2007 SUPERMARKET PANEL REPORT

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The Food Industry Center is located at the University of Minnesota and is one of twenty-four industry centers originally funded by the Alfred P. Sloan Foundation. The Food Industry Center works as an educator and independent voice to the food industry; providing academic thought leadership through balanced perspective and research to advance knowledge of the food industry.

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Executive Summary

The Food Industry Center established the Supermarket Panel in 1998 as the basis for an 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 purpose of collecting data on supermarket operations and performance is to:

- Provide timely, useful information for the industry through benchmark reports and annual summaries, trends on key indices of technology adoption, competitive positions and performance.
- Be a ready source of data for research on current and emerging issues – to be able to track the changes in operation and its impacts on performance over time.

This report provides a detailed summary of results from the 2007 Supermarket Panel, an in-depth survey of 270 stores that represents a cross-section of the supermarket industry. Earlier surveys were conducted for the years 2000, 2001, 2002 and 2003.

Business Practices

- More than two thirds of the stores have participated in earlier Panel Surveys; 39 stores have been in the Panel since 2000.
- Median sales statistics show economies of scale in the size of the group to which stores belong. The largest annual growth in sales was for stores in group size 50-750. The largest group size stores have the largest sales per labor hour and per transaction.
- Hard discount stores had negative sales growth; supercenters had none. The largest percentage sales growth was for conventional stores and superstores.
- Many independent stores are still not adopting information technology that allows them to electronically communicate with suppliers. Self-distributing stores are 3 times as likely to use scan-based trading and 2.3 times as likely to use vendor-managed inventory as wholesaler-distributed stores.
- The most common form of marketing was newspaper ads with coupons; websites were a strong second.
- Superior scores in management practices are associated with superior financial performance.

Services Offered

- A larger portion of single stores offer the more labor-intensive services such as home delivery, telephone/fax ordering and custom cut meats.
- Superstores offer the most services and are more likely to carry organic products and gasoline. Eleven percent of all stores offer gasoline, up from 8 percent in 2002.
- Organic meat and poultry is more likely to be found in stores in larger-store groups than at independents. Organic produce is more likely to be offered in superstores, super wholesale stores and supercenters.
- Offering a high level of service is correlated with higher performance measures, especially sales per square foot and annual percentage sales growth.

Human Resources

- Super warehouse stores have a higher portion of stores with high levels of training for personnel than stores with other formats.
- Being in the highest quartile of the human resource index is correlated with having a union labor force and having higher sales per square foot, per labor hour and per transaction. It was not associated with greater profit or growth.
- One-third of the stores in the 2007 Panel are unionized. These stores tended to be large, belong to large store groups, be self-distributing, have a high adoption of information technology, and be in urban areas.
- Unionized stores have higher payroll expenses, higher sales per labor hour, higher annual sales growth, and higher labor turnover than non-unionized stores.

Food Handling, Environmental and Quality Control

- There is little difference in food safety/handling scores, but there is a slight increase as stores belong to larger groups. Larger groups do better with training and sanitation audits.
- Stores in large group sizes score better on environmental practices, especially training.
- Quality assurance and disaster recovery plans were strongest in stores in the largest groups, especially super warehouse stores and supercenter stores. They are notably stronger in the use of customer satisfaction surveys and disaster recovery plans.

Supercenter Competition

- Supercenter stores are not significantly different from other stores in groups larger than 50 for most characteristics except size and in claims of being a price leader.

Comparisons Over Time

- The adoption of electronic invoices received from warehouses among wholesaler supplied stores increased 175 percent between 2001 and 2007.
- Adoption of Vendor-managed Inventory is slowly rising, but is lower than other information technologies. The highest rate of adoption is for stores in the largest store group with a 48% adoption in 2007.
- Service offerings over time have stayed steady except for self-scanning which more than doubled for stores in groups of more than 50 and a switch from fax to internet ordering for those who offer it.
- Top stores, those with above median scores for three performance measures (weekly sales per square foot, sales per labor hour and annual sales growth) also have higher scores on management practices in 2007, in contrast to earlier Panels.
- Comparing stores in the Panel in 2002 and 2007 found 72 percent unchanged in ownership or closure. Of those that changed ownership, financial performance improved by almost every measure, they became variety leaders, and they improved food handling practices.
- Stores in larger groups were more likely to change ownership while stores in smaller groups were more likely to close.
- Change in ownership between 2002 and 2007 revealed no significant change increases in productivity growth after the change.

CHAPTER 1: INTRODUCTION

This report provides a detailed summary of results from the 2007 Supermarket Panel, an in-depth survey of 270 stores that represents a cross-section of the supermarket industry. This report represents the information collected in the latest round of the Supermarket Panel, a dataset established by The Food Industry Center in 1998. Earlier surveys were conducted in the years 2000, 2001, 2002 and 2003.

The Supermarket 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-sectional data for research on current and emerging issues.

The 2007 Supermarket Panel conducted a direct survey of 270 stores and provides data on store characteristics, operations and performance. The findings are summarized in this report with the goal of pointing out significant relationships among these variables, not to draw out or test causal relationships.

The next section contains a brief description of the data collection methods and a descriptive profile of the stores in our survey. Sections 3 through 8 present key findings in each of the following management areas: business practices, service offerings, human resources, food handling, environmental practices, and quality assurance.

Section 9 shows how supercenter stores differ from other supermarkets and compares 2007 data to earlier surveys. Section 10 presents the characteristics of well-performing stores in our sample. Section 11 presents an analysis of stores that changed ownership between 2002 and 2007, focusing on store characteristics and productivity changes.

CHAPTER 2: A DESCRIPTIVE PROFILE OF THE PANEL

The Sample

The population for the Panel was defined as the 35,517 establishments classified as supermarkets on a USDA list of the 161,267 establishments in the United States that accept food stamps.

Of the total random sample of 2,000 supermarkets, 270 completed the 2007 Panel. This represents an overall response rate of 13.5%. Of the 270 stores, 100 participated in the Panel for the first time. Thirty-nine stores have been in the panel since 2000, 28 stores have been in since 2001, 78 stores have been in since 2002, and 25 stores have been in the Panel since 2003 - the last Panel before the 2007 Panel.

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, issues, and trends in the industry, though neither collects detailed data at the individual store level. Table 2.1 compares median store characteristics for the 2007 Supermarket Panel with other industry-wide figures presented in *Speaks*, 2007 and *Progressive Grocer's 74th Annual Report of the Grocery Industry*. Stores in the Panel have much smaller selling areas and lower annual sales and weekly sales than those reported by both *Speaks* and *Progressive Grocer*. Relative to figures reported in *Speaks*, Panel stores are less efficient with regard to utilization of space, labor, and technology as observed in lower sales per transaction, weekly sales per square foot, sales per labor hour, and gross profit as a percent of sales. On the other hand, annual inventory turnover is slightly higher for the Panel stores, and annual sales growth and payroll as a percent of sales are nearly identical for the two studies. For the Panel and *Progressive Grocer*, weekly sales per square foot, sales per labor hour, and sales per full-time equivalent employee are very similar.

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

Table 2.1 Median Store Characteristics for U.S. Supermarkets

	Median Store Characteristics		
Characteristics	Supermarket Panel	*Speaks*[1]	*Progressive Grocer*[2]
Selling Area	22,000 square feet	34,000 square feet	33,398 square feet
Annual Store Sales	$8,320,000	$17,047,000	$14,680,000
Weekly Store Sales	$160,000	$327,839	$282,368
Annual Sales Growth	2.0%	2.0%	-
Sales per Transaction	$21.43	$29.26	-
Weekly Sales per Square Foot of Selling Area	$8.22	$11.04	$8.45
Sales per Labor Hour	$110.24	$133.31	$100.85
Weekly Sales per Full-time Equivalent Employee	$3,861[3]	-	$4,034
Annual Inventory Turns	16	14	-
Gross Profit as a Percent of Sales	25.0%	28.6%	-
Payroll as a Percent of Sales	10.0%	10.5%	-

[1] Source: *The Food Retailing Industry Speaks*, 2007, Food Marketing Institute, 2007.

[2] Source: *74th Annual Report of the Grocery Industry*, special supplement to *Progressive Grocer*, April 2007.

[3] Calculated as number of full time employees plus one-half the number of part time employees.

Ownership Group Size and Store Format

Ownership group size is defined as the number of stores owned by the same 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 ten stores that operate under three different names. Manager responses to the question about group size often differ 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. Ownership group sizes were adjusted to reflect externally available, verifiable information. This means that a store's ownership group size in this report may not be the same as that reported by the manager, but it reflects more accurately the true group or chain size. (Only the data manager has access to store names and can match store names to ownership groups.)

Store format classifications were assigned on the basis of store characteristics rather than on respondents' selection from a list of possible formats. Peer group format definitions were changed for

the 2007 Panel from those for the 2003 and 2002 Panels[1], with the number of format categories decreased from six for the 2003 Panel to five for the 2007 Panel. Table 2.2 presents criteria for 2007 peer group format definition. Table 2.3 compares peer group formats between 2007 and 2003, though underlying criteria are not the same in 2007 and 2003.

Table 2.2 Criteria for 2007 Peer Group Format Definitions

Format	Selling Area (square feet)	Bagging Service
Hard Discounter	Less than 35,000	No
Conventional	Less than 35,000	Yes
Superstore	More than 35,000 but less than 100,000	Yes
Super Warehouse	More than 35,000 but less than 100,000	No
Supercenter	More than 100,000	Yes/No

Table 2.3 Comparison of 2007 and 2003 Peer Group Formats

2003 Format	2007 Format
	Hard Discounter
Conventional	Conventional
Superstore	Superstore
Food-Drug Combo	
Warehouse	Super Warehouse
Super Warehouse	
Supercenter/Hypermarket	Supercenter

[1] 2003 Store Format Definition: 1. Conventional: Stores with the Conventional format have up to 25,000 square feet of selling area and do not offer pharmacy, or have 25,001 to 40,000 square feet of selling area and do not offer pharmacy but offer bagging service.

2. Superstore: Stores with the Superstore format have more than 40,000 square feet of selling area and do not offer pharmacy but offer bagging service.

3. Food/Drug Combination: Stores with the Food/Drug Combination format have 20,000 to 75,000 square feet of selling area and offer both pharmacy and bagging services, or have 75,000 to 100,000 square feet of selling area with more than 30% of sales from grocery and offer both pharmacy and bagging services.

4. Warehouse: Stores with the Warehouse format have 25,001 to 100,000 square feet of selling area and offer neither pharmacy nor bagging services.

5. Super Warehouse: Stores with the Super Warehouse format have 25,001 to 100,000 square feet of selling area and offer pharmacy but do not offer bagging service.

6. Supercenter/Hypermarket: Stores with the Supercenter/Hypermarket format have 75,000 to 100,000 square feet of selling area with up to 30% of sales from grocery and offer both pharmacy and bagging services, or have more than 100,000 square feet of selling area and offer pharmacy.

Store Profiles by Ownership Group Size

Larger groups of stores can be the basis for greater efficiency in procurement, distribution, advertising, employee training, and implementation of new technologies. Table 2.4 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, often referred to as “banners” in the industry.

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. It is evident that median selling area increases by around 8,000 square feet as ownership group size category goes up. Nearly all stores in groups of ten or fewer stores are wholesaler supplied. As group size increases beyond 50 stores, however, the parent company is increasingly likely to operate its own distribution system. Stores are generally newer and more likely to be in a metropolitan area as group size increases.

Four median sales measures – weekly sales, weekly sales per square foot, sales per labor hour, and sales per transaction – trend upward as ownership group size increases. All of these measures indicate economies of scale. Stores in groups with more than 750 stores have much higher inventory turns than the other stores have. Median gross profit as a percent of sales is similar across all group sizes. Groups of 11-50 stores have the lowest median gross margins. This may be attributable to the fact there is a relatively higher percentage of super warehouse formats in this category – formats that traditionally base their competitive strategy on low prices with the expectation of having lower gross profits. Lower payroll as a percent of sales, in the group of 11-50 stores, may also be due to a higher percentage of super warehouses that have fewer employees compared to other store formats having the same level of sales. Annual percentage sales growth is highest for stores in groups of 50-750 stores, illustrating the benefits of consolidation. Stores in groups of more than 750 stores show the highest sales per transaction and per labor hour. Percent employee turnover does not show any pattern across group size categories.

Relative to results for the 2003 Panel, sales per transaction and annual percentage sales growth are higher for the 2007 Panel. On the other hand, sales per labor hour and percentage employee turnover are generally lower for the 2007 Panel. Gross profit as a percent of sales and payroll as a percent of sales are largely unchanged from 2003 to 2007. Stores in groups of over 750 stores reported much higher weekly sales and weekly sales per square foot in the 2007 Panel, whereas those in the other group size categories varied with some values increasing and some decreasing across years.

Table 2.4 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
Number of Stores in the Panel	89	57	32	27	65
Stores and Market Characteristics					
・Median Selling Area (sq. ft.)	12,000	20,000	28,000	35,000	48,000
・Median Store Age (years)	40	27	27	20	16
・Mean Ownership Store Group Size (Stores)	1	4	22	178	1,352
・Percent Wholesaler Supplied	100	98	75	33	2
・Percent Located in an SMSA	40	40	56	52	74
Median Performance Measures					
・Weekly Sales ($)	79,560	140,000	220,000	225,972	430,000
・Weekly Sales per Square Foot ($)	7.00	7.50	8.60	8.75	9.75
・Sales per Labor Hour ($)	94.67	104.74	107.08	120.27	130.97
・Sales per Transaction ($)	18.6	20.0	21.5	25.8	30.8
・Annual Inventory Turns	15.0	15.5	12.5	16.0	19.0
・Percent Employee Turnover	23.0	31.5	29.5	22.5	31.5
・Gross Profit as a Percent of Sales	25.4	25.0	23.0	24.8	26.0
・Payroll as a Percent of Sales	11.5	10.5	9.0	10.0	8.8
・Annual Percentage Sales Growth	2.0	1.5	1.2	5.8	2.3
Number of Stores by Format					
・Hard Discounter	2	1	-	-	5
・Conventional	79	49	21	11	15
・Superstore	6	6	7	15	27
・Super Warehouse	-	-	3	-	8
・Supercenter	-	1	-	-	7
Number of Stores by Region					
・Northeast	14	7	-	4	10
・South	11	4	5	6	11
・Midwest	42	37	25	13	24
・West	22	9	2	4	20

Figures in the two lower sections of Table 2.4 indicate the distribution of stores by format and region within each group size category. With regard to format, it is noteworthy that the percentage of conventional stores falls steadily as ownership group size increases and most of supercenter stores are in the largest ownership group size category. The vast majority of independent stores (group size less than 11) have a conventional format. It is also notable that a higher percentage of hard discounter

stores are in the largest group size category. With respect to region, 60% of stores in the Northeast and 56% of stores in the Midwest are in groups with ten or fewer stores, while 46% of stores in the South are in groups with more than 50 stores.

Store Profiles by Store Format

Supermarket formats are changing to better respond to customers' desire for cost savings, convenience, quality, variety, and service. Table 2.5 shows median store characteristics and performance measures for stores grouped into the five format categories defined in Table 2.2: hard discounter, conventional, superstore, super warehouse, and supercenter. Before looking more closely at Table 2.5, readers should note there are only eight stores in the hard discounter format and eight stores in the supercenter format category. This small number of stores almost certainly under-represents the total number of stores in these formats. Given the industry-wide interests in rapidly growing supercenters and newly classified hard discounter stores in the 2007 Panel, and the fact that the eight Panel stores in the supercenter format come from several companies, we decided to retain hard discounter and supercenter as a distinct category.

As expected, the supercenter stores are much larger in median selling area and mean ownership group size, newer, and less likely to be wholesaler supplied than any of the other formats. Conventional stores are more likely to be wholesaler supplied, less likely to be located in a metropolitan area, and part of much smaller ownership groups. Hard discounter stores are smaller and older in all other formats and the majority of the stores are located in a metropolitan area. It is remarkable that mean ownership group size of hard discounter stores is much larger than conventional stores or superstores. Superstore and super warehouse are similar on median selling area, median age, and percent wholesaler supplied.

Turning to the median performance measures in the middle of the Table 2.5, it is noteworthy that hard discounter stores have the highest sales per square foot, but lowest sales growth. Conventional stores show the lowest weekly sales, sales per square foot, sales per labor hour, and sales per transaction as expected. Super warehouse stores are also noteworthy for their high levels of labor productivity, high sales per labor hour and low payroll as a percent of sales, and for their high sales per square foot and low median gross profit as a percent of sales. Super warehouse stores also have the highest inventory turns and percent employee turnover. Finally, the supercenter stores have much higher weekly sales, sales per transaction, and lower percent employee turnover than stores in all other formats. However, they do not perform particularly well on sales per square foot, sales per labor hour, inventory turns, and sales growth.

Table 2.5 Descriptive Profile of the Panel for Stores Grouped by Format

	HD	CON	SS	SWH	SC
Number of Stores in the Panel	8	175	61	11	8
Stores and Market Characteristics					
・Median Selling Area (sq. ft.)	15,000	16,000	46,000	59,000	174,500
・Median Store Age (years)	44	31	16	17	15
・Mean Ownership Store Group Size (Stores)	2,006	190	1,343	2,387	2,703
・Percent Wholesaler Supplied	25	84	39	27	13
・Percent Located in an SMSA	75	37	75	100	75
Median Performance Measures					
・Weekly Sales ($)	130,000	110,000	381,000	635,500	1,200,000
・Weekly Sales per Square Foot ($)	11.76	7.33	8.50	11.29	8.99
・Sales per Labor Hour ($)	111.11	101.85	122.52	159.44	128.64
・Sales per Transaction ($)	26.00	19.68	30.13	30.85	33.60
・Annual Inventory Turns	18.5	15.0	18.0	28.0	11.0
・Percent Employee Turnover	35.0	23.0	30.0	40.0	18.0
・Gross Profit as a Percent of Sales	22.2	25.1	26.0	22.0	23.5
・Payroll as a Percent of Sales	10.0	10.5	10.0	7.4	8.0
・Annual Percentage Sales Growth	-1.7	2.1	2.3	1.1	0.0
Number of Stores by Store Group Size					
・Single Store	2	79	6	-	-
・2-10 Stores	1	49	6	-	1
・11-50 Stores	-	21	7	3	-
・51-750 Stores	-	11	15	-	-
・>750 Stores	5	15	27	8	7
Number of Stores by Region					
・Northeast	2	22	10	-	1
・South	2	25	9	-	1
・Midwest	2	87	31	10	5
・West	2	41	11	1	1

HD = Hard Discounter CON = Conventional SS = Superstore
SWH = Super Warehouse SC = Supercenter

For the distribution of stores by group size and region, the largest number of conventional stores are in group size of ten or fewer stores whereas most of supercenter stores belong to group size of more

than 750 stores. Super warehouse stores are remarkably concentrated in the Midwest.

Continuing and New Stores in the Supermarket Panel

Of the 270 stores in the 2007 Panel, 100 participated in the Panel for the first time. Thirty-nine stores have been in the panel since 2000. Another 28, 78, and 25 stores have participated since 2001, 2002, and 2003 respectively. Figure 2.1 shows percentages of continuing stores and new stores in the 2007 Panel.

Table 2.6 presents median store characteristics and performance measures for continuing and new Panel stores. Stores in the two groups are remarkably similar with regard to median store age, sales per transaction, gross profit as a percent of sales, payroll as a percent of sales, and mean ownership group size. New stores have larger selling areas, larger weekly sales and sales per labor hour, and higher employee turnover and sales growth. However, the differences are relatively small, even considering all dollar figures are not adjusted for inflation. New stores are also more likely to be located in a metropolitan area and slightly less likely to be wholesaler supplied. On the other hand, continuing stores show slightly higher sales per square foot and inventory turns. Overall, there are no striking, systematic differences between continuing and new stores.

