppliers	76	78	84	100	55	100
• Decision Sharing Practices and Technologies						
– Vendor managed inventory	22	22	38	21	16	99
– Scanned-based trading (payment to vendor triggered by sale to consumer)	18	32	34	59	17	73
– Scanning data used for automatic inventory refill	7	11	26	11	48	100
• Technologies that Support Product Assortment, Pricing, and Merchandising Decisions						
– Product movement analysis/Category management	83	94	91	90	100	91
– Electronic shelf tags	32	27	20	11	32	51
– Shelf-space allocation plan-o-grams	65	91	94	90	90	100
– Frequent shopper/Loyalty card program	35	40	59	27	23	11

CON = Conventional  
SS = Superstore

FD COMBO = Food/Drug Combination  
WH = Warehouse

SWH = Super Warehouse  
SC/HY = Supercenter/Hypermarket

**Table 3.4 Supply Chain Practices for Stores Grouped by Format: Decision Sharing**

	CON	SS	FD COMBO	WH	SWH	SC/HY
<b>DECISION SHARING WITH PARTIES OUTSIDE THE STORE (Percentages)</b>						
<b><u>APPLES</u></b>						
• Pricing	59	94	87	95	100	83
• Advertising	75	100	93	100	100	91
• Space Allocation	33	59	71	73	93	90
• Display Merchandising	25	46	50	22	56	71
• Promotions	65	100	87	100	100	80
<b><u>DRY CEREAL</u></b>						
• Pricing	67	94	89	95	100	83
• Advertising	77	100	93	100	100	91
• Space Allocation	43	74	81	89	85	91
• Display Merchandising	25	47	52	22	57	69
• Promotions	65	100	87	89	100	78
<b><u>DSD SNACKS</u></b>						
• Pricing	62	90	89	95	100	100
• Advertising	73	96	93	95	100	100
• Space Allocation	49	80	82	95	95	89
• Display Merchandising	42	58	63	57	79	89
• Promotions	68	96	86	95	90	100
<b><u>FLUID MILK</u></b>						
• Pricing	54	93	87	85	100	78
• Advertising	67	95	92	95	100	100
• Space Allocation	41	74	79	95	70	89
• Display Merchandising	35	63	61	58	63	89
• Promotions	64	96	85	95	80	89
<b>CON = Conventional</b> <b>FD COMBO = Food/Drug Combination</b> <b>SW = Super Warehouse</b> <b>SS = Superstore</b> <b>WH = Warehouse</b> <b>SC/HY = Supercenter/Hypermarket</b>						

**Table 3.5 Average Characteristics and Performance Measures for Stores Grouped by Supply Chain Score**

	<b>Lowest Quartile</b>	<b>Second Quartile</b>	<b>Third Quartile</b>	<b>Highest Quartile</b>
<b>MEAN SUPPLY CHAIN SCORE</b>	<b>26</b>	<b>58</b>	<b>75</b>	<b>87</b>
• Technology Component	33	49	60	78
• Decision Sharing Component	19	67	89	97
<b>MARKET CHARACTERISTICS</b>				
• Median Population Density (per sq. mi.)	92	208	1,011	1,148
• Median Household Income (\$/year)	\$40,386	\$44,578	\$50,688	\$48,627
• Percent Located in an SMSA	49	73	72	71
<b>STORE CHARACTERISTICS</b>				
• Median Store Age (years)	32	23	15	14
• Mean Ownership Group Size (Stores)	1	35	120	1,159
• Median Weekly Sales	\$89,500	\$180,000	\$245,000	\$360,000
• Median Selling Area (sq. ft.)	14,000	27,000	35,000	42,000
• Median Weekly Labor Hours	980	1,619	2,300	2,750
<b>STORE CHARACTERISTICS (Percentage)</b>				
• Wholesaler Supplied	85	57	24	12
• Union Workforce	4	32	44	41
<b>PERFORMANCE MEASURES (Median)</b>				
• Weekly Sales per Square Foot of Selling Area	\$7.44	\$7.00	\$8.13	\$8.06
• Sales per Labor Hour	\$87.91	\$107.14	\$128.48	\$133.70
• Sales per Transaction	\$16.59	\$19.60	\$23.57	\$25.00
• Annual Inventory Turns	17.0	16.0	14.0	20.0
• Percentage Employee Turnover	38.1	41.8	44.0	40.7
• Gross Profit as a Percent of Sales	24.0	24.0	23.0	26.6
• Payroll as a Percent of Sales	10.0	10.0	9.8	9.3
• Annual Percentage Sales Growth	2.2	1.8	1.6	1.2

There are interesting differences in both market and store characteristics across the quartiles. Compared to stores in the lowest quartile, those in the highest quartile tend to be located in areas with higher median incomes and much higher population density. Stores in the highest quartile are newer, members of much larger store groups, and much less likely to be wholesaler supplied. They also have larger selling area and weekly sales. These patterns are similar to those observed for the 2000 and 2001 Panels and are not surprising. Membership in a larger ownership group and common ownership of stores and their distribution center make it easier for store personnel to interact with parties outside the store. Similarly, larger store size and selling volume makes it easier to justify investments in new information technologies, since hardware and software costs are often not sensitive to store size.

Turning attention to the performance measures information in the lower portion of Table 3.5, increases in the Supply Chain score are associated with stronger performance in weekly sales per square foot, sales per labor hour and payroll as a percent of sales. There is no clear pattern across quartiles for gross profit as a percent of sales and inventory turns. Surprisingly, median sales growth trends down across the quartiles.

Overall, there is a generally positive association between supply chain readiness and store performance that is stronger than that observed for the 2001 Panel. As adoption of supply chain technologies and business practices becomes more widespread, more store managers may have the knowledge and experience required for successful implementation of supply chain initiatives. At the same time, it is also possible that non-adopting stores are being penalized by suppliers.



### **A Closer Look at Supply Chain Technology and Practice Adoption Patterns**

Many of the supply chain technologies and business practices included in the Supply Chain score have important “network externalities” – i.e., the net benefits of adoption increase as the overall level of adoption increases. For example, electronic invoicing systems for DSD products become more valuable for stores as more vendors offer electronic invoices in compatible formats and they become more valuable for DSD vendors as more stores are prepared to accept them. Therefore, the rate of progress toward nearly universal adoption of key supply chain technologies is important to the industry.

- **Stores with the highest Supply Chain score tend to be located in areas with higher median incomes and much higher population density.**
- **Increases in the Supply Chain score are associated with stronger performance in weekly sales per square foot, sales per labor hour, and payroll as a percent of sales.**
- **The generally positive association between supply chain readiness and store performance for the 2002 Panel is stronger than that observed for the 2001 Panel.**

In responding to questions about supply chain technology and practice adoption, managers of stores where a technology or practice had been adopted indicated whether it had been used more than two years, one to two years, or less than one year. Managers of stores not currently using a technology or practice indicated whether they planned to start using it in the next year, had no plans to use it, or did not know. In this section we use this more detailed response data to take a closer look at adoption patterns for five key supply chain technologies and practices:

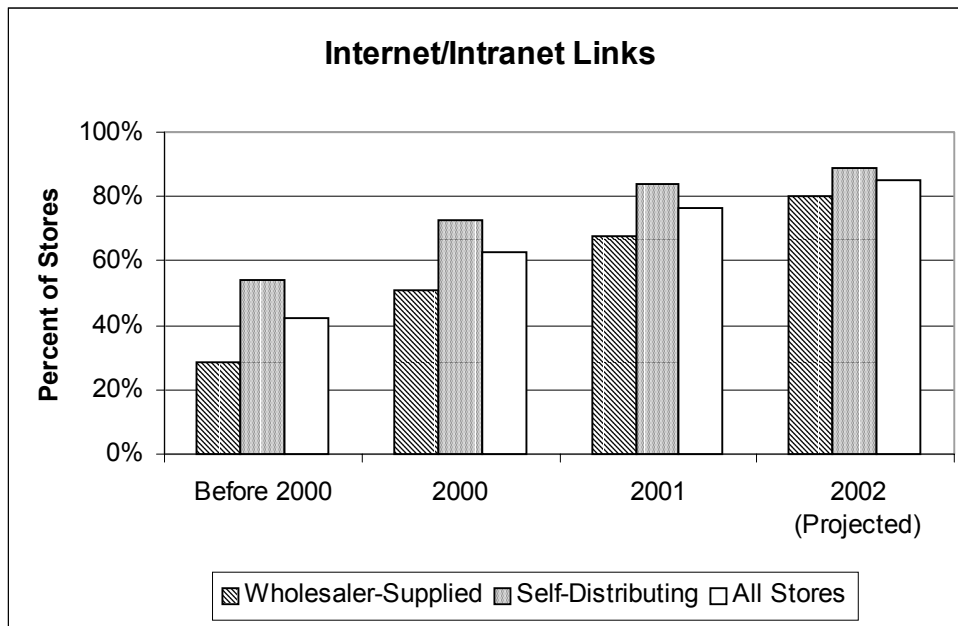
- Internet/Intranet links to headquarters and/or key suppliers
- Electronic receipt of invoices from primary warehouse
- Vendor managed inventory (orders for non-DSD items generated by vendor based on store movement data)
- Electronic receipt of invoices from DSD vendors
- Scan-based trading (payment to vendor triggered by sale to consumer)

Because current adoption rates for these practices and technologies differ considerably for stores that are wholesaler-supplied and those that part of self distributing groups, we examine historical and projected adoption patterns separately for these two groups of stores.

- **The industry is rapidly approaching 100% adoption of Internet/Intranet links, with the adoption rate for all stores doubling in just three years.**

Widespread Internet/Intranet adoption will be critical for the success of current e-commerce initiatives in the industry. Figure 3.1 shows cumulative percentage adoption levels of Internet/Intranet links for wholesaler-supplied and self distributing stores as well as for all stores. This graph shows that the industry is rapidly approaching 100% adoption of Internet/Intranet links, with the adoption rate for all stores doubling in just three years. It is also noteworthy that adoption levels for wholesaler-supplied stores are quickly catching up to those for stores in self-distributing groups. Therefore, lack of access to the basic infrastructure for electronic communication and data sharing should not stand in the way of progress on other supply chain initiatives.



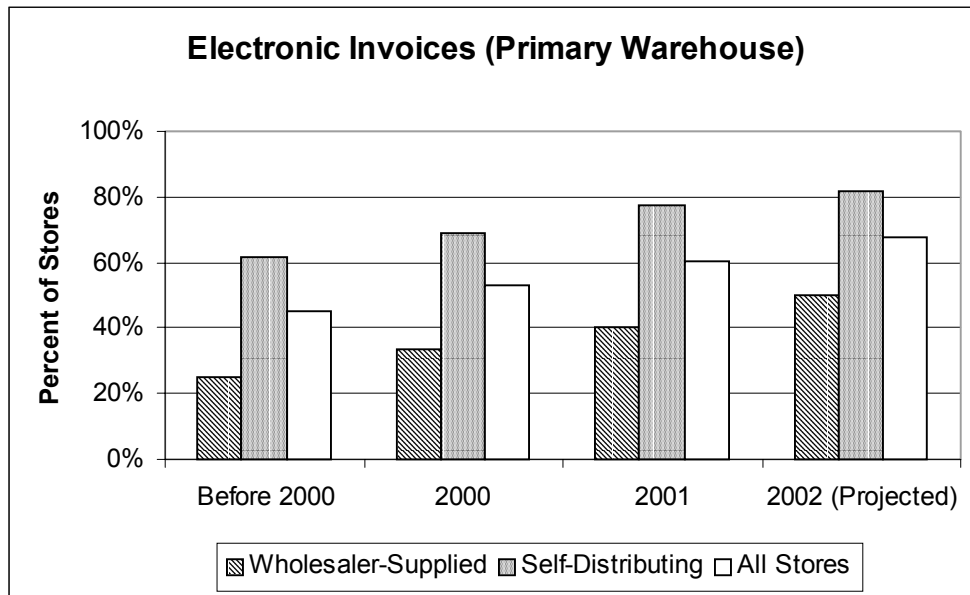


**Figure 3.1 Cumulative Adoption of Internet/Intranet Links to Headquarters and/or Key Suppliers**

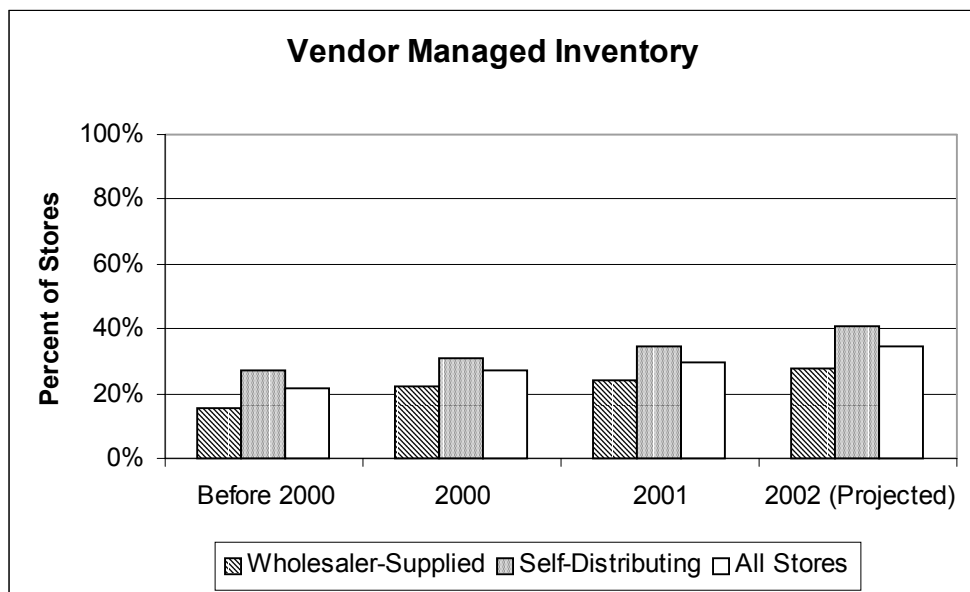
Figures 3.2 and 3.3 show cumulative adoption levels for receipt of electronic invoices from the store's primary warehouse and for vendor managed inventory by non-DSD vendors. These are important elements of the evolving relationship between the supermarkets and distribution centers. Electronic invoices save time and reduce errors for both the store and the distribution center. They are also the basis for electronic payment systems and other more advanced supply chain applications. Vendor managed inventory systems transfer ordering decisions from the store to its key supplier, making it possible to adjust replenishment decisions to account for distribution center inventories and delivery logistics. Such systems require accurate, timely communication about product movement and store inventory levels.

Stores that belong to self-distributing groups are far ahead of wholesaler supplied stores in adoption of electronic invoices from their primary warehouse. However, both groups of stores are making rapid progress in adopting this technology, and wholesaler-supplied stores appear to be closing the adoption gap. Adoption rates for vendor managed inventory are much lower, and progress in adoption has been slower. The gap in adoption between the two store groups has changed little in the past three years.

- Stores that belong to self-distributing groups are far ahead of wholesaler supplied stores in adoption of electronic invoices from their primary warehouse, but wholesaler-supplied stores appear to be closing the adoption gap.

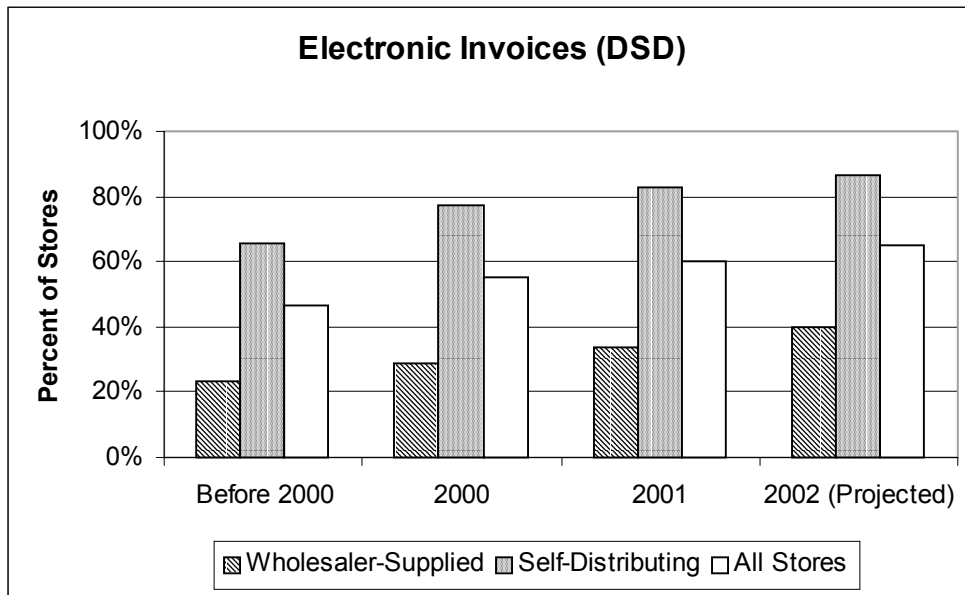


**Figure 3.2 Cumulative Adoption of Electronic Invoices from the Primary Warehouse**

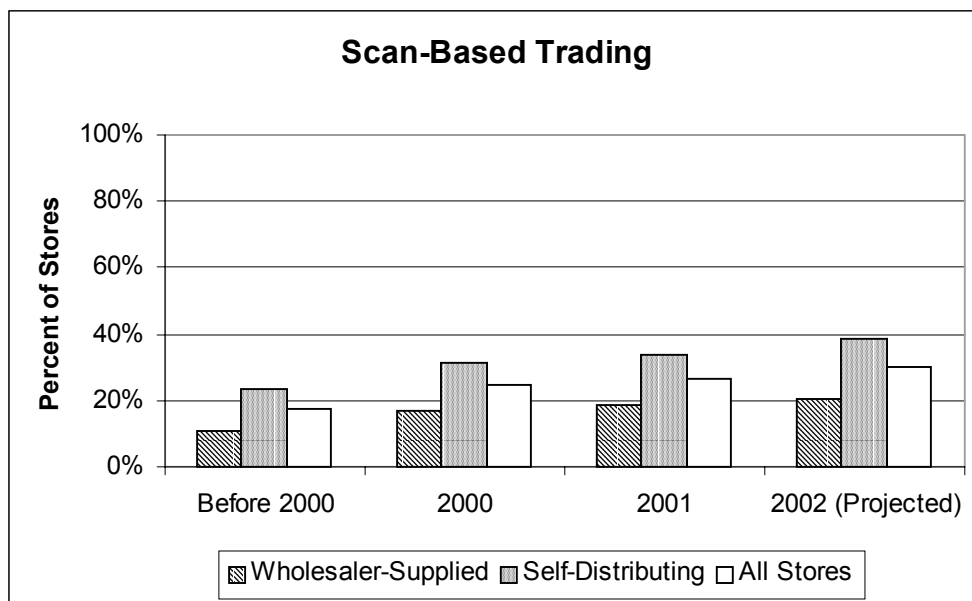


**Figure 3.3 Cumulative Vendor Managed Inventory**

Figures 3.4 and 3.5 show cumulative adoption levels for receipt of electronic invoices from DSD vendors and use of scan-based trading. These are important for the store's relationship with manufacturers that deliver their products directly to the store. Once again, electronic invoices save time and reduce errors for both the store and the vendor and serve as the foundation for electronic payment. Scan-based trading transfers inventory management decisions and inventory holding costs from the store to the vendor. This requires trust and very effective, timely electronic communication.



**Figure 3.4 Cumulative Adoption of Electronic Invoices from DSD Vendors**



**Figure 3.5 Cumulative Adoption of Scan-Based Trading**

Stores that belong to self-distributing groups are far ahead of wholesaler supplied stores in adoption of electronic invoices from DSD vendors. It is noteworthy that wholesaler-supplied stores' projected level of adoption for 2002 is still well below the pre-2000 level of adoption for stores in self-distributing groups. Scan-based trading is a form of vendor managed inventory, and trends in adoption shown in Figure 3.5 are

- Stores that belong to self-distributing groups are far ahead of wholesaler supplied stores in adoption of electronic invoices from DSD vendors.

- **Supply Chain**  
**technology adoption**  
**continues to increase**  
**significantly for all**  
**stores, but there are**  
**large differences in**  
**adoption levels for**  
**wholesaler-supplied**  
**and self-distributing**  
**stores.**

similar to those in Figure 3.3. However, the adoption gap between wholesaler-supplied and self-distributing stores is wider for scan-based trading.

### **Summary**

The results presented here confirm findings from the 2000 and 2001 Panels that stores in larger groups are better positioned to take part in supply chain initiatives. Readiness in this area is generally associated with superior performance at the store level. The relationship between supply chain readiness and performance will be examined again in the more comprehensive analysis of performance drivers presented in Section 11. Finally, adoption rates for individual technologies and practices within the technology component of the Supply Chain score continue to increase significantly for all stores, but there are large differences in adoption levels for wholesaler-supplied and self-distributing stores.

## 4. Human Resources

Labor is the second largest operating expense in the typical supermarket – exceeded only by the cost of goods sold – and human resource issues probably place the greatest demands on the time and attention of most supermarket managers. Hiring, training, retaining, and motivating employees are key managerial challenges. Stores serve their customers through their employees, and customers will quickly go elsewhere if they have a bad shopping experience.

The Human Resource score measures adoption of human resource practices that reflect a store's investment in employees through training, full-time employment opportunities, and benefits. The Human Resource score has four equally weighted components.

1. New employee training is based on hours of training during the first twenty-six weeks of employment for new hires in cashier and other positions. This component is defined as total training hours for these two employee categories as a percent of 100 hours, with a maximum score of 100.
2. Key employee training is based on hours of training in the previous year for three key employees: the store manager, the grocery department manager, and the scanning coordinator. This component is defined as total training hours for these three employees as a percent of 120 hours, with a maximum score of 100.
3. The proportion of all employees who are classified as full-time is simply the number of full-time employees divided by the total number of employees.
4. The use of incentive based compensation and several types of non-cash compensation component reflects the opportunities store managers, department heads, other full time employees, and part-time employees have to receive incentive pay. It is also based on the extent to which employees in these four categories receive the following types of non-cash compensation: employee stock ownership, individual health insurance, family health insurance, disability insurance, pension, and a 401(k) plan.

Each of the four components is scored on a 100 point scale, as is the overall index.

- The mean Human Resource score rises consistently as ownership group size increases.

### Human Resource Practices for Stores Grouped by Ownership Group Size

Table 4.1 shows mean Human Resource scores for stores in the five ownership group size categories that range from single store independents to groups with more than 750 stores. In the top row of the table, numbers of stores represented are estimates for the entire population, while numbers in parentheses are actual non-weighted numbers of stores in the Panel. The mean Human Resource score is lowest for single store independents and rises consistently as ownership group size increases. Among the individual components for the score, there is a consistent upward trend for the incentive based compensation and benefits component.

**Table 4.1 Human Resource Practices for Stores Grouped by Ownership Group Size**

	<b>Single</b>	<b>2 -10</b>	<b>11 - 50</b>	<b>51 - 750</b>	<b>&gt; 750</b>
<b>NUMBER OF STORES REPRESENTED: HR Score</b>	<b>5,166 (246)</b>	<b>4,201 (163)</b>	<b>5,103 (85)</b>	<b>7,524 (224)</b>	<b>8,077 (85)</b>
<b>MEAN HUMAN RESOURCE PRACTICES SCORE</b>	<b>32</b>	<b>36</b>	<b>40</b>	<b>42</b>	<b>43</b>
• New Employee Training Component	<b>42</b>	<b>46</b>	<b>40</b>	<b>42</b>	<b>40</b>
• Key Employee Training	<b>12</b>	<b>18</b>	<b>32</b>	<b>31</b>	<b>36</b>
• Proportion of Full-time Employees	<b>43</b>	<b>44</b>	<b>42</b>	<b>40</b>	<b>40</b>
• Compensation Component	<b>30</b>	<b>36</b>	<b>46</b>	<b>57</b>	<b>60</b>
<b>NEW EMPLOYEE TRAINING COMPONENT: MEDIAN</b>					
• Cashier Training (hours in 1 <sup>st</sup> 26 weeks)	<b>24</b>	<b>24</b>	<b>20</b>	<b>20</b>	<b>22</b>
• Other Training (hours in 1 <sup>st</sup> 26 weeks)	<b>15</b>	<b>20</b>	<b>16</b>	<b>15</b>	<b>20</b>
<b>KEY EMPLOYEE TRAINING COMPONENT: MEDIAN</b>					
• Store Manager Training (hours/years)	<b>0</b>	<b>5</b>	<b>12</b>	<b>16</b>	<b>16</b>
• Grocery Manager Training (hours/years)	<b>0</b>	<b>0</b>	<b>4</b>	<b>6</b>	<b>6</b>
• Scanning Coordinator Training (hours/years)	<b>0</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>2</b>
<b>COMPENSATION COMPONENT: MEAN</b>					
• Incentive Based Component	<b>20</b>	<b>20</b>	<b>26</b>	<b>31</b>	<b>37</b>
• Noncash Component	<b>38</b>	<b>49</b>	<b>64</b>	<b>78</b>	<b>78</b>

The median new employee training score is similar across all group sizes, as are training levels for the two employee categories considered in this component. There are noteworthy differences in median key employee training scores for stores in ownership groups of ten or fewer stores and those in larger ownership groups. This is attributable largely to differences in store manager training.

The mean proportion of full-time employees trends downward across ownership group size categories, though the trend is not consistent. Mean scores for the compensation component are considerably higher for stores that belong to larger groups. This is expected, since large store groups often centralize human resource policies and are able to offer a wider array of benefits. It is also noteworthy that the use of incentive compensation trends upward across group sizes.

#### **Human Resource Practices for Stores Grouped by Format**

Table 4.2 shows detailed information on Human Resource score components for stores grouped by format. In the top row of the table, numbers of stores represented are estimates for the entire population, while numbers in parentheses are actual non-weighted numbers of stores in the Panel. Super warehouse and conventional stores have the lowest mean overall scores, while supercenter/hypermarket stores have the highest overall mean score. Shifting attention to the four component scores, supercenter/hypermarket stores stand out from stores in other formats in the area of key employee training, with dramatically higher median hours of training for store managers, grocery department managers, and scanning coordinators. The supercenter/hypermarket stores also make much greater use of incentive based compensation and offer more comprehensive packages of non-cash benefits.

- **Supercenter/hypermarket stores stand out from stores in other formats in the area of key employee training. They also make much greater use of incentive based compensation and offer more comprehensive packages of non-cash benefits.**

#### **Store Characteristics and Performance Measures for Stores Grouped by Human Resource Score**

Table 4.3 shows store characteristics and performance measures for stores grouped into quartiles based on the Human Resource score. Mean scores range from 24 for stores in the lowest quartile to 57 for those in the highest. Among the components of this score, variation is lowest for the proportion of full-time employees and highest for key employee training. This is unchanged from the 2001 Panel.

**Table 4.2 Human Resource Practices for Stores Grouped by Format**

	CON	SS	FD COMBO	WH	SWH	SC/HY
<b>NUMBER OF STORES REPRESENTED: HR Score</b>	<b>16,846 (508)</b>	<b>1,757 (31)</b>	<b>9,574 (191)</b>	<b>696 (27)</b>	<b>664 (37)</b>	<b>534 (9)</b>
<b>MEAN HUMAN RESOURCE PRACTICES SCORE</b>	<b>37</b>	<b>40</b>	<b>42</b>	<b>45</b>	<b>32</b>	<b>51</b>
• Training Component	42	37	41	59	32	52
• Key Employee Training	22	28	34	37	25	55
• Proportion of Full-time Employees	42	40	42	35	28	45
• Compensation Component	42	55	55	50	46	77
<b>NEW EMPLOYEE TRAINING COMPONENT: MEDIANS</b>						
• Cashier Training (hours in 1 <sup>st</sup> 26 weeks)	20	17	23	40	20	26
• Other Training (hours in 1 <sup>st</sup> 26 weeks)	16	12	16	24	16	24
<b>KEY EMPLOYEE TRAINING COMPONENT: MEDIANS</b>						
• Store Manager Training (hours/year)	4	8	16	24	12	40
• Grocery Manager Training (hours/year)	0	8	8	0	5	16
• Scanning Coordinator Training (hours/year)	0	4	4	0	0	8
<b>COMPENSATION COMPONENT: MEAN</b>						
• Incentive Based Component	25	34	31	29	22	60
• Noncash Component	57	72	75	68	65	91

CON = Conventional  
SS = Superstore

FD COMBO = Food/Drug Combination  
WH = Warehouse

SWH = Super Warehouse  
SC/HY = Supercenter/Hypermarket



**Table 4.3 Average Characteristics and Performance Measures for Stores Grouped by Human Resource Practices Score**

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
<b>MEDIAN HUMAN RESOURCE PRACTICES SCORE</b>	<b>24</b>	<b>35</b>	<b>42</b>	<b>57</b>
• New Employee Training Component	24	35	50	61
• Key Employee Training	6	15	25	62
• Proportion of Full-time Employees	34	42	42	49
• Compensation Component	36	48	53	57
<b>MARKET CHARACTERISTICS</b>				
• Median Population Density (per sq. mi.)	141	208	515	552
• Median Household Income (\$/year)	\$43,504	\$44,200	\$47,371	\$44,387
• Percent Located in an SMSA	65	67	74	58
<b>STORE CHARACTERISTICS</b>				
• Median Store Age (years)	27	22	22	15
• Mean Ownership Group Size (Stores)	6	101	111	180
• Median Weekly Sales	\$119,000	\$205,000	\$272,000	\$248,000
• Median Selling Area (sq. ft.)	20,000	29,000	34,000	33,000
• Median Weekly Labor Hours	1,250	1,700	2,500	2,260
<b>STORE CHARACTERISTICS (Percentage)</b>				
• Wholesaler Supplied	68	44	40	35
• Union Workforce	30	36	29	26
<b>PERFORMANCE MEASURES (Median)</b>				
• Weekly Sales per Square Foot of Selling Area	\$7.20	\$7.80	\$8.00	\$8.29
• Sales per Labor Hour	\$99.97	\$120.37	\$118.61	\$127.05
• Sales per Transaction	\$18.33	\$20.79	\$22.41	\$23.47
• Annual Inventory Turns	17.0	16.0	15.0	19.0
• Percentage Employee Turnover	43.8	41.2	37.2	42.9
• Gross Profit as a Percent of Sales	24.0	25.0	23.5	25.0
• Payroll as a Percent of Sales	10.0	10.0	9.9	10.0
• Annual Percentage Sales Growth	1.8	1.6	1.7	1.8

On average, stores with the highest Human Resource practice scores are newer, larger, part of larger store groups, and less likely to be wholesaler supplied. These patterns are consistent with those observed for the 2001 Panel. The fact that there is no clear trend in the percentage of stores with a union workforce is also consistent with the pattern reported for the 2001 Panel.

- Stores in the upper quartile for the Human Resources score have the highest median levels for sales per square foot, sales per labor hour, sales per transaction, and inventory turns.

Stores in the upper quartile for the Human Resources score have the highest median levels for sales per square foot, sales per labor hour, sales per transaction, and inventory turns. The only consistent trend across quartiles is for weekly sales per square foot, but the range of median values for this measure is not wide. In the 2000 and 2001 Panels stores in the lowest quartile had relatively low median levels for all performance measures, while differences among stores in the top three quartiles were generally less clear-cut. This pattern is not evident for the 2002 Panel. This does not mean that there is no strong link between human resource practices and performance. Rather, it suggests that human resource practices may be interacting with practices in other areas to influence performance.



### A Closer Look at Unionization

Unionization has long been a point of discussion in the food industry. Proponents argue that unionization leads to higher productivity through lower turnover, better worker skills, and higher employee satisfaction. Opponents argue that union demands for higher wages and benefits make it more difficult for supermarkets to compete with other non-union grocery and food service outlets.

Rates of unionization differ considerably across ownership group sizes and formats. Figure 4.1 shows percentages of stores with a union workforce across ownership group sizes. The unionization rate rises steadily with ownership group size from a low of 7.1% for single store independents to a high of 58.3% for stores in groups with more than 750 stores. Figure 4.2 shows percentages of stores with a union workforce for stores grouped by format. Food/drug combination stores and super warehouse stores both have unionization rates that exceed 50%, while the rate for conventional stores is just below 20%.

Due to the smaller number of stores in the supercenter/hypermarket format group, their rate of unionization is not reported. However, it can be noted that these stores have a unionization rate below that for conventional stores.

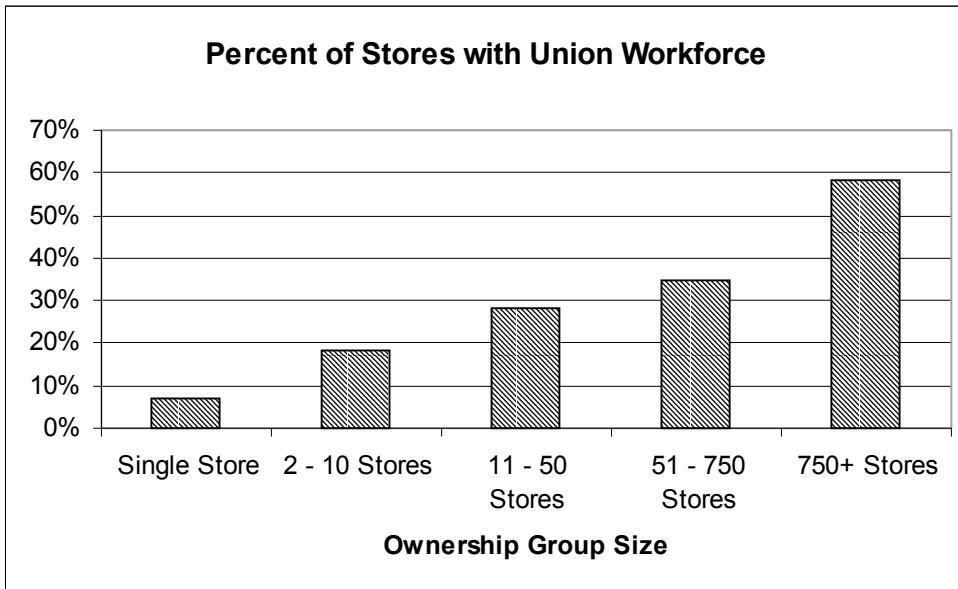


Figure 4.1 Percentage of Stores with Union Workforce for Stores Grouped by Ownership Group Size

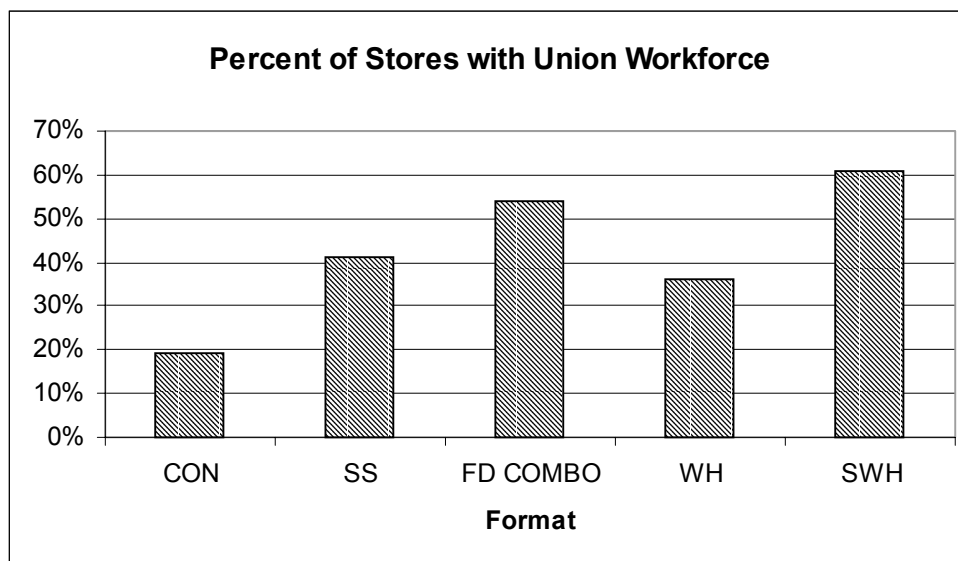


Figure 4.2 Percentage of Stores with Union Workforce for Stores Grouped by Format

Table 4.4 compares store characteristics, management practices, and operating performance for stores with and without a union workforce. Based on weighted data for the Panel stores, approximately one-third of supermarkets have a union workforce. Those stores are larger in selling area and weekly sales, they belong to larger ownership groups, and they are more likely to be wholesaler supplied and located in an SMSA. Mean overall Human Resource scores for non-union and union stores are almost identical, and the two groups differ little for the first three

**Table 4.4 Descriptive Profile for Stores Grouped by Unionization**

	<b>Non-Union Workforce</b>	<b>Union Workforce</b>
	<b>19,541</b>	<b>9,577</b>
<b>NUMBER OF STORES REPRESENTED</b>	<b>(597)</b>	<b>(203)</b>
<b>STORE AND MARKET CHARACTERISTICS</b>		
• Median Selling Area	<b>25,000</b>	<b>38,000</b>
• Median Weekly Sales	<b>\$163,000</b>	<b>\$340,000</b>
• Median Store Age	<b>21</b>	<b>20</b>
• Mean Ownership Group Size	<b>314</b>	<b>903</b>
• Percent Wholesaler Supplied	<b>56</b>	<b>26</b>
• Percent in an SMSA	<b>60</b>	<b>83</b>
<b>MEAN SUPPLY CHAIN SCORE</b>	<b>54</b>	<b>74</b>
• Technology Component	<b>50</b>	<b>63</b>
• Decision Sharing Component	<b>58</b>	<b>86</b>
<b>MEAN HUMAN RESOURCE PRACTICES SCORE</b>	<b>38</b>	<b>37</b>
• New Employee Training Component	<b>40</b>	<b>36</b>
• Key Employee Training	<b>16</b>	<b>17</b>
• Proportion of Full-time Employees	<b>43</b>	<b>38</b>
• Incentive-Based Compensation	<b>31</b>	<b>24</b>
• Non-Cash Benefits	<b>61</b>	<b>74</b>
<b>PERFORMANCE MEASURES (MEDIAN)</b>		
• Estimated Hourly Payroll Expense	<b>\$10.41</b>	<b>\$13.50</b>
• Weekly Sales per Square Foot of Selling Area	<b>\$7.35</b>	<b>\$8.71</b>
• Sales per Labor Hour	<b>\$104.07</b>	<b>\$130.13</b>
• Sales per Transaction	<b>\$19.61</b>	<b>\$24.57</b>
• Annual Inventory Turns	<b>16.0</b>	<b>20.0</b>
• Percentage Employee Turnover	<b>44.1</b>	<b>34.0</b>
• Gross Profit as a Percent of Sales	<b>24.0</b>	<b>25.0</b>
• Payroll as a Percent of Sales	<b>9.9</b>	<b>10.5</b>
• Annual Percentage Sales Growth	<b>14</b>	<b>2.0</b>

components of this score. However union stores are slightly less likely to use incentive-based compensation, and they offer a more comprehensive set of non-cash benefits.

These two groups of stores also differ with respect to their Supply Chain scores. Union stores have a higher mean overall score and higher mean scores for both the technology and decision sharing components. This suggests that stores with a union workforce may substitute technology for labor and shift more decision responsibility to parties outside the store. One reason for this may be the higher estimated hourly payroll expense for union stores – \$13.50 versus \$10.41 – but it is also important to recognize that union stores tend to be in larger ownership groups, which have already been shown to have higher Supply Chain scores.

Turning to the remaining performance measures, union stores outperform non-union stores for every measure except payroll as a percent of sales. However, combining two critical components of operating cost – payroll as a percent of sales and the cost of goods sold as a percent of sales implied by the gross profit figure – results in almost identical cost estimates: 85.9% of sales for non-union stores and 85.5% of sales for union stores. While unionization is associated with dramatic differences in some management practices and performance measures, there does not appear to be a significant difference between union and non-union stores for this more comprehensive measure of operating cost.

## Summary

Differences in the Human Resources score are relatively small across stores grouped by ownership group size and by format. Among the components of this score, differences are most pronounced for key employee training and compensation practices. On average, stores in large groups provide more training to key employees, are more likely to offer incentive-based compensation, and offer a wider range of non-cash benefits. Among stores grouped by format, supercenter/hypermarket stores are noteworthy for their high scores on the key employee training and compensation components of the Human Resources score. Trends in store characteristics and performance levels over stores grouped by quartiles for the Human Resources score are generally less clear-cut than they have been in previous years, suggesting that human resource practices may interact with other management practices in determining

- **Union stores have a higher mean overall score and higher mean scores for both the technology and decision sharing components of the Supply Chain score. They may be substituting technology for labor and shifting more decision responsibility to parties outside the store.**
- **Combined costs for payroll and cost of goods sold are essentially identical for union and non-union stores.**

store performance. Finally, the closer look at unionization shows that stores with and without a union workforce differ significantly with regard to store characteristics and management practices. Though stores with a union workforce have superior median levels for most performance measures, combined costs for payroll and cost of goods sold are essentially identical for union and non-union stores.

## 5. Food Handling

Food safety issues have always been an important focus of attention for consumers, retailers, and manufacturers. Concerns have grown with continuing media attention to food borne illness incidents in the U.S. and in Europe. Additionally, increased awareness of the threat of bioterrorism after the events of September 11, 2001, has brought new meaning to the term “food security.”

The Food Handling score measures a store’s adoption of practices that promote food safety and quality.<sup>1</sup> It has the following five components, each of which is measured on a 100 point scale.

1. Temperature Checks – conformity with recommended frequency of temperature checks for self service meat, dairy products, self service deli, and frozen foods. Meeting frequency standards results in a score of 100 for this component. The score falls as temperature check frequencies fall below recommended levels.
2. Store Sanitation Audits – conformity with recommended frequency for self audits and third party audits of store sanitation practices. Meeting frequency standards results in a score of 100 for this component. The score falls as audit frequencies fall below recommended levels.
3. Dating Information – use of “sell by” or “use by” dates for poultry, red meat, seafood, and deli products. The score for this component is the percentage of these product categories using recommended dating information.
4. Inventory Practices – conformity with recommended inventory rotation practices for meat, dairy, self-service deli, and frozen foods. Using recommended practices for all products results in a score of 100 for this component.
5. Training – provision of food safety and handling training for the deli manager, deli employees, and meat department employees. The score for this component is the percentage of these employee categories that receive food safety and handling training.

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<sup>1</sup> This index was developed by Professor Ted Labuza, Department of Food Science and Nutrition, University of Minnesota. It reflects the judgement of academic and industry food scientists on the relative importance of a range of factors related to food safety.

Scores for these five components are combined into an overall score on a 100 point scale.<sup>2</sup>

### **Food Handling Practices for Stores Grouped by Ownership Group Size**

Table 5.1 shows mean Food Handling scores for stores across the range of ownership group size categories. In the top row of the table, numbers of stores represented are estimates for the entire population, while numbers in parentheses are actual non-weighted numbers of stores in the Panel. Scores are high for stores in all group size categories. There is a slight upward trend in mean levels for the overall score as store group size increases, similar to the pattern observed in 2001. There is very little variation in mean scores for the first five individual components, including target temperatures. For the food safety training component, however, the mean score and the percentage of each type of employee receiving food safety training has a general upward trend across ownership group size categories. Differences between single store independents and stores in the largest ownership groups are especially striking.

- **Food Handling scores are high for stores in all group size categories.**

### **Food Handling Practices for Stores Grouped by Format**

Table 5.2 shows detailed information on Food Handling score components for stores grouped by format. As in other tables, numbers of stores represented are estimates for the entire population, while numbers in parentheses are actual non-weighted numbers of stores in the Panel. There is very little variation in mean overall and component scores across the first five format categories. The supercenter/hypermarket stores stand out, however, with higher overall mean scores that are attributable largely to greater emphasis on food safety audits and food safety training.

- **Supercenter/hypermarket stores have higher overall mean Food Handling scores that are attributable largely to greater emphasis on food safety audits and food safety training.**

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<sup>2</sup> In 2000 and 2001, the Food handling score included a sixth component: Target Temperatures. This component measures conformity with recommended target temperatures for self service meat, dairy products, and self service deli. Meeting standards results in a score of 100 for this component, and the score falls as target temperatures are set above recommended levels. Nearly one-third of all stores in the 2002 Panel failed to respond to questions about the Target Temperature component of the Food Handling score. We believe this was due to a problem with the formatting of the question. Therefore, this year overall Food Handling scores are based only on five components. Average responses for the Target Temperature component will continue to be reported in this chapter. However, readers should recognize that Target Temperature information is based on a smaller number of responding stores than the overall Food Handling score.