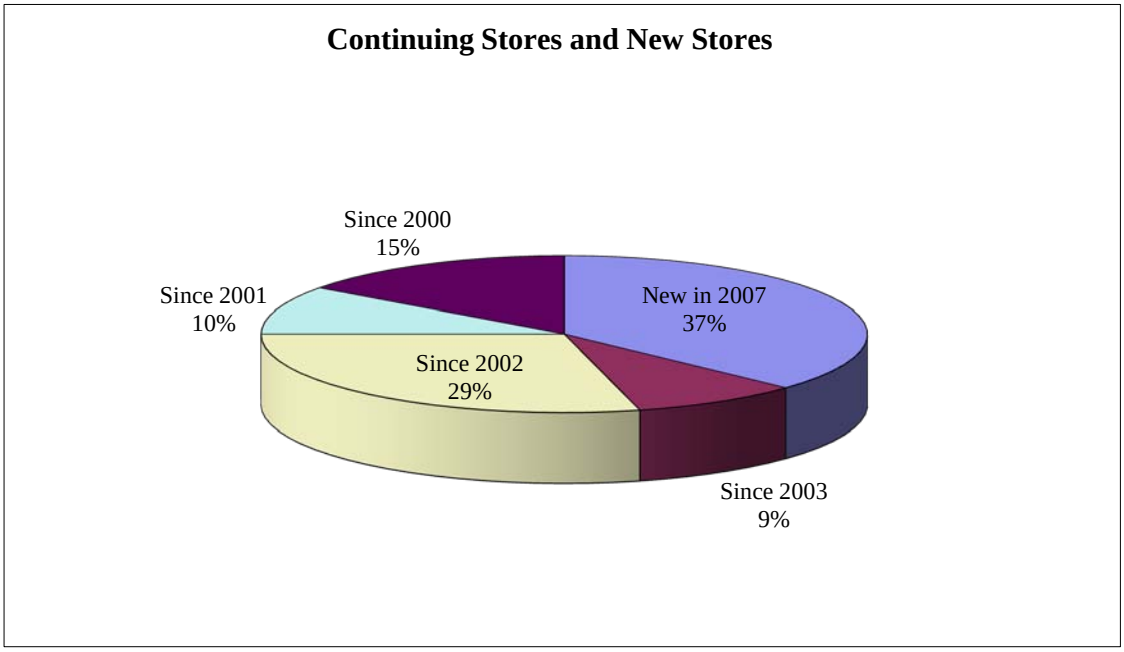

Figure 2.1 Percent of Continuing Stores and New Stores in the 2007 Panel

Table 2.6 Descriptive Profile for Continuing and New Stores in the 2007 Supermarket Panel

	Median Store Characteristics	
	Stores that First Participated in the Panel Prior to 2007	**Stores that First Participated in the Panel in 2007**
Number of Stores in the Panel	170	100
Stores and Market Characteristics		
・Median Selling Area (sq. ft.)	21,500	25,000
・Median Store Age (years)	27	26
・Mean Ownership Store Group Size (Stores)	701	694
・Percent Wholesaler Supplied	68	64
・Percent Located in an SMSA	43	66
Median Performance Measures		
・Weekly Sales ($)	149,000	186,500
・Weekly Sales per Square Foot ($)	8.39	7.50
・Sales per Labor Hour ($)	108.97	113.09
・Sales per Transaction ($)	21.43	21.67
・Annual Inventory Turns	17.0	14.0
・Percent Employee Turnover	24.5	31.0
・Gross Profit as a Percent of Sales	25.0	25.0
・Payroll as a Percent of Sales	10.0	10.0
・Annual Percentage Sales Growth	1.6	2.8
Number of Stores by Store Group Size		
・Single Store	56	33
・2-10 Stores	40	17
・11-50 Stores	18	14
・51-750 Stores	17	10
・>750 Stores	39	26
Number of Stores by Format		
・Hard Discounter	7	1
・Conventional	117	58
・Superstore	31	30
・Super Warehouse	10	1
・Supercenter	3	5

CHAPTER 3: BUSINESS PRACTICES – SUPPLY CHAIN MANAGEMENT AND MARKETING PRACTICES

Business practices represented by supply chain management and marketing practices are having profound impacts as companies struggle to control costs and operate more efficiently in the food industry. Since the 1980s, supermarkets have been adopting new information technologies and accompanying business practices to reduce inefficiencies and improve coordination throughout the retail food supply chain. Based on the importance of supply chain practices, the Supermarket Panel has been tracking the adoption of information technologies and business practices to measure the performance of the supply chain since 2000.

The Business Practices score in the 2007 Panel is designed to serve as an indicator of store supply chain management practices and marketing/promotion practices. This score is measured in two equally weighted components: the technology component and the marketing component. The technology component measures a store's adoption of ten store-level technologies related to supply chain management:

1. Electronic transmission of movement data to headquarters
2. Electronic transmission of movement data to key suppliers
3. Electronic receipt of invoices from primary warehouse
4. Electronic receipt of invoices from direct store delivery (DSD) vendors
5. Vendor-managed inventory (order for non-DSD items generated by vendor based on store management data)
6. Scan-based trading (payment to vendor triggered by sale to customer)
7. Scanning data used for automatic inventory refill
8. Product movement analysis/Category management
9. Electronic shelf tags
10. Shelf-space allocation plan-o-grams

The first four of these technologies facilitate the flow of data and information between a 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 scanning data used for automatic inventory refill – are technology-based business practices that facilitate decision sharing and inventory control with trading partners. Finally, the last three technologies – product movement analysis, electric shelf tags, and plan-o-grams – all support product assortment, pricing, and merchandising decisions at the store level. These ten technologies are equally weighted and the score is simply the percent of technologies adopted.

The marketing component of the Business Practices score measures a store's use of nine different advertising and marketing practices:

1. Newspaper ads with coupons
2. Radio ads
3. Television ads
4. Website for customers
5. Frequent shopper/Loyalty card program
6. Purchase triggered electronic coupons
7. Customer focus groups
8. Customer satisfaction surveys
9. Mystery shopper program

The first four are advertising practices and the last five practices are the most popular marketing strategies in the food retail industry. The score for this component is simply the percent of these nine practices.

Business Practices for Stores Grouped by Store Group Size

Table 3.1 shows the mean Business Practices 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. The mean Business Practices score increases steadily with ownership group size, as do both the technology component and the marketing component scores.

Stores in ownership groups with ten or fewer stores have much lower adoption rates for electronic transmission of movement data to headquarters and key suppliers than stores in larger group size categories. Adoption rates for electronic receipt of invoices from primary warehouse and DSD vendors show clear upward trends as ownership group size increases. 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. The average adoption levels for these four data sharing technologies in the 2007 Panel increased from those in the 2003 Panel for stores in ownership groups with 11-50 stores, while the rates of stores in smaller or larger group sizes are little changed between the two years (Figure 3.1). It is largely attributable that most stores in the two larger groups have already adopted the data sharing technologies in 2002 while many independent stores (group size less than 11) still did not find any strong motivation to invest on the technologies.

Table 3.1 Business Practices for Stores Grouped by Ownership Group Size: Technology Component

	Single Stores	2-10 Stores	11-50 Stores	51-750 Stores	>750 Stores
NUMBER OF STORES IN THE PANEL: BP Score	86	57	32	27	65
MEAN BUSINESS PRACTICES SCORE	31	37	59	63	74
・Technology Component	31	34	56	60	73
・Marketing Component	30	39	62	67	75
USE OF TECHNOLOGY (Percentage)					
Data Sharing Technology					
・Electronic transmission of movement data to headquarters	37	46	88	89	86
・Electronic transmission of movement data to Key suppliers	17	21	63	63	54
・Electronic receipt of invoices from primary warehouse	43	53	69	89	95
・Electronic receipt of invoices from DSD vendors	20	30	47	67	91
Decision Sharing Practices and Technology					
・Vendor-managed inventory	19	9	34	37	48
・Scan-based trading (Payment to vendor triggered by sale to Consumer)	23	21	41	52	88
・Scanning data used for automatic inventory refill	2	-	9	33	43
Technologies that Support Product Assortment, Pricing, and Merchandising Decisions					
・Product movement analysis/Category management	73	79	97	96	98
・Electric shelf tags	22	14	25	4	28
・Shelf-space allocation plan-o-grams	60	70	84	67	95

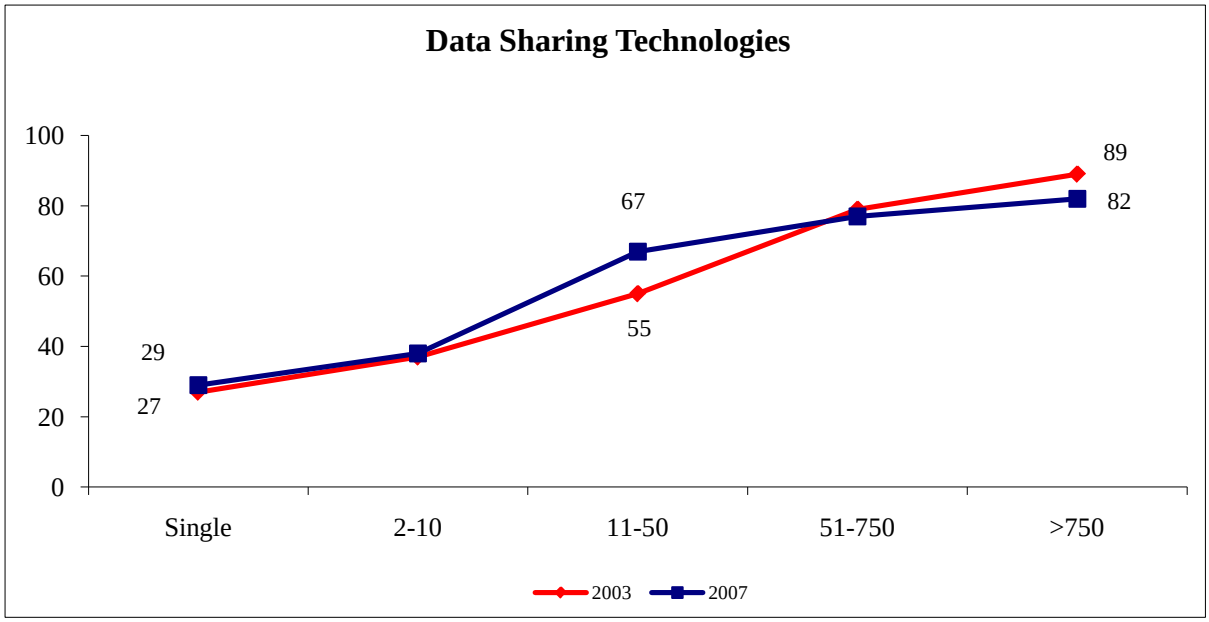

Figure 3.1 Adoption of Data Sharing Technologies by Group Size, 2003-2007

Overall adoption rates for the decision sharing technologies - vendor-managed inventory, scan-based trading, and use of scanner data for automatic inventory refill - are lower than those for the above three data sharing technologies through all group size categories. Stores in the two largest ownership group size categories have considerably higher adoption rates for these decision sharing technologies 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 inventory methods may be realized at the distribution center rather than in the store. This makes them more attractive for self-distributing companies. It is noteworthy that the average use rates of these three decision sharing technologies by stores in ownership groups with more than 10 stores increased from those in the 2003 Panel, while the rates of independent stores are similarly low in both 2007 and 2003 (Figure 3.2). This reflects the difficulty in adopting the decision-sharing technologies by independent stores.

Among the three product assortment, pricing, and merchandising technologies at the bottom of Table 3.1, differences in use rates are relatively small across group size categories. A large percentage of stores in all group sizes have adopted product movement analysis (73%-98%) and plan-o-grams (60%-95%), while only a few are using electronic shelf tags (4%-28%). The comparison of adoption rates of the product assortment, pricing, and merchandising technologies between 2007 and 2003 shows the rates increased from those in the 2003 Panel across group sizes with the exception of stores in a group size 51-750 (Figure 3.3). This exception would be attributable to relatively low adoption rates on electronic shelf tags by a small sample of stores in the group in the 2007 Panel.

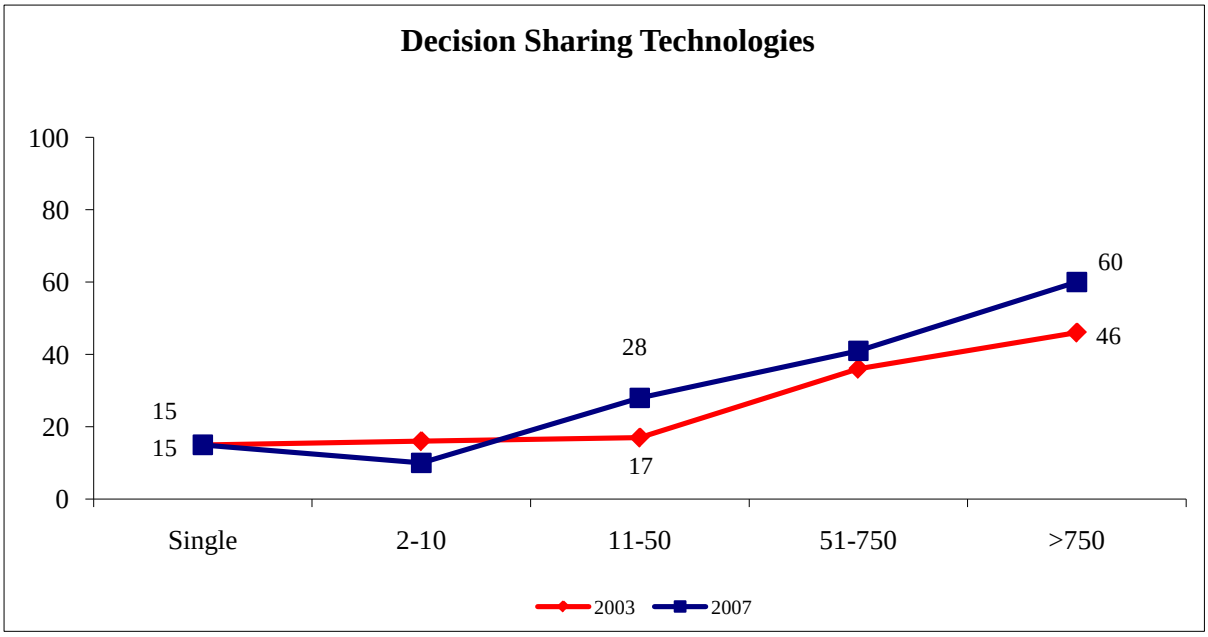

Figure 3.2 Adoption of Decision Sharing Technologies by Group Size, 2003-2007

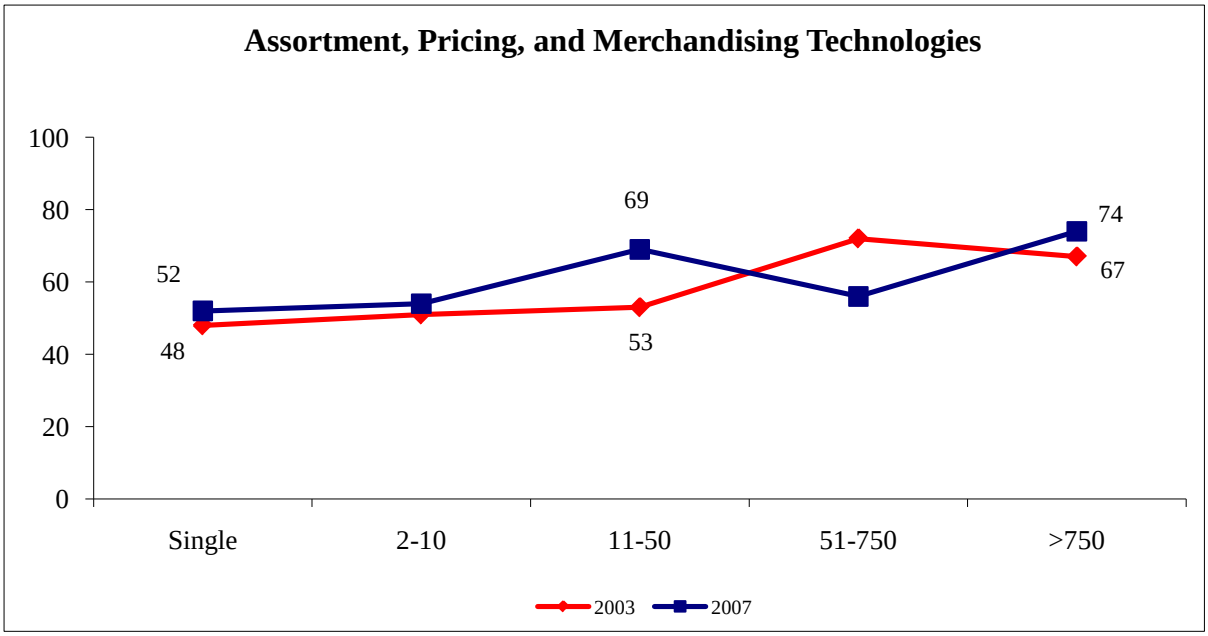

Figure 3.3 Adoption of Assortment, Pricing, and Merchandising Technologies by Group Size, 2003-2007

Table 3.2 shows how advertising and marketing practices change across ownership group sizes. Among the advertising practices, it is not surprising that newspaper ads with coupons have relatively higher use rates compared to other practices through all store group size categories. Use rates of radio

ads and websites are much higher for stores in the highest two groups. Television ads show an upward trend in use rates as group size increases. Use rates of frequent shopper/loyalty card programs, customer focus groups, and mystery shopper programs in marketing practices, are generally lower compared with those in the above advertising practices. Independent stores (group size less than 11) have much lower use rates for all marketing practices than stores in larger groups.

Table 3.2 Business Practices for Stores Grouped by Ownership Group Size: Marketing Component

	Single Stores	2-10 Stores	11-50 Stores	51-750 Stores	>750 Stores
USE OF PRACTICES (Percentage)					
Advertising					
・Newspaper Ads with Coupons	75	82	94	85	86
・Radio Ads	42	65	63	85	85
・Television ads	14	25	53	59	78
・Website for Customers	29	44	78	93	89
Marketing					
・Frequent Shopper/Loyalty Card Program	18	19	38	41	52
・Purchase Triggered Electronic Coupons	24	32	47	85	80
・Customer Focus Groups	18	14	53	33	55
・Customer Satisfaction Survey	33	37	72	56	82
・Mystery Shopper Program	19	32	59	67	69

Business Practices for Stores Grouped by Format

Table 3.3 shows mean Business Practices scores and technology adoption rates for stores grouped by format. Super warehouse, superstores and supercenter stores have higher mean Business Practices scores compared with hard discounter and conventional stores. Supercenter stores show the highest score for the technology component, while Super warehouse stores have the highest score for the marketing component. It is not surprising that supercenter stores are most likely to adopt the technology practices, since supercenter stores are often part of large, self-distributing groups.

Turning attention to individual technologies and practices, supercenter stores are especially noteworthy for their highest 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 these stores have a much broader, more complex product mix, making 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 these stores have transferred expertise gained from experience with non-food items such as apparel and housewares.

Table 3.3 Business Practices for Stores Grouped by Format: Technology Components

	HD	CON	SS	SWH	SC
NUMBER OF STORES IN THE PANEL: BP Score	8	172	61	11	8
MEAN BUSINESS PRACTICES SCORE	38	41	65	71	68
・Technology Component	44	40	62	69	74
・Marketing Component	32	42	68	74	63
USE OF TECHNOLOGY (Percentage)					
Data Sharing Technology					
・Electric transmission of movement data to headquarters	38	54	82	91	75
・Electric transmission of movement data to Key suppliers	25	29	51	73	50
・Electronic receipt of invoices from primary warehouse	63	54	85	100	88
・Electronic receipt of invoices from DSD vendors	63	32	72	82	75
Decision Sharing Practices and Technology					
・Vendor-managed inventory	25	23	34	36	63
・Scan-based trading (Payment to vendor triggered by sale to Consumer)	38	32	62	73	88
・Scanning data used for automatic inventory refill	13	6	30	27	75
Technologies that Support Product Assortment, Pricing, and Merchandising Decisions					
・Product movement analysis/Category management	75	81	93	100	100
・Electric shelf tags	38	17	25	18	25
・Shelf-space allocation plan-o-grams	63	68	87	91	100

HD = Hard Discounter CON = Conventional SS = Superstore
SWH = Super Warehouse SC = Supercenter

For the product assortment, pricing, and merchandising technologies, more than 70% of the stores in

each format category have product movement analysis technology. Most of the stores in superstore, super warehouse, and supercenter format adopted plan-o-gram software, while half of the stores in hard discounter and conventional formats use the software. It is also noteworthy that hard discounter stores are most likely to adopt electronic shelf tags – a labor saving technology that increases in value with the number of items stocked in the store.