**Table 5.1 Food Handling Practices for Stores Grouped by Ownership Group Size**

	Single Store	2 -10 Stores	11 - 50 Stores	51 - 750 Stores	> 750 Stores
NUMBER OF STORES REPRESENTED (FH Score)	3,266 (158)	2,623 (101)	3,476 (63)	5,033 (146)	5,509 (57)
<b>MEAN FOOD HANDLING PRACTICES SCORE</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>90</b>	<b>90</b>
• Target Temperature Component	100	98	99	100	99
• Temperature Check Component	94	97	95	99	99
• Sanitation Audit Component	69	65	67	62	66
• Dating Information Component	92	97	99	100	99
• Inventory Practices	99	98	94	96	98
• Training	51	61	61	76	80
<b>TARGET TEMPERATURE COMPONENT: MEDIANS</b>					
• Self Service Meat	34	35	34	36	35
• Dairy	36	36	37	36	36
• Self Service Deli	36	38	37	38	36
<b>TEMPERATURE CHECK COMPONENT: MODES</b>					
• Self Service Meat	3	3	3	3	3
• Dairy	3	3	3	3	3
• Self Service Deli	3	3	3	3	3
• Frozen	3	3	3	3	3
<b>SANITATION AUDIT COMPONENT: MODES</b>					
• Self Audit	4	4	4	4	4
• 3 <sup>rd</sup> Party Commercial Audit	0	0	0	0	0
<b>DATING INFORMATION COMPONENT: MODES</b>					
• Poultry	2	2	2	2	2
• Red Meat	2	2	2	2	2
• Seafood	2	2	2	2	2
• Deli	2	2	2	2	2
<b>INVENTORY PRACTICES COMPONENT: MODES</b>					
• Self Service Meat	2	2	2	2	2
• Dairy	2	2	2	2	2
• Self Service Deli	2	2	2	2	2
• Frozen	2	2	2	2	2
<b>TRAINING COMPONENT: PERCENTAGES</b>					
• Deli Manager	51	63	74	87	93
• Deli Employees	34	49	45	57	68
• Meat Manager	44	51	55	62	76
• Store Manager	49	50	73	85	94

**Table 5.2 Food Handling Practices for Stores Grouped by Format**

	CON	SS	FD COMBO	WH	SWH	SC/HY
NUMBER OF STORES REPRESENTED: FH Score	10,129 (321)	1,528 (28)	7,127 (139)	547 (11)	384 (20)	192 (6)
<b>MEAN FOOD HANDLING PRACTICES SCORE</b>	<b>87</b>	<b>88</b>	<b>89</b>	<b>87</b>	<b>85</b>	<b>99</b>
• Target Temperature Component	99	100	98	100	100	100
• Temperature Check Component	96	95	98	97	99	97
• Sanitation Audit Component	66	60	65	64	51	82
• Dating Information Component	96	99	99	100	100	100
• Inventory Practices	98	90	97	94	100	99
• Training	63	73	76	57	58	94
<b>TARGET TEMPERATURE COMPONENT: MEDIANS</b>						
• Self Service Meat	34	35	36	35	35	34
• Dairy	36	35	38	35	37	36
• Self Service Deli	36	35	38	38	37	35
<b>TEMPERATURE CHECK COMPONENT: MODES</b>						
• Self Service Meat	3	3	3	3	3	3
• Dairy	3	3	3	3	3	4
• Self Service Deli	3	3	3	3	3	3
• Frozen	3	3	3	3	3	4
<b>SANITATION AUDIT COMPONENT: MODES</b>						
• Self Audit	4	3	4	4	2	4
• 3 <sup>rd</sup> Party Commercial Audit	0	2	0	2	2	0
<b>DATING INFORMATION COMPONENT: MODES</b>						
• Poultry	2	2	2	2	2	2
• Red Meat	2	2	2	2	2	2
• Seafood	2	2	2	2	2	2
• Deli	2	2	2	2	2	3
<b>INVENTORY PRACTICES COMPONENT: MODES</b>						
• Self Service Meat	2	2	2	2	2	2
• Dairy	2	2	2	2	2	2
• Self Service Deli	2	2	2	2	2	2
• Frozen	2	2	2	1	2	2
<b>TRAINING COMPONENT: PERCENTAGES</b>						
• Deli Manager	68	90	88	90	85	91
• Deli Employees	46	57	64	39	41	83
• Meat Manager	55	61	71	43	23	72
• Store Manager	66	92	86	85	59	89

CON = Conventional  
SS = Superstore

FD COMBO = Food/Drug Combination  
WH = Warehouse

SW = Super Warehouse  
SC/Hypermarket = Superrcenter/Hypermarket

**Table 5.3 Characteristics and Performance Measures for Stores Grouped by Food Handling Practices Score**

	<b>Lowest Quartile</b>	<b>Second Quartile</b>	<b>Third Quartile</b>	<b>Highest Quartile</b>
<b>MEAN FOOD HANDLING PRACTICES SCORE</b>	<b>75</b>	<b>86</b>	<b>93</b>	<b>99</b>
• Target Temperature Component	97	100	100	100
• Temperature Checking Component	98	97	99	100
• Store Audits Component	52	58	60	92
• Dating Information Component	95	97	100	100
• Inventory Practices	96	95	99	99
• Training	17	67	95	100
<b>MARKET CHARACTERISTICS</b>				
• Median Population Density (per sq. mi.)	123	250	416	853
• Median Household Income (\$/year)	\$43,493	\$47,315	\$44,778	\$45,619
• Percent Located in an SMSA	68	76	65	68
<b>STORE CHARACTERISTICS</b>				
• Median Store Age (years)	23	22	20	17
• Mean Ownership Group Size (Stores)	18	27	140	180
• Median Weekly Sales	\$180,000	\$240,000	\$235,000	\$270,000
• Median Selling Area (sq. ft.)	28,000	29,000	35,000	37,000
• Median Weekly Labor Hours	1,612	2,260	2,300	2,400
<b>STORE CHARACTERISTICS (Percentage)</b>				
• Wholesaler Supplied	61	51	37	29
• Union Workforce	33	36	31	33
<b>PERFORMANCE MEASURES (Median)</b>				
• Weekly Sales per Square Foot of Selling Area	\$7.50	\$8.51	\$7.35	\$7.36
• Sales per Labor Hour	\$107.58	\$121.01	\$117.54	\$125.00
• Sales per Transaction	\$18.75	\$21.90	\$22.73	\$21.67
• Annual Inventory Turns	20.0	18.0	16.0	15.0
• Percentage Employee Turnover	44.4	40.0	45.6	33.0
• Gross Profit as a Percent of Sales	24.0	25.0	25.0	24.0
• Payroll as a Percent of Sales	10.0	10.0	10.5	9.8
• Annual Percentage Sales Growth	1.0	1.9	0.3	1.3

- Differences in mean scores across quartiles are much smaller than for other management practice scores, suggesting that most stores are performing well in this area.

### **Store Characteristics and Performance Measures for Stores Grouped by Food Handling Score**

Table 5.3 shows store characteristics and performance measures for stores grouped into quartiles based on the Food Handling score. Differences in mean scores across quartiles are much smaller than for other management practice scores, suggesting that most stores are performing well in this area. Food safety training is the component that varies the most across quartiles.

Stores in the highest quartile for the Food Handling score are, on average, newer, larger, part of a larger store group, and less likely to be wholesaler supplied. Differences between the third and fourth quartiles are not large, however. There are few consistent patterns for the performance measures across the quartiles for this management practice score. It is striking, though, that stores in the highest quartile have much lower rates of labor turnover than stores in the other quartiles.

### **Summary**

Stores are generally achieving a high standard for food safety and handling, regardless of group size or format. In general, stores in larger ownership groups and supercenter/hypermarket stores have the highest average overall scores. The distinguishing characteristic of the top stores in this management area is their greater emphasis on food safety training.

## 6. Environmental Practices

Environmental practices are important to consumers, who are interested in buying more environmentally friendly products and in recycling waste packaging from products purchased in supermarkets. Environmental practices, including energy management, are also a key concern for store managers. Energy is the third largest operating expense item for most supermarkets, exceeded only by cost-of-goods-sold and labor.

The Environmental Practices score measures a store's adoption of practices that promote environmental quality. It has two equally weighted components:

1. A consumer component that measures the store's offering of environmentally friendly products, organic produce, and recycling services. The score for this component is the percentage of product/service offerings.
2. A store operations component that measures the store's adoption of energy efficient lighting, refrigeration management, and store waste recycling. The score for this component is the percentage adoption rate for these practices.

Each component is measured on a 100 point scale, as is the overall score.

### **Environmental Practices for Stores Grouped by Ownership Group Size**

Table 6.1 shows mean Environmental Practices scores for stores in the five store group size categories. As for the 2000 and 2001 Panels, the overall score trends upward with ownership group size. In the top row of the table, numbers of stores represented are estimates for the entire population, while numbers in parentheses are actual non-weighted numbers of stores in the Panel. Scores for both the consumer and operations components also trend upward with ownership group size, but differences are greater for the consumer component than for the operations component. Again, this is consistent with findings for previous years. The same pattern holds for nearly all of the individual practices that make up this score.

### **Environmental Practices for Stores Grouped by Format**

Table 6.2 shows detailed information on Environmental Practices for stores grouped by format. Food/drug combination and supercenter/hypermarket stores have the highest mean score, while stores with conventional formats have the lowest. It is noteworthy that warehouse

stores have the lowest mean score for the consumer component of the environmental practices score, while they have the highest mean score for the store operations component. This reflects the emphasis these stores have on cost control.

**Table 6.1 Environmental Practices for Stores Grouped by Ownership Group Size**

	<b>Single Store</b>	<b>2 -10 Stores</b>	<b>11 - 50 Stores</b>	<b>51 - 750 Stores</b>	<b>&gt; 750 Stores</b>
<b>NUMBER OF STORES REPRESENTED: EP Score</b>	<b>5,502 (262)</b>	<b>4,450 (174)</b>	<b>5,107 (86)</b>	<b>8,160 (241)</b>	<b>8,914 (94)</b>
<b>MEAN ENVIRONMENTAL PRACTICES SCORE</b>	<b>51</b>	<b>59</b>	<b>68</b>	<b>80</b>	<b>84</b>
• <b>Consumer Component</b>	<b>44</b>	<b>60</b>	<b>69</b>	<b>79</b>	<b>81</b>
• <b>Operations Component</b>	<b>59</b>	<b>57</b>	<b>67</b>	<b>81</b>	<b>87</b>
<b>CONSUMER ORIENTED PRACTICES: PERCENTAGE</b>					
• <b>Environmentally Friendly Products</b>	<b>56</b>	<b>69</b>	<b>67</b>	<b>75</b>	<b>80</b>
• <b>Organic Produce</b>	<b>31</b>	<b>50</b>	<b>67</b>	<b>82</b>	<b>82</b>
<b>OPERATIONS ORIENTED PRACTICES: PERCENTAGE</b>					
• <b>Energy Efficient Lighting</b>	<b>66</b>	<b>59</b>	<b>64</b>	<b>78</b>	<b>88</b>
• <b>Refrigeration Management Program</b>	<b>43</b>	<b>46</b>	<b>64</b>	<b>76</b>	<b>86</b>
• <b>Store Recycling</b>	<b>68</b>	<b>65</b>	<b>69</b>	<b>90</b>	<b>89</b>

**Table 6.2 Environmental Practices: Medians for Stores Grouped by Format**

	CON	SS	FD COMBO	WH	SWH	SC/HY
<b>NUMBER OF OBSERVATIONS: EP Score</b>	<b>17,457 (537)</b>	<b>1,769 (34)</b>	<b>10,352 (200)</b>	<b>784 (30)</b>	<b>828 (41)</b>	<b>943 (15)</b>
<b>MEAN ENVIRONMENTAL PRACTICE SCORES</b>	<b>63</b>	<b>77</b>	<b>83</b>	<b>73</b>	<b>72</b>	<b>81</b>
• Consumer Component	60	83	82	58	70	76
• Operations Component	66	72	84	89	75	86
<b>CONSUMER ORIENTED PRACTICES: PERCENTAGE</b>						
• Environmentally Friendly Products	65	78	81	59	65	80
• Organic Produce	54	89	83	57	74	72
<b>OPERATIONS ORIENTED PRACTICES: PERCENTAGE</b>						
• Energy Efficient Lighting	67	67	85	90	79	70
• Refrigeration Management Program	56	64	82	88	65	89
• Store Waste Recycling	73	84	85	90	82	99

CON = Conventional  
SS = Superstore

FD COMBO = Food/Drug Combination  
WH = Warehouse

SWH = Super Warehouse  
SC/HY = Supercenter/Hypermarket

### Store Characteristics and Performance Measures for Stores Grouped by Environmental Practices Score

Table 6.3 shows store characteristics and performance measures for stores grouped into quartiles based on the Environmental Practices score. Stores in the highest quartile have the highest mean number of stores in their ownership group and are least likely to be wholesaler supplied. On average, they are larger and are located in areas with higher population density and median household income. They are somewhat more likely to have a union workforce and considerably more likely to be located in a metropolitan area.

Median performance levels for sales per labor hour, sales per transaction, and gross margin as a percent of sales all trend consistently upward from the lowest to highest quartiles. Weekly sales per square foot and employee turnover also tend to improve as the environmental practices score increases. These findings need to be interpreted with

**Table 6.3 Average Characteristics and Performance Measures for Stores Grouped by Environmental Practices Score**

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
<b>MEAN ENVIRONMENTAL PRACTICES SCORE</b>	<b>26</b>	<b>58</b>	<b>80</b>	<b>100</b>
• Consumer Component	19	54	80	100
• Operations Component	34	61	80	100
<b>MARKET CHARACTERISTICS</b>				
• Median Population Density (per sq. mi.)	96	220	405	913
• Median Household Income (\$/year)	\$39,666	\$44,546	\$47,371	\$50,501
• Percent Located in an SMSA	43	69	67	76
<b>STORE CHARACTERISTICS</b>				
• Median Store Age (years)	30	23	16	17
• Mean Ownership Group Size (Stores)	3	23	101	616
• Median Weekly Sales	\$82,000	\$205,000	\$220,000	\$330,000
• Median Selling Area (sq. ft.)	15,000	27,000	30,000	38,000
• Median Weekly Labor Hours	930	1,500	1,960	3,100
<b>STORE CHARACTERISTICS (Percentage)</b>				
• Wholesaler Supplied	79	52	44	24
• Union Workforce	10	28	34	39
<b>PERFORMANCE MEASURES: MEDIANS</b>				
• Weekly Sales per Square Foot of Selling Area	\$6.82	\$7.56	\$7.50	\$8.33
• Sales per Labor Hour	\$94.81	\$107.58	\$120.48	\$125.00
• Sales per Transaction	\$15.89	\$20.83	\$22.73	\$23.47
• Annual Inventory Turns	14.0	13.0	17.0	20.0
• Percentage Employee Turnover	45.2	46.7	36.6	38.9
• Gross Profit as a Percent of Sales	23.5	24.0	24.8	25.5
• Payroll as a Percent of Sales	10.0	9.8	10.1	10.0
• Annual Percentage Sales Growth	0.8	1.8	2.4	1.8



caution, however, since other store characteristics that are correlated with the Environmental Practices score are also associated with better performance.



### A Closer Look at Energy Management Practice Adoption

Results from the 2001 Panel showed that stores in large ownership groups were well ahead of stores in smaller groups in the adoption of energy efficient lighting and refrigeration management programs. However, stores in smaller ownership groups in the 2002 Panel appear to be closing the gap in adoption of these key energy management practices.

Figures 6.1 and 6.2 show cumulative adoption levels for these two practices for stores in ownership groups with fifty or fewer stores and more than fifty stores, as well as for all stores in the Panel. Both technologies appear to be reaching the saturation point, as the rate of adoption was low in 2001 and is projected to be still lower in 2002. The gap in cumulative adoption also appears to have stabilized. In general, stores in the smaller ownership groups are older and have smaller selling areas. It may well be that expensive retrofitting required to adopt these practices is simply not cost effective for older, smaller stores. The economics of adopting these technologies could change quickly, though, if electricity and natural gas prices increase significantly.

- Cumulative adoption levels for energy efficient lighting and refrigeration management programs indicate that the technologies may be reaching the saturation point.

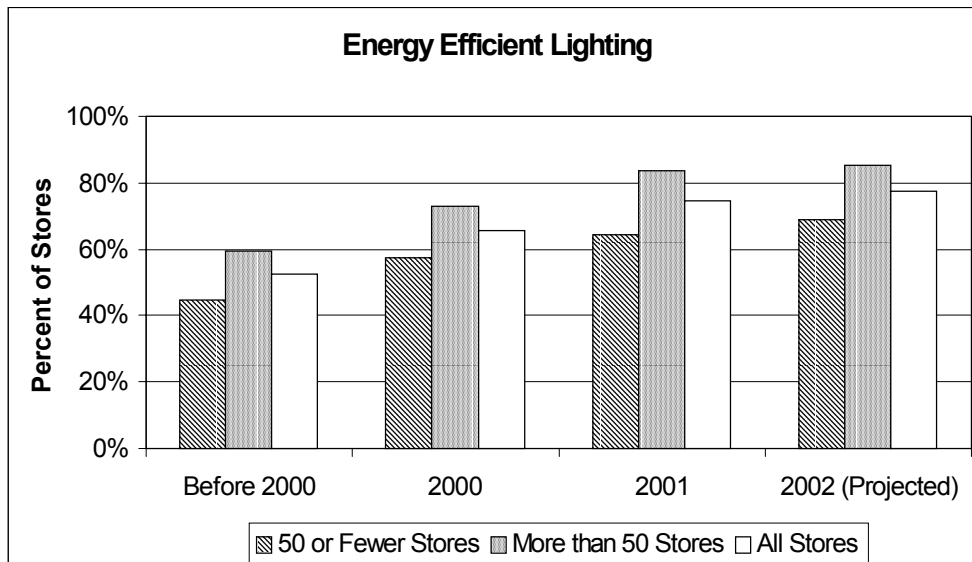


Figure 6.1 Cumulative Adoption of Energy Efficient Lighting

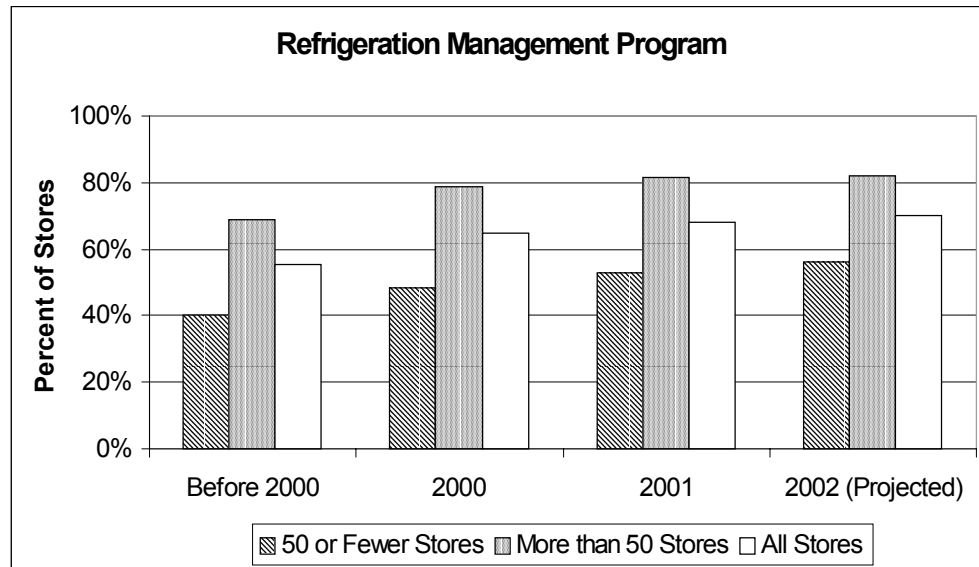


Figure 6.2 Cumulative Adoption of Refrigeration Management Programs

### Summary

Stores in larger ownership groups and stores in the food/drug combination and supercenter/hypermarket format categories have the highest average Environmental Practices scores, though differences across ownership group sizes and formats are not especially large. Higher levels for the Environmental Practices score are generally associated with better store performance, but this may be due to the fact that adoption of environmental practices is correlated with other factors (such as store age and selling area and ownership group size) that are also strongly linked with superior performance. Finally, cumulative adoption of two key energy management practices – energy efficient lighting and refrigeration management – may have reached a saturation point.

## 7. Quality Assurance

Quality assurance practices are the objective procedures stores use to measure customer satisfaction and to maintain food quality. In larger ownership groups, formal quality assurance practices also help maintain consistency across stores. The Quality Assurance score measures a store's adoption of quality assurance practices in two areas:

1. Formal assessment of customer satisfaction, with the score for this component being the percentage adoption rate for use of customer focus groups, customer satisfaction surveys, and mystery shopper programs.
2. Food safety and handling, with the score based on the temperature check, sanitation audit, inventory rotation, and food safety training components of the Food Handling score.

These equally weighted components of the Quality Assurance score are measured on a 100 point scale, as is the overall index.

### Quality Assurance Practices for Stores Grouped by Ownership Group Size

Table 7.1 summarizes quality assurance practices for stores grouped by ownership group size. In the top row of the table, numbers of stores represented are estimates for the entire population, while numbers in parentheses are actual non-weighted numbers of stores in the Panel. Mean overall scores increase steadily across the first four ownership group size categories and then are essentially equal for the last two. Mean scores for the customer satisfaction component follow the same pattern, and mean scores for the food safety and handling component are roughly equal across ownership group categories with up to fifty stores and then slightly higher for the last two ownership group categories. Stores in the largest ownership groups are much more likely to use all three formal practices for customer satisfaction assessment, with the difference being especially large for the percentage of stores using mystery shoppers. For the food safety and handling component, food safety training is the only area where there are meaningful differences across group size categories. Once again, stores in larger groups have higher mean scores for this practice.