Table 3.4 shows detailed information on the marketing components for stores grouped by format. Most stores, except hard discounter stores, use newspaper ads with coupons. Most superstore, super warehouse, and supercenter stores use radio ads and websites for customers, while hard discounter and conventional stores are relatively less likely to use radio ads, television ads, and websites. Turning to the marketing component, hard discounter and conventional stores are less likely to use most marketing practices. Super warehouse stores are most likely to use purchase-triggered electric coupons, customer focus groups, and customer satisfaction surveys while supercenter stores are more likely to use mystery shopper programs.

Table 3.4 Business Practices for Stores Grouped by Format: Marketing Component

	HD	CON	SS	SWH	SC
USE OF PRACTICES (Percentage)					
Advertising					
・Newspaper Ads with Coupons	38	82	90	82	88
・Radio Ads	13	57	82	91	75
・Television ads	25	29	64	73	75
・Website for Customers	50	47	82	100	88
Marketing					
・Frequent Shopper/Loyalty Card Program	25	28	46	9	13
・Purchase Triggered Electronic Coupons	38	35	79	82	50
・Customer Focus Groups	25	25	41	82	38
・Customer Satisfaction Survey	38	43	69	100	75
・Mystery Shopper Program	38	36	61	45	63

HD = Hard Discounter CON = Conventional SS = Superstore
SWH = Super Warehouse SC = Supercenter

Store Characteristics and Performance Measures for Stores Grouped by Business Practices Score

Table 3.5 presents store characteristics and performance measures for stores grouped into quartiles based on their Business Practices score. Mean scores show dramatically increasing patterns, ranging from 19 for stores in the lowest quartile to 80 for those in the highest.

Compared to stores in the lowest two quartiles, those in the highest two quartiles tend to be located in areas with higher median incomes and higher population density. Stores in the highest quartile are newer, more likely to be located in a metropolitan area, members of much larger store groups, and much less likely to be wholesaler supplied than those in any other quartiles. They also have much larger weekly sales and selling areas. These patterns are similar to those observed in the 2000, 2001, 2002, and 2003 Supermarket Panels and are not surprising. 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. Stores in larger ownership group size categories are also more likely to adopt new information technologies, since their parent companies with many stores and distribution centers tend to adopt more cost efficient information technologies to interact with their stores effectively.

Shifting attention to the performance measures in the lower portion of Table 3.5, increases in the Business Practices score are associated with stronger performance in weekly sales per square foot, sales per labor hour, and sales per transaction. The decreasing trend of payroll as a percent of sales along with increasing sales per labor hour is especially noteworthy, since trends supporting higher Business Practices scores through the increased adoption of new technologies, leads to higher levels of labor productivity. There is no clear pattern across quartiles for inventory turns, gross profit as a percent of sales, and sales growth.

Overall, there is a generally positive association between Business Practices score and store performance that is similar to the relationship between Supply Chain score and store performance in the previous Supermarket Panels. As adoption of supply chain technologies and business practices become more widespread, more store managers may have the knowledge and experience required for successful implementation of supply chain initiative.

Table 3.5 Average Characteristics and Performance Measures for Stores Grouped by Business Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEAN BUSINESS PRACTICES SCORE	19	38	58	80
MARKET CHARACTERISTICS				
・Median Population Density (per sq. mi.)[1]	60	62	196	982
・Median Household Income ($/year)[2]	46,261	46,546	48,876	49,699
・Percent Located in an SMSA	47	36	49	73
STORE CHARACTERISTICS				
・Median Store Age (year)	37	30	26	15
・Mean Ownership Group Size (stores)	106	124	649	1,859
・Median Weekly Sales ($)	87,000	110,000	200,000	500,000
・Median Selling Area (sq. ft.)	12,500	15,000	28,000	45,000
・Median Weekly Labor Hours	920	1,100	1,595	2,910
STORE CHARACTERISTICS (Percentages)				
・Wholesaler Supplied	95	91	63	19
・Union Workforce	8	12	19	55
PERFORMANCE MEASURES (Median)				
・Weekly Sales per Square Foot of Selling Area ($)	6.83	7.33	8.71	9.62
・Sales per Labor Hour ($)	96.74	101.44	109.00	130.24
・Sales per Transaction ($)	18.25	18.61	22.16	30.27
・Annual Inventory Turns	14.0	17.0	15.0	17.0
・Percentage Employee Turnover	25.0	23.0	28.0	32.0
・Gross Profit as a Percent of Sales	24.7	26.0	24.7	25.0
・Payroll as a Percent of Sales	11.0	11.0	10.0	9.1
・Annual Percentage Sales Growth	1.4	2.1	1.9	2.4

[1] Estimated by dividing “PopulationEstimate” by “LandArea” at the zip-level (Source: *Zip-Codes.com*, 2009)

[2] Estimated by multiplying the zip-level “IncomePerHousehold” for 2000 (Source: *Zip-Codes.com*, 2009) by annual inflation calculated based on the county-level “Personal Income” for 2000 and 2005 (Source: *County and City Data Book: 2007*, U.S. Census Bureau)

A Closer Look at Supply Chain Practices Over Time

Since the early 1990's, retail food stores led by Wal-Mart have been changing business practices to conform with the rigors of a new information age. Wal-Mart and some of its suppliers designed an information logistics system to manage point-of-sale (POS) scanner data. With compatible computer systems and the willingness to share data with suppliers, the information from the scanner data could be transmitted directly to Wal-Mart's own distribution centers and sent to suppliers or manufacturers. The concept of sharing information about sales with vendors and developing a continuous and coordinated flow of products, was introduced to the rest of the retail food industry under the banner of Efficient Consumer Response (ECR) in 1992. ECR was a new business plan where retailers were called upon to not only collect, but share electronic information with their suppliers in order to make the supply/demand chain more efficient and more responsive to consumer sales. In many ways it contributed to the revolutionizing of the food supply chain, transforming it from old supply push food system into a demand pull system. More recently, more efficient demand chain management, called Collaborative Planning, Forecasting, and Replenishment (CPFR), was adopted. This allows a vertical exchange of POS information between retailers and manufacturers on a daily basis. With the historical record of consumer sales, retailer and manufacturer each forecast sales over some future time period and share their forecasts for arranging replenishment schedules for each store.

New information technologies and accompanying business practices have been more widely adopted by large chain stores, due to the advantages from economies of scale in IT investment or positive "network externalities" – i.e., the net benefits of adoption increase as the overall level of adoption increases. It is also an important principle in driving down operating costs, increasing efficiency and being able to lower consumer prices. 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.

In responding to questions about the adoption of supply chain technologies and practices, managers of stores where a technology or practice had been adopted were asked 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 were asked 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 four supply chain technologies and practices:

- Electronic receipt of invoices from primary warehouse

- Electronic receipt of invoices from DSD vendors
- Vendor-managed inventory (orders for non-DSD items generated by vendor based on store movement data)
- Scan-based trading (payment to vendor triggered by sale to consumer)

Because current adoption rates for these technologies and practices differ considerably for stores that are wholesaler-supplied and those that are part of self-distributing groups, we examined historical adoption patterns separately for these two groups of stores. We also observed the historical adoption patterns by ownership group size which considering economies of scale.

Figure 3.4 shows cumulative adoption levels for receiving electronic invoices from the store's primary warehouse for wholesaler-supplied stores and self-distributing stores. This is an important element of the evolving relationship between supermarkets and their 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. 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 (92% compared to 52% for wholesaler-supplied stores in the 2007 Panel). Both groups of stores, however, are making progress in adopting this technology, even though there has been little change for wholesaler-supplied stores between 2003 and 2007. Since 2000, the participation of wholesaler-supplied stores has grown 175% while the participation of self-distributing stores grew 60%.

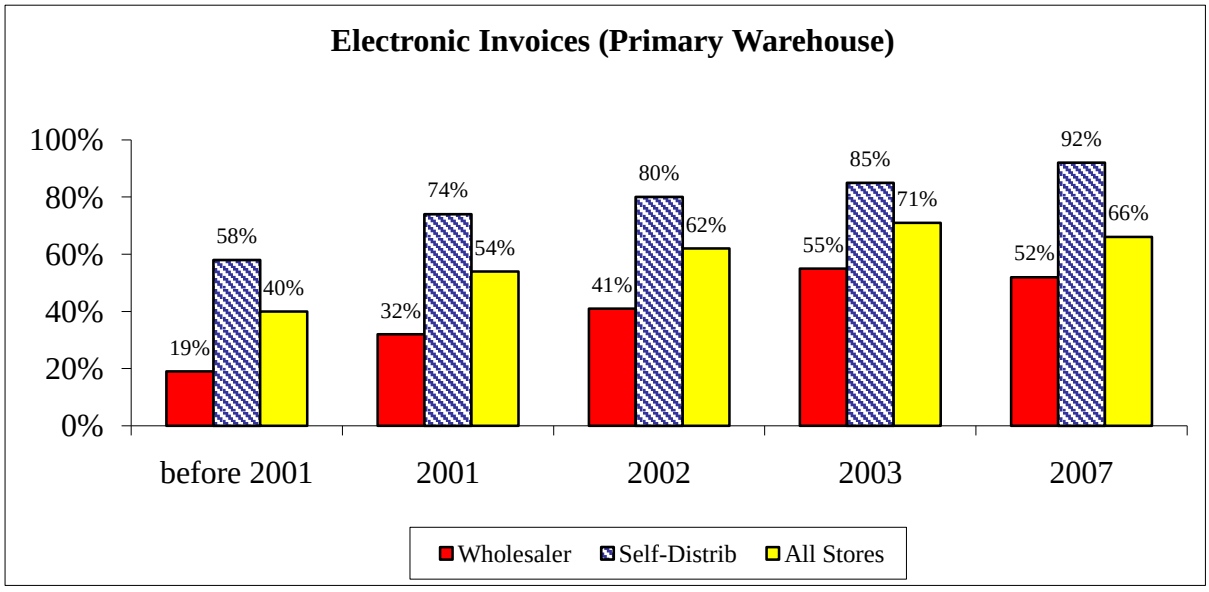

Figure 3.4 Use of Electronic Invoices from the Primary Warehouse by Two Distributed Groups

Use rate of this technology has also steadily increased for all five group size stores since 2000 (Figure 3.5). It is noteworthy that independent stores in the group of ten or fewer stores have made remarkable progress. Their participation has grown about 200% since 2000.

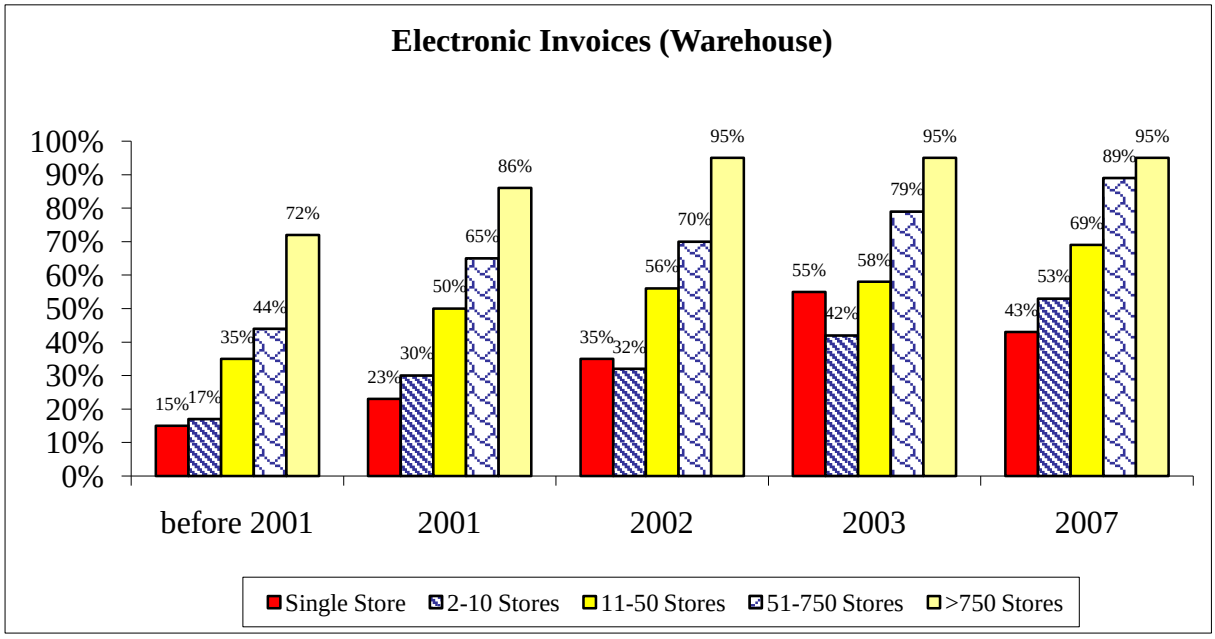

Figure 3.5 Use of Electronic Invoices from the Primary Warehouse by Five Ownership Groups

Figure 3.6 shows cumulative adoption levels for receipt of electronic invoices from DSD vendors for wholesaler-supplied stores and self-distributing stores. Electronic invoicing is 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. Stores that belong to self-distributing groups are far ahead of wholesaler-supplied stores in adoption of electronic invoices from DSD vendors. Wholesaler-supplied stores' level of adoption for 2007 (28%) is still well below the 2000 level of adoption for stores in self-distributing groups (54%). The adoption rate of this technology by wholesaler-supplied stores, is increasing slowly with a growth of 47% since 2000 compared to 175% increase of their participation for receipt of electronic invoices from the primary warehouse. On the other hand, self-distributing stores are increasing their adoption of this technology with a growth rate of 56%, which is similar to the growth rate of 52% of their participation for receipt of electronic invoices from the primary warehouse.

Looking at the cumulative adoption of electronic invoices from DSD vendors by five ownership groups (Figure 3.7) reveals a similar picture. Participation of independent stores (group size less than 11) is much lower than the two largest groups' participation. As we see in all of these time trends,

stores in larger groups with information and communication technology capacity and knowledge make the heaviest use of new supply chain management methods and can realize the greatest efficiencies. It is noteworthy, however, that single stores have made much higher progress with a growth rate of 186% than any other store ownership group since 2000.

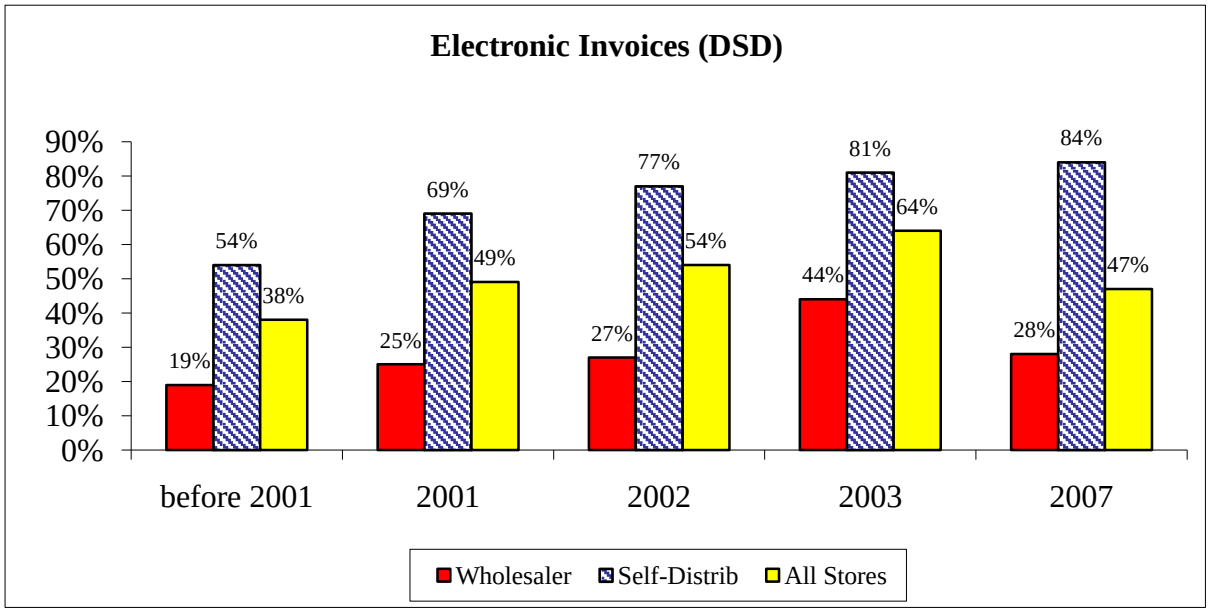

Figure 3.6 Use of Electronic Invoices from DSD Vendors by Two Distributed Groups

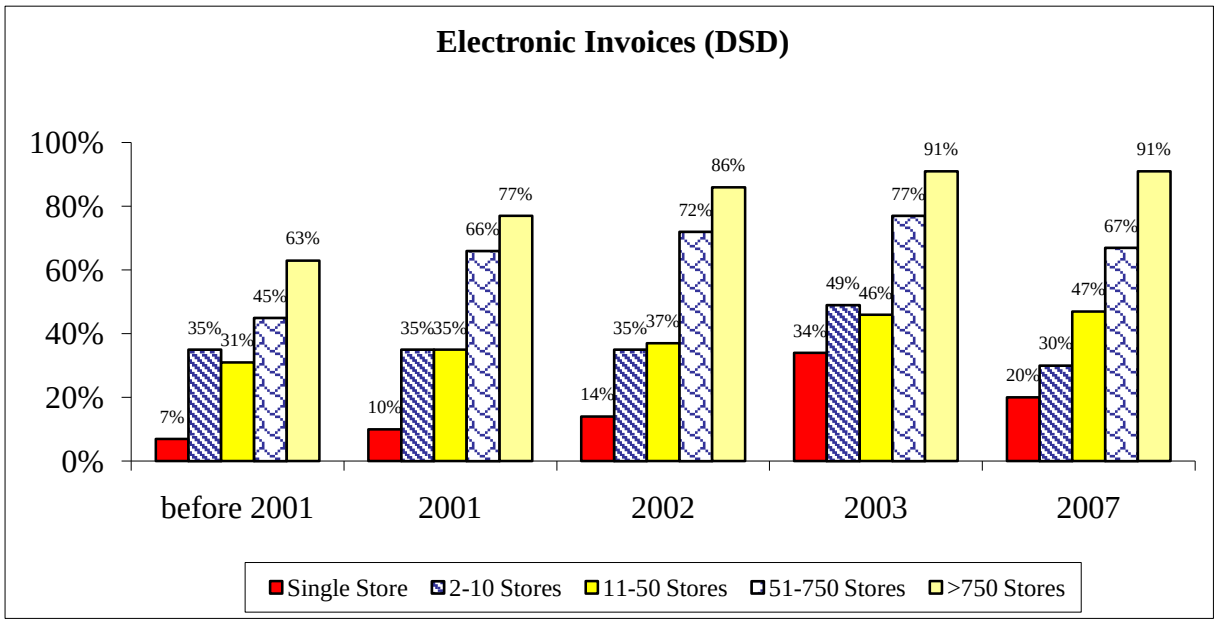

Figure 3.7 Use of Electronic Invoices from DSD Vendors by Five Ownership Groups

Figure 3.8 illustrates the cumulative adoption rates of vendor-managed inventory by non-DSD vendors for wholesaler-distributed stores and self-distributing stores. This practice transfers ordering decisions from the store to its key suppliers. It is one of the most advanced uses of information and communication technology in retail food stores. Vendor-managed inventory system makes it possible to adjust orders and provide continuous replenishment consistent with a distribution center's inventories and delivery logistics. Adoption rates for vendor-managed inventory are much lower, and progress in adoption has been slower than other supply chain metrics in the Panel. The gap in adoption between the two store groups has changed little in the past seven years. However, adoption has almost doubled for both groups.