- **Stores in the largest ownership groups are much more likely to use mystery shoppers than stores in smaller ownership groups.**

**Table 7.1 Quality Assurance Practices for Stores Grouped by Ownership Group Size**

	Single Store	2 -10 Stores	11 - 50 Stores	51 - 750 Stores	> 750 Stores
<b>NUMBER OF OBSERVATIONS: QA Score</b>	<b>4,328 (222)</b>	<b>3,963 (156)</b>	<b>4,645 (81)</b>	<b>7,386 (230)</b>	<b>8,386 (88)</b>
<b>MEAN QUALITY ASSURANCE PRACTICES SCORE</b>	<b>47</b>	<b>54</b>	<b>66</b>	<b>78</b>	<b>77</b>
• Customer Satisfaction Component	20	30	57	71	70
• Food Handling Component	74	75	74	81	83
<b>USE OF INSTRUMENTS TO ASSESS CUSTOMER SATISFACTION: PERCENTAGES</b>					
• Customer Focus Groups	20	24	50	30	56
• Customer Satisfaction Surveys	29	40	58	60	82
• Mystery Shopper Programs	25	24	59	58	85
<b>FOOD HANDLING PRACTICES: MEANS</b>					
• Temperature Check Score	94	97	95	99	99
• Sanitation Audit Score	69	65	67	62	66
• Inventory Rotation Score	99	98	94	96	98
• Food Safety Training Score	66	66	66	100	100

Results for both components are similar to findings for the 2000 and 2001 Panels. Stores in larger groups are more likely to use customer satisfaction surveys and mystery shopper programs and more likely to provide food safety training because management wants to be sure they have consistent offerings across the company. Also, larger companies can spread the fixed costs of implementing these quality assurance practices over a larger number of stores.

#### **Quality Assurance Practices for Stores Grouped by Format**

Table 7.2 shows detailed information on quality assurance practices for stores grouped by format. Supercenter/hypermarket stores have mean overall scores that are well above those for the other formats. This is largely due to a higher mean score for the food safety and handling component, though these stores also make greater use of formal methods for assessing customer satisfaction. Turning to individual practices, the supercenter/hypermarket stores all use customer satisfaction surveys and, in the food safety and handling area, are much

- Supercenter/  
hypermarket stores  
have mean overall  
scores that are well  
above those for the  
other formats.

more likely to use formal food sanitation audits. The low mean food safety training scores for warehouse and super warehouse stores and the high average scores in this area for superstore, food/drug combination, and supercenter/hypermarket stores are also noteworthy.

**Table 7.2 Quality Assurance Practices for Stores Grouped by Format**

	CON	SS	FD COMBO	WH	SWH	SC/HY
<b>NUMBER OF OBSERVATIONS: QA Score</b>	<b>15,144 (472)</b>	<b>1,769 (34)</b>	<b>9,746 (191)</b>	<b>747 (29)</b>	<b>623 (39)</b>	<b>679 (12)</b>
<b>MEAN QUALITY ASSURANCE PRACTICES SCORE</b>	<b>61</b>	<b>71</b>	<b>76</b>	<b>68</b>	<b>63</b>	<b>86</b>
• Customer Satisfaction Component	43	66	69	60	42	74
• Food Handling Component	77	77	81	73	71	96
<b>USE OF INSTRUMENTS TO ASSESS CUSTOMER SATISFACTION: PERCENTAGES</b>						
• Customer Focus Groups	30	54	49	43	21	65
• Customer Satisfaction Surveys	51	70	76	63	44	100
• Mystery Shopper Programs	47	75	82	75	62	59
<b>FOOD HANDLING PRACTICES: MEANS</b>						
• Temperature Check Score	96	95	98	97	99	97
• Sanitation Audit Score	66	60	65	64	51	82
• Inventory Rotation Score	98	90	97	94	100	99
• Food Safety Training Score	66	100	100	33	33	100

CON = Conventional  
SS = Superstore

FD COMBO = Food/Drug Combination  
WH = Warehouse

SWH = Super Warehouse  
SC/HY = Supercenter/Hypermarket

### Store Characteristics and Performance Measures for Stores Grouped by Quality Assurance Score

Median store characteristics and performance measures for stores grouped into quartiles based on the Quality Assurance score are summarized in Table 7.3. As in previous years, the customer satisfaction component has the widest range in median levels for the two components of this score.

**Table 7.3 Characteristics and Performance Measures for Stores Grouped by Quality Assurance Practices Score**

	<b>Lowest Quartile</b>	<b>Second Quartile</b>	<b>Third Quartile</b>	<b>Highest Quartile</b>
<b>MEDIAN QUALITY ASSURANCE PRACTICES SCORE</b>	<b>38</b>	<b>62</b>	<b>79</b>	<b>94</b>
• Customer Satisfaction Component	9	48	75	100
• Food Handling Component	67	77	83	88
<b>MARKET CHARACTERISTICS</b>				
• Median Population Density (per sq. mi.)	114	357	747	975
• Median Household Income (\$/year)	\$41,791	\$46,893	\$49,966	\$45,042
• Percent Located in an SMSA	61	67	67	78
<b>STORE CHARACTERISTICS</b>				
• Median Store Age (years)	30	22	17	14
• Mean Ownership Group Size (stores)	2	100	481	501
• Median Weekly Sales	\$100,000	\$245,000	\$300,000	\$290,000
• Median Selling Area (sq. ft.)	16,000	30,000	32,000	40,000
• Median Weekly Labor Hours	1,000	2,000	2,425	2,500
<b>STORE CHARACTERISTICS (Percentage)</b>				
• Wholesaler Supplied	83	40	34	16
• Union Workforce	19	31	41	37
<b>PERFORMANCE MEASURES: MEDIANS</b>				
• Weekly Sales per Square Foot of Selling Area	\$7.43	\$7.50	\$7.86	\$7.73
• Sales per Labor Hour	\$101.22	\$120.42	\$133.70	\$125.00
• Sales per Transaction	\$17.02	\$20.92	\$22.89	\$24.74
• Annual Inventory Turns	17.0	18.0	19.0	15.0
• Percentage Employee Turnover	39.4	41.9	37.5	40.8
• Gross Profit as a Percent of Sales	24.0	25.0	23.5	26.5
• Payroll as a Percent of Sales	10.0	9.8	10.0	10.0
• Annual Percentage Sales Growth	1.8	1.7	0.8	1.8

Stores in the highest quartile tend to be newer and are located in more densely populated areas. They are larger in selling area and weekly sales, members of larger store groups, and less likely to be wholesaler supplied. For most performance measures there is no clear trend in median levels across quartiles for the Quality Assurance score. It is possible that stores in smaller ownership groups, which also tend to have lower Quality Assurance scores, use less formal (but effective) quality assurance practices that are not included in this score.

### **Summary**

Stores that are part of a larger store group tend to place greater emphasis on both the customer satisfaction and the food handling components of the Quality Assurance score, with differences being greatest for formal customer satisfaction assessment techniques. Trends across quartiles based on the Quality Assurance score are not strong for most performance measures. This suggests that linkages are weak between use of these particular quality assurance practices and store performance.

## 8. Service Offerings

Service offerings are often the basis for differentiation of stores in a local market area. In assessing their range of service offerings, stores need to balance the benefits of becoming a one-stop destination against the added costs and space requirements for new services.

The Service Offerings score measures the adoption rate for sixteen services listed in Table 8.1. They range from self-scanning, bagging, and carryout to teller banking, videos, and a customer web site. Measured on a 100 point scale, a store's score is the percentage of these services that it offers.

### Service Offering Scores for Stores Grouped by Ownership Group Size

Table 8.1 presents Service Offerings scores for stores grouped by store group size. In the top row of the table, numbers of stores represented are estimates for the entire population, while numbers in parentheses are actual non-weighted numbers of stores in the Panel. The mean score trends upward across ownership group sizes, but the range in mean scores is relatively narrow. There are a few dramatic differences in percentages of stores offering individual services. Stores that offer gasoline are concentrated in the largest ownership groups, and stores in the two largest ownership group size categories are more likely to offer customer self-scanning, a pharmacy with a full-time licensed pharmacists, Internet ordering, and a web site for customers. On the other hand, stores in ownership groups with ten or fewer stores are more likely than stores in larger groups to offer home delivery.

- Stores that offer gasoline are concentrated in the largest ownership groups.
- Stores in ownership groups with ten or fewer stores are more likely than stores in larger groups to offer home delivery.
- Supercenter/hypermarket stores stand out in offering services based on information technology – customer self-scanning, Internet ordering, and a customer web site.

### Service Offering Scores for Stores Grouped by Format

Service Offering scores are summarized for stores grouped by format in Table 8.2. Because bagging and pharmacy services were used in defining formats, there are often sharp differences across formats in percentages of stores offering these services. Food/drug combination and supercenter/hypermarket stores have the highest mean scores. The food/drug combination stores are noteworthy because they consistently offer a wide range of services, with more than 75% of stores offering seven key services. The supercenter/hypermarket stores stand out in offering services based on information technology – customer self-scanning, Internet ordering, and a customer web site.



**Table 8.1 Service Offerings for Stores Grouped by Ownership Group Size**

	Single Store	2 -10 Stores	11 - 50 Stores	51 - 750 Stores	> 750 Stores
<b>NUMBER OF OBSERVATIONS: SO Score</b>	<b>5,502 (262)</b>	<b>4,379 (172)</b>	<b>5,113 (87)</b>	<b>8,060 (240)</b>	<b>8,914 (94)</b>
<b>MEAN SERVICE OFFERINGS SCORE</b>	<b>33</b>	<b>36</b>	<b>39</b>	<b>44</b>	<b>46</b>
<b>PERCENTAGE THAT OFFER EACH SERVICE</b>					
• Customer Self-Scanning	0	2	0	16	18
• Bagging Service	93	92	81	89	96
• Carryout Service	86	80	68	78	91
• Custom Meat Cutting/Service Meats	91	83	82	71	85
• Dry Cleaning	11	7	13	10	2
• Fax Ordering by Customer	28	23	19	25	22
• Gasoline	3	4	3	5	14
• Home Delivery	35	30	7	15	9
• Hot Meals or Meal Components (HMR)	49	66	68	68	63
• In-Store Bakery	53	76	77	86	93
• Internet Ordering by Customer	4	8	7	22	15
• Pharmacy, Prescriptions	3	10	29	54	63
• Post Office, Mailing Services	24	27	28	18	17
• Teller Banking/In-store Banking	12	18	27	28	39
• Video Department	21	18	29	31	35
• Web Site	21	34	69	84	88

**Table 8.2 Service Offerings for Stores Grouped by Format**

	CON	SS	FD COMBO	WH	SWH	SC/HY
<b>NUMBER OF OBSERVATIONS: SO Score</b>	<b>17,286 (534)</b>	<b>1,769 (34)</b>	<b>10,358 (201)</b>	<b>784 (30)</b>	<b>828 (41)</b>	<b>943 (15)</b>
<b>MEAN SERVICE OFFERINGS SCORE</b>	<b>35</b>	<b>42</b>	<b>52</b>	<b>21</b>	<b>37</b>	<b>47</b>
<b><u>PERCENTAGE THAT OFFER EACH SERVICE</u></b>						
• Customer Self-Scanning	3	17	17	0	0	36
• Bagging Service	94	100	100	0	0	71
• Carryout Service	84	71	93	0	27	49
• Custom Meat Cutting/Service Meats	82	95	88	49	50	39
• Dry Cleaning	10	4	5	5	10	0
• Fax Ordering by Customer	23	12	28	16	21	11
• Gasoline	4	0	12	0	10	21
• Home Delivery	21	10	16	0	0	11
• Hot Meals or Meal Components (HMR)	58	63	76	45	58	48
• In-Store Bakery	68	95	93	100	84	80
• Internet Ordering by Customer	7	15	17	0	0	89
• Pharmacy, Prescriptions	0	0	100	0	100	100
• Post Office, Mailing Services	20	21	25	16	46	11
• Teller Banking/In-Store Banking	14	50	38	39	56	61
• Video Department	18	39	41	4	62	54
• Web Site	51	88	83	56	73	81

CON = Conventional  
SS = Superstore

FD COMBO = Food/Drug Combination  
WH = Warehouse

SWH = Super Warehouse  
SC/HY = Supercenter/Hypermarket

### Store Characteristics and Performance Measures for Stores Grouped by Service Offerings Score

Table 8.3 presents median store characteristics and performance measures for stores grouped into quartiles based on the Service Offerings score. On average, stores in the highest quartile are newer, larger, and more likely to be part of a self-distributing group. At the other extreme, stores in the lowest quartile tend to be older, smaller, wholesaler supplied, and part of a relatively small ownership group. There are no striking trends in median performance levels across the four quartiles.

**Table 8.3 Characteristics and Performance Measures for Stores Grouped by Service Offerings Score**

	<b>Lowest Quartile</b>	<b>Second Quartile</b>	<b>Third Quartile</b>	<b>Highest Quartile</b>
<b>MEDIAN SERVICE OFFERINGS SCORE</b>	<b>24</b>	<b>41</b>	<b>50</b>	<b>61</b>
<b>MARKET CHARACTERISTICS</b>				
• Median Population Density (per sq. mi.)	220	182	433	357
• Median Household Income (\$/year)	\$43,115	\$45,255	\$47,485	\$44,863
• Percent Located in an SMSA	63	65	77	66
<b>STORE CHARACTERISTICS</b>				
• Median Store Age (years)	32	20	14	13
• Mean Ownership Group Size (stores)	12	111	501	187
• Median Weekly Sales	\$120,000	\$215,000	\$328,000	\$350,000
• Median Selling Area (sq. ft.)	20,000	31,000	39,000	40,000
• Median Weekly Labor Hours	1,191	1,750	2,600	2,800
<b>STORE CHARACTERISTICS (Percentage)</b>				
• Wholesaler Supplied	64	42	33	29
• Union Workforce	22	32	40	33
<b>PERFORMANCE MEASURES: MEDIANS</b>				
• Weekly Sales per Square Foot of Selling Area	\$7.48	\$7.25	\$7.67	\$8.18
• Sales per Labor Hour	\$109.68	\$118.18	\$130.13	\$120.37
• Sales per Transaction	\$19.15	\$20.59	\$23.47	\$25.00
• Annual Inventory Turns	15.0	15.0	20.0	18.0
• Percentage Employee Turnover	40.0	39.6	49.2	38.9
• Gross Profit as a Percent of Sales	24.0	24.0	23.5	25.5
• Payroll as a Percent of Sales	9.5	10.0	10.3	10.0
• Annual Percentage Sales Growth	1.6	0.9	4.1	1.9



### **A Closer Look at Adoption Rates for Three Emerging Customer Services**

*The 2001 Supermarket Panel Annual Report* includes a “closer look” section on adoption of three relatively new customer services – customer self-scanning, Internet ordering, and sale of gasoline. Customer self-scanning has the potential to lower checkout times for customers and reduce front-end labor costs, but developing self-scanning systems that are easy to use and can be monitored for errors and theft poses difficult

technical challenges. Internet ordering also has the potential to save time for customers, but incorporating this into an effective business model that includes order picking and order delivery or pickup has also proved to be a difficult challenge. After the failure of several purely online grocery businesses, several large retailers began exploring a “clicks and brick” strategy based on synergies between online shopping and traditional stores. Finally, selling gasoline has been viewed as a way to compete with convenience stores by making the supermarket a more attractive destination for quick stops for milk, bread, cigarettes, and gasoline.

- Stores that are part of ownership groups with more than fifty stores are much more likely than stores in smaller groups to offer customer self-scanning, and plans for future adoption suggest this gap will widen.

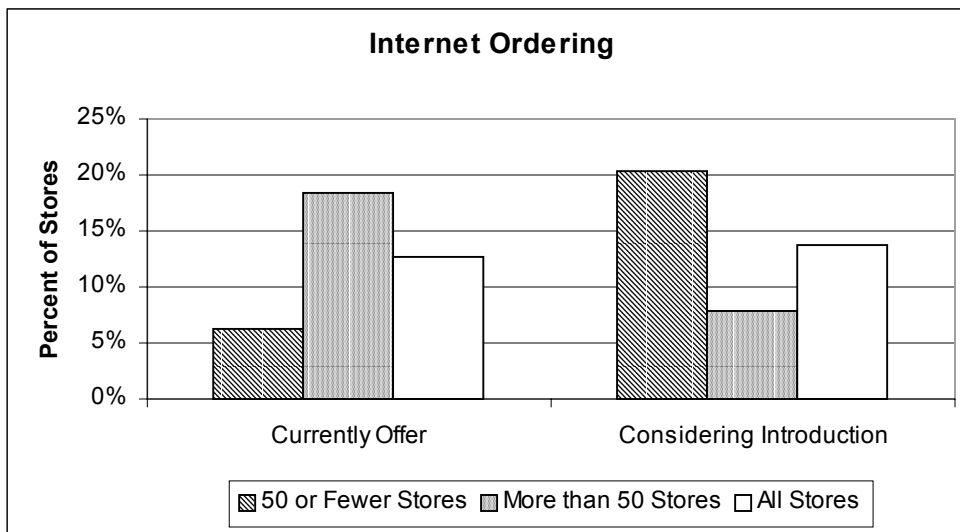
Figure 8.1 shows percentages of stores currently offering and considering introduction of customer self-scanning. Stores that are part of ownership groups with more than fifty stores are much more likely to offer this service, and plans for future adoption suggest this gap will widen. The percentages of stores currently offering and considering introduction are similar to that reported for the 2001 Panel. Therefore, it appears that few of the stores considering introduction last year actually installed customer self-scanning systems. One possible explanation for this is that the technology is still developing and stores are delaying installation until the rate of technical change has slowed.



Figure 8.1 Current and Planned Adoption of Customer Self-Scanning

Figure 8.2 shows percentages of stores currently offering and considering introduction of Internet ordering by the customer. More stores in larger ownership groups currently offer Internet ordering, but this difference in adoption will disappear if many of the stores in smaller ownership groups considering introduction do actually offer Internet ordering. Again, the adoption pattern for the 2002 Panel is similar to that for the 2001 Panel. Actual adoption rates are virtually unchanged, and the percentage of stores considering introduction of Internet ordering has declined for both stores in both ownership group size categories.

- Since 2001, the percentage of stores considering introduction of Internet ordering has declined in both ownership group size categories.



**Figure 8.2 Current and Planned Adoption of Internet Ordering by Customers**

Finally, Figure 8.3 shows percentages of stores currently offering and considering introduction of gasoline sales. The rate of adoption for all stores is low for gasoline, relative to self-scanning and Internet ordering. Once again, more stores currently in larger ownership groups offer this service, and plans for future introduction suggest this will continue. The actual adoption rate for the 2002 Panel is almost identical to that for the 2001 Panel for both store groups. The percentage of stores in smaller ownership groups considering introduction has remained steady, but the percentage of stores in larger groups considering introduction has fallen.

- Relatively few stores in small or large ownership groups sell gasoline.

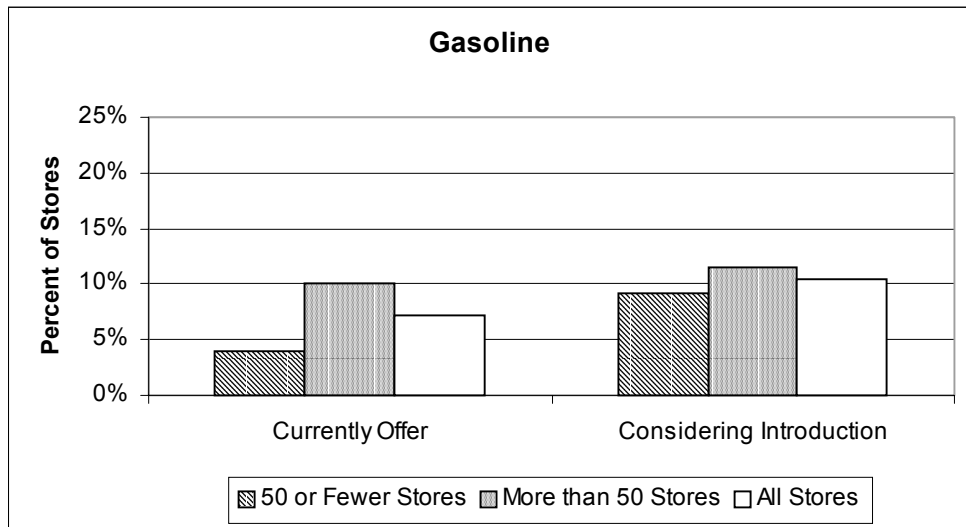


Figure 8.3 Current and Planned Adoption of Gasoline Sales

### Summary

Choices about the range of service offerings are an important, visible component of a store's competitive strategy. Differences across stores categorized by ownership group size are less pronounced in this management area than in others. Food/drug combination and supercenter/hypermarket stores offer the widest range of services, though the areas they emphasize differ. There are no clear, consistent relationships between Service Offerings scores and superior performance levels. Finally, the closer look at adoption of customer self-scanning, Internet ordering, and gasoline sales suggests that changes in these service offerings have been slow and that stores may be scaling back earlier plans to add these new services

- Stores may be scaling back earlier plans to offer customer self-scanning, Internet ordering, and gasoline sales.

## 9. Supercenters and Supercenter Competition

Supercenters are an important competitive force in the supermarket industry. Stores in the 2001 Supermarket Panel that faced supercenter competition had significantly lower sales per labor hour and annual sales growth. Further analysis for stores that were also in the 2000 Panel showed that stores facing competition from a new supercenter experienced large drops in labor productivity and large increases in labor turnover in the first year of supercenter competition. In this section we use findings from the 2002 Panel to explore the question of how supercenters differ from other supermarkets. We then reexamine the question of how supercenter competition impacts store performance.

### How Do Supercenter/Hypermarket Stores Differ from Other Supermarkets?

Supercenter/hypermarket stores are defined as stores with more than 100,000 square feet of selling area or stores with 75,000 to 100,000 square feet of selling area, a pharmacy, and no more than 30% of store sales from groceries. Based on sampling weights, the fifteen supercenter/hypermarket stores in the 2002 Panel represent a total of 943 stores nation-wide. Based on publicly available company information and news reports, this under-represents the number of supercenter/hypermarket stores. Nevertheless, there are enough stores in this group to be the basis for simple descriptive comparisons between these stores and other stores in the Panel.

Table 9.1 shows store and market characteristics, management practices, and operating performance for stores in ownership groups with up to fifty stores, stores in ownership groups with more than fifty stores, and supercenter/hypermarket stores. Superscripted letters are used to indicate statistically different levels for each measure at the 0.10 percent confidence level, with lower letters being associated with lower values. For example, the median population density of locations for stores in smaller groups is significantly less than that for stores in larger groups, as is indicated by the “a” and “b” superscripts. The median population density for the location of supercenter/hypermarket stores is not significantly different from that for either of the other two groups, as is indicated by the “a,b” superscript.

Differences in the demographic characteristics of the zip codes in which stores are located are relatively small. Shifting attention to store characteristics, supercenter/hypermarket stores are, by definition, much

**Table 9.1 Store Characteristics and Performance for Supercenter/Hypermarket Stores and Other Supermarkets<sup>1</sup>**

	Ownership Group Size		
	Up to 50 Stores	More than 50 Stores	Supercenter/Hypermarket Stores
<b>NUMBER OF STORES REPRESENTED</b>	<b>15,343 (529)</b>	<b>16,139 (322)</b>	<b>943 (15)</b>
<b>MARKET CHARACTERISTICS</b>			
• Median Population Density (per sq. mi.)	226 <sup>a</sup>	709 <sup>b</sup>	430 <sup>a,b</sup>
• Median Household Income (\$/year)	\$43,339 <sup>a</sup>	\$46,943 <sup>a</sup>	\$42,282 <sup>a</sup>
• Percent Located in an SMSA	57 <sup>a</sup>	73 <sup>b</sup>	70 <sup>a,b</sup>
<b>STORE CHARACTERISTICS</b>			
• Median Selling Area (sq.ft.)	18,000 <sup>a</sup>	36,000 <sup>b</sup>	139,000 <sup>c</sup>
• Median Weekly Sales	\$151,094 <sup>a</sup>	\$315,000 <sup>b</sup>	\$900,000 <sup>c</sup>
• Median Store Age (years)	30 <sup>b</sup>	15 <sup>a</sup>	7 <sup>a</sup>
• Mean Ownership Group Size	10 <sup>a</sup>	966 <sup>b</sup>	731 <sup>c</sup>
• Percent Wholesaler Supplied	92 <sup>c</sup>	3 <sup>a</sup>	* <sup>b</sup>
• Percent with Union Workforce	0.17 <sup>b</sup>	0.5 <sup>c</sup>	* <sup>a</sup>
<b>MANAGEMENT SCORES (Mean)</b>			
• Supply Chain	44.6 <sup>a</sup>	74.2 <sup>b</sup>	84.6 <sup>c</sup>
• Human Resources	35.7 <sup>a</sup>	42.2 <sup>b</sup>	51.3 <sup>c</sup>
• Food Handling	76.9 <sup>a</sup>	83.4 <sup>b</sup>	96.9 <sup>c</sup>
• Environmental Practices	59.2 <sup>a</sup>	82.0 <sup>b</sup>	81.1 <sup>b</sup>
• Quality Assurance	55.6 <sup>a</sup>	76.8 <sup>b</sup>	86.1 <sup>c</sup>
• Service Offerings	36.1 <sup>a</sup>	44.9 <sup>b</sup>	47.2 <sup>b</sup>
<b>COMPETITIVE POSITION (Percent)</b>			
• Price Leader	25 <sup>a</sup>	37 <sup>b</sup>	60 <sup>c</sup>
• Quality Leader	69 <sup>a</sup>	65 <sup>a</sup>	61 <sup>a</sup>
• Service Leader	69 <sup>a</sup>	74 <sup>a</sup>	80 <sup>a</sup>
• Variety Leader	26 <sup>a</sup>	42 <sup>b</sup>	80 <sup>c</sup>
<b>PERFORMANCE MEASURES (Median)</b>			
• Weekly Sales per Square Foot	\$7.14 <sup>a</sup>	\$8.41 <sup>b</sup>	\$8.06 <sup>a,b</sup>
• Sales per Labor Hour	\$100.00 <sup>a</sup>	\$129.85 <sup>b</sup>	\$138.69 <sup>b</sup>
• Sales per Transaction	\$17.50 <sup>a</sup>	\$23.53 <sup>b</sup>	\$35.71 <sup>c</sup>
• Annual Inventory Turns	16.0 <sup>a</sup>	18.0 <sup>a</sup>	10.0 <sup>a</sup>
• Percentage Employee Turnover	41.2 <sup>a</sup>	39.1 <sup>a</sup>	48.2 <sup>a</sup>
• Gross Profit as a Percent of Sales	24.0 <sup>a</sup>	24.3 <sup>a</sup>	24.6 <sup>a</sup>
• Payroll as a Percent of Sales	10.0 <sup>b</sup>	9.8 <sup>b</sup>	8.0 <sup>a</sup>
• Annual Percentage Sales Growth	1.8 <sup>a</sup>	1.8 <sup>a</sup>	3.1 <sup>a</sup>

<sup>1</sup>Superscripted letters indicate significant differences at the 0.10 level

\* Not reported to preserve confidentiality



larger than stores in either of the other groups. On average, they were built more recently than stores in ownership groups with up to fifty stores, but the difference in median age for stores in larger ownership groups and the supercenter/hypermarket stores is not statistically significant. Differences in the percentage of stores with a union workforce, mean ownership group size, and the percentage of stores that are wholesaler supplied are all large and statistically significant.

Differences for the six management practice scores across the three groups are relatively large and generally statistically significant. Stores in the smaller ownership groups consistently have the lowest scores and supercenter/hypermarket stores have the highest mean scores in all areas except environmental practices. Differences in percentages of stores that say they are price, service, quality, and variety leaders follow a similar pattern, though none of the differences for service and quality leadership is statistically significant.

Finally, focusing on the operating performance measures, supercenter/hypermarket stores have significantly higher sales per transaction and annual sales growth and significantly lower payroll as a percent of sales. Their median sales per labor hour is also significantly higher than that for stores in ownership groups with no more than fifty stores.

Supercenter/hypermarket stores have higher labor productivity than other supermarkets, though they also have higher employee turnover. Table 9.2 presents more detailed information on human resource management for the three groups of stores.

Supercenter/hypermarket stores do not differ significantly from other stores in the percentage of their employees who work full-time. However, they do rely on full-time employees for a much higher percentage of their total labor hours, and they experience significantly higher turnover among their full-time employees. Finally, it is noteworthy that supercenter/hypermarket stores use much less labor per 1,000 square feet in their stores. In part, this can be attributed to the fact that the percentage of selling area devoted to aisles usually increases with selling area, but it also suggests that supercenter/hypermarket stores use less labor intensive operating practices.

- **Supercenter/hypermarket stores have the highest mean score in each management area except environmental practices.**

- **Supercenter/hypermarket stores have significantly higher sales per transaction and annual sales growth and significantly lower payroll as a percent of sales.**

- **Supercenter/hypermarket stores rely on full-time employees for a much higher percentage of their total labor hours, and they experience significantly higher turnover among their full-time employees.**

**Table 9.2 Median Human Resource Practice Measures for Supercenter/Hypermarket Stores and Other Supermarkets<sup>1</sup>**

	<b>Ownership Group Size</b>		<b>Supercenter/ Hypermarket Stores</b>
	<b>Up to 50 Stores</b>	<b>More than 50 Stores</b>	
• <b>Percent Full-Time Employees</b>	<b>39.0<sup>a</sup></b>	<b>34.0<sup>a</sup></b>	<b>43.0<sup>a</sup></b>
• <b>Percent of Labor Hours by Full-Time Employees</b>	<b>53.3<sup>a</sup></b>	<b>48.3<sup>a</sup></b>	<b>70.4<sup>b</sup></b>
• <b>Percentage Full-Time Employee Turnover</b>	<b>14.3<sup>a</sup></b>	<b>12.3<sup>a</sup></b>	<b>32.7<sup>b</sup></b>
• <b>Percentage Part-Time Employee Turnover</b>	<b>55.3<sup>a</sup></b>	<b>49.7<sup>a</sup></b>	<b>68.8<sup>a</sup></b>
• <b>Weekly Labor Hours per 1,000 Square Feet of Selling Area</b>	<b>68.3<sup>b</sup></b>	<b>63.3<sup>b</sup></b>	<b>40.0<sup>a</sup></b>

<sup>1</sup>Superscripted letters indicate significant differences at the 0.10 level.

- Approximately half of the supermarket population recognizes significant competition from a supercenter, up from about one-third of stores in the 2001 Panel.

- Stores that report supercenter competition have significantly lower sales per square foot of selling area and lower sales growth.

### **Supercenter Competition**

Stores that participated in the Panel were asked to identify their three most important competitors by store name. They also provided information on store characteristics, including whether each competitor was a supercenter. Store characteristics and performance levels for stores that did and did not identify a supercenter as one of their three most important competitors are presented in Table 9.3.

Based on weighted responses, approximately half of the supermarket population recognizes significant competition from a supercenter, up from about one-third of stores in the 2001 Panel. Stores in the two groups are similar in terms of market and store characteristics, though stores reporting supercenter competition are, on average, slightly larger and are located in areas with lower median household income. Comparing performance levels, stores that report supercenter competition have significantly lower sales per square foot of selling area and sales growth, but they have a median payroll as a percent of sales that is significantly lower, though the difference is very small.

**Table 9.3 Store Characteristics and Performance for Stores Grouped by Competition with Supercenters\***

	<b>No Supercenter Competition</b>	<b>Supercenter Competition</b>
<b>NUMBER OF STORES</b>	<b>16,782 (437)</b>	<b>14,941 (408)</b>
<b>STORE CHARACTERISTICS</b>		
• Median Selling Area	<b>28,000</b>	<b>30,000*</b>
• Mean Group Size	<b>435</b>	<b>594</b>
• Median Household Income	<b>\$46,798</b>	<b>\$44,389*</b>
• Percent Located in an SMSA	<b>65.3</b>	<b>65.3</b>
<b>STORE PERFORMANCE LEVELS (Median)</b>		
• Weekly Sales per Square Foot	<b>\$7.94</b>	<b>\$7.14*</b>
• Sales per Labor Hour	<b>\$120.00</b>	<b>\$117.54</b>
• Percentage Employee Turnover	<b>40.4</b>	<b>41.2</b>
• Payroll as a Percent of Sales	<b>10.0</b>	<b>9.9*</b>
• Annual Percentage Sales Growth	<b>2.2</b>	<b>1.2*</b>

\* Difference is statistically significant at the 0.10 level.

Results from an analysis of data for stores that participated in both the 2001 and 2002 Panels – presented in Table 9.4 – offer additional insights on the effects of supercenter competition.<sup>1</sup> Of 234 stores that provided information on competitors in both years, 113 did not report supercenter competition in either year, sixty-seven stores reported it in both 2000 and 2001, fifteen stores reported it in 2000 but not 2001, and thirty-nine stores reported new supercenter competition in 2001. Note that, because Panel data are collected early in the calendar year, stores in the 2001 Panel were reporting data for 2000, while those in the 2002 panel were reporting 2001 data.

Median changes in performance levels for these four groups are summarized in the middle section of the table. Differences in employee turnover are especially noteworthy. Stores that reported supercenter competition for the first time in 2001 experienced a large increase in

- Stores that reported supercenter competition for the first time in 2001 experienced a large increase in employee turnover, while stores in the other three groups had a decline in employee turnover.

<sup>1</sup> Data were not weighted for this analysis.

**Table 9.4 Changes in Performance for Continuing Panel Stores Grouped by Supercenter Competition<sup>1</sup>**

	No Supercenter Competition	Supercenter Competition in 2000 but not in 2001	Supercenter Competition in 2000 and 2001	Supercenter Competition in 2001
<b>NUMBER OF STORES</b>	<b>113</b>	<b>15</b>	<b>67</b>	<b>39</b>
<b>MEDIAN CHANGE IN PERFORMANCE FROM 2000 TO 2001</b>				
• Weekly Sales per Square Foot	-\$0.01	\$0.18	-\$0.07	\$0.21
• Sales per Labor Hour	\$2.22	\$9.72	\$2.61	\$11.41
• Percent Employee Turnover	-3.4%	-4.7%	-3.4%	6.1%
• Weekly Sales (% change)	2.6%	0.9%	0.0%	0.0%
<b>PERCENT OF STORES WITH A MAJOR REMODELING</b>				
• Remodel in 2000	8.0%	20.0%	4.5%	2.6%
• Remodel in 2001	10.6%	6.7%	10.4%	20.5%

<sup>1</sup> Data are not weighted for this analysis.

employee turnover, while stores in the other three groups had a decline in employee turnover. On the other hand, stores facing new supercenter competition had the largest increase in sales per labor hour. These results differ from findings last year, when stores facing new supercenter competition experienced significant declines in sales per labor hour along with increases in turnover. Differences in sales growth are also noteworthy. Sales were essentially flat for stores that faced supercenter competition, while sales grew for stores that did not report supercenter competition in 2001.

- **Remodeling may be an effective preemptive response to supercenter competition.**

Results summarized in the lower portion of Table 9.4 point to a possible strategic response by stores reporting supercenter competition – remodeling. Stores that reported supercenter competition in 2000 but not in 2001 remodeled at a much higher rate than other stores in 2000. Stores that reported new supercenter competition in 2001 remodeled at a much higher rate than other stores 2001. This is similar to findings from the 2001 Panel. It suggests that remodeling may help a store overcome supercenter competition and that it can be a preemptive or initial response to new competition from a supercenter.

## 10. Characteristics of Outstanding Stores

Understanding the linkages among store characteristics, store operating practices, and store performance is an important long-term goal for the Supermarket Panel. Much of the analysis in this report focuses on these linkages. Replicating an analysis from the 2001 *Annual Report*, we identify stores that have above average levels for each of three key performance measures: weekly sales per square foot, sales per labor hour, and annual percentage sales growth. Of the 866 stores in the 2002 Panel, only fifty-four stores meet this criterion. These outstanding stores come from all five ownership group size categories, all formats except supercenter/hypermarket, and all four regions used in this report. Table 10.1 presents a descriptive profile for stores grouped by performance category and ownership group size. Only two ownership group size categories are used in this analysis – groups with fifty or fewer stores and groups with more than fifty stores.

Approximately thirty percent of the top stores are in ownership groups with fifty or fewer stores. Within this ownership group size category, top stores tend to be slightly larger and newer, and they operate in areas with slightly higher median household income. They are also less likely to be wholesaler supplied and belong to larger ownership groups. Within the larger ownership group size category, top stores operate in areas with higher population density and higher median household income. They are also more likely to have a union workforce but otherwise differ little from other stores. Finally, it is noteworthy that differences between stores in the two ownership group size categories are pronounced for most store and market characteristics.

For both ownership group size categories, there are remarkably few large differences between mean management practice scores for top stores and regular stores. Differences between mean scores for the two ownership group size categories are more noteworthy, especially for the Supply Chain and Quality Assurance scores.

Median performance measures are presented in the lower portion of Table 10.1. As expected, median levels for weekly sales per square foot, sales per labor hour, and annual percentage sales growth are dramatically higher for top stores in each group size category, since these are the performance measures used to identify the top stores. It is noteworthy, however, that top stores outperform regular stores for every other measure except payroll as a percent of sales for stores in the larger

- Of 866 stores in the 2002 Panel, only fifty-four have above average levels for weekly sales per square foot, sales per labor hour, and annual percentage sales growth.

- Top stores operate in areas with higher population density and higher median household income.

- This year there are remarkably few large differences between mean management practice scores for top stores and regular stores.

**Table 10.1 Descriptive Profile for Stores Grouped by Performance**

	Groups with 50 or Fewer Stores		Groups with More than 50 Stores	
	Regular Stores	Top Stores	Regular Stores	Top Stores
<b>NUMBER OF STORES REPRESENTED</b>	<b>14,539 (513)</b>	<b>804 (16)</b>	<b>15,111 (299)</b>	<b>1,971 (38)</b>
<b>MARKET CHARACTERISTICS</b>				
• Median Population Density (per sq. mi.)	226	192	641	1934
• Median Household Income (\$/year)	\$42,798	\$45,696	\$45,963	\$56,071
• Percent Located in an SMSA	57	62	71	85
<b>STORE CHARACTERISTICS</b>				
• Median Store Age (years)	26	16	17	18
• Mean Ownership Group Size (Stores)	10	16	951	970
• Median Weekly Sales	\$140,000	\$226,500	\$310,000	\$347,000
• Median Selling Area (sq.ft.)	18,000	22,000	38,000	40,000
<b>STORE CHARACTERISTICS (Percentage)</b>				
• Wholesaler Supplied	92	81	5	4
• Union Workforce	17	28	42	77
<b>MANAGEMENT SCORES (Mean)</b>				
• Supply Chain	44.5	47.1	74.8	74.9
• Human Resources	35.6	36.6	42.7	41.2
• Food Handling	76.9	76.7	84.0	81.9
• Environmental Practices	58.3	77.4	81.6	85.1
• Quality Assurance	55.9	49.4	77.4	76.1
• Service Offerings	36.1	35.8	45.0	45.9
<b>PERFORMANCE MEASURES (Median)</b>				
• Weekly Sales per Square Foot	\$7.00	\$9.69	\$7.44	\$11.00
• Sales per Labor Hour	\$94.81	\$128.50	\$125.00	\$146.34
• Sales per Transaction	\$17.08	\$25.83	\$23.57	\$26.38
• Annual Inventory Turns	16	21	15	22
• Percentage Employee Turnover	41.9	34.1	40.0	38.9
• Gross Profit as a Percent of Sales	24.0	24.3	24.0	25.0
• Payroll as a Percent of Sales	10.0	9.0	9.8	10.0
• Annual Percentage Sales Growth	1.6	5.0	0.7	7.5

ownership group size category. Comparing top stores in the two ownership group size categories, stores in larger groups have slightly better performance for every measure except employee turnover and payroll as a percent of sales. However, differences in top store performance are relatively small, and it is not possible to conclude that top stores in one ownership group size category outperform those in the other.

Taken together, these results suggest that there is no simple formula for success. None of the management practice scores is a good predictor of superior performance, and even the linkages between market characteristics and performance are not as strong as expected.

- **The results suggest there is no simple formula for success.**

Finally, it is noteworthy that of eighteen top stores from the 2001 Panel that also participated in the 2002 Panel, only five stores remained in the top store group. This is too few stores to permit detailed analysis, but some characteristics of these stores are worth noting.

- Two of these five stores are single store independents, and another is in an ownership group with only four stores. The remaining two are in self distributing ownership groups of 140 and 501 stores.
- Two of the three wholesaler supplied stores have the same wholesaler.
- Four of the five stores are located in areas with a median household income that exceeds \$50,000. The three wholesaler supplied stores are in areas with a population density below 200 people per square mile, while the two stores in self distributing groups are in areas with population density greater than 1,500 people per square mile.
- Selling area for these five stores ranges from 25,000 to 42,000 square feet. Formats include conventional, superstore, food/drug combination, and warehouse.
- Three of the five stores were built less than ten years ago. The other two were built more than thirty years ago.

- Four of the five stores identify themselves as price and quality leaders in their market area.. The other store faces supercenter competition and is one of only two of the five stores that identifies itself as a service leader.

Once again, there is no single characteristic or management practice that distinguishes these stores. The key to top performance may well rest with the store manager and the support s/he receives from the store's key supplier or corporate headquarters. This is an issue that deserves more attention in the future.



## 11. Statistical Analysis of Performance Drivers

The descriptive profile of the Panel and the analysis of store characteristics and performance for each of the six key management areas provide useful insights on the structure of the supermarket industry and factors associated with strong performance. Additional insights can be drawn from the analyses of supercenter competition and top performing stores. However, store performance is actually the product of complex interactions among store characteristics, market characteristics, and management practices.

- **Store performance is the product of complex interactions among store characteristics, market characteristics, and management practices.**

This section presents findings from a multivariate regression analysis of five key performance measures.

1. Weekly Sales per Square Foot
2. Sales per Labor Hour
3. Payroll as a Percent of Sales
4. Gross Profit as a Percent of Sales
5. Annual Percentage Sales Growth

Each of these measures was regressed on independent variables that are grouped into four broad sets of performance drivers.

1. **Market Characteristics** include population density and median household income in the zip code where the store is located and a binary (i.e., zero or one) variable that is set to one if the store is in a metropolitan area (SMSA) and zero otherwise. These are factors that cannot be changed once a store has been built, but it is important to control for them because they can have important influences on store performance.
2. **Store Characteristics** include store selling area, a set of binary variables for alternative formats (superstore, food/drug combination, warehouse, super warehouse, and supercenter/hypermarket, with conventional being considered as the “base case”), ownership group size, a binary variable that is set to one if the store is part of a self-distributing group and zero otherwise, and a binary variable set to one if the store has a union workforce and zero otherwise. Store size and format cannot be changed in the short run, but they can be altered through a major remodeling. To capture the effects of remodeling, store

characteristics also include binary variables indicating a major remodeling in 2000 or 2001 – the two years preceding data collection for the 2002 Panel.

3. **Competitive Position** performance drivers include binary variables indicating whether the manager identifies the store as a price leader, quality leader, service leader, and/or variety leader. These market position indicators are not mutually exclusive – a store could be both a quality and service leader, for example. Also, they are not fully under the manager's control, since a new competitor could take away leadership in one or more areas. Nevertheless, it is useful to examine how a store's competitive position in each of these areas is associated with alternative performance dimensions. A binary variable indicating supercenter competition was also included in preliminary analyses of performance drivers, but this did not add significantly to the explanatory power of the models. One explanation for this is that the impacts of supercenter competition are reflected in the other competitive position variables.
4. **Management Practices** are summarized by the store's scores for the six key management areas: supply chain, human resources, food handling, environmental practices, quality assurance, and service offerings. These are performance drivers that can be affected by deliberate management decisions, either at the store level or in store group headquarters.

Table 11.1 presents summary information on all the variables in this analysis, along with variable name abbreviations used in subsequent tables. All twenty-four explanatory variables were included in the regression analysis for each of the five performance measures. With so many variables in the analysis, there were often missing values. In fact, only 260 stores had valid responses for all performance measures and all explanatory variables. Therefore, two sets of regressions were run. The first used only the 260 stores with no missing values. The second used as many stores as possible for each performance regression. Results of the two sets of regressions were quite similar from a qualitative standpoint. Only the results using the largest possible sample for each performance measure are reported here.