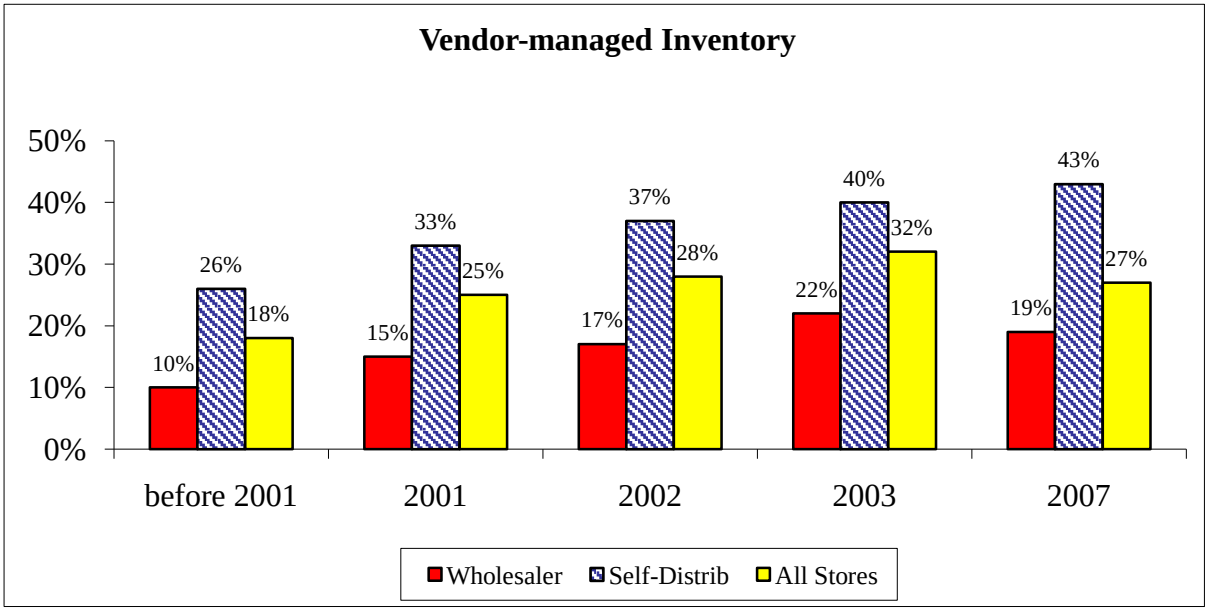

Figure 3.8 Use of Vendor-managed Inventory by Two Distributed Groups

We can also see that the cumulative adoption rates for vendor-managed inventory over store group sizes are lower than for other practices and technologies tracked in this study (Figure 3.9). Stores in the 11-50 group size had the lowest use of this system until 2003, but their adoption rate jumped by 183% between 2003 and 2007. Single stores and those in the 2-10 groups have slowly adopted this advanced technology at a low level since 2000.

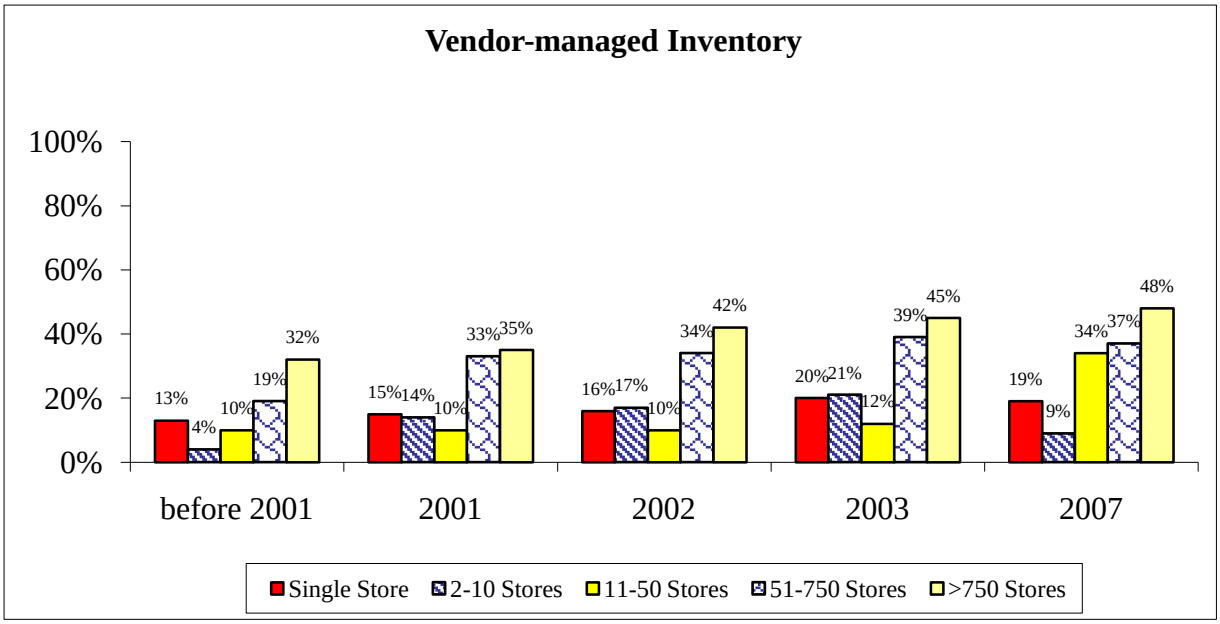

Figure 3.9 Use of Vendor-managed Inventory by Five Ownership Groups

Figure 3.10 shows the cumulative adoption of scan-based trading which is a form of vendor-managed inventory. Like vendor-managed inventory by non-DSD vendors, scan-based trading transfers inventory management decisions and inventory holding costs from the store to the vendor. This is also important for the store's relationship with manufacturers that deliver their products directly to the store. This requires trust and very effective, timely electronic communication. Although the trends in adoption in Figure 3.10 are similar to those in Figure 3.8, the adoption gap between wholesaler-supplied and self-distributing stores is wider for scan-based trading than for vendor-managed inventory. Self-distributing stores are 3.1 times as likely to use scan-based trading and 2.3 times as likely to use vendor-managed inventory as wholesaler-distributed stores. The cumulative adoption rate of scan-based trading also shows general upward trends with ownership group size and across years (Figure 3.11).

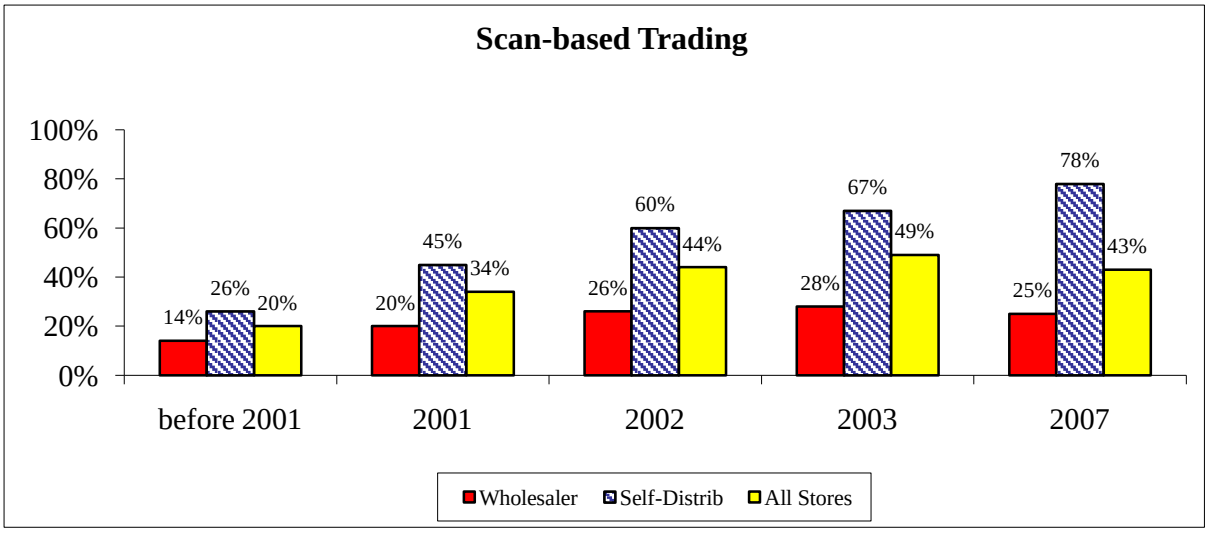

Figure 3.10 Use of Scan-Based Trading by Two Distributed Groups

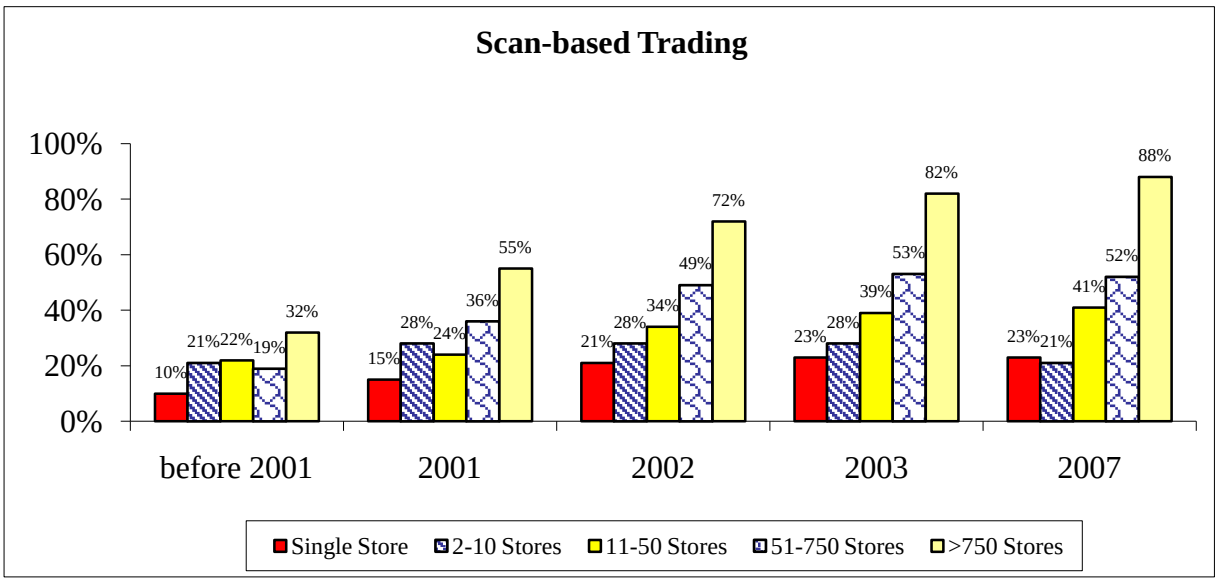

Figure 3.11 Use of Scan-based Trading by Five Ownership Groups

Summary

Business Practices scores including both technology and marketing components show an upward trend across ownership group sizes. The results for the technology component presented here confirm findings from earlier Panels that stores in larger groups are better positioned to take part in supply chain initiatives driven by information and communication technologies. Readiness in this area is generally associated with superior performance at the store level. Finally, adoption rates for individual technologies and practices continue to increase significantly for all stores, but there are large

differences in adoption levels for wholesaler-supplied stores and self-distributing stores and between stores in the largest two groups (>50 stores) and stores in smaller groups. Looking at the adoption of individual systems by size of store group reveals that independent stores (group size less than 11) have made much higher progress than stores in the other larger groups since 2000, but they still have a long way to go to catch up.

CHAPTER 4: SERVICE OFFERINGS

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

The Service Offerings score is designed to serve as an indicator of a store's range of service offerings. This score has three equally weighted components: the general services component, the premium meat services component, and the value-added products component. The general services component measures a store's adoption of twenty one services listed in Table 4.1. They range from customer self-scanning, bagging, and carryout to teller banking, DVD/video rental, and gasoline service. Measured on a 100 point scale, a store's score for the general services component is the percentage of these services it offers.

The premium meat services component measures a store's offerings in premium meat, poultry, and seafood categories for self-service and service meat listed in Table 4.2. They range from dry-aged prime beef, prime beef, choice beef for self-service to fresh-never frozen seafood, fresh seafood, and frozen seafood for service meat. Measured on a 100 point scale, a store's score for the premium meat services component is the percentage of these eighteen services it offers.

The value-added products component measures a store's offerings of value-added products in four departments: meat, produce, freshly squeezed juice, and deli. They range from branded meat, co-packed meat, company commissary meat, and prepared in-store beef to branded deli, co-packed deli, company commissary deli, and prepared in-store deli listed in Table 4.3. Measured on a 100 point scale, a store's score for the value-added products component is the percentage of these sixteen services it offers.

Service Offering Scores for Stores Grouped by Ownership Group Size

Table 4.1 presents mean Service Offering scores and general service offering rates for stores grouped

by store group size. The mean overall Service Offering score trends slightly upward across the first four ownership group sizes, but the score for the largest group size category is slightly lower than those for the next largest two groups. The mean scores of the premium meat services and the value-added products components show similar trends to the overall Service Offering scores. The mean score of the general services component steadily increases with ownership group size.

Table 4.1 Service Offerings for Stores Grouped by Ownership Group Size: General Services Component

	Single Stores	2-10 Stores	11-50 Stores	51-750 Stores	>750 Stores
NUMBER OF STORES IN THE PANEL: SO Score	74	43	29	22	61
MEAN SERVICE OFFERINGS SCORE	35	39	45	47	42
˙ General Services Component	38	44	49	50	50
˙ Premium Meat Services Component	34	34	43	46	43
˙ Value-Added Products Component	36	40	44	45	35
PERCENTAGE THAT OFFER GENERAL SERVICES					
˙ Customer Self-Scanning	1	2	16	30	42
˙ Bagging Service	98	98	91	96	74
˙ Carryout Service/Parcel Pickup	90	93	81	81	65
˙ Home Delivery	47	37	13	22	14
˙ Internet Ordering by Customer	7	11	19	19	28
˙ Telephone/Fax Ordering by Customer	43	35	28	26	3
˙ Custom Meat Cutting/Service Meats	92	96	88	78	77
˙ In-Store Bakery	63	88	88	81	86
˙ Home Meal Replacement (HMR)/Fresh Prepared Foods	47	77	88	81	72
˙ Private Label Program-Owned Brand	81	95	94	96	98
˙ Organic Produce	45	54	88	81	85
˙ Labels Pertaining to Genetically Modified Foods	14	26	41	48	51
˙ Environmentally-Friendly Products	45	54	69	74	80
˙ Franchise/License Dept.	3	11	9	11	37
˙ Seating for Eating/Customer Rest Areas	26	33	47	59	55
˙ Pharmacy, Full-Time Licensed Pharmacist(s)	7	16	41	48	71
˙ Dry Cleaning	14	14	13	26	2
˙ Post Office, Mailing Services	34	33	34	19	12
˙ Teller Banking/In-store Banking	9	18	28	22	38
˙ DVD/Video Rental Department	22	33	34	37	45
˙ Gasoline	6	9	13	22	15

There are a few remarkable differences in percentages of stores offering general services. Stores in larger ownership groups are more likely to offer the following nine services: customer self-scanning, internet ordering by customer, private label program-owned brand, labels pertaining to genetically modified foods, environmentally-friendly products, seating for eating, pharmacy, teller banking, and DVD/video rental. Telephone/fax ordering and home delivery services are more likely to be offered by stores in smaller groups. At least 70% of stores in all size categories offer bagging, carryout, custom meat cutting, and private label program-owned brand services.

Since the 2002 Supermarket Panel, self-scanning service offering has been notably increased in stores of group sizes with more than ten stores. The largest group stores showed decreasing fax ordering services (22% in 2002, 15% in 2003, and 3% in 2007) and increasing internet ordering services (15% in 2002, 16% in 2003, and 39% in 2007) for customers.

Table 4.2 shows how premium meat service offerings change across ownership group sizes for self-service and service meat. Overall, the offerings rates are relatively higher for self-service than for service meat across group sizes. Independent stores in the group of ten or fewer stores are less likely to offer organic beef, organic poultry, fresh-never frozen seafood, and fresh seafood for both self service and service meat compared to stores in larger groups. On the other hand, frozen seafood do not show any offering pattern across group sizes.

Table 4.3 shows value-added products offerings rates across ownership group sizes in the four departments for each of the four value-added products. Branded products offered in the meat, produce, and deli departments show an upward trend of offerings rates across the first four group sizes, but the largest group has relatively lower offerings rates for the products in the three departments. Co-packed products offered in all four departments do not show any difference across group sizes. Stores in the two groups with 11-50 stores and 51-750 stores are more likely to offer company commissary products in all four departments. It is notable that stores in the largest group are less likely to offer prepared in-store products in all four departments while stores in other group categories do not show much difference.

Table 4.2 Service Offerings for Stores Grouped by Ownership Group Size: Premium Meat Services

Component	Single Stores	2-10 Stores	11-50 Stores	51-750 Stores	>750 Stores
PERCENTAGE THAT OFFER PREMIUM MEAT SERVICES					
Self Services					
Beef					
˙ Dry-Aged Prime	10	16	10	8	22
˙ Prime	22	43	44	42	43
˙ Choice	72	69	81	69	70
˙ Select	55	58	71	46	44
˙ Organic/Natural (any grade)	21	23	53	58	48
Poultry					
˙ Organic/Natural	35	45	58	81	59
Seafood					
˙ Fresh - Never Frozen	29	34	28	54	68
˙ Fresh	42	49	63	56	76
˙ Frozen	83	87	84	93	91
Service Meat					
Beef					
˙ Dry-Aged Prime	13	14	13	8	11
˙ Prime	25	22	30	40	22
˙ Choice	55	38	47	56	33
˙ Select	39	23	40	42	21
˙ Organic/Natural (any grade)	13	19	27	29	16
Poultry					
˙ Organic/Natural	14	20	20	24	17
Seafood					
˙ Fresh - Never Frozen	22	20	27	52	48
˙ Fresh	27	26	40	58	48
˙ Frozen	46	30	43	42	44

Table 4.3 Service Offerings for Stores Grouped by Ownership Group Size: Value-Added Products

Component	Single Stores	2-10 Stores	11-50 Stores	51-750 Stores	>750 Stores
PERCENTAGE THAT OFFER VALUE-ADDED PRODUCTS					
Meat					
` Branded	75	78	90	92	73
` Co-Packed	45	45	50	46	44
` Company Commissary	6	8	23	17	8
` Prepared In-Store	76	76	83	87	55
Produce					
` Branded	65	67	77	81	56
` Co-Packed	39	45	40	38	40
` Company Commissary	5	6	6	17	10
` Prepared In-Store	74	76	67	78	43
Freshly Squeezed Juice					
` Branded	11	22	13	24	14
` Co-Packed	8	8	13	4	14
` Company Commissary	1	2	6	4	2
` Prepared In-Store	4	8	-	9	5
Deli					
` Branded	64	59	77	81	67
` Co-Packed	38	44	50	42	50
` Company Commissary	6	10	29	26	14
` Prepared In-Store	67	84	84	80	69

Service Offering Scores for Stores Grouped by Format

Mean service offering scores and general service offering rates are summarized for stores grouped by format in Table 4.4. Superstore stores have the highest mean overall score, followed by super

warehouse and supercenter stores. Superstore stores also have the highest mean score for all three components. Supercenter stores show the second highest score for the general services component, while super warehouse stores show the second highest score for the value-added products component. The two formats of stores show the same mean score for the premium meat services component.

Because bagging service was used in defining formats, there are sharp differences across formats in percentages of stores offering this service. For example, 100% of conventional and superstore stores offer bagging service and none of hard discounter and super warehouse stores offer this service, based on the format definitions (Table 2.2). Supercenter stores classified by only selling area of more than 100,000 square feet, regardless of bagging service, show a 50% offering ratio for this service.

Superstore stores are noteworthy because they consistently offer a wide range of services, with more than 75% of stores offering eight key services: bagging, carryout, custom meat cutting, in-store bakery, hot meals, private label program-owned brand, organic produce, and environmentally-friendly products. The stores are more likely to offer seating for eating and dry cleaning services than other stores. Supercenter stores stand out in offering services based on information technology: self-scanning and internet ordering. They are also more likely to offer organic products, floral department, post office, and gasoline services. Super warehouse stores have the third highest scores, which may be attributable to their no bagging service offering. However, they have the highest percentage in offering pharmacy, in-store bakery, hot meals, labels pertaining to genetically modified foods, environmentally-friendly products, teller banking, and DVD/video rental services. Conventional stores are most likely to offer bagging, carryout, home delivery, telephone/fax ordering, and custom meat cutting services. Hard discounter stores have the lowest mean scores, offering only twelve out of twenty-one services in this Panel.

Table 4.5 shows detailed information on premium meat service offerings for stores grouped by format. As expected from the highest mean score for the premium meat services component, superstore stores are most likely to offer all premium meat services for service meat and relatively high percentage of all premium meat services for self service. It is remarkable that supercenter stores are much more likely to offer beef and poultry premium meat services for self–service, while they offer very few premium meat services for service meat. Super warehouse stores are most likely to offer seafood premium meat services for self-service. Meanwhile, hard discounter and conventional stores offer very low premium meat services for self-service except frozen seafood.