**Table 11.1 Summary Information for Explanatory Variables in Store Performance Analysis**

<b>Variable</b>	<b>Abbreviation</b>	<b>Comments</b>
<b><u>MARKET CHARACTERISTICS</u></b>		
• Population Density (per sq. mi.)	PopDen	Based on Census data
• Median Household Income (\$/year)	HHInc	Based on Census data
• Located in an SMSA	SMSA	1 if SMSA, 0 otherwise
<b><u>STORE CHARACTERISTICS</u></b>		
• Selling Area (sq. ft.)	SellSize	
• Superstore	SS	1 if SS, 0 otherwise
• Food/Drug Combination	FD	1 if FD, 0 otherwise
• Warehouse	WH	1 if WH, 0 otherwise
• Super Warehouse	SWH	1 if SWH, 0 otherwise
• Supercenter/Hypermarket	SC/HY	1 if SC/HY, 0 otherwise
• Store Group Size	GSize	
• Self Distributing Group	SelfDist	1 if SelfDist, 0 otherwise
• Union Workforce	Union	1 if Union, 0 otherwise
• Major Remodeling in 2000	RMaj2000	1 if RMaj2000, 0 otherwise
• Major Remodeling in 2001	RMaj2001	1 if RMaj2001, 0 otherwise
<b><u>COMPETITIVE POSITION</u></b>		
• Price Leader	PLleader	1 if PLleader, 0 otherwise
• Quality Leader	QLleader	1 if QLleader, 0 otherwise
• Service Leader	SLleader	1 if SLleader, 0 otherwise
• Variety Leader	VLleader	1 if VLleader, 0 otherwise
<b><u>MANAGEMENT PRACTICES</u></b>		
• Supply Chain Score	SCScr	Scale from 0 to 100
• Human Resources Score	HRScr	Scale from 0 to 100
• Food Handling Score	FHScr	Scale from 0 to 100
• Environmental Practices Score	EPScr	Scale from 0 to 100
• Quality Assurance Score	QAScr	Scale from 0 to 100
• Service Offerings Score	SOScr	Scale from 0 to 100

Table 11.2 summarizes qualitative results for the five regression models. Each performance measure is associated with a column in the table, while each explanatory variable is associated with a table row. When the regression coefficient for an explanatory variable is statistically significant at the 95% confidence level, two pluses (++) or minuses (-) are placed in the appropriate performance variable column to indicate the sign of the coefficient. One plus (+) or minus (-) indicates statistical significance at the 90% confidence level. For example, the relationship between population density and sales per square foot is positive and statistically significant at the 95% level, so there are two pluses in the cell at the intersection for the row and column for these variables.

It is important to note that regression results measure statistical association between variables, while controlling for all other factors. Also, they indicate correlation but not causation. With multiple years of data for the same stores, it will be possible to attribute a change in performance to a change in store characteristics or management practices, but the number of continuing Panel stores is not yet large enough for a meaningful analysis of this type.

#### **Weekly Sales per Square Foot**

Stores located in areas with higher population density and higher median household income have significantly higher levels of sales per square foot. This is consistent with findings from the analysis of top performing stores. Store format also has a strong association with this measure. Relative to conventional stores, which are treated as the base format in this analysis, stores in four of the five other major format categories have significantly higher sales per square foot. In general, stores in these four formats are larger than conventional stores. After controlling for format, increases in selling area have a significant negative association with sales per square foot. This is consistent with findings for the 2000 and 2001 Panels.

There is a statistically significant, positive relationship between membership in a self distributing group and sales per square foot, however ownership group size is not associated with differences in this measure. Finally, the statistically significant, positive relationship between remodeling in 2000 and sales per square foot suggests that it often takes a year or more to realize added sales from a major remodeling.

- **Stores located in areas with higher population density and higher median household income have significantly higher levels of sales per square foot.**
- **After controlling for store format, increases in selling area have a significant negative association with sales per square foot.**
- **It often takes a year or more to realize added sales from a major remodeling.**

**Table 11.2 Qualitative Results for Performance Driver Regressions<sup>1</sup>**

Explanatory Variable <sup>2</sup>	Weekly Sales per Square Foot	Sales per Labor Hour	Payroll as a Percent of Sales	Gross Profit as a Percent of Sales	Annual Percentage Sales Growth
<b>MARKET CHARACTERISTICS</b>					
• PopDen	++	++			
• HHInc	++		++		++
• SMSA				++	
<b>STORE CHARACTERISTICS</b>					
• SellSize	--	+	--		
• SS					
• FD	++		++	--	
• WH	++	++			--
• SWH	++		++	--	
• SC/HY	++		+	-	
• GSize					
• SelfDist	+	+	--		
• Union		++	++		
• RMaj2000	+				
• RMaj2001		--			
<b>COMPETITIVE POSITION</b>					
• PLeader	++		--		
• QLeader	++			++	+
• SLeader	+				
• VLeader				+	
<b>MANAGEMENT PRACTICES</b>					
• SCScr			--	+	
• HRScr					--
• FHScr					-
• EPScr					+
• QAScr					
• SOScr		--	+	++	

<sup>1</sup>The symbol “++” indicates a positive relationship that is statistically significant at the 95% confidence level, while the symbol “--” indicates a negative relationship that is statistically significant at the 95% confidence level. The symbol “+” and “-” indicate positive and negative relationships that are statistically at the 90% confidence level. Significance levels are based on a one-tailed test.

<sup>2</sup>See Table 11.1 for full variable names and variable definitions.

- Price, quality, and service leadership all have statistically significant, positive relationships with sales per square foot.

A store's competitive position is also closely linked with the performance measure. Price, quality, and service leadership all have statistically significant, positive relationships with sales per square foot. On the other hand, there is no statistically significant relationship between this measure and any of the six management practice scores. This is not a strong departure from findings in 2001, however, when only the environmental practices score had a statistically significant, positive relationship with sales per square foot.

### **Sales per Labor Hour**

- Sales per labor hour is significantly higher in markets with higher population density and for stores with a warehouse format and a union workforce.
- Remodeling is linked with lower labor productivity.

This measure of labor efficiency is significantly higher in markets with higher population density and for stores with a warehouse format and a union workforce. Once again, membership in a self distributing group has a statistically significant, positive association with this measure. Increases in selling area are also linked with higher sales per labor hour. A major remodeling in 2001 has a statistically significant, negative relationship with this measure, suggesting that the disruptive effects of remodeling may have an important adverse effect on labor productivity. This is consistent with findings from a closer look at the impacts of remodeling in the *Annual Report* for the 2001 Panel.

None of the competitive position variables has a significant association with sales per labor hour, perhaps because store managers can adjust labor scheduling in response to market conditions. Of the management practice scores, only Service Offerings has a significant association with sales per labor hour. Offering a wider array of services has a negative relationship with this measure. This makes sense, because many of the services included in this score are labor intensive.

### **Payroll as a Percent of Sales**

- Stores with food/drug combination, super warehouse, and supercenter/hypermarket formats and stores with a union workforce tend to have higher payroll as a percent of sales.

This second measure of labor productivity takes both labor time and the wage rate paid to workers into account. It is the only one of the five performance measures that stores try to minimize rather than maximize. So in this case negative signs for explanatory variables indicate an association with better performance.

Among the market characteristics, only median household income has a statistically significant relationship with payroll as a percent of sales, and that relationship is positive. Stores with food/drug combination, super warehouse, and supercenter/hypermarket formats and stores with a union workforce also tend to have higher payroll as a percent of sales. The result for super warehouse and supercenter/hypermarket stores is

surprising. This is at least partially offset by the statistically significant, negative relationship between selling area and payroll as a percent of sales, though, since these stores have much larger selling area than stores in other formats. Membership in a self distributing group is also associated with significantly lower payroll as a percent of sales.

Of the four competitive position variables, only price leadership has a statistically significant relationship with payroll as a percent of sales. Consistent with expectations and with findings for the 2000 and 2001 Panels, the relationship is negative. Finally, two of the management practice scores have a statistically significant relationship with payroll as a percent of sales. A higher level for the Supply Chain score has a statistically significant, negative relationship with this measure, suggesting that adoption of supply chain management technologies and business practices improves labor efficiency. On the other hand, a higher score for Service Offerings is associated with higher levels of payroll as a percent of sales.

#### **Gross Profit as a Percent of Sales**

This productivity measure – the difference between sales and cost of goods sold divided by sales – can indicate success in being able to charge higher prices while maintaining sales levels and/or greater efficiency in procurement. Among the market characteristics, only location in an SMSA has a statistically significant relationship with gross profit as a percent of sales, and it is positive. Turning to store characteristics, food/drug combination, super warehouse, and supercenter/hypermarket stores all have significantly lower gross profit as a percent of sales, relative to conventional stores. The negative relationship for super warehouse and supercenter/hypermarket stores is expected, since these stores often base their competitive strategies on a combination of high sales volume and low margins. The negative relationship for the food/drug combination stores is unexpected, since these stores do not have unusually low gross profit as a percent of sales levels. It is likely that this effect is offset by the effects of other factors in the regression model. For example, food/drug combination stores are more likely than conventional stores to be quality and variety leaders in their market area, and both these competitive position variables have statistically significant, positive relationships with gross profit as a percent of sales.

Finally, two management scores – Supply Chain and Service Offerings — have statistically significant, positive relationships with gross profit as a percent of sales. The positive relationship for Service Offerings is

- **Stores that are price leaders have lower payroll as a percent of sales.**
- **Adoption of supply chain management technologies and business practices is linked with higher labor efficiency.**
- **Stores located in an SMSA have higher gross profits.**

expected, since the cost of goods sold is generally low for services. One possible explanation for the positive relationship between gross profit as a percent of sales and the Supply Chain score is that stores adopting the practices included in this score are receiving discounts from suppliers because they are less costly to serve.

- Sales growth is significantly higher for stores located in areas with higher median household income, lower for warehouse stores, and significantly higher for stores that identify themselves as quality leaders.

### Annual Percentage Sales Growth

Unlike the other performance measures, sales growth is not closely associated with store and market characteristics and competitive position. The annual rate of sales growth is significantly higher for stores located in areas with higher median household income and lower for warehouse stores. Sales growth is also significantly higher for stores that identify themselves as quality leaders in their market area.

Among the management practices, both the Human Resource and Food Handling scores have statistically significant, negative relationships with sales growth, a result that is both counterintuitive and in conflict with findings from the 2001 Panel. There is a statistically significant, positive relationship between the Environmental Practices score and sales growth, but this relationship is also difficult to explain. The results from this year's panel shed little light on the factors driving sales growth.

### Results Across Performance Measures

While the regression models used in this analysis are designed to measure the effects of performance drivers on one performance measure at a time, it is also useful to look at the qualitative results across performance measures. For example, market characteristics clearly have important impacts on all dimensions of performance. At least one market characteristic has a statistically significant relationship with superior performance for every measure except payroll as a percent of sales. In general, stores in more densely populated, higher income areas perform better.

- Stores in more densely populated, higher income areas perform better.

- Stores in self distributing groups have higher productivity for both selling area and labor.

There are three interesting patterns for store characteristics. First, format matters. In general, food/drug combination, warehouse, super warehouse, and supercenter/hypermarket stores have performance levels that are significantly different from (but not always better than) performance for stores with conventional and superstore formats. Second, membership in a self distributing group is associated with higher productivity for both selling area and labor. Here the key factor may be the collaborative relationship between the store and its primary supplier, since stores in self distributing groups have been shown to place greater



emphasis on sharing information and decision authority with trading partners. These effects are also reflected in the relationship between higher levels of the Supply Chain score and lower payroll as a percent of sales and higher gross profit as a percent of sales. Finally, it is surprising that there are no statistically significant relationships between group size and any of the five performance measures.

The importance of competitive position is also noteworthy. Leadership in each of the four areas – price quality, service, and variety – has a statistically significant relationship with improved performance for at least one measure. Consistent with findings from 2000 and 2001, price and quality leadership appear to be the most important competitive position variables associated with the performance measures considered here.

Finally, the relative lack of statistically significant relationships between management practice scores and performance levels is surprising. The observed relationships for the Service Offerings score – higher labor costs and higher gross profit – are largely attributable to differences between the sale of tangible products and services and so do not necessarily point to prescriptions for management practices. On the other hand, the relationship between the Supply Chain score and superior performance suggests that increased attention to this area may have immediate benefits.

- **There are no statistically significant relationships between group size and any of the five performance measures.**
- **Competitive position matters. Price and quality leadership have especially important links with superior performance.**
- **Increased attention to supply chain practices may have immediate performance benefits.**

## **12. Looking Ahead to the 2003 Panel**

Work on the 2003 Panel is under way as this report is being completed. We plan to continue expanding the size of the Panel. This will increase the accuracy of our industry profile and make it possible to examine emerging trends in greater detail.

In order to enhance the value of the panel for participating stores, we are exploring several alternatives for streamlining data collection, including a major revision of the Panel questionnaire and the possibility of offering the Panel online. We will also use data from the past three years to reassess the management practice scores that are currently a critical component of the benchmark reports and *Annual Report*. Our goal will be to identify summary measures of management practices that will be more effective indicators of best practices.

We are also piloting new research efforts that will build on and complement the Panel. These include an online customer satisfaction survey that can be customized for individual stores and a coordinated set of survey instruments designed to assess human resource practices and employee satisfaction. Both these new efforts will benefit from being linked to the detailed store level information provided by the Panel. At the same time, they will add to the value of the core Panel by collecting information on critical factors beyond store characteristics, operating practices, and performance.

## **Appendix A**

### **Data Collection Procedures**

#### **Sampling Procedures**

Data collection for the 2002 Supermarket Panel began in the fall of 2001 with establishment of the sampling frame and drawing of a random sample of stores from that frame.

The process began with a computer file provided by the Food Stamp Program of USDA, which lists the 151,999 establishments in the United States that accept food stamps. The data fields for each store were:

- Name of Establishment
- Street Address
- City
- State
- Zip Code
- Area Code
- Phone Number
- Open 24 Hours
- Not Open 24 Hours
- Type of Establishment

Of the 151,999 establishments, 31,879 were classified as supermarkets. These became the relevant population for the 2002 Panel.

Based on experience in past years, we expected response rates to vary with store group size. Therefore, the population was grouped into 2 store group size strata, 1-10 and 11+, and those stores in the larger store groups were sampled at a higher rate. Weights based on sampling intensity and response rates were used to correct for response imbalances in the final data set. Procedures for determining appropriate weights are described in the final section of this appendix.

All 405 stores that were randomly selected and participated in the 2001 Panel were included in the sample for 2002. Of these, nine stores had either ceased operations or declined to participate again, leaving 396 stores that had previously participated in the Panel. Prior to the initiation of data collection, the Food Industry Center and IGA agreed to send the 2002 Panel to all of the IGA affiliated stores in the United States.

Therefore, the IGA stores were removed from the population list before an additional 1,604 stores were drawn at random from the remaining 30,916 stores in the population, yielding a total sample of 2,000 stores.

Two major retailers also established working relationships with the Food Industry Center that made it possible to include some or all of their stores in the Panel. The inclusion of the IGA stores and the two retailers increased the total sample size for the 2002 Panel to 3,901 stores.

### **Data Collection Procedures**

Data collection, coding, and entry were administered and performed by the Minnesota Center for Survey Research (MCSR) at the University of Minnesota. This helped ensure not only smooth operations during a complex data collection process but also strict confidentiality for the Panel data.

The data collection process was based on mail survey methods developed by Dillman.<sup>1</sup> It began in November 2001, when MCSR personnel called each of the 2,000 stores in the “core sample” constructed prior to inclusion of the IGA stores and the stores of the two affiliated food retail companies. The calls verified the store name and address and asked for the store manager’s name and title. This helped reduce mailing errors and made it possible to address Panel correspondence directly to the store manager.

On January 8, 2002, letters were mailed to the 2,000 stores in the core sample. These letters introduced the Panel, indicated that the Panel data booklets would be mailed the following week, and asked for a prompt response.

On January 15, 2002, panel data booklets were mailed to all the stores in the core sample. The mailing packet also included a cover letter encouraging participation and a return envelope addressed to the Minnesota Center for Survey Research. On January 22, 2002, a follow-up postcard was sent to all stores in the sample. Then on February 5, 2002, a second data booklet and cover letter were mailed to all stores that had not yet responded. Follow-up telephone calls were made to non-

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<sup>1</sup> Dillman, Don A. *Mail and Telephone Surveys: The Total Design Method*. New York: Wiley, 1978.

respondents between February 18 and March 1, 2002. Data booklets were re-mailed to store managers requesting another survey. Data collection for the stores ended in mid March.

Data collection procedures were similar for the IGA stores and the stores of the two affiliated food retail companies. Managers of these stores also received letters from their corporate headquarters, encouraging them to complete the Panel data booklet and explaining that their store data and benchmark reports would also be available to their parent organization.<sup>2</sup> All mailings to these stores were conducted by MCSR.

Coding/editing of surveys, data entry, and data file cleaning were completed in mid April by MCSR personnel. In June 2002, Elaine Jacobson, the Food Industry Center Research Associate who manages the Supermarket Panel database, prepared the data for analysis and generated a confidential benchmark report for each store in the Panel. All the benchmark reports were mailed on or before June 17, 2002.

To ensure confidentiality, Elaine Jacobson was the only person outside of MCSR who had access to the full data set while the benchmark reports were being prepared. All store names, addresses, and zip codes were then removed from the data set used by Food Industry Center researchers for preparation of this report and for any future studies based on the Panel data.

During the preparation of this report, U.S. Census data based on zip code were acquired for all stores in the sample, including the IGA stores and the two affiliated retail companies. These data were merged with the original data set by Elaine Jacobson, who subsequently removed all store identifiers from the data files used by other researchers.

### **Response Rates and the Construction of Weights for Statistical Analysis**

Preliminary analysis of the data for the 2002 Panel indicated that, as expected, response rates differed by ownership group size, with single store independents and stores in smaller groups having a higher response rate. There were also regional differences in response rates. Stores in the Midwest were more likely to respond than stores in other regions. Finally, IGA stores and the two affiliated food retail companies were over-represented in the data set, since the entire population of those

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<sup>2</sup>IGA and the two affiliated food retail companies were given access only to data from their own stores.

stores had been given an opportunity to participate in the Panel. The population, original sample, and respondents were grouped into strata and frequency weights were constructed to correct for these imbalances.

The first step in the stratification process was to sort the 31,879 supermarkets in the population by establishment name. In cases where several store names were known to be under common corporate ownership, the stores with these names were combined into a single group. Similarly, when stores with the same name were known to be independently owned and operated, those stores were classified as belonging to single store groups. Each store in the entire population was then placed in one of three ownership groups: (1) single store independents and stores in ownership groups with two to ten stores, (2) stores in ownership groups with more than ten stores, (3) stores in the IGA network, (4) stores affiliated with food retail company #1, and (5) stores affiliated with food retail company #2. Within each ownership group, stores were assigned to one of four regional strata: (1) Midwest, (2) Northeast, (3) South, and (4) West.<sup>3</sup> Overall, then, the population was divided into twenty strata.

Strata definitions, strata sizes, and sample sizes for each stratum are reported in Table A.1. The overall sample size was 3,901 stores. The strata sizes for the two affiliated retail food companies are not reported separately in order to maintain confidentiality.

**Table A.1 Population and Sample Size by Ownership Stratum and Region**

	Midwest		Northeast		South		West		Total	
	Pop	Sam	Pop	Sam	Pop	Sam	Pop	Sam	Pop	Sam
<b>1 to 10</b>	2,704	189	2,073	102	2,237	87	1,797	104	8,811	482
<b>11 and more</b>	4,904	344	4,391	286	7,583	530	4,710	304	21,588	1,464
<b>IGA</b>	786	786	234	234	454	454	168	168	1,642	1,642
<b>Affiliated Retailers</b>	212	187	188	114	21	0	18	12	439	313
<b>Total</b>	8,606	1,506	6,886	736	10,295	1,071	6,693	588	32,480	3,901

<sup>3</sup> States in the Midwest region are: IA, IL, IN, KS, KY, MI, MN, MO, ND, NE, OH, SD, WI, and WV. States in the Northeast region are: CT, DC, DE, MA, MD, ME, NH, NJ, NY, PA, RI, VA, and VT. States in the South region are: AL, AR, FL, GA, LA, MS, NC, OK, SC, TN, and TX. States in the West region are: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, and WY

Response rates are presented by stratum in Table A.2. Again, figures for the two affiliated retail food companies are not reported separately in order to maintain confidentiality.

**Table A.2 Response Rates by Ownership Stratum and Region**

	Midwest		Northeast		South		West		Total	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
<b>1 to 10</b>	73	38.62%	32	31.37%	20	22.99%	27	25.96%	152	31.54%
<b>11 and more</b>	61	17.73%	35	12.24%	76	14.34%	56	18.42%	228	15.57%
<b>IGA</b>	181	23.03%	42	17.95%	71	15.64%	33	19.64%	327	19.91%
<b>Affiliated Retailers</b>	118	63.10%	33	28.95%	0	--	8	66.67%	159	50.80%
<b>Total</b>	433	28.75%	142	19.29%	167	15.59%	124	21.09%	866	22.20%

Weights were constructed to correct for (i) over-representation of IGA stores and the two affiliated retail food company stores in the original sample and (ii) differences in response rates by ownership group size and region. The weight for each of the twenty strata was calculated by dividing the total population by the number of respondents. In effect, then, the weights indicate the number of stores in the population represented by each store in the sample.<sup>1</sup> Weights are reported by stratum in Table A.3. Weights for the two affiliated food retail companies are not reported in order to maintain confidentiality.

**Table A.3 Statistical Analysis Weights by Ownership Stratum and Region**

	Midwest	Northeast	South	West
<b>1 to 10</b>	37	65	112	67
<b>11 and more</b>	80	125	100	84
<b>IGA</b>	4	6	6	5

<sup>1</sup> Weights were rounded to the nearest integer, because integer weights are required for some of the statistical procedures used in the analysis for this report.

## Appendix B

### Performance Driver Regression Analysis Results

Multiple linear regression models for the analysis of drivers for key performance variables were estimated using *Stata*, Release 6.0.<sup>1</sup> For simplicity and ease of interpretation, the specification was limited to a simple linear model with no interactions among explanatory variables. Qualitative findings were similar for a preliminary analysis using natural logs of the dependent variables and the continuous explanatory variables.

Two regression models were estimated for each performance measure. For the first, the sample was restricted to those stores with valid data for all five performance measures and all twenty explanatory variables. A total of 260 stores met this restriction. For the second model, the sample included all stores with valid data for the performance measure under consideration and for all twenty-four explanatory variables. With such a large number of explanatory variables, this is still quite restrictive, but sample sizes did increase significantly for all performance measures.

Results from the two set of regressions were quite similar qualitatively, and parameter estimates differed little in size, sign, and statistical significance. Only results for the less restrictive model are presented here.<sup>2</sup>

Finally, a word on interpretation of the estimated coefficients may be helpful. In general each coefficient indicates the change in the performance measure associated with a one unit increase in the associated explanatory variable, holding all other explanatory variables constant. For example, looking at the results for Weekly Sales per Square Foot reported in Table B.1, the coefficient for **SellSize** (store selling area) is **-0.000061**. This implies a very small reduction in Weekly Sales per Square Foot with a one square foot increase in selling area, or a \$0.06 reduction with a 1,000 square foot increase in selling area. The coefficient for **FD** (binary variable for the warehouse format) is **3.16**. This implies that, relative to a conventional format store with all other characteristics and practices identical, a warehouse store is expected to have a level of Weekly Sales per Square Foot that is \$3.16 higher.

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<sup>1</sup> StataCorp. *Stata Statistical Software: Release 6.0*. College Station, TX: Stata Corporation, 1999.

<sup>2</sup> Results for the restricted model are available on request from Robert King.



**Table B.1 Weekly Sales per Square Foot\***

<b>Number of obs.</b>	516
<b>F(24, 491)</b>	3.78
<b>Prob &gt; F</b>	0.0000
<b>R-Squared</b>	0.3381
<b>Root MSE</b>	3.4343

	<b>Coef.</b>	<b>Robust** Std. Err.</b>	<b>t</b>	<b>P&gt; t </b>	<b>[95% Conf. Interval]</b>	
<b>PopDen</b>	0.000478	0.000168	2.850	0.005	0.000148	0.000807
<b>HHInc</b>	0.000079	0.000021	3.738	0.000	0.000037	0.000120
<b>SMSA</b>	-0.373988	0.499410	-0.749	0.454	-1.355232	0.607256
<b>SellSize</b>	-0.000061	0.000017	-3.558	0.000	-0.000095	-0.000027
<b>SS</b>	-1.157428	1.202289	-0.963	0.336	-3.519695	1.204838
<b>FD</b>	1.039896	0.629461	1.652	0.099	-0.196874	2.276665
<b>WH</b>	3.161720	1.893323	1.670	0.096	-0.558294	6.881734
<b>SWH</b>	6.302572	2.056814	3.064	0.002	2.261330	10.343820
<b>SC/HY</b>	5.647227	2.351966	2.401	0.017	1.026068	10.268390
<b>Gsize</b>	-0.000169	0.000415	-0.408	0.684	-0.000984	0.000646
<b>SelfDist</b>	1.163891	0.789492	1.474	0.141	-0.387309	2.715090
<b>Union</b>	0.684533	0.668571	1.024	0.306	-0.629079	1.998145
<b>RMaj2000</b>	0.284738	1.004704	0.283	0.777	-1.689312	2.258788
<b>RMaj2001</b>	1.255502	0.910806	1.378	0.169	-0.534056	3.045059
<b>PLeader</b>	0.983320	0.581610	1.691	0.092	-0.159430	2.126071
<b>QLeader</b>	1.381565	0.585080	2.361	0.019	0.231995	2.531134
<b>SLeader</b>	0.786980	0.506712	1.553	0.121	-0.208611	1.782570
<b>VLeader</b>	0.082870	0.542947	0.153	0.879	-0.983917	1.149657
<b>SCScr</b>	-0.016567	0.019091	-0.868	0.386	-0.054078	0.020943
<b>HRScr</b>	0.007583	0.025626	0.296	0.767	-0.042768	0.057934
<b>FHScr</b>	-0.019770	0.018542	-1.066	0.287	-0.056203	0.016662
<b>EPScr</b>	0.008155	0.010040	0.812	0.417	-0.011573	0.027882
<b>QAScr</b>	0.007801	0.017651	0.442	0.659	-0.026879	0.042482
<b>SOScr</b>	-0.022773	0.022108	-1.030	0.303	-0.066211	0.020666
<b>constant</b>	5.211987	1.415156	3.683	0.000	2.431477	7.992496

\*See Table 11.1 on page 75 for a key to abbreviations for explanatory variable names.

\*\*Standard errors were calculated using the Huber/White/sandwich procedure to correct for heteroskedasticity.

**Table B.2 Sales per Labor Hour\***

Number of obs. 344  
F(24, 319) 6.94  
Prob > F 0.0000  
R-Squared 0.4435  
Root MSE 26.1850

	Coef.	Robust** Std. Err.	t	P> t	[95% Conf. Interval]	
<b>PopDen</b>	0.002980	0.001058	2.816	0.005	0.000898	0.005061
<b>HHInc</b>	0.000220	0.000183	1.202	0.230	-0.000140	0.000581
<b>SMSA</b>	0.855733	5.114014	0.167	0.867	-9.205723	10.917190
<b>SellSize</b>	0.000269	0.000187	1.439	0.151	-0.000099	0.000636
<b>SS</b>	-11.561440	16.484220	-0.701	0.484	-43.992960	20.870090
<b>FD</b>	-2.701347	7.009839	-0.385	0.700	-16.492700	11.090010
<b>WH</b>	27.519030	15.476550	1.778	0.076	-2.929974	57.968040
<b>SWH</b>	-14.661520	25.535150	-0.574	0.566	-64.900090	35.577050
<b>SC/HY</b>	-13.875940	23.712820	-0.585	0.559	-60.529210	32.777330
<b>Gsize</b>	0.004562	0.004434	1.029	0.304	-0.004162	0.013285
<b>SelfDist</b>	11.738490	7.295338	1.609	0.109	-2.614562	26.091550
<b>Union</b>	9.998052	5.341802	1.872	0.062	-0.511561	20.507660
<b>RMaj2000</b>	-21.776620	11.849200	-1.838	0.067	-45.089070	1.535839
<b>RMaj2001</b>	5.735058	13.248760	0.433	0.665	-20.330930	31.801050
<b>PLeader</b>	5.182457	5.319016	0.974	0.331	-5.282325	15.647240
<b>QLeader</b>	-4.590873	4.949928	-0.927	0.354	-14.329500	5.147755
<b>SLeader</b>	-6.901934	5.422702	-1.273	0.204	-17.570710	3.766843
<b>VLeader</b>	-1.747401	5.747908	-0.304	0.761	-13.056000	9.561197
<b>SCScr</b>	0.216659	0.182370	1.188	0.236	-0.142141	0.575459
<b>HRScr</b>	-0.141916	0.162665	-0.872	0.384	-0.461948	0.178117
<b>FHScr</b>	0.038547	0.181623	0.212	0.832	-0.318782	0.395877
<b>EPScr</b>	-0.112321	0.088791	-1.265	0.207	-0.287011	0.062369
<b>QAScr</b>	0.013261	0.152442	0.087	0.931	-0.286656	0.313179
<b>SOScr</b>	-0.453416	0.213654	-2.122	0.035	-0.873765	-0.033066
<b>constant</b>	106.715600	13.794820	7.736	0.000	79.575260	133.855900

\*See Table 11.1 on page 75 for a key to abbreviations for explanatory variable names.

\*\*Standard errors were calculated using the Huber/White/sandwich procedure to correct for heteroskedasticity.

**Table B.3 Payroll as a Percent of Sales\***

Number of obs. 526  
F(24, 501) 4.85  
Prob > F 0.0000  
R-Squared 0.2587  
Root MSE 1.9585

	Coef.	Robust** Std. Err.	t	P> t	[95% Conf. Interval]	
<b>PopDen</b>	-0.000063	0.000075	-0.836	0.403	-0.000211	0.000085
<b>HHInc</b>	0.000025	0.000009	2.771	0.006	0.000007	0.000043
<b>SMSA</b>	-0.151661	0.380632	-0.398	0.690	-0.899493	0.596171
<b>SellSize</b>	-0.000027	0.000012	-2.256	0.025	-0.000050	-0.000003
<b>SS</b>	0.272254	0.660349	0.412	0.680	-1.025141	1.569649
<b>FD</b>	1.027166	0.471511	2.178	0.030	0.100785	1.953548
<b>WH</b>	-0.166998	0.861182	-0.194	0.846	-1.858972	1.524975
<b>SWH</b>	2.230891	1.214820	1.836	0.067	-0.155879	4.617660
<b>SC/HY</b>	2.165504	1.397908	1.549	0.122	-0.580980	4.911988
<b>Gsize</b>	0.000338	0.000300	1.127	0.260	-0.000252	0.000928
<b>SelfDist</b>	-0.560799	0.333315	-1.682	0.093	-1.215667	0.094069
<b>Union</b>	0.944612	0.344351	2.743	0.006	0.268062	1.621161
<b>RMaj2000</b>	0.000104	0.393753	0.000	1.000	-0.773507	0.773714
<b>RMaj2001</b>	0.483124	0.461661	1.046	0.296	-0.423907	1.390154
<b>PLeader</b>	-0.768866	0.278714	-2.759	0.006	-1.316458	-0.221273
<b>QLeader</b>	0.234235	0.327503	0.715	0.475	-0.409214	0.877685
<b>SLeader</b>	0.033522	0.292878	0.114	0.909	-0.541900	0.608943
<b>VLeader</b>	0.096072	0.342574	0.280	0.779	-0.576987	0.769131
<b>SCScr</b>	-0.027181	0.009177	-2.962	0.003	-0.045212	-0.009150
<b>HRScr</b>	0.011464	0.010759	1.066	0.287	-0.009673	0.032602
<b>FHScr</b>	0.012637	0.010843	1.165	0.244	-0.008667	0.033940
<b>EPScr</b>	0.001312	0.007073	0.185	0.853	-0.012585	0.015209
<b>QAScr</b>	-0.000133	0.008804	-0.015	0.988	-0.017430	0.017165
<b>SOScr</b>	0.019061	0.011940	1.596	0.111	-0.004398	0.042520
<b>constant</b>	8.874135	0.886424	10.011	0.000	7.132568	10.615700

\*See Table 11.1 on page 75 for a key to abbreviations for explanatory variable names.

\*\*Standard errors were calculated using the Huber/White/sandwich procedure to correct for heteroskedasticity.

**Table B.4 Gross Profit as a Percent of Sales\***

<b>Number of obs.</b>	454
<b>F(24, 429)</b>	2.91
<b>Prob &gt; F</b>	0.0000
<b>R-Squared</b>	0.1908
<b>Root MSE</b>	4.9552

	<b>Coef.</b>	<b>Robust** Std. Err.</b>	<b>t</b>	<b>P&gt; t </b>	<b>[95% Conf. Interval]</b>	
<b>PopDen</b>	-0.000059	0.000235	-0.251	0.802	-0.000521	0.000403
<b>HHInc</b>	0.000035	0.000031	1.121	0.263	-0.000027	0.000097
<b>SMSA</b>	2.007128	0.966824	2.076	0.038	0.106827	3.907429
<b>SellSize</b>	-0.000001	0.000042	-0.024	0.981	-0.000083	0.000081
<b>SS</b>	-0.103186	1.563317	-0.066	0.947	-3.175899	2.969526
<b>FD</b>	-3.063807	1.467376	-2.088	0.037	-5.947947	-0.179666
<b>WH</b>	-2.556448	3.216228	-0.795	0.427	-8.877972	3.765076
<b>SWH</b>	-5.348504	1.972067	-2.712	0.007	-9.224620	-1.472389
<b>SC/HY</b>	-7.279749	5.491404	-1.326	0.186	-18.073150	3.513655
<b>Gsize</b>	-0.000761	0.000829	-0.918	0.359	-0.002391	0.000869
<b>SelfDist</b>	0.659839	1.145912	0.576	0.565	-1.592461	2.912139
<b>Union</b>	1.066609	0.967941	1.102	0.271	-0.835888	2.969105
<b>RMaj2000</b>	-1.685400	2.009498	-0.839	0.402	-5.635087	2.264287
<b>RMaj2001</b>	-0.248079	1.562414	-0.159	0.874	-3.319017	2.822860
<b>PLleader</b>	-0.628272	1.042048	-0.603	0.547	-2.676427	1.419883
<b>QLleader</b>	1.227585	1.014490	1.210	0.227	-0.766403	3.221574
<b>SLleader</b>	0.660782	0.843943	0.783	0.434	-0.997996	2.319559
<b>VLleader</b>	0.954729	0.870063	1.097	0.273	-0.755389	2.664846
<b>SCScr</b>	0.036960	0.028493	1.297	0.195	-0.019042	0.092962
<b>HRScr</b>	0.020168	0.026778	0.753	0.452	-0.032464	0.072800
<b>FHScr</b>	0.036616	0.037187	0.985	0.325	-0.036475	0.109708
<b>EPScr</b>	0.000742	0.016999	0.044	0.965	-0.032670	0.034154
<b>QAScr</b>	-0.021728	0.030587	-0.710	0.478	-0.081847	0.038390
<b>SOScr</b>	0.059933	0.032669	1.835	0.067	-0.004279	0.124145
<b>constant</b>	15.642830	2.863899	5.462	0.000	10.013810	21.271850

\*See Table 11.1 on page 75 for a key to abbreviations for explanatory variable names.

\*\*Standard errors were calculated using the Huber/White/sandwich procedure to correct for heteroskedasticity.

**Table B.5 Annual Percentage Sales Growth\***

					<b>Number of obs.</b>	468
					<b>F(24, 443)</b>	1.94
					<b>Prob &gt; F</b>	0.0051
					<b>R-Squared</b>	0.1061
					<b>Root MSE</b>	0.0896
	<b>Coef.</b>	<b>Robust** Std. Err.</b>	<b>t</b>	<b>P&gt; t </b>	<b>[95% Conf. Interval]</b>	
<b>PopDen</b>	0.000000	0.000003	-0.145	0.885	-0.000007	0.000006
<b>HHInc</b>	0.000001	0.000000	1.883	0.060	0.000000	0.000002
<b>SMSA</b>	0.006813	0.015385	0.443	0.658	-0.023424	0.037049
<b>SellSize</b>	0.000000	0.000001	-0.354	0.724	-0.000001	0.000001
<b>SS</b>	-0.014561	0.043094	-0.338	0.736	-0.099255	0.070134
<b>FD</b>	-0.010726	0.021192	-0.506	0.613	-0.052375	0.030923
<b>WH</b>	-0.040800	0.023064	-1.769	0.078	-0.086128	0.004529
<b>SWH</b>	-0.013629	0.027790	-0.490	0.624	-0.068246	0.040989
<b>SC/HY</b>	-0.011433	0.086384	-0.132	0.895	-0.181206	0.158339
<b>Gsize</b>	-0.000002	0.000012	-0.173	0.863	-0.000026	0.000021
<b>SelfDist</b>	0.007341	0.019934	0.368	0.713	-0.031836	0.046518
<b>Union</b>	-0.008520	0.016203	-0.526	0.599	-0.040365	0.023326
<b>RMaj2000</b>	-0.014973	0.018490	-0.810	0.419	-0.051312	0.021366
<b>RMaj2001</b>	0.055285	0.053181	1.040	0.299	-0.049234	0.159804
<b>PLeader</b>	0.006219	0.012012	0.518	0.605	-0.017387	0.029826
<b>QLeader</b>	0.017991	0.011980	1.502	0.134	-0.005553	0.041535
<b>SLeader</b>	-0.002913	0.012420	-0.235	0.815	-0.027323	0.021496
<b>VLeader</b>	0.008609	0.017030	0.506	0.613	-0.024860	0.042077
<b>SCScr</b>	-0.000373	0.000499	-0.748	0.455	-0.001353	0.000607
<b>HRScr</b>	-0.000966	0.000439	-2.203	0.028	-0.001828	-0.000104
<b>FHScr</b>	-0.000681	0.000453	-1.501	0.134	-0.001572	0.000210
<b>EPScr</b>	0.000365	0.000267	1.364	0.173	-0.000161	0.000890
<b>QAScr</b>	0.000687	0.000586	1.172	0.242	-0.000465	0.001839
<b>SOScr</b>	0.000138	0.000447	0.309	0.757	-0.000740	0.001017
<b>constant</b>	1.008257	0.041962	24.028	0.000	0.925787	1.090727

\*See Table 11.1 on page 75 for a key to abbreviations for explanatory variable names.

\*\*Standard errors were calculated using the Huber/White/sandwich procedure to correct for heteroskedasticity.

## **Appendix C**

### **Sample Benchmark Report**

In June 2002 each store in the Panel received a confidential benchmark report comparing it to peer stores similar in marketing format and size. This was the primary reward for participation.

A sample benchmark report is reproduced on the pages that follow. This report was prepared for a store that was classified as Conventional. As explained in the cover letter, the peer group for this store was stores ranging in size from 22,000 to 23,000 square feet.

The first section of the report compares the store's scores for six management area indices to the median scores for the peer group. The six management area indices summarize supply chain practices, human resource practices, food handling, environmental practices, quality assurance, and service offerings of the store.

The remainder of the report presents question-by-question comparisons of the store's responses to those of its peers. The store's responses are noted by bold face type. Questions for which the store's responses are "unusual" relative to those of its peers are marked with a box. For example, in question 1, the sample store is one of only 17% of peer stores that plan to start customer self-scanning next year. This distinguishes it from other stores in its peer group. Similarly, in question 3, the fact that this store has a total of 11 check-stands distinguishes it from its peer stores, which have a median of 7 check-stands.

The benchmark report provides detailed, highly personalized feedback to stores in the Panel.

# University of Minnesota

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## **2002 Supermarket Panel Benchmark Report**

June 15, 2002

Prepared for: Jon Seltzer  
1994 Buford Ave  
St. Paul, MN 55108

Dear Jon:

Thank you for participating once again in the Supermarket Panel. Your continuing support makes possible this unique, in-depth view of the supermarket industry at the store level. We are pleased to provide your benchmark report that compares your store with all others in your peer group.

Peer groups are stores of similar size and marketing formats (Conventional, Superstore, Food/Drug Combination, Warehouse, Super Warehouse, or Supercenter/Hypermarket). We assigned a marketing format to your store on the basis of your responses to questions about your store's selling area and about bagging and pharmacy services in your store. Your peer group for this report consists of "Conventional" stores which range in selling size from 22,000 to 23,000 square feet. Stores with Conventional formats are less than 40,000 sq. ft. of selling area, offer bagging for their customers, and do not have a pharmacy, though there are some exceptions. If this peer group is not appropriate for your store or you would like to see another comparison, please let us know immediately. We will prepare a follow-up benchmark report with a revised peer group.

Your report begins with summary information for six areas of management interest:

- Supply Chain
- Human Resources
- Food Handling
- Environmental Practices
- Quality Assurance
- Service Offerings

We have also included your 2001 Supermarket Panel index scores to help you identify important management changes for your store.

Store #9999

In the first section of the report, responses in each management area are combined into scores that can range from 0 to 100%. The higher your score, the more of the “characteristics” you have adopted. A high score may not be the ideal target for your store. The score shown under “Peer Group Score” is the median value (half the responses larger, half smaller) for stores in your peer group. This may be your most meaningful basis for comparison.

*Based on your index scores, your practices in many of the areas of management are similar to those of stores in your peer group. You are a leader in Supply Chain and Environmental Practices.*

The remainder of your benchmark report presents question-by-question comparisons between your responses and those of stores in your peer group.

*Considering the entire questionnaire, your responses differ most from those of stores in your peer group in Store Operations (questions 1-5, 17).*

For more information on interpreting this portion of your report, see the one-page guide titled “How to Read the Benchmark Report” at the beginning of the second section.

In the fall we will have a full analysis of the results of this year’s Panel. The initial results indicate that we have good representation of large and small stores, chain and independents, and stores from all parts of the country, fully reflecting the breadth of the retail food industry.

Your participation in the Panel is important and we want it to be a valuable resource for you. Please contact Jon Seltzer if you have any questions about this report or if there are changes in the areas of interest and benchmark comparisons that would make it more useful for you.

Jon Seltzer  
Supermarket Panel Project Manager

Telephone: 952-926-4602  
FAX: 952-926-3933  
Email: seltz004@tc.umn.edu

Once again, thank you for your participation.



## Summary Information for Key Management Areas

Area		Peer Group Score 2002	Your Score 2002	Your Score 2001*
<b>Supply Chain</b>	This index measures progress in implementing Supply Chain initiatives. It has two distinct dimensions which are combined to give a single score:			
	<ul style="list-style-type: none"> <li>• Use of technology (questions 1d - h, 1j, 1l, 1n, 1o, 1p, 1r, and 6h).</li> <li>• The role of various supply chain members in making marketing decisions--it assesses the degree to which pricing, advertising, promotions, merchandise display, and space allocation in produce, dry cereal, DSD snacks, and dairy are the responsibility of different parties in the supply chain (question 17).</li> </ul>			
	A higher value indicates that your store is further along in implementing Supply Chain initiatives.			
	<b>You are a leader in this area.</b>	62%	83%	72%
<b>Human Resources</b>	This index measures your adoption of more progressive human resource practices. It has four components which are combined into a single score:			
	<ul style="list-style-type: none"> <li>• New hire training (question 18).</li> <li>• Key employee training (question 19).</li> <li>• Proportion of full time to total employees (question 21).</li> <li>• Use of incentive-based and non-cash compensation (questions 25 and 26).</li> </ul>			
	A higher value indicates greater adoption of progressive human resource policies.			
	Your score is typical of stores in your peer group.	38%	38%	28%

\* Some changes in your index scores between 2001 and 2002 may be due to slight differences in index definitions, even if your management practices in this area have not changed.