Table 4.4 Service Offerings for Stores Grouped by Format: General Services Component

	HD	CON	SS	SWH	SC
NUMBER OF STORES IN THE PANEL: SO Score	7	148	51	11	8
MEAN SERVICE OFFERINGS SCORE	20	37	53	41	41
˙ General Services Component	18	41	57	48	53
˙ Premium Meat Services Component	24	34	53	37	37
˙ Value-Added Products Component	20	36	49	38	33
PERCENTAGE THAT OFFER GENERAL SERVICES					
˙ Customer Self-Scanning	0	2	39	55	63
˙ Bagging Service	0	100	100	0	50
˙ Carryout Service/Parcel Pickup	13	92	80	9	63
˙ Home Delivery	25	35	26	9	0
˙ Internet Ordering by Customer	0	10	26	9	63
˙ Telephone/Fax Ordering by Customer	13	35	23	0	0
˙ Custom Meat Cutting/Service Meats	88	92	87	64	38
˙ In-Store Bakery	50	73	93	100	88
˙ Home Meal Replacement (HMR)/Fresh Prepared Foods	13	63	84	91	63
˙ Private Label Program-Owned Brand	75	88	100	100	100
˙ Organic Produce	38	55	89	91	100
˙ Labels Pertaining to Genetically Modified Foods	13	23	54	55	38
˙ Environmentally-Friendly Products	38	53	79	91	88
˙ Franchise/License Dept.	0	9	26	18	63
˙ Seating for Eating/Customer Rest Areas	13	29	69	55	63
˙ Pharmacy, Full-Time Licensed Pharmacist(s)	0	13	69	91	88
˙ Dry Cleaning	0	10	20	9	13
˙ Post Office, Mailing Services	0	30	25	18	38
˙ Teller Banking/In-store Banking	0	11	43	64	38
˙ DVD/Video Rental Department	13	26	51	73	25
˙ Gasoline	0	6	21	18	38

HD = Hard Discounter CON = Conventional SS = Superstore

SWH = Super Warehouse SC = Supercenter

Table 4.5 Service Offerings for Stores Grouped by Format: Premium Meat Services Component

	HD	CON	SS	SWH	SC
PERCENTAGE THAT OFFER PREMIUM MEAT SERVICES					
Self Services					
Beef					
` Dry-Aged Prime	0	11	23	18	38
` Prime	0	30	58	18	63
` Choice	63	72	73	73	88
` Select	63	57	46	45	75
` Organic/Natural (any grade)	14	25	59	64	75
Poultry					
` Organic/Natural	50	41	74	64	75
Seafood					
` Fresh - Never Frozen	29	36	55	73	50
` Fresh	29	51	68	82	50
` Frozen	88	85	90	100	88
Service Meat					
Beef					
` Dry-Aged Prime	0	10	23	0	0
` Prime	0	21	49	0	0
` Choice	38	47	50	27	13
` Select	25	32	40	9	0
` Organic/Natural (any grade)	0	16	30	0	13
Poultry					
` Organic/Natural	25	14	30	0	0
Seafood					
` Fresh - Never Frozen	14	21	65	36	13
` Fresh	14	29	66	36	13
` Frozen	38	39	58	18	13

HD = Hard Discounter CON = Conventional SS = Superstore

SWH = Super Warehouse SC = Supercenter

Table 4.6 shows detailed information on value-added product offerings for stores grouped by format. Again, superstore stores are more likely to offer most value-added products in all four departments. Supercenter stores are most likely to offer co-packed products in the meat, produce, and freshly squeezed juice departments. On the other hand, hard discounter stores are least likely to offer value-added products in all departments.

Table 4.7 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, part of larger ownership groups, more likely to be part of a self-distributing group, and more likely to have a unionized workforce. They are also more likely to be located in areas with higher median incomes, much higher population density, and a metropolitan area. At the other extreme, stores in the lowest quartile tend to be older, smaller, and less likely to have a unionized workforce. As for performance, stores in the highest quartile have the highest sales per square foot of selling area, sales per labor hour, gross profit as a percent of sales, annual percentage sales growth, and the highest percentage employee turnover. However, most performance measures do not show any striking trends or differences across the other three quartiles.

Table 4.6 Service Offerings for Stores Grouped by Format: Value-added Products Component

	HD	CON	SS	SWH	SC
PERCENTAGE THAT OFFER VALUE-ADDED PRODUCTS					
Meat					
· Branded	50	76	93	91	63
· Co-Packed	38	41	60	45	63
· Company Commissary	0	7	22	9	0
· Prepared In-Store	50	74	81	64	13
Produce					
· Branded	25	64	76	82	63
· Co-Packed	13	38	53	27	63
· Company Commissary	0	6	15	0	13
· Prepared In-Store	50	68	72	36	38
Freshly Squeezed Juice					
· Branded	0	13	26	9	25
· Co-Packed	0	8	17	9	25
· Company Commissary	0	2	4	0	0
· Prepared In-Store	0	4	9	0	0
Deli					
· Branded	38	61	85	91	50
· Co-Packed	13	38	65	45	50
· Company Commissary	0	10	29	9	13
· Prepared In-Store	38	72	87	82	50

HD = Hard Discounter CON = Conventional SS = Superstore
SWH = Super Warehouse SC = Supercenter

A Closer Look at Adoption Rates for Three Emerging Customer Services

The 2007 Supermarket Panel Report includes a "closer look" section on adoption of three customer

services – customer self-scanning, internet ordering, and sale of gasoline – that were considered as relatively new customer services in the 2002 Panel. This “closer look” section compares the current and planned adoption of the three services between the 2002 Panel and the 2007 Panel.

Customer self-scanning has the potential to lower checkout times for customers and reduce front-end 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 a shopping service and order delivery or pickup has also proved to be a difficult challenge. After the failure of several exclusively 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.

Table 4.7 Characteristics and Performance Measures for Stores Grouped by Service Offerings Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEAN SERVICE OFFERINGS SCORE	21	35	44	61
MARKET CHARACTERISTICS				
・Median Population Density (per sq. mi.)	114	114	157	936
・Median Household Income ($/year)	45,727	46,982	47,843	55,218
・Percent Located in an SMSA	53	47	54	65
STORE CHARACTERISTICS				
・Median Store Age (year)	37	27	25	16
・Mean Ownership Group Size (stores)	629	661	748	1,049
・Median Weekly Sales ($)	85,000	132,072	200,000	381,000
・Median Selling Area (sq. ft.)	12,550	17,000	27,000	45,000
・Median Weekly Labor Hours	897	1,155	1,840	2,905
STORE CHARACTERISTICS (Percentages)				
・Wholesaler Supplied	72	72	60	53
・Union Workforce	4	24	27	41
PERFORMANCE MEASURES (Median)				
・Weekly Sales per Square Foot of Selling Area ($)	8.06	8.18	7.67	9.13
・Sales per Labor Hour ($)	100.00	117.02	110.41	120.27
・Sales per Transaction ($)	19.63	18.61	22.83	27.06
・Annual Inventory Turns	16.0	17.0	16.0	16.0
・Percentage Employee Turnover	26.0	28.5	26.0	29.0
・Gross Profit as a Percent of Sales	24.7	24.5	24.0	25.6
・Payroll as a Percent of Sales	10.0	10.0	10.0	10.0
・Annual Percentage Sales Growth	2.5	2.0	2.0	2.7

Figure 4.1 compares percentages of stores currently offering and considering introduction of customer self-scanning between the 2002 Panel and the 2007 Panel. For the 2002 Panel, stores in the groups with more than 50 stores were much more likely to offer this service than stores in the groups with 50 or fewer stores (18% vs. 1%); this gap was expected to widen based on the large gap of future adoption plans between these two groups (14% vs. 4%). As expected in the 2002 Panel, the adoption gap of customer self-scanning between the large and small groups widened (38% vs. 4%) in the 2007

Panel. The percent of stores considering introduction in the 2007 Panel decreased to 7% for the large ownership group and 2% for the small ownership group from 14% and 4% respectively in the 2002 Panel. This suggests that customer self-scanning systems have been confirmed to be effective, and so that many stores in both ownership group size categories considering introduction for the 2002 Panel actually installed the systems.

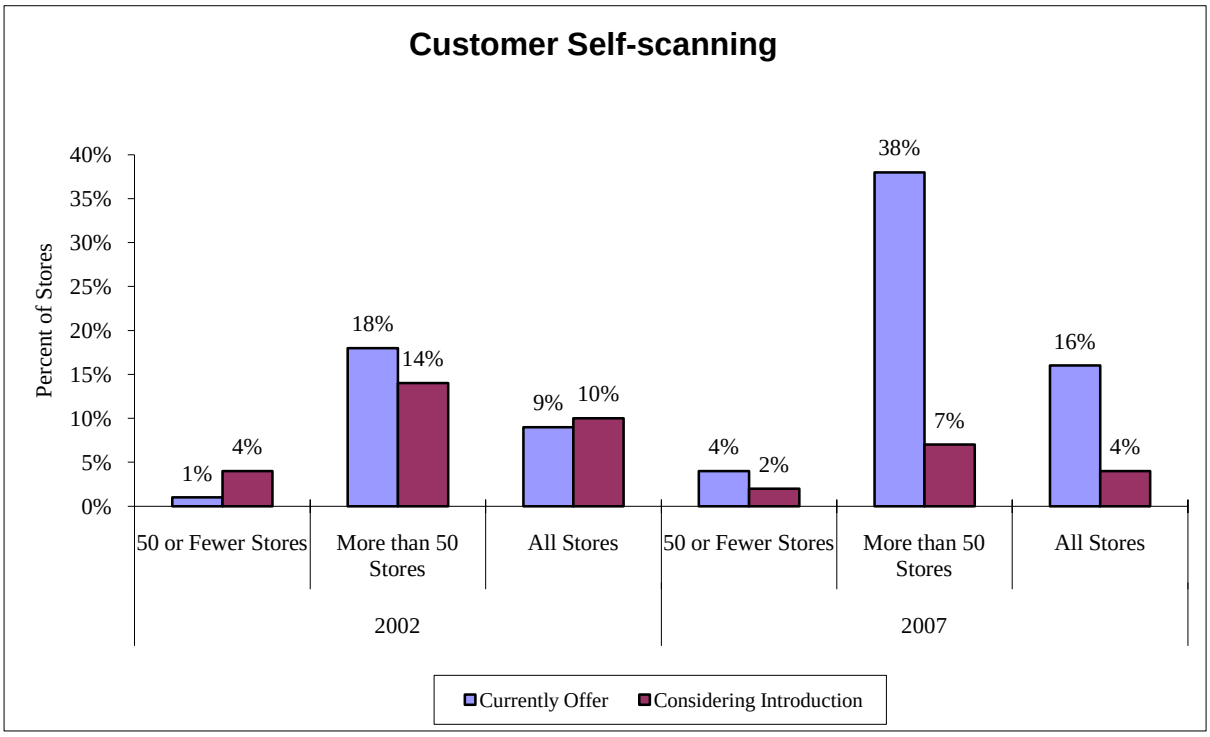

Figure 4.1 Current and Planned Adoption of Customer Self-scanning, 2002 vs. 2007

Figure 4.2 compares percentages of stores currently offering and considering introduction of internet ordering by the customer between the 2002 Panel and the 2007 Panel. The current and planned adoption patterns for both stores in both ownership group size categories for the 2007 Panel are similar to those for the 2002 Panel, though the adoption rate of stores in the large ownership group (more than 50 stores) increased to 25% in 2007 from 18% in 2002. One possible explanation for this pattern, is the business model involving internet ordering has been slowly introduced and led mostly by stores in larger ownership groups.

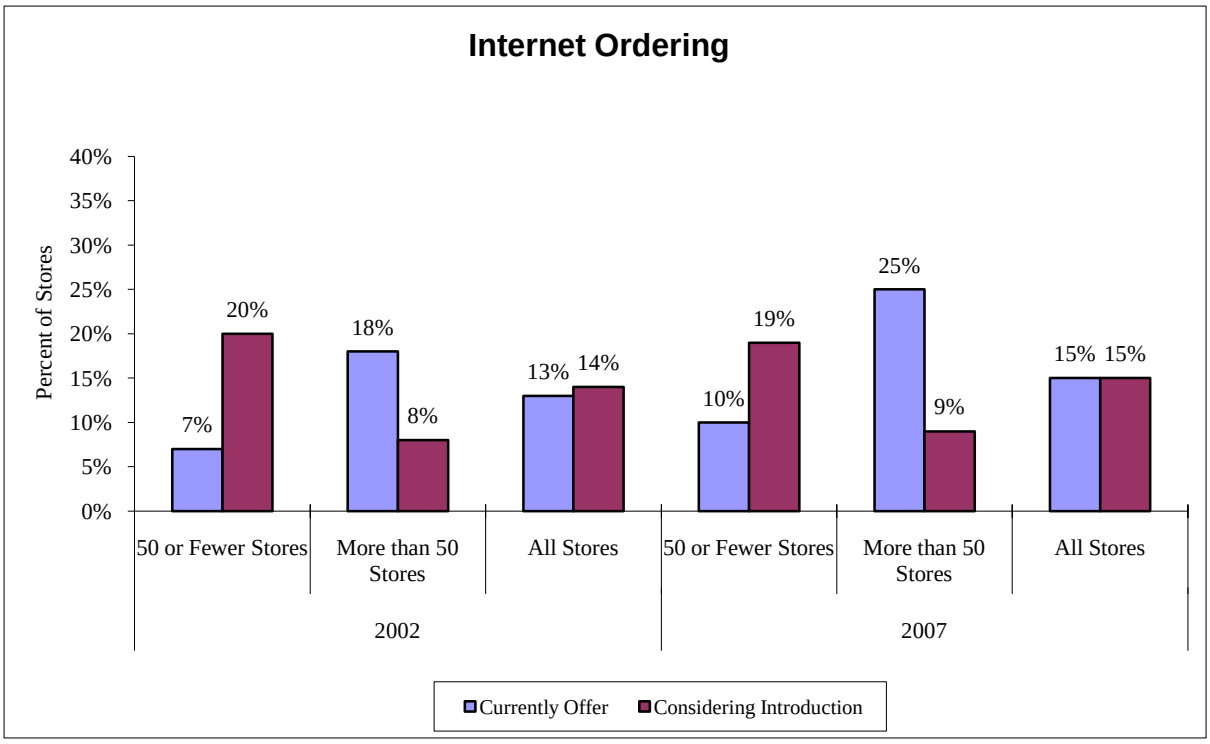

Figure 4.2 Current and Planned Adoption of Internet Ordering by Customers, 2002 vs. 2007

Finally, Figure 4.3 compares percentages of stores currently offering and considering introduction of gasoline sales between the 2002 Panel and the 2007 Panel. The rate of adoption for all stores for both 2002 and 2007 was low for gasoline, relative to self-scanning and internet ordering. Once again, more stores currently in larger ownership groups offered this service for both years. The current adoption rate for the 2007 Panel is a little higher than for the 2002 Panel for both store groups, while the planned adoption rates are almost identical between the two years for both store groups.

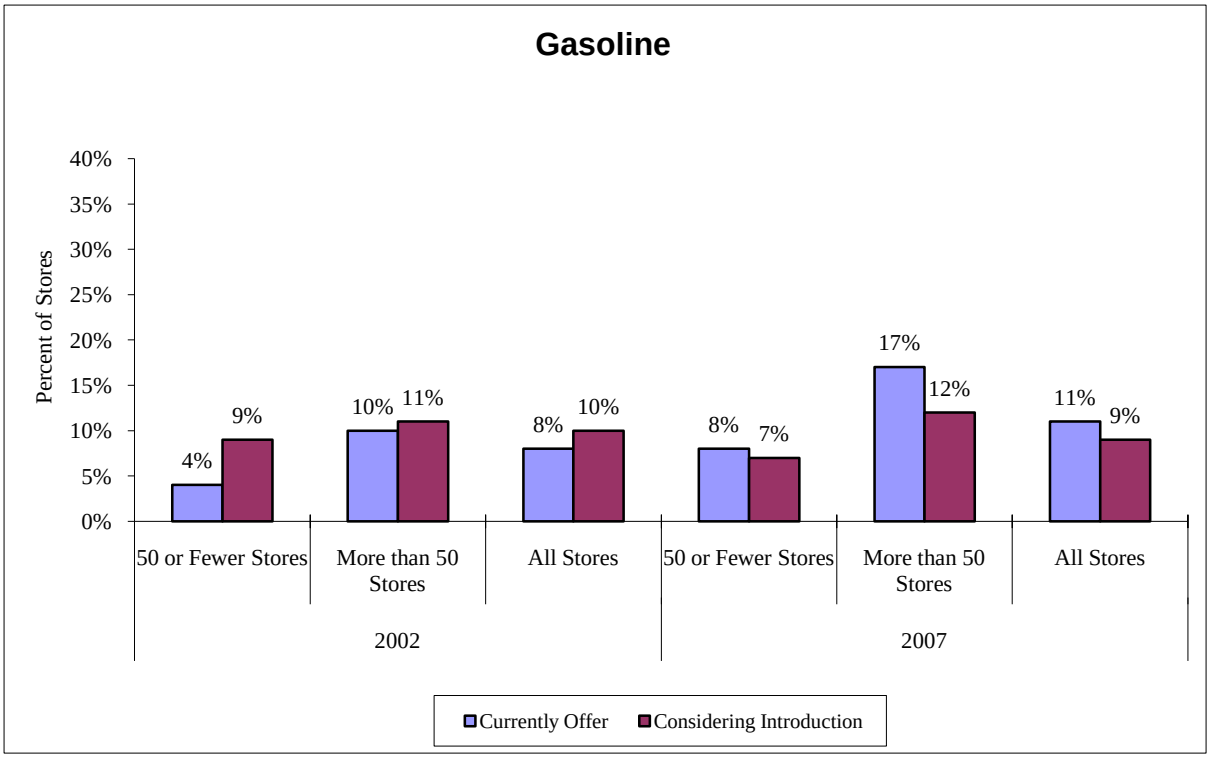

Figure 4.3 Current and Planned Adoption of Gasoline Sales, 2002 vs. 2007

Summary

Choices about the range of service offerings are an important, visible component of a store's competitive strategy. However, there are little remarkable differences across stores categorized by ownership group size in this management area. As for the service offerings for stores grouped by format, superstore stores offer the widest range of services while hard discounter stores offer very limited services. Stores in the highest quartile based on the Service Offering score tend to be newer, larger, part of larger ownership groups, and more likely to be part of a self-distributing group. As for performance, stores in the highest quartile show the highest median level for most key performance measures. However, there are no clear, consistent trends in median performance levels across the other three quartiles. Finally, the closer look at adoption of customer self-scanning, internet ordering, and gasoline sales suggests that many stores considering introduction of self-scanning in the 2002 Panel actually installed the systems, while changes in internet ordering and gasoline service offerings have been slow.

CHAPTER 5: HUMAN RESOURCES

Labor is the second largest operating expense in a typical supermarket - exceeded only by the cost of

goods sold. Meanwhile, human resource issues probably place the greatest demand on the time and attention of most supermarket managers. Hiring, training, retaining, and motivating employees are key managerial challenges. Stores connect with their customers through their employees, and customers will quickly go elsewhere if they have a bad shopping experience. Additionally, steadily rising healthcare costs, as one of the most important non-cash compensation expenses, continues to be among the top issues impacting the labor-intensive food retailing industry.

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 in the first week of employment for new hires in cashier and other hourly positions. This component is defined as total training hours for those 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 pricing or 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 compensation component is comprised of cash and non-cash incentives compensation. The use of cash-based compensation component - annual bonus, individual performance incentive pay, incentive pay based on product or category performance, and employee stock ownership plan - reflects the opportunities store managers, department heads, and other full time employees have to receive incentive pay. It is also based on the extent to which employees in these three categories receive the following types of non-cash compensation: 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.

Human Resource Practices for Stores Grouped by Ownership Group Size

Table 5.1 shows mean Human Resource scores for stores in the five ownership group size categories that range from single stores to groups with more than 750 stores. As expected, the mean Human Resource score is low for the smallest two groups while the score is high for the largest two groups.

However, the range in mean Human Resource scores is relatively low.

The median new employee training score is very 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. The differences between the two groups are also observed equally for three individual key employees: store manager, grocery manager, and scanning coordinator, though stores in the largest group show a relatively smaller number of hours for scanning coordinator training.