## Summary Information for Key Management Areas

Area		Peer Group Score 2002	Your Score 2002	Your Score 2001*
<b>Food Handling</b>	<p>This index is based on your responses to the questions in the Food Handling Section of the survey.</p> <ul style="list-style-type: none"> <li>For all departments other than Frozen Foods, is the target temperature low enough (question 37)?</li> <li>Do you check the temperature in each department often enough (question 37)?</li> <li>Do you conduct store sanitation and 3<sup>rd</sup> party commercial audits often enough (question 38)?</li> <li>What dating information do you include (question 39)?</li> <li>Are your inventory rotation policies appropriate (question 40)?</li> <li>Do you require employees to be trained in proper handling techniques (question 41)?</li> </ul> <p>A higher value indicates better food quality/handling practices.</p> <p>Your score is typical of stores in your peer group.</p>	85%	87%	82%
<b>Environmental Practices</b>	<p>This index reflects your adoption of “environmentally friendly” practices. It has two aspects:</p> <ul style="list-style-type: none"> <li>Consumer oriented environmental policies (questions 6e and 6p).</li> <li>Operations oriented environmental policies (questions 1i, 1m, and 1q).</li> </ul> <p>A higher value indicates greater adoption of environmentally friendly practices.</p> <p><b>You are a leader in this area.</b></p>	67%	100%	100%

\* Some changes in your index scores between 2001 and 2002 may be due to slight differences in index definitions, even if your management practices in this area have not changed.

## Summary Information for Key Management Areas

Area		Peer Group Score 2002	Your Score 2002	Your Score 2001*
<b>Quality Assurance</b>	<p>This index measures your adoption of quality assurance practices in two areas:</p> <ul style="list-style-type: none"> <li>• Use of instruments that assess customer satisfaction (questions 1a, 1b, and 1k).</li> <li>• Food handling practices regarding sanitation audits, inventory rotation, and food safety training.</li> </ul> <p>A higher value indicates greater attention to quality assurance.</p> <p>Your score is typical of stores in your peer group.</p>	55%	61%	40%
<b>Service Offerings</b>	<p>This index measures the breadth of customer service your store provides. It is based on your responses to questions 1c, 6a-d, 6f, 6i-l, 6m, 6q, 6r, 6x, 6y, and 6z.</p> <p>A higher value indicates that your store offers a wider range of services.</p> <p>Your score is typical of stores in your peer group.</p>	38%	44%	38%

\* Some changes in your index scores between 2001 and 2002 may be due to slight differences in index definitions, even if your management practices in this area have not changed.

## How to Read the Benchmark Report

- There are 2 types of answers.
  - Percentages: these numbers indicate the percentage of peer group stores that selected a specific response. The percentage is based on all peer group stores that answered this question.
  - Averages: these are numbers without "%" signs and are based only on the peer group stores that answered the question. These numbers are not means but medians, so half of the peer group stores that answered this question gave answers that are larger and half gave answers that are smaller.
- Numbers in bold face indicate answers for your store.
- Boxed answers indicate an unusual answer. For a percentage, if your answer is different from the answer or answers on which your peer stores are concentrated, then your answer is unusual. For a numerical answer, "unusual" means that it is far from the peer group average.
- EXAMPLE 1: Consider the following sample response to Q1 on Page 1 by a hypothetical store.

Q1. To what extent are the following practices actively used in your store?  
*(Respondents circled ONE answer for each item)*

		Used for More Than 2 Years	Used for 1-2 Years	Started in Past Year	Plan to Start Next Year	No Plans to Use	Don't Know
a.	Customer focus groups		12%		12%	45%	31%
b.	Customer satisfaction surveys	42%	25%	7%	7%	5%	14%
c.	Customer self-scanning	11%	7%	7%	7%	11%	57%
d.	Electronic invoices from DSD vendors	16%	7%		17%	10%	49%

Twelve percent of stores in the peer group have used focus groups for between one and two years, 12% plan to start using them next year, and 31% of store managers in this peer group do not know what company plans are for using focus groups. The bold face indicates that this store is among the 45% of stores in the peer group that have no plans to use customer focus groups. In the last row, we see that this store is among the 7% of stores in the peer group that have used electronic receipt of invoices from vendors/suppliers for between one and two years. In this regard, it belongs to an unusually small group of stores. This is indicated by the box around the number.

- EXAMPLE 2: Consider the following response to Q2 on Page 1 by a hypothetical store.

Q2. How many EXPRESS check-stands are there? **1 : 2** EXPRESS check-stands

Stores in this particular store's peer group have an average of 1 express check-stand. The 2 in bold face indicates that this store has 2 express check-stands. The box indicates that this is an unusually high number of express check-stands for this peer group.

Q1. To what extent are the following practices actively used in your store?

(Respondents circled ONE answer for each item)

		Used for More Than 2 Years	Used for 1-2 Years	Started in Past Year	Plan to Start Next Year	No Plans to Use	Don't Know
a.	Customer focus groups	23%	5%	5%	9%	41%	18%
b.	Customer satisfaction surveys	43%	4%	4%		35%	13%
c.	Customer self-scanning				17%	78%	4%
d.	Electronic invoices from DSD vendors	35%	4%	4%	9%	43%	4%
e.	Electronic invoices from primary warehouse	43%	9%		13%	30%	4%
f.	Electronic transmission of movement data to headquarters or key suppliers	45%	23%	5%	5%	14%	9%
g.	Electronic transmission of orders to vendors/suppliers (e.g., Telxon, Web, EDI)	70%	13%			9%	9%
h.	Electronic shelf tags	13%	13%			52%	22%
i.	Energy efficient lighting (e.g., T-8)	39%	22%		13%	13%	13%
j.	Internet/Intranet link to corporate headquarters and/or key suppliers	35%	30%	13%	9%	13%	
k.	Mystery shopper program	17%	9%	4%	4%	48%	17%
l.	Product movement analysis/Category management	50%	32%		5%	14%	
m.	Refrigeration management program	45%	9%	9%	5%	23%	9%
n.	Scan-based trading (payment to vendor triggered by sale to consumer)	9%	4%		4%	61%	22%
o.	Scanning data used for automatic inventory refill	9%				78%	13%
p.	Shelf-space allocation plan-o-grams	57%	10%		10%	5%	19%
q.	Store waste recycling	70%	4%	4%		13%	9%
r.	Vendor managed inventory (orders for non-DSD items generated by vendor based on store movement data)	14%	5%			50%	32%

Q2. How many EXPRESS check-stands are there? 1 : 2 EXPRESS check-stands

Q3. How many TOTAL check-stands are there (including express)? 7 : 11 check-stands TOTAL

Q4. How many hours per week are all check-stands in use? 22 : 8 hours per week

Q5. How many hours per week is the store open? (168 maximum) 105 : 120 hours per week

Q6. How would you rate the use of the following service offerings in your store?

(Respondents circled ONE answer for each item)

		Key Competitive Advantage	Standard Offering	Plan to Discontinue	Considering Introduction	Not Used, No Plan to Offer
a.	Bagging service	35%	65%			
b.	Carryout service/parcel pickup	35%	43%		4%	17%
c.	Custom meat cutting/service meats	43%	48%		4%	4%
d.	Dry cleaning		9%		5%	86%
e.	Environmentally-friendly products	9%	74%			17%
f.	Fax ordering by customer	9%	22%		13%	57%
g.	Franchise/license depts. (Starbucks, Subway)	9%	13%		17%	61%
h.	Frequent shopper/Loyalty card program	26%	4%	4%	13%	52%
i.	Gasoline	9%			17%	74%
j.	Home delivery	13%	4%		17%	65%
k.	Home meal replacement (HMR)/fresh prepared foods	17%	70%		4%	9%
l.	In-store bakery	43%	48%	4%		4%
m.	Internet ordering by customer	4%			26%	70%
n.	Labels pertaining to genetically modified foods (GMO-Free or Contains GMOs)		22%		9%	70%
o.	Newspaper ads with coupons	32%	36%	5%		27%
p.	Organic produce	17%	48%		9%	26%
q.	Pharmacy, full-time licensed pharmacist(s)				17%	83%
r.	Post office, mailing services	4%	22%		4%	70%
s.	Private label program-own brand	48%	43%			9%
t.	Purchase triggered electronic coupons	13%	26%		9%	52%
u.	Radio ads	30%	57%			13%
v.	Seating for eating/customer rest areas	13%	22%		9%	57%
w.	Television ads	26%	22%		17%	35%
x.	Teller banking/in-store banking		17%			83%
y.	Video department	13%	13%			74%
z.	Web site for customers	9%	43%		9%	39%

Q7. What is the approximate number of parking spaces?

- a. Number of parking spaces EXCLUSIVE to your store: 100 : 110
- b. TOTAL parking spaces available to your store, exclusive and shared: 189 : 300

- Q8. What is the approximate size of the SELLING AREA in your store? 22,000 : 22,250 sq. ft.
- Q9. Approximately, what is the TOTAL size of your store (selling area and backroom)? 30,000 : 31,000 sq. ft.
- Q10. In what year was the store originally constructed? (Approx) 1972 : 1990
- Q11. In what year was the store 1<sup>st</sup> operated under its current name? (Approx) 1988 : 1990
- Q12. Has your store ever had a major remodeling (significant new equipment or new departments, or store dimensions changed)?
1. Yes 73% → If Yes: What was the year of the most recent MAJOR remodeling? 1997 : 1999
  2. No 23%
  3. Not sure or don't know 5%
- Q13. Has your store ever had a minor remodeling (some equipment change or replacement but no new departments or change in store dimensions)?
1. Yes 91% → If Yes: What was the year of the most recent MINOR remodeling? 1999 : 1996
  2. No 9%
  3. Not sure or don't know
- Q14. Approximately how many stores are owned by the same company that owns your store?
- 8 : 118 stores
- If 10 stores or less → Is the manager's equity ownership in THIS STORE at least 20%?
1. Yes 50%
  2. No 50%
  3. Not sure or don't know
- Q15. What is the relationship between this store and its primary warehouse or major supplier?
1. The warehouse is a wholesaler or cooperative 73%
  2. The store and the warehouse are part of the same company (including wholesaler owned store) 27%
  3. Not sure or don't know
- Q16. Does your store participate in a cooperative or wholesaler-sponsored ad group or franchise program?
1. Yes 65%
  2. No 22%
  3. Not sure or don't know 13%

Q17. For each of the products listed below, please indicate who has MAJOR responsibility for each of the functions listed. (Respondents circled ALL that applied; row totals may exceed 100%)

	In-Store Personnel	Wholesaler or Independent Ad Group	Chain Headquarters or Region	Vendor or Broker
<b>Fresh Apples</b>				
Pricing	61%	17%	52%	9%
Advertising	39%	26%	52%	4%
Space Allocation	78%	4%	26%	9%
Display Merchandising	83%	4%	30%	9%
Promotions	48%	22%	57%	9%
<b>Dry Cereal</b>				
Pricing	39%	30%	57%	9%
Advertising	43%	30%	52%	9%
Space Allocation	74%	9%	30%	13%
Display Merchandising	91%		22%	13%
Promotions	48%	30%	57%	13%
<b>DSD Snacks</b>				
Pricing	61%	9%	48%	30%
Advertising	43%	26%	52%	22%
Space Allocation	83%		35%	13%
Display Merchandising	87%		26%	35%
Promotions	57%	17%	57%	39%
<b>Fresh Fluid Milk</b>				
Pricing	52%	13%	52%	9%
Advertising	52%	17%	57%	4%
Space Allocation	78%		30%	9%
Display Merchandising	83%	4%	26%	9%
Promotions	57%	13%	57%	13%



- Q18. For a typical new-hire in each of the following positions, how many hours of training (classroom or one-on-one supervision) are given for the following? Answers should be cumulative; i.e., include "Training hours during week 1 of employment" in the total for "Training hours during weeks 1-26 of employment". (A zero indicates no classroom or one-on-one, supervised training)

	Number of Hours of Training for a New Hire (classroom or one-on-one supervision)	
	During Week 1 of Employment	During Weeks 1-26 of Employment
a. Cashier	16 : 16	24 : 24
b. Elsewhere in the Store	16 : 4	24 : 8

- Q19. How many hours in the past 12 months have the following individuals spent in classroom training or one-on-one instruction? (Training would include outside programs like Dale Carnegie, college courses or internal training. Time spent in operational meetings, such as staff meetings, should not be included.)

	Number of Hours
a. Store Manager	4 : 16
b. Grocery Department Manager	0 : 0
c. Pricing or Scanning Coordinator	0 : 8

	Full Time	Part Time
Q20. In an average week, how many employee hours do you schedule Full Time and Part Time?	870 : 780	700 : 640
Q21. CURRENTLY, how many employees are working in the store?	20 : 19	31 : 32
Q22. 12 MONTHS AGO, what was the number of employees working in the store?	16 : 18	32 : 34

- Q23. Approximately how many Full Time and Part Time employees started working at this location in the last 12 months (whether or not they are still with your store or company)?

	Full Time	Part Time
a. Number of new hires in the last 12 months	2 : 2	17 : 4
b. Number of transfers from other locations in your company in the last 12 months.	0 : 1	0 : 5

- Q24. Are 25% or more of your employees covered by a collective bargaining agreement?

1. Yes 22%
2. No 61%
3. Not sure or don't know 17%

The next questions asked how different types of employees are compensated. *Respondents circled Yes, No, or DK (Don't Know) for each question below.*

Q25. Please indicate which of the items below is typically a part of the compensation of

		<u>Store Managers</u>			<u>Department Heads</u>		
		Yes	No	DK	Yes	No	DK
a.	Salary	87%	13%		39%	61%	
b.	Annual Bonus	70%	30%		52%	48%	
c.	Hourly Wage	25%	75%		82%	18%	
d.	Individual Performance Incentive Pay	35%	65%		18%	82%	
e.	Incentive Pay Based on Product or Category Performance	14%	86%		18%	82%	
f.	Employee Stock Ownership Plan	18%	82%		14%	86%	
g.	Individual Health Insurance	96%	4%		91%	9%	
h.	Family Health Insurance	91%	9%		86%	14%	
i.	Disability Insurance	74%	22%	4%	78%	17%	4%
j.	Company Funded Pension Plan	39%	57%	4%	48%	48%	4%
k.	401(k) Plan	73%	27%		59%	41%	

Q26. Please indicate which of the items below is typically a part of the compensation of

		<u>Other Full Time Personnel</u>			<u>Part Time Personnel</u>		
		Yes	No	DK	Yes	No	DK
a.	Salary	18%	82%		10%	90%	
b.	Annual Bonus	14%	86%		10%	90%	
c.	Hourly Wage	96%	4%		95%	5%	
d.	Individual Performance Incentive Pay	5%	95%		5%	95%	
e.	Incentive Pay Based on Product or Category Performance	5%	95%			100%	
f.	Employee Stock Ownership Plan	14%	86%			100%	
g.	Individual Health Insurance	91%	9%		48%	52%	
h.	Family Health Insurance	82%	18%		33%	67%	
i.	Disability Insurance	68%	27%	5%	38%	57%	5%
j.	Company Funded Pension Plan	39%	57%	4%	24%	71%	5%
k.	401(k) Plan	50%	50%		48%	52%	

The next set of questions concerns the three stores that compete most strongly with your store for customers, whether or not they belong to your company or ad group.

		Your Store	Competitor 1	Competitor 2	Competitor 3
Q27.	Name (not included to maintain confidentiality)	XXXX	XXXX	XXXX	XXXX
Q28.	Distance from your store in miles	XXXX	1.5 : 0.5	3.0 : 1.0	3.0 : 3.0
Q29.	Approximate size of SELLING AREA (sq. ft.)	XXXX	42,500	40,000	40,000
Q30.	What is the competitive sales rank of each of these stores CURRENTLY? (1 - 4: Leader = 1)	3 : 2	1 : 1	2 : 3	3 : 4
Q31.	What was the competitive sales rank of each of these stores LAST YEAR? (1 - 4: Leader = 1)	3 : 2	1 : 1	2 : 3	3 : 4

(Respondents circled ONE answer for each of the following items)

		Your Store	Competitor 1	Competitor 2	Competitor 3
Q32.	Which ONE of these 4 stores is the PRICE LEADER?	19%	48%	19%	14%
Q33.	Which ONE of these 4 stores is the SERVICE LEADER?	67%	14%	10%	10%
Q34.	Which ONE of these 4 stores is the QUALITY LEADER?	60%	10%	15%	15%
Q35.	Which ONE of these 4 stores is the VARIETY LEADER?	38%	19%	29%	14%

Q36. Please indicate each store's MARKETING PROGRAMS below.

		<u>Your Store</u>		<u>Competitor 1</u>		<u>Competitor 2</u>		<u>Competitor 3</u>	
		Yes	No	Yes	No	Yes	No	Yes	No
a.	Bagging	91%	9%	71%	29%	81%	19%	72%	22%
b.	Carryout service/parcel Pickup	82%	18%	33%	62%	48%	43%	44%	44%
c.	Pharmacy, full-time licensed pharmacist(s)		100%	48%	52%	48%	48%	50%	44%
d.	Gasoline		100%	5%	95%	19%	81%	22%	78%
e.	Frequent Shopper Program	27%	73%	48%	52%	52%	48%	47%	53%
f.	Heavy Private Label Program	76%	24%	71%	24%	50%	50%	62%	38%
g.	Open 24 Hours	5%	95%	43%	57%	33%	57%	29%	65%
h.	Supercenter (e.g., Fred Meyer, Kmart, Meijer, Target, WalMart)		100%	25%	75%	10%	90%	31%	69%
i.	Store coupons	82%	18%	62%	24%	57%	33%	59%	35%
j.	Low Prices	64%	36%	71%	29%	52%	48%	65%	35%
k.	Every Day Low Prices (EDLP)	64%	36%	65%	30%	52%	48%	35%	59%
l.	High/Low Advertising	67%	33%	55%	40%	65%	35%	69%	25%
m.	Home Shopping	9%	91%	5%	81%	5%	76%	6%	82%
n.	Other	13%		13%		13%		4%	9%

Q37. How frequently are display case temperatures checked for the following departments? (For each department, respondents chose ONE answer to indicate frequency and filled in the target temperature)

Department	Does not apply	Less than once per week	At least once per week, less than once per day	At least once per day	Checked whenever automatic alarm goes off	Display case target temperature
a. Meat (self service)				95%	5%	35 : 40
b. Dairy			5%	91%	5%	38 : 40
c. Deli (self service)			5%	90%	5%	36 : 40
d. Frozen				95%	5%	10 : 26

Q38. How often is your store inspected for food sanitation by the following? (Respondents chose ONE answer for each item)

	Does not apply	Once per year	More than once per year, less than once per month	Once per month	More than once per month
a. Self Audit	18%		23%	23%	36%
b. Local Authority	5%	27%	64%	5%	
c. 3 <sup>rd</sup> Party Commercial	16%	47%	32%		5%

Q39. For each product listed below, please indicate what type of dating information is on the package and who determines the date (if any). (Respondents chose ONE answer for dating information and ONE for who determines the dating information, if applicable)

Perishable Product	Does not apply	None	Sell by date	Use by date	Other	Determined by manufacturer or processor	Determined at store level or company HQ
a. Poultry		5%	71%	24%		39%	61%
b. Red Meat		5%	80%	15%		11%	89%
c. Seafood	10%	5%	70%	15%		6%	94%
d. Self Service Deli (Cold)		5%	71%	24%		33%	67%

Q40. For each of the following areas, please circle all the inventory rotation or stocking policies that apply. (Respondents circled all that applied; row totals may exceed 100%)

	Department	Does not apply	Replace when depleted	Restock as needed into the rear	Restock, no rotation	Other
a.	Meat (self service)	4%	17%	83%		
b.	Dairy		17%	91%		
c.	Deli (self service)		26%	78%		
d.	Frozen		26%	61%	13%	4%

Q41. Is a food safety training course required, either by company policy or regulation, for:

		Does not apply	Yes	No	Don't know
a.	Deli Manager?		77%	23%	
b.	Deli Employees?		41%	59%	
c.	Meat Department Employees?		64%	36%	
d.	Store Manager or Assistant Store Manager?		68%	32%	

Q42. How much of a problem are "stock-outs" in your store for:  
(Respondents circled ONE answer for each item):

		Large Problem	Small Problem	Not a Problem	Don't Know
a.	Dry Cereal?	9%	22%	65%	4%
b.	Case-Ready Fresh Chicken?		17%	74%	9%
c.	Yogurt?	5%	41%	50%	5%

Q43. Are you using or would you consider using scanner data for automatic inventory refill for:  
(Respondents circled ONE answer for each item)

		Currently Using	Would Consider	Would not Consider	Don't Know
a.	Dry Cereal?	4%	43%	39%	13%
b.	Case-Ready Fresh Chicken?		30%	57%	13%
c.	Yogurt?	9%	39%	39%	13%

Q44. How many deliveries per week do you receive for:

- a. Dry Cereal? 3 : 3
- b. Case-Ready Fresh Chicken? 3 : 2
- c. Yogurt? 3 : 3

The next set of questions asks for information about three individual departments and for the store as a whole.

		Produce	Meat	Grocery	Total Store
Q45.	Approximately, how much are PRIVATE LABEL SALES as a percentage of total sales in Grocery and Total Store? (Please include STORE BRAND BREAD in the TOTAL STORE but not in GROCERY)	XXXX	XXXX	15 : 15	12 : 15
Q46.	In each department, how much are average weekly sales as a percentage of total store sales?	9 : 9	16 : 10	49 : 60	100%
Q47.	What is the AVERAGE NUMBER of DSD DELIVERIES per week in each department and for the TOTAL STORE?	2 : 5	4 : 5	44 : 38	60 : 45
Q48.	What is the AVERAGE NUMBER of non-DSD DELIVERIES per week in each department and for the TOTAL STORE?	3 : 3	3 : 3	3 : 3	4 : 14
Q49.	What is the number of ANNUAL INVENTORY TURNS for each department and for the TOTAL STORE? (annual sales ÷ average inventory value)	38 : 47	28 : 40	12 : 15	13 : 15
Q50.	What is the number of SKUs for each department and for the TOTAL STORE?	405 : 450	553 : 475	15,000 : 19,000	25,000 : 30,000

		Most Recent Complete Fiscal Year	Previous Fiscal Year
Q51.	Ending date of Fiscal Year	Dec 01 : Dec 01	XXXX
Q52.	What were AVERAGE WEEKLY STORE SALES?	152,500 : 140,000	145,000 : 135,000
Q53.	What was the AVERAGE NUMBER OF CUSTOMER TRANSACTIONS PER WEEK?	8,250 : 7,100	8,200 : 7,050
Q54.	What was the AVERAGE GROSS PROFIT as a PERCENTAGE of SALES?	27 : 23	27 : 22
Q55.	What was the AVERAGE PAYROLL as a PERCENTAGE of SALES?	11 : 10	10 : 10