Table 5.1 Human Resource Practices for Stores Grouped by Ownership Group Size

	Single Stores	2-10 Stores	11-50 Stores	51-750 Stores	>750 Stores
NUMBER OF STORES IN THE PANEL: HR Score	76	47	29	27	51
MEAN HUMAN RESOURCE PRACTICES SCORE	36	35	43	45	44
・New Employee Training Component	31	30	30	32	32
・Key Employee Training	22	22	45	49	39
・Proportion of Full-time Employees	48	43	39	39	42
・Compensation Component	39	43	61	60	63
NEW EMPLOYEE TRAINING COMPONENT: MEDIANS					
・Cashier Training (hours in Week 1)	16	16	16	20	16
・Other Training (hours in Week 1)	10	12	11	12	12
KEY EMPLOYEE TRAINING COMPONENT: MEDIANS					
・Store Manager Training (hours/years)	8	10	22	20	18
・Grocery Manager Training (hours/years)	0	2	16	20	10
・Scanning Coordinator Training (hours/years)	0	0	6	10	2
COMPENSATION COMPONENT: MEANS					
・Cash-based Component	28	21	34	40	39
・Non-cash Component	48	60	82	76	83

There is no apparent pattern in the median proportion of full-time employees across group size categories. Mean scores for the compensation component are generally 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 wide array of benefits.

Human Resource Practices for Stores Grouped by Format

Table 5.2 shows detailed information on Human Resource score components for stores grouped by format. Hard discounter and conventional stores have relatively low mean overall scores, while super warehouse and supercenter stores have the highest overall mean scores.

Shifting attention to the four component scores, super warehouse 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 and scanning coordinators. Supercenter stores have much higher scores in the new employee training component, but relatively lower scores in the compensation component. Hard discounter and conventional stores have lower scores in the key employee training and compensation components.

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

Table 5.3 presents 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 55 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 finding has been consistent since the 2001 Panel.

On average, stores with the highest Human Resource practice scores are newer, larger, and part of larger ownership groups. They are more likely to be located in a metropolitan area with higher population density and less likely to be wholesaler supplied. The percentage of stores with a union workforce is lowest for the lowest quartile and highest for the highest quartile. This may be closely linked to the score on compensation component, since unionized labors usually require a wide array of compensation benefits package.

Stores in the upper quartile for the Human Resources score have higher median levels for sales per

labor hour and annual percentage sales growth. Sales per square foot and sales per transaction are highest for the highest quartile, but there is no consistent pattern for stores in the other quartiles. It is noteworthy that stores in the lowest quartile have poor median levels for all performance measures, while differences among stores in the top three quartiles are generally less clear-cut. This finding suggests that failure to adopt moderately progressive human resource practices can adversely affect performance. Overall, store characteristics and performances for stores grouped by Human Resource score in the 2007 Panel are similar to the results in the previous Panels.

Table 5.2 Human Resource Practices for Stores Grouped by Format

	HD	CON	SS	SWH	SC
NUMBER OF STORES IN THE PANEL: HR Score	6	153	55	10	4
MEAN HUMAN RESOURCE PRACTICES SCORE	31	37	43	48	47
・New Employee Training Component	29	30	32	26	45
・Key Employee Training	15	27	42	60	39
・Proportion of Full-time Employees	34	45	40	39	54
・Compensation Component	45	47	60	67	49
NEW EMPLOYEE TRAINING COMPONENT: MEDIANS					
・Cashier Training (hours in Week 1)	15	16	16	16	24
・Other Training (hours in Week 1)	10	10	12	10	16
KEY EMPLOYEE TRAINING COMPONENT: MEDIANS					
・Store Manager Training (hours/years)	0	10	18	40	8
・Grocery Manager Training (hours/years)	0	6	16	20	10
・Scanning Coordinator Training (hours/years)	0	0	4	16	0
COMPENSATION COMPONENT: MEANS					
・Cash-based Component	15	29	36	45	32
・Non-cash Component	69	60	79	84	63

HD = Hard Discounter CON = Conventional SS = Superstore

SWH = Super Warehouse SC = Supercenter

Table 5.3 Characteristics and Performance Measures for Stores Grouped by Human Resource Practice Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEDIAN HUMAN RESOURCE PRACTICES	24	34	43	55
· New Employee Training Component	18	26	32	34
· Key Employee Training	3	21	30	76
· Proportion of Full-time Employees	31	37	49	47
· Compensation Component	33	52	56	67
MARKET CHARACTERISTICS				
· Median Population Density (per sq. mi.)	71	94	173	396
· Median Household Income ($/year)	46,478	48,345	46,580	48,137
· Percent Located in an SMSA	44	52	49	64
STORE CHARACTERISTICS				
· Median Store Age (year)	35	28	25	20
· Mean Ownership Group Size (stores)	416	589	623	950
· Median Weekly Sales ($)	92,000	149,500	146,630	315,000
· Median Selling Area (sq. ft.)	17,000	16,500	28,000	32,000
· Median Weekly Labor Hours	990	1,625	1,319	2,050
STORE CHARACTERISTICS (Percentages)				
· Wholesaler Supplied	79	69	63	57
· Union Workforce	10	28	24	33
PERFORMANCE MEASURES (Median)				
· Weekly Sales per Square Foot of Selling Area ($)	7.24	8.88	6.82	9.62
· Sales per Labor Hour ($)	101.41	109.17	111.59	120.01
· Sales per Transaction ($)	19.20	21.23	20.49	27.92
· Annual Inventory Turns	15.0	14.0	18.0	16.0
· Percentage Employee Turnover	28.0	29.0	26.5	26.5
· Gross Profit as a Percent of Sales	25.1	25.5	24.6	25.0
· Payroll as a Percent of Sales	11.0	10.6	9.8	10.0
· Annual Percentage Sales Growth	1.1	2.1	2.5	2.4

A Closer Look at Unionization

Unionization has long been a point of discussion in the food industry. As health care costs continue to rise and large supercenters increasingly operate without unionized labor, there is increasing interest in

the value of having unionized labor in the industry. Unionization proponents argue that unionization leads to higher productivity through lower turnover, better work 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 5.1 shows the percentage of stores with a union workforce across ownership group sizes. The unionization rate rises steadily with ownership group size from a low of 10% for single stores to a high of 56% for stores in groups with more than 750 stores. Figure 5.2 shows the percentage of stores with a union workforce for stores grouped by format. We find that 16% of conventional formats, 40% of superstore formats, and 60% of super warehouse formats have unionized labor. The unionization rates for the hard discounter and supercenter format groups is not reported for the 2007 Panel, to ensure the confidentiality of the small number of these stores that participated in the survey. However, it can be noted that supercenter stores have a unionization rate below that for conventional stores while hard discounter stores have a rate of unionization above that for conventional stores. Finally, the pattern of unionization rates across ownership group sizes and formats are very similar to those in the 2002 and 2003 Panels.

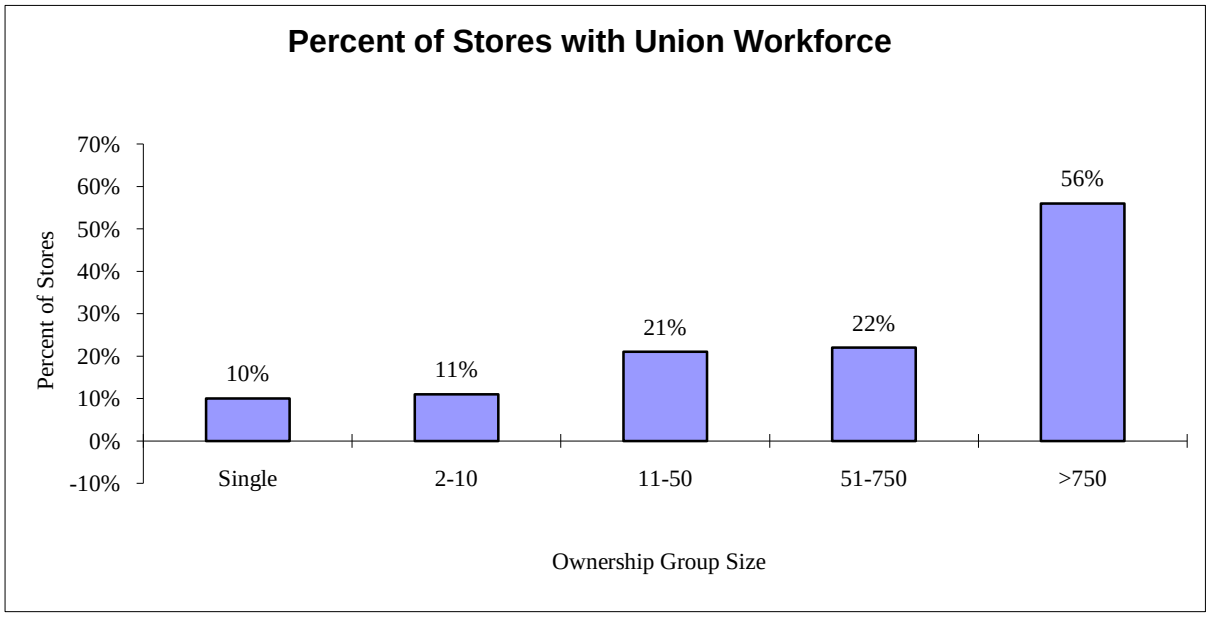

Figure 5.1 Percentages of Stores with Union Workforce for Stores Grouped by Ownership Group Size

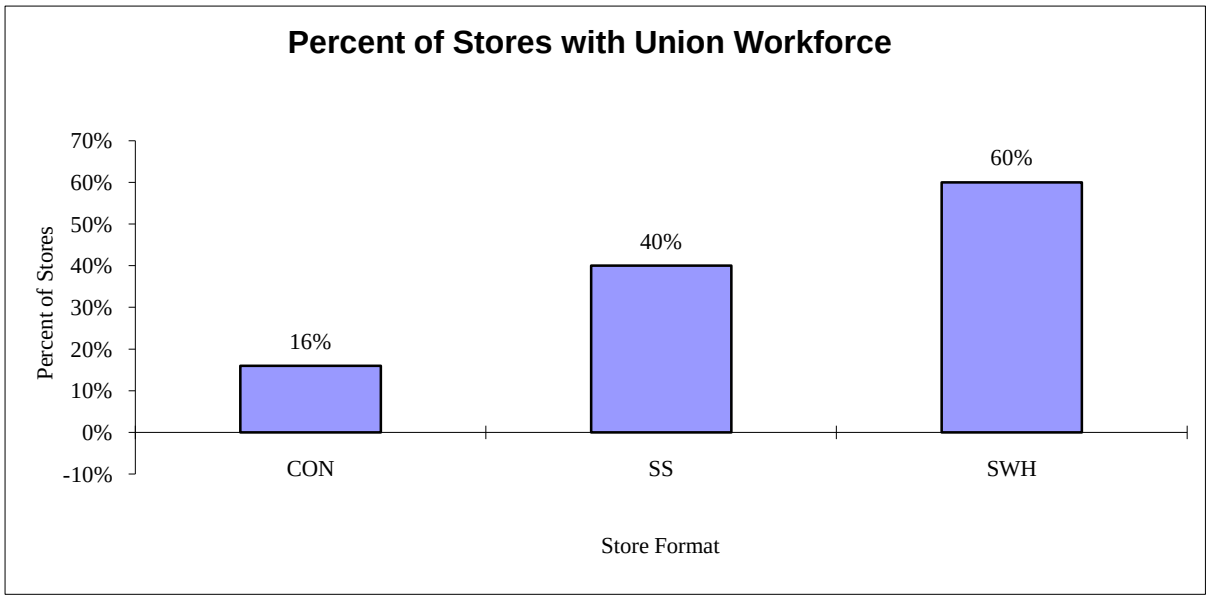

Figure 5.2 Percentages of Stores with Union Workforce for Stores Grouped by Format

Table 5.4 compares store characteristics, management practices, and performance measures for stores with and without unionized labor. One-third of the stores in the 2007 Panel have unionized labor. Unionized stores are relatively newer, larger, part of larger ownership groups, more likely to be self-distributing, and more likely to be located in a metropolitan area.

Unionized stores have higher mean Technology Component scores, suggesting that stores with a union workforce may substitute technology for labor. One possible explanation for this finding is that higher labor costs in unionized stores – $14.30 versus $10.47 - led the stores to more readily invest in labor saving technologies. However, it is also important to recognize that unionized stores tend to be in larger ownership groups, which have already been shown to have higher Technology Component scores in Table 3.1.

Unionized and non-unionized stores also differ with respect to their mean Human Resource scores. Unionized stores have a higher mean overall score attributable to a higher level of key employee training and a more comprehensive set of noncash benefits for unionized stores. The other components including new employee training, proportion of full-time employees, and incentive-based compensation are almost identical.

Table 5.4 Descriptive Profile for Stores Grouped by Unionization

	Non-Union Workforce	Union Workforce
NUMBER OF STORES IN THE PANEL	162	53
STORE AND MARKET CHARACTERISTICS		
˙ Median Selling Area (sq. ft.)	18,000	35,000
˙ Median Weekly Sales ($)	134,750	426,500
˙ Median Store Age (year)	28	24
˙ Mean Ownership Group Size (stores)	429	1,707
˙ Percent Wholesaler Supplied	75	36
˙ Percent in an SMSA	46	70
MEAN BUSINESS PRACTICES SCORE	45	68
˙ Technology Component	43	66
˙ Marketing Component	46	70
MEAN HUMAN RESOURCE PRACTICE SCORE	38	43
˙ New Employ Training Component	29	31
˙ Key Employee Training	30	39
˙ Proportion of Full-time Employees	44	43
˙ Cash-based Compensation	32	34
˙ Non-Cash Benefits	63	80
PERFORMACE MEASURES (Median)		
˙ Estimated Hourly Payroll Expense	10.47	14.30
˙ Weekly Sales per Square Foot of Selling Area ($)	7.50	10.06
˙ Sales per Labor Hour ($)	102.94	150.17
˙ Sales per Transaction ($)	20.45	31.07
˙ Annual Inventory Turns	16.0	17.0
˙ Percentage Employee Turnover	25.5	31.0
˙ Gross Profit as a Percent of Sales	25.0	28.2
˙ Payroll as a Percent of Sales	10.1	10.0
˙ Annual Percentage Sales Growth	1.5	2.3

In terms of performance measures, unionized stores outperform non-unionized stores for every measure except percentage employee turnover. This comparison result is almost similar to previous Panels. The higher level of sales per labor hour for unionized stores signals a more efficient and effective use of unionized labor. Several possible reasons for the higher level of sales per labor hour

are better trained key employees, higher employee satisfaction through a higher level of noncash compensation benefits, and improved labor productivity by adopting higher levels of information technologies. Combining the two critical components of operating costs, 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 slightly different cost estimates: 81.8% of sales for unionized stores and 85.1% of sales for non-unionized stores. However, it is hard to say that unionized stores have lower operating costs based on these estimated operating costs, since the difference is not significantly large.

Summary

Differences in the Human Resources score are relatively small across stores grouped by ownership group size and format. Among the components of this score, differences are most pronounced for key employee training and noncash compensation practices. On average, stores in large groups provide more training to key employees and offer a wider range of noncash benefits. Among stores grouped by format, hard discounter and conventional stores have relatively low mean overall scores, while super warehouse and supercenter stores have high overall mean scores. Stores in the lowest quartile for the Human Resource score have poor median levels for all performance measures, while differences among stores in the top three quartiles are generally less clear cut. This suggests that adopting moderately progressive human resource management practices is important for all stores. Finally, the closer look at unionization shows that stores with and without unionized labor differ significantly with regard to store characteristics and management practices. In terms of performance measures, unionized stores outperform non-unionized stores for every measure except percentage employee turnover. Combined costs for payroll and cost of goods sold are not significantly different for union and non-union stores.

CHAPTER 6: FOOD HANDLING

Food safety issues have always been an important focus of attention for customers, retailers, and manufacturers to minimize the risk of microbial contamination. Consumer confidence in food safety was eroded by the *E.coli* contamination of spinach in 2006, followed by major recalls of pet food and peanut butter products in the first few months of 2007. As a result, only 66 percent of shoppers were confident in the safety of the food supply in 2007, down from 82 percent a year earlier (*The Food Retailing Industry Speaks*, Food Marketing Institute, 2007). These recent food contamination incidents have highlighted the fact that food safety is a never ending journey. Food safety is becoming increasingly more challenging as the consumer's demand for ready-to-eat produce continues to

increase. In addition, after the terrorist attacks of September 11, 2001, concerns have increased about protecting the food supply from a bioterrist attack.

The Food Handling score measures a store's adoption of practices that promote food safety and quality[2]. 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 managers, 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.

Scores for these five components are combined into an overall score on a 100 point scale.

Food Handling Practices for Stores Grouped by Ownership Group Size

Table 6.1 shows mean Food Handling scores for stores across the range of ownership group size categories. Scores are high for stores in all group size categories. There is a slight upward trend in mean levels for the overall scores as store group size increases, similar to the pattern observed in 2001 and 2002. There is very little variation in mean scores for the first five individual components. 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 group size categories. Differences between single stores and stores in the largest ownership groups are especially striking. The

[2] This index was developed by Professor Ted Labuza, Department of Food Science and Nutrition, University of Minnesota. It reflects the judgment of academic and industry food scientists on the relative importance of a range of factors related to food safety.

percentage of meat managers receiving training is relatively small across group sizes.

Food Handling Practices for Stores Grouped by Format

Table 6.2 shows detailed information on Food Handling score components for stores grouped by format. There is little variation in mean overall and component scores across the first four format categories. However, the supercenter stores stand out with higher overall mean scores that are attributable largely to greater emphasis on sanitation audits and food safety training; a finding consistent with 2002. It is striking that all stores in the 2007 Panel meet recommended target temperature.

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

Table 6.3 presents store characteristics and performance measures for stores grouped into quartiles based on their 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. Sanitation audits and food safety training are the components that vary in score across quartiles.

Stores in the highest two quartiles for Food Handling score are, on average, newer, larger, part of a larger store group, more likely to be in a metropolitan area, and less likely to be wholesaler supplied compared with stores in the lowest two quartiles. Stores in these two highest quartiles have higher median weekly sales. Turning to the performance measures in the bottom quartiles, weekly sales per square foot of selling area, sales per labor hour, and annual percentage sales growth increase as the Food Handling scores increase. Sales per transaction is also higher for the highest two quartiles. The other performance measures do not show any consistent patterns across the quartiles.

Table 6.1 Food Handling Practices for Stores Grouped by Ownership Group Size

	Single Stores	2-10 Stores	11-50 Stores	51-750 Stores	>750 Stores
NUMBER OF STORES IN THE PANEL: FH Score	46	28	21	21	36
MEAN FOOD HANDLING PRACTICES SCORE	88	90	90	92	94
˙ Target Temperature Component	99	100	99	100	100
˙ Temperature Check Component	93	95	97	98	99
˙ Sanitation Audit Component	67	63	73	70	73
˙ Dating Information Component	96	98	100	100	100
˙ Inventory Practices	98	99	98	98	98
˙ Training	63	74	80	79	85
TARGET TEMPERATURE COMPONENT: MEDIANS					
˙ Self Service Meat	34	35	34	35	36
˙ Dairy	36	38	36	37	36
˙ Self Service Deli	36	38	36	37	38
TEMPERATURE CHECK COMPONENT: MODES					
˙ 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
SANITATION AUDIT COMPONENT: MODES					
˙ Self Audit	3	3	3	3	3
˙ Local Authority	2	2	2	2	2
˙ 3rd Party Commercial Audit	0	1	2	2	3
DATING INFORMATION COMPONENT: MODES					
˙ 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
INVENTORY PRACTICES COMPONENT: MODES					
˙ 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
TRAINING COMPONENT: PERCENTAGES					
˙ Deli Manager	71	91	97	92	100
˙ Deli Employees	51	67	72	70	75
˙ Meat Manager	61	63	72	74	78
˙ Store Manager	66	62	87	85	95

Table 6.2 Food Handling Practices for Stores Grouped by Format

	HD	CON	SS	SWH	SC
NUMBER OF STORES IN THE PANEL: FH Score	4	95	40	7	3
MEAN FOOD HANDLING PRACTICES SCORE	95	89	93	90	98
˙ Target Temperature Component	100	100	100	100	100
˙ Temperature Check Component	98	96	95	100	100
˙ Sanitation Audit Component	56	68	71	75	83
˙ Dating Information Component	100	97	99	100	100
˙ Inventory Practices	95	99	98	97	100
˙ Training	75	70	86	70	100
TARGET TEMPERATURE COMPONENT: MEDIANS					
˙ Self Service Meat	34	34	36	35	38
˙ Dairy	38	36	38	38	38
˙ Self Service Deli	37	36	38	37	38
TEMPERATURE CHECK COMPONENT: MODES					
˙ 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
SANITATION AUDIT COMPONENT: MODES					
˙ Self Audit	3	3	4	3	3
˙ Local Authority	2	2	2	2	3
˙ 3rd Party Commercial Audit	2	0	2	3	3
DATING INFORMATION COMPONENT: MODES					
˙ 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
INVENTORY PRACTICES COMPONENT: MODES					
˙ 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
TRAINING COMPONENT: PERCENTAGES					
˙ Deli Manager	83	83	100	100	100
˙ Deli Employees	67	60	76	64	100
˙ Meat Manager	63	64	81	45	100
˙ Store Manager	75	70	90	82	100

HD = Hard Discounter CON = Conventional SS = Superstore

SWH = Super Warehouse SC = Supercenter

Table 6.3 Characteristics and Performance Measures for Stores Grouped by Food Handling Practice Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEDIAN FOOD HANDLING PRACTICES	78	89	94	99
˙ Target Temperature Component	100	99	99	100
˙ Temperature Checking Component	90	98	100	100
˙ Store Audits Component	57	59	74	91
˙ Dating Information Component	98	99	100	100
˙ Inventory Practices	99	99	99	98
˙ Training	27	75	91	100
MARKET CHARACTERISTICS				
˙ Median Population Density (per sq. mi.)	71	122	340	195
˙ Median Household Income ($/year)	46,140	47,850	49,015	46,590
˙ Percent Located in an SMSA	39	42	61	57
STORE CHARACTERISTICS				
˙ Median Store Age (year)	28	32	25	21
˙ Mean Ownership Group Size (stores)	502	427	908	1,034
˙ Median Weekly Sales ($)	111,610	132,000	247,500	172,500
˙ Median Selling Area (sq. ft.)	15,000	18,500	30,000	29,000
˙ Median Weekly Labor Hours	1,025	1,440	2,325	1,459
STORE CHARACTERISTICS (Percentages)				
˙ Wholesaler Supplied	78	71	58	53
˙ Union Workforce	30	26	25	20
PERFORMANCE MEASURES (Median)				
˙ Weekly Sales per Square Foot of Selling Area ($)	6.30	7.76	8.11	8.53
˙ Sales per Labor Hour ($)	104.08	112.28	113.04	120.29
˙ Sales per Transaction ($)	20.33	18.71	24.77	23.75
˙ Annual Inventory Turns	17.0	14.0	20.5	16.0
˙ Percentage Employee Turnover	30.0	23.5	30.5	21.5
˙ Gross Profit as a Percent of Sales	24.0	25.1	25.3	24.6
˙ Payroll as a Percent of Sales	10.0	10.0	10.0	10.0
˙ Annual Percentage Sales Growth	-	2.0	2.0	3.6

Summary

Stores are generally performing well for most food handling practices, regardless of group size or format. In general, stores in larger ownership groups and supercenter/hypermarket stores have higher average overall scores. Sanitation audits and food safety training components vary in score across ownership group size, format, and the quartiles in this management area. Though differences in mean scores across quartiles for this area are slight, stores with higher scores do perform better by some key performance measures.

CHAPTER 7: ENVIRONMENTAL PRACTICES

Environmental practices are important to both consumers and supermarket operators. Consumers are increasingly interested in buying more environmentally friendly products and organic produce. The trend of "going green" is believed by many business watchers to be a key element in consumer awareness, sales growth and profitability in the retail food industry in the near future. Consequently, environmental practices is one trend supermarket companies are likely to follow with great interest and involvement. In addition to "going green," store managers are considering more efficient energy-saving practices for refrigeration and lighting, since energy is the third largest operating expense for most supermarkets, exceeded only by cost-of-goods-sold and labor. Store waste recycling is also receiving increased attention from store managers.

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 offerings of organic produce, labels pertaining to genetically modified foods, and environmentally friendly products. The score for this component is the percentage of product offerings.
2. A store operations component that measure the store's adoption of energy efficient lighting, refrigeration management program, 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 7.1 presents mean Environmental Practices scores for stores in the five store group size

categories. As with the 2001 and 2002 Panels, the overall score trends upward with store group size. Scores for both consumer and operations components show a general upward trend with store group size, but the trend is more evident for the consumer component than the operations component. Again, this is consistent with findings for previous years. The similar upward pattern generally holds for all of the individual practices that make up this score.

Table 7.1 Environmental Practices for Stores Grouped by Ownership Group Size

	Single Stores	2-10 Stores	11-50 Stores	51-750 Stores	>750 Stores
NUMBER OF STORES IN THE PANEL: EP Score	87	56	32	27	65
MEAN ENVIRONMENTAL PRACTICES SCORE	51	52	69	69	80
˙ Consumer Component	35	45	66	68	72
˙ Operations Component	66	59	72	69	89
CONSUMER ORIENTED PRACTICES: PERCENTAGE					
˙ Organic Produce	45	54	88	81	85
˙ Labels pertaining to genetically modified foods	14	26	41	48	51
˙ Environmentally Friendly Products	45	54	69	74	80
OPERATIONS ORIENTED PRACTICES: PERCENTAGE					
˙ Energy Efficient Lighting	71	65	66	59	88
˙ Refrigeration Management Program	51	46	72	81	91
˙ Store Recycling	77	66	78	67	88

Environmental Practices for Stores Grouped by Format

Table 7.2 presents mean Environmental Practices scores for stores grouped by format. Super warehouse and supercenter stores have the highest mean score, while stores with hard discounter and conventional formats have the lowest. This pattern holds for both consumer and operations components.

Table 7.2 Environmental Practices for Stores Grouped by Format

	HD	CON	SS	SWH	SC
NUMBER OF STORES IN THE PANEL: EP Score	8	172	61	11	8
MEAN ENVIRONMENTAL PRACTICES SCORE	44	55	77	85	83
‧ Consumer Component	29	44	74	79	75
‧ Operations Component	58	66	81	91	92
CONSUMER ORIENTED PRACTICES: PERCENTAGE					
‧ Organic Produce	38	55	89	91	100
‧ Labels pertaining to genetically modified foods	13	23	54	55	38
‧ Environmentally Friendly Products	38	53	79	91	88
OPERATIONS ORIENTED PRACTICES: PERCENTAGE					
‧ Energy Efficient Lighting	63	68	77	100	88
‧ Refrigeration Management Program	63	55	85	91	100
‧ Store Recycling	50	76	80	82	88

HD = Hard Discounter CON = Conventional SS = Superstore
SWH = Super Warehouse SC = Supercenter

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

Table 7.3 shows store characteristics and performance measures for stores grouped in quartiles based on their Environmental Practices score. It is noteworthy that mean score for the lowest quartile is much lower than those for the highest quartile. Largely due to the consumer component, this finding suggests stores in the lowest quartile cannot afford or do not need to consider consumers' interests on environmentally friendly or organic products. Meanwhile, stores in the highest quartile easily offer those products.

As expected, stores in the higher quartile are newer, larger, and part of larger ownership group size. They are more likely to be located in areas with higher population density, median household income

and a metropolitan area. They are less likely to be wholesaler supplied and more likely to have a union workforce. Most key performance measures such as weekly sales per square foot of selling area, sales per labor hour, sales per transaction, and annual percentage sales growth trend consistently upward from the lowest to highest quartiles. The strength and direction of association between the Environmental Practice score and performance measures, however, needs to be interpreted with caution, since other store characteristics that are correlated with the Environmental Practice score are also associated with better performance.

Table 7.3 Characteristics and Performance Measures for Stores Grouped by Environmental Practices Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEAN ENVIRONMENTAL PRACTICES SCORE	23	50	67	91
· Consumer Component	13	28	59	88
· Operations Component	33	72	74	94
MARKET CHARACTERISTICS				
· Median Population Density (per sq. mi.)	60	74	176	459
· Median Household Income ($/year)	44,572	46,590	48,341	49,145
· Percent Located in an SMSA	36	42	59	61
STORE CHARACTERISTICS				
· Median Store Age (year)	37	33	24	19
· Mean Ownership Group Size (stores)	117	387	664	1,262
· Median Weekly Sales ($)	92,000	100,000	200,000	345,000
· Median Selling Area (sq. ft.)	13,000	17,000	26,500	35,000
· Median Weekly Labor Hours	920	1,052	1,685	2,560
STORE CHARACTERISTICS (Percentages)				
· Wholesaler Supplied	94	80	61	44
· Union Workforce	9	8	25	42
PERFORMANCE MEASURES (Median)				
· Weekly Sales per Square Foot of Selling Area ($)	6.77	6.62	8.50	9.48
· Sales per Labor Hour ($)	99.96	104.11	109.58	125.00
· Sales per Transaction ($)	18.81	17.14	21.46	26.34
· Annual Inventory Turns	15.0	13.0	18.0	15.5
· Percentage Employee Turnover	17.0	30.5	26.0	30.0
· Gross Profit as a Percent of Sales	25.9	24.0	24.0	25.5
· Payroll as a Percent of Sales	11.0	10.0	10.0	10.0
· Annual Percentage Sales Growth	1.1	1.7	2.0	3.3

CHAPTER 8: QUALITY ASSURANCE

Quality assurance practices are the objective procedures stores use to maintain food quality and to measure customer satisfaction. The 2007 Panel measured whether the store or its upstream suppliers have an active and up-to-date plan for disaster recovery as one of the quality assurance components; considering the importance of disaster preparedness for food supply and quality maintenance. 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 three 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 program.
2. Food safety and handling, with the score based on the temperature check, sanitation audit, inventory rotation, and food safety training component of the Food Handling score.
3. Disaster recovery, with the score based on the adoption rate of disaster recovery plans at the store/company or supplier levels.

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 8.1 summarizes quality assurance practices for stores grouped by ownership group size. Mean overall scores increase steadily across ownership group size categories. Stores in the group of ten or fewer stores show much lower mean score for customer satisfaction component compared with stores in larger group sizes. Mean scores for the food safety and handling component are generally higher with relatively less variation across group size categories. Mean scores for the disaster recovery component show a clear upward trend as group size increases. Stores in the smallest two group sizes are much less likely to use the three formal practices for customer satisfaction assessment. As observed from the food handling practices data in chapter 6, food safety training is the only area where there are meaningful differences across group size categories, showing larger groups have higher scores in this practice. Regarding the disaster recovery component, the upward adoption rate trend across group sizes is more distinguishable at the store/company level than at the supplier level. This finding reflects that stores in larger ownership groups have the formal and consistent disaster recovery plan maintained by their parent company. Results for both customer satisfaction and food handling components are similar to findings from the 2000, 2001, and 2002 Panels.

Table 8.1 Quality Assurance Practices for Stores Grouped by Ownership Group Size

	Single Stores	2-10 Stores	11-50 Stores	51-750 Stores	>750 Stores
NUMBER OF STORES IN THE PANEL: QA Score	70	51	30	26	59
MEAN QUALITY ASSURANCE PRACTICES SCORE	43	47	62	65	78
・Customer Satisfaction Component	23	27	61	52	69
・Food Handling Component	76	80	84	84	87
・Disaster Recovery Component	28	32	44	56	73
USE OF INSTRUMENTS TO ASSESS CUSTOMER SATISFACTION: PERCENTAGES					
・Customer Focus Group	18	14	53	33	55
・Customer Satisfaction Surveys	33	37	72	56	82
・Mystery Shopper Program	19	32	59	67	69
FOOD HANDLING PRACTICES: MEANS					
・Temperature Check Score	93	95	97	98	99
・Sanitation Audit Score	67	63	73	70	73
・Inventory Rotation Score	98	99	98	98	98
・Food Safety Training Score	63	74	80	79	85
DISASTER RECOVERY: PERCENTAGES					
・Disaster Recovery Plan at the Store/Company-level	24	33	50	67	85
・Disaster Recovery Plan at the Store/Company-level	33	30	38	44	62

Quality Assurance Practices for Stores Grouped by Format

Tables 8.2 shows detailed information on quality assurance practices for stores grouped by format. Super warehouse and supercenter stores have mean overall scores that are well above those for other formats. Super warehouse stores have the highest scores for satisfaction and disaster recovery components, while supercenter stores have highest scores for the food handling component. Turning to individual practices, super warehouse stores are more likely to use customer focus group and customer satisfaction surveys, while supercenter stores are more likely to use mystery shopper

programs.

Supercenter stores show the highest score for all food handling practices. Super warehouse stores are more likely to have the store-level disaster recovery plan. Conventional stores are less likely to have the disaster recovery plan, both at the store-level and at the supplier-level.

Table 8.2 Quality Assurance Practices for Stores Grouped by Format

	HD	CON	SS	SWH	SC
NUMBER OF STORES IN THE PANEL: QA Score	8	148	57	11	6
MEAN QUALITY ASSURANCE PRACTICES SCORE	54	50	69	80	84
、Customer Satisfaction Component	33	34	57	76	58
、Food Handling Component	78	80	86	82	96
、Disaster Recovery Component	50	33	62	82	75
USE OF INSTRUMENTS TO ASSESS CUSTOMER SATISFACTION: PERCENTAGES					
、Customer Focus Group	25	25	41	82	38
、Customer Satisfaction Surveys	38	43	69	100	75
、Mystery Shopper Program	38	36	61	45	63
FOOD HANDLING PRACTICES: MEANS					
、Temperature Check Score	98	96	95	100	100
、Sanitation Audit Score	56	68	71	75	83
、Inventory Rotation Score	95	99	98	97	100
、Food Safety Training Score	75	70	86	70	100
DISASTER RECOVERY: PERCENTAGES					
、Disaster Recovery Plan at the Store/Company-level	63	33	75	91	75
、Disaster Recovery Plan at the Store/Company-level	38	34	49	73	75

HD = Hard Discounter CON = Conventional SS = Superstore

SWH = Super Warehouse SC = Supercenter

Store Characteristics and Performance Measures for Stores Grouped by Quality Assurance

Table 8.3 summarizes median store characteristics and performance measures for stores grouped into quartiles based on their Quartile Assurance score. As in previous years, there is a very wide range in median levels across quartiles for the customer satisfaction component. The disaster recovery component that was included first in the 2007 Panel, also has very wide range in median levels across quartiles. Stores in the highest quartile are newer, larger, part of larger ownership groups, more likely to be self-distributed, and have a union work force. They are more likely to be located in areas with much higher population density, higher median household incomes, and in a metropolitan area. Turning to the performance measures, stores in the highest quartile show higher levels for weekly sales per square foot of selling area, sales per labor hour, sales per transaction, gross profit as a percent of sales, and annual percentage sales growth. While this finding is consistent with results from the 2000 Panel, it is contrary to results from the 2001 and 2002 Panels which showed no clear trend for performance measures across quartiles. Again, these findings need to be interpreted with caution since other store characteristics such as store group size, store selling area, or self-distribution, are correlated with the Quality Assurance scores and are also associated with better performance.

Summary

Mean overall Quality Assurance scores show an upward trend across ownership group size categories, with differences being greater for the customer satisfaction and the disaster recovery components. For stores grouped by format, super warehouse and supercenter stores have mean overall scores that are well above those for other formats. Key performance measures show an upward trend across quartiles based on the Quartile Assurance score.

Table 8.3 Characteristics and Performance Measures for Stores Grouped by Quality Assurance Practices Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEDIAN QUALITY ASSURANCE PRACTICES	27	48	67	88
· Customer Satisfaction Component	6	33	52	84
· Food Handling Component	68	84	84	90
· Disaster Recovery Component	7	26	66	91
MARKET CHARACTERISTICS				
· Median Population Density (per sq. mi.)	58	86	156	1,312
· Median Household Income ($/year)	46,534	47,162	46,636	49,568
· Percent Located in an SMSA	34	37	57	78
STORE CHARACTERISTICS				
· Median Store Age (year)	32	33	29	17
· Mean Ownership Group Size (stores)	68	342	878	1,620
· Median Weekly Sales ($)	102,500	127,900	172,500	430,000
· Median Selling Area (sq. ft.)	15,000	17,000	27,500	37,750
· Median Weekly Labor Hours	1,025	1,168	1,418	2,622
STORE CHARACTERISTICS (Percentages)				
· Wholesaler Supplied	92	78	62	25
· Union Workforce	7	15	28	48
PERFORMANCE MEASURES (Median)				
· Weekly Sales per Square Foot of Selling Area ($)	7.25	6.83	8.65	9.21
· Sales per Labor Hour ($)	100.37	101.71	112.79	127.72
· Sales per Transaction ($)	19.14	20.38	25.82	27.92
· Annual Inventory Turns	16.0	14.5	19.5	17.0
· Percentage Employee Turnover	25.5	33.0	19.0	31.0
· Gross Profit as a Percent of Sales	24.7	25.0	25.5	25.8
· Payroll as a Percent of Sales	10.0	10.3	10.3	9.6
· Annual Percentage Sales Growth	1.1	3.2	0.4	3.7

CHAPTER 9: SUPERCENTERS AND SUPERCENTER COMPETITION

Supercenters are an important competitive force in the supermarket industry. Supercenters in the 2002 and 2003 Panels had the highest sales per labor hour and per transaction. They also had the highest

score in supply chain management and service offerings. Stores in the 2000, 2001, and 2002 Supermarket Panels that faced supercenter competition had significantly lower sales per labor hour and lower annual sales growth, while the characteristics of stores that did and did not face supercenter competition in the 2003 Panel were very similar. In this chapter, we explore findings from the 2007 Panel that address questions of how supercenters differ from other supermarkets and how their competitive behavior impacts the performance of other stores.

How Supercenter Stores in the 2007 Panel Differ from Other Supermarkets

Supercenter stores are defined as stores with more than 100,000 square feet of selling area in the 2007 Panel; a definition that was redefined in the 2007 Panel. Previous Panels defined supercenter stores as more than 100,000 square feet of selling area and pharmacy or stores with 75,000 to 100,000 square feet of selling area, pharmacy ,bagging services, and no more than 30% of store sales from groceries. The 2007 Panel has eight supercenter stores, representing 3.0 % of the 270 supermarket stores in the Panel as compared to 1.7% of the 866 stores in the 2002 Panel and 2.0% of 391 stores in the 2003 Panel, despite the varying definitions.

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 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 valued numbers. For example, weekly sales per square foot of selling area for stores in smaller groups is significantly less than for stores in larger groups, as is indicated by the “a” and “b” superscripts. That is, stores in groups of 50 or less have a statistically significant difference in sales per square foot than stores in groups of more than 50; likewise, for sales per labor hour and per transaction. But, the weekly sales per square foot in supercenters is not significantly different from each of other the two groups. Thus, the “a,b” superscript is repeated to indicate they are the same. Annual percentage sales growth for each category of ownership group is not significantly different. Thus, all “a” superscripts appear for each value in the row, indicating they are statistically the same.

Supercenter stores are much larger and part of much larger ownership groups than stores in the other groups. They are newer, less likely to be wholesaler supplied, and more likely to be located in a metropolitan area with a higher population density than stores in ownership groups with up to fifty stores. The difference, however, in characteristics for stores in larger ownership groups and the supercenter stores is not statistically significant. The percentage of supercenter stores with a union workforce is significantly lower than stores with more than fifty stores, but not significantly lower than stores in groups of less than 50.

Table 9.1 Store Characteristics and Performance for Supercenter Stores and Other Supermarkets[1]

	Ownership Group Size		
	Up to 50 Stores	**More than Stores**	**Supercenter Stores**
NUMBER OF STORES IN THE PANEL	194	64	8
MARKET CHARACTERISTICS			
˙ Median Population Density (per sq. mi.)	75[a]	913[b]	328[b]
˙ Median Household Income ($/year)	46,590[a]	48,275[a]	46,989[a]
˙ Percent Located in an SMSA	43[a]	67[b]	75[b]
STORE CHARACTERISTICS			
˙ Median Selling Area (sq. ft.)	16,000[a]	40,000[b]	174,500[c]
˙ Median Weekly Sales ($)	110,805[a]	350,000[b]	1,200,000[a,b]
˙ Median Store Age (year)	32[b]	18[a]	15[a]
˙ Mean Ownership Group Size (stores)	6[a]	1,951[b]	2.703[c]
˙ Percent Wholesaler Supplied	95[b]	12[a]	13[a]
˙ Percent with Union Workforce	13[a]	51[b]	0[a]
MANAGEMENT SCORES (MEAN)			
˙ Supply Chain	37.8[a]	70.5[b]	68.1[b]
˙ Human Resources	36.8[a]	44.4[b]	47.5[b]
˙ Food Handling	88.9[a]	92.9[b]	97.8[b]
˙ Environmental Practices	54.5[a]	76.1[b]	83.3[b]
˙ Quality Assurance	48.1[a]	73.0[b]	83.8[b]
˙ Service Offerings	38.4[a]	43.8[b]	40.9[a,b]
COMPETITIVE POSITION (PERCENT)			
˙ Price Leader	14[a]	37[b]	67[c]
˙ Quality Leader	74[b]	76[b]	50[a]
˙ Service Leader	75[a]	70[a]	83[a]
˙ Variety Leader	27[a]	51[b]	67[b]
PERFORMANCE MEASURES (Median)			
˙ Weekly Sales per Square Foot of Selling Area ($)	7.33[a]	9.75[b]	8.99[a,b]
˙ Sales per Labor Hour ($)	101.47[a]	126.26[b]	128.64[a,b]
˙ Sales per Transaction ($)	19.87[a]	27.85[b]	33.60[a,b]
˙ Annual Inventory Turns	15.0[a]	17.0[a]	11.0[a]
˙ Percentage Employee Turnover	26.0[a]	29.0[a]	18.0[a]
˙ Gross Profit as a Percent of Sales	25.0[a]	25.5[a]	23.5[a]
˙ Payroll as a Percent of Sales	10.5[b]	9.2[a]	8.0[a,b]
˙ Annual Percentage Sales Growth	1.7[a]	2.5[a]	0[a]

[1]Superscripted letters indicate significant differences at the 0.10 level.

Shifting attention to the six management practice scores, supercenter stores have significantly higher

scores in most management practices, except service offerings management, than stores in ownership groups with up to fifty stores. On the other hand, the difference in those practices for stores in larger ownership groups and the supercenter stores is not statistically significant. Supercenters are more likely to identify themselves as price and variety leaders. Finally, focusing on the operating performance measures, supercenter stores do not show any significant difference from other stores.

Table 9.2 presents more detailed information on human resource management for the three groups of stores. We find supercenter stores rely on full-time employees for much higher percentages of total employees and their total labor hours. They experience lower turnover among their full-time employees and higher turnover among their part-time employees. Weekly labor hours per 1,000 square feet for supercenter stores are almost identical to those for stores in smaller ownership groups, but are more than for stores in groups with more than fifty stores. All practice measures for supercenter stores, however, are not significantly different from either group of stores. In the 2002 and 2003 Panels, supercenter stores had significantly higher percentages of labor hours by full-time employees and significantly less labor hours per 1,000 square feet in their stores.

Table 9.2 Median Human Resource Practice Measures for Supercenter Stores and Other Supermarkets[1]

	Ownership Group Size		
	Up to 50 Stores	**More than 50 Stores**	**Supercenter Stores**
` Percent Full-Time Employees	40.4[a]	34.3[a]	64.2[a]
` Percent of Labor Hours by Full-Time Employees	55.2[b]	51.2[a]	69.2[a,b]
` Percentage Full-Time Employee Turnover	10.0[a]	9.0[a]	1.0[a]
` Percentage Part-Time Employee Turnover	38.0[a]	40.0[a]	54.0[a]
` Weekly Labor Hours per 1,000 Square Feet of Selling Area	81.3[b]	66.0[a]	77.5[a,b]

[1]Superscripted letters indicate significant differences at the 0.10 level.

Supercenter Competition

Stores that participated in the 2007 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.

Approximately 40% of stores in the 2007 Panel recognize significant competition from a supercenter, compared to about half of the stores in the 2002 and 2003 Panels. Stores in the two groups are not statistically different in most store characteristics and performance levels, though stores reporting supercenter competition have a significantly larger median selling area. This is similar to the results in the 2003 Panel, while the 2002 Panel showed that stores reporting supercenter competition had significantly lower sales per square foot of selling area and sales growth.

Table 9.3 Store Characteristics and Performance for Stores Grouped by Competition with Supercenters[1]

	No Supercenter Competition	Supercenter Competition
NUMBER OF STORES IN THE PANEL	131	87
STORE CHARACTERISTICS		
、Median Selling Area (sq. ft.)	20,000	29,000*
、Mean Ownership Group Size (stores)	682	733
、Median Household Income ($/year)	47,809	46,580
、Percent Located in an SMSA	53	52
STORE PERFORMANCE LEVELS (Median)		
、Weekly Sales per Square Foot of Selling Area ($)	8.19	8.40
、Sales per Labor Hour ($)	112.28	108.24
、Percentage Employee Turnover	25.5	27.0
、Payroll as a Percent of Sales	10.1	10.0
、Annual Percentage Sales Growth	2.1	1.2

*Difference is statistically significant at the 0.10 level.

CHAPTER 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. Replicating the analysis from the 2001 *Annual Report*, we identify stores that have above the median levels for each of the three key

performance measures: weekly sales per square foot, sales per labor hour, and annual percentage sales growth. Of the 270 stores in the 2007 Panel, 26 stores or 9.6% meet this criterion, in comparison to 6.2% of the stores in the 2002 Panel and 10.7% of the stores in the 2003 Panel. These outstanding stores come from all five ownership group size categories, all formats except the hard discounter, 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.

The smaller ownership group size category has eleven top stores, while the larger ownership group size category has fifteen top stores. Within the smaller group size category, top stores are more likely to be located in areas with a higher population density and household income. They have higher weekly sales and belong to larger ownership groups. They tend to be newer, larger and more likely to have a union workforce. Within the larger ownership group size category, top stores are newer and more likely to be located in a metropolitan area SMSA with higher household income and much higher population density. They have higher weekly sales and are more likely to have a union workforce

For both ownership group size categories, top stores have generally higher management practice scores, suggesting there is a positive relationship between store level management practice scores and three key performance measures. This finding is different from those in the 2002 and 2003 Panel. Looking at the mean scores across the two ownership group size categories, we see scores in the larger groups have considerably higher scores on business practices and quality assurance practices. This pattern is consistent with the 2002 and 2003 Panels.

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. Top stores for both ownership groups also have better performance on sales per transaction and annual inventory turns. In addition, top stores in larger groups outperform regular stores on gross profit as a percent of sales.

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**
NUMBER OF STORES IN THE PANEL	167	11	77	15
MARKET CHARACTERISTICS				
˙ Median Population Density (per sq. mi.)	75	85	714	1,674
˙ Median Household Income ($/year)	46,534	55,218	48,150	53,830
˙ Percent Located in an SMSA	43	45	64	87
STORE CHARACTERISTICS				
˙ Median Store Age (year)	32	28	17	14
˙ Mean Ownership Group Size (stores)	6	10	2,043	2,008
˙ Median Weekly Sales ($)	107,000	246,000	345,000	635,000
˙ Median Selling Area (sq. ft.)	16,000	18,000	45,000	40,000
STORE CHARACTERISTICS (Percentages)				
˙ Wholesaler Supplied	95	91	10	13
˙ Union Workforce	12	20	41	79
MANAGEMENT SCORES (MEAN)				
˙ Business Practices	37.4	43.5	69.5	77.6
˙ Human Resources	36.6	39.4	43.6	48.7
˙ Food Handling	88.7	92.7	92.9	94.5
˙ Environmental Practices	53.9	65.2	74.7	87.8
˙ Quality Assurance	47.6	60.7	72.4	80.4
˙ Service Offerings	38.2	40.0	41.7	52.7
PERFORMANCE MEASURES (Median)				
˙ Weekly Sales per Square Foot of Selling Area ($)	7.10	11.61	8.75	11.53
˙ Sales per Labor Hour ($)	99.98	137.68	123.53	152.26
˙ Sales per Transaction ($)	19.36	27.47	28.25	30.85
˙ Annual Inventory Turns	14.5	17.0	16.0	19.5
˙ Percentage Employee Turnover	25.5	26.0	28.0	30.5
˙ Gross Profit as a Percent of Sales	25.0	24.0	24.5	30.0
˙ Payroll as a Percent of Sales	10.5	10.1	9.0	9.6
˙ Annual Percentage Sales Growth	1.2	4.1	1.2	6.4

Comparing top stores in the two ownership group size categories, stores in larger groups have slightly better performance for every measure except sales per square foot and employee turnover. 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 confirm that most store level management practices, especially, business practices and environmental practices are closely linked to superior performance for stores in both ownership groups. For market characteristics, stores located in a Standard Metropolitan Statistical Area (SMSA) are more closely linked to better performance for the larger ownership group. Most store characteristics except union work force, however, are not strongly related with performance.

CHAPTER 11: CHARACTERISTICS OF OWNERSHIP CHANGED STORES

In more recent years, the increasing degree of competition to satisfy various customers' interests, continues to bring about mergers, acquisitions, and other types of ownership changes in the supermarket industry. As observed in the acquisition of Albertsons, the nation's third-largest supermarket company, by SUPERVALU, Inc. in 2006, bigger group size with many store chains is not always better in the food retailing business. The supermarket industry has many unique competitive characteristics in addition to price competition. Specialty grocers, supercenter store format, upscale grocers, and regional banners have been considered important competitive business strategies by supermarket industry analysts and business managers. Results show that store-level customer services and quality assurance practices are more important for sales growth in each store level than any other industries.

The 2007 Supermarket Panel observed ownership changes of the stores between 2002 and 2007 based on the both Panels, and compares store characteristics and performance among the stores. Ownership changes include mergers and acquisitions and all other types of changes. In addition, closed stores are considered their own group and their characteristics are compared with the other two groups: ownership changed and unchanged groups.

Table 11.1 shows the distribution of store group size, store format, and region for the 2002 Panel stores grouped by ownership changes. Among 866 stores in the 2002 Panel, 112 stores experienced ownership changes and 132 stores closed between 2002 and 2007. On average, stores in larger groups are more likely to be ownership changed rather than closed, compared with independent stores (group size with less than 11 stores). Specifically, 30% of the stores in ownership groups with up to 750 stores in the 2002 Panel experienced ownership changes while 22% of single stores in the Panel closed.

Shifting attention to store format[3], super warehouse and supercenter/hypermarket stores are more likely to stay unchanged in their ownership. On the other hand, 50% of superstores experienced ownership changes or closed by the time the 2007 Panel was conducted. Differences in the regional distribution for ownership changes are relatively small, though a higher percent of stores located in the Western region changed their ownership as compared to stores in the other regions.

Table 11.2 presents store characteristics and performance for the 2002 Panel stores grouped by ownership changes between 2002 and 2007. Overall, it is evident that most characteristics and performance measures of the closed stores are significantly different from the other two groups, while there is no notable difference between unchanged and changed groups. Closed stores are significantly older, smaller, more likely to be wholesaler supplied, and less likely to be located in a metropolitan area at the 0.10 confidence level. Their weekly sales are much lower than the other two groups. It is noteworthy that mean ownership group size for ownership-changed stores is significantly larger than for unchanged stores. Consequently, the 2007 Panel finds there have been several remarkable large company-level merging and acquisition activities since 2002 and many stores in larger groups in the 2002 Panel were part of the companies.

Turning to management and performance measures, most scores and measures of the closed stores are consistently lower than those of the other two groups. Management scores showed ownership-changed stores have significantly higher supply chain and quality assurance scores. This is mostly attributable to larger mean ownership group size of ownership-changed stores, since stores in larger group size categories tend to have much higher supply chain and quality assurance scores. Stores where ownership was unchanged are more likely to be price leaders, while stores with changed ownership are more likely to be variety leaders.

[3] See the 2003 store format definition in Table 2.3: Conventional, Superstore, Food/Drug Combination, Warehouse, Super warehouse, and Supercenter/Hypermarket.

Table 11.1 Distribution of the 2002 Panel for Stores Grouped by Ownership Changes

	Ownership Changes					
	Unchanged	**(%)***	**Changed**	**(%)**	**Closed**	**(%)**
NUMBER OF STORES REPRESENTED	622		112		132	
NUMBER OF STORES BY GROUP SIZE						
、Single Store	185	(70)	21	(8)	59	(22)
、2-10 Store	117	(67)	24	(14)	34	(19)
、11-50 Store	75	(84)	9	(10)	5	(6)
、51-750 Store	193	(79)	30	(12)	20	(8)
、>750 Store	52	(55)	28	(30)	14	(15)
NUMBER OF STORES BY FORMAT						
、Conventional	381	(70)	63	(12)	101	(18)
、Superstore	17	(50)	9	(26)	8	(24)
、Food/Drug Combination	149	(74)	36	(18)	16	(8)
、Warehouse	23	(77)	2	(7)	5	(16)
、Super Warehouse	39	(95)	2	(5)	-	(-)
、Supercenter/Hypermarket	13	(87)	-	(-)	2	(13)
NUMBER OF STORES BY REGION						
、Northeast	112	(79)	14	(10)	16	(11)
、South	110	(66)	27	(16)	30	(18)
、Midwest	321	(74)	43	(10)	67	(16)
、West	79	(64)	26	(21)	19	(15)

* % is the percent of each group stores grouped by store group size, format, and region

Table 11.2 Store Characteristics and Performance for the 2002 Panel Stores Grouped by Ownership Changes[1]

	Ownership Changes		
	Unchanged	**Changed**	**Closed**
NUMBER OF STORES REPRESENTED	622	112	132
MARKET CHARACTERISTICS			
˙ Median Population Density (per sq. mi.)	257[b]	332[b]	116[a]
˙ Median Household Income ($/year)	44,795[b]	43,766[b]	42,334[a]
˙ Percent Located in an SMSA	62[b]	65[b]	48[a]
STORE CHARACTERISTICS			
˙ Median Selling Area (sq. ft.)	25,000[b]	29,000[b]	12,000[a]
˙ Median Weekly Sales ($)	170,400[b]	171,954[b]	62,068[a]
˙ Median Store Age (year)	22[a]	22[a]	32[b]
˙ Mean Ownership Group Size (stores)	278[a]	513[b]	249[a]
˙ Percent Wholesaler Supplied	59[b]	46[a]	76[c]
˙ Percent with Union Workforce	27[b]	26[b]	17[a]
MANAGEMENT SCORES (MEAN)			
˙ Supply Chain	52.4[b]	57.4[c]	43.4[a]
˙ Human Resources	38.1[b]	37.1[b]	35.2[a]
˙ Food Handling	85.5[a]	86.1[a]	84.4[a]
˙ Environmental Practices	64.9[b]	63.4[b]	55.3[a]
˙ Quality Assurance	57.7[b]	61.1[c]	53.0[a]
˙ Service Offerings	39.0[b]	40.8[b]	33.3[a]
COMPETITIVE POSITION (PERCENT)			
˙ Price Leader	32[b]	26[a]	23[a]
˙ Quality Leader	68[b]	65[b]	57[a]
˙ Service Leader	66[a]	66[a]	59[a]
˙ Variety Leader	29[b]	37[c]	23[a]
PERFORMANCE MEASURES (Median)			
˙ Weekly Sales per Square Foot of Selling Area ($)	7.52[b]	6.21[a]	5.83[a]
˙ Sales per Labor Hour ($)	105.72[b]	114.71[b]	97.50[a]
˙ Sales per Transaction ($)	19.77[b]	20.57[b]	15.01[a]
˙ Annual Inventory Turns	18.0[b]	13.0[a]	13.0[a]
˙ Percentage Employee Turnover	42.1[a]	41.7[a]	40.8[a]
˙ Gross Profit as a Percent of Sales	24.0[b]	24.5[b]	23.0[a]
˙ Payroll as a Percent of Sales	10.0[a]	10.0[a]	10.0[a]
˙ Annual Percentage Sales Growth	2.0[b]	0.0[a]	0.0[a]

[1]Superscripted letters indicate significant differences at the 0.10 level.

Median performance measures are generally higher for unchanged stores compared with changed

stores, showing significantly higher weekly sales per square foot of selling area, annual inventory turns, and annual percentage sales growth. The sales per labor hour measure is slightly higher for ownership changed stores, but not significant at the 0.10 level. The other performance measures are very similar to each other.

To observe whether ownership-changed stores improve their management practice and performance measures after the change event, as compared to unchanged stores, Table 11.3 compares the management scores, competitive position, and performance measures for the 145 stores that participated in both the 2002 and 2007 Panel. Among the 145 stores, two stores closed after participating the 2007 Panel. The two stores showed much lower performance measures in 2007 compared with their 2002 measures. They are not reported to preserve confidentiality.

Table 11.3 Store Performance for the 2002 and 2007 Panel Stores Grouped by Ownership Changes

	Ownership Changes			
	Unchanged		Changed	
	2002	2007	2002	2007
NUMBER OF STORES REPRESENTED	130	130	13	13
MANAGEMENT SCORES (MEAN)				
˙ Supply Chain (Business Practices for 2007)	46.2	44.4	68.9	67.5
˙ Human Resources	37.1	37.4	39.2	36.9
˙ Food Handling	89.3	91.1	87.5	92.6*
˙ Environmental Practices	61.9*	57.3	81.8	78.2
˙ Quality Assurance	59.9*	53.6	66.9	70.6
˙ Service Offerings	38.2	38.7	48.1	50.3
COMPETITIVE POSITION (PERCENT)				
˙ Price Leader	28*	13	33*	17
˙ Quality Leader	73	76	100	92
˙ Service Leader	66	69	83	83
˙ Variety Leader	26	27	50	75*
PERFORMANCE MEASURES (Mean)				
˙ Weekly Sales per Square Foot of Selling Area ($)	8.44	8.80	8.17*	6.94
˙ Sales per Labor Hour ($)	159.38	107.68	114.76	128.86*
˙ Sales per Transaction ($)	19.45	22.24*	23.97	27.80*
˙ Gross Profit as a Percent of Sales	22.6	22.8	22.0	28.2*
˙ Payroll as a Percent of Sales	11.2	11.5	10.3	9.2*
˙ Annual Percentage Sales Growth	1.0	3.9*	1.0	3.8

*Difference is statistically significant at the 0.10 level.

In Table 11.3, most management scores and competitive positions have not significantly changed between 2002 and 2007 for both unchanged and changed stores. Ownership-changed stores, however, show a significantly improved food handling score while unchanged stores show significantly lower environmental practices and quality assurance scores in the 2007 Panel. For competitive position measures, the percent of variety leader measure was significantly improved for ownership changed stores, but the percent of price leader measure became lower in 2007 for both unchanged and changed stores. Performance measures are compared by mean values rather than median values in order to capture any significant performance changes for individual store. Most key performance measures, such as sales per labor hour, sales per transaction, gross profit as a percent of sales, and payroll as a percent of sales, significantly improved for ownership-changed stores. Unchanged stores show significant improvements in sales per transaction and annual percentage sales growth. Annual percentage sales growth was also highly improved for ownership-changed stores, but not statistically significant due to the small number of sample responses. On the other hand, the sales per square foot of selling area became lower for the ownership-changed stores. It is important to note the number of stores, especially the ownership-changed stores, is a small part of the sample, so it is difficult to conclude that ownership-changed stores are significantly improved in their performances.

A Closer Look at the Relationship between Ownership Changes and Productivity

From an economic point of view, whether ownership changes are more desirable at the company or industry level depends on whether the changes increase productivity. Therefore, many studies have examined the productivity effects of ownership changes in various industries since mid-1980's. The supermarket industry is differentiated from other manufacturing and service industries in that there are various ownership group sizes with many different banners under the same parent company, unique store formats and business strategies. Adding to the complexity, store ownership changes happened at different levels – individual store, regional, banner, or whole company level – for various reasons.

This section presents findings from the relationship between ownership changes and productivity using a more robust statistical regression analysis of the ownership changes. Specifically, we focus on the two questions:

1. Are stores with relatively low productivity more likely to experience an ownership change than those with relatively high productivity? Are there any other store characteristics affecting ownership changes?
2. Do stores that changed ownership experience productivity improvement after the change compared with stores that had no ownership changes? What other store characteristics contribute the productivity improvement?

Both labor productivity and multifactor productivity are measured for the 2002 and 2007 Panel stores. Labor productivity is one of the most popular productivity measurements in labor intensive industries like the supermarket industry. Labor productivity is measured as weekly sales per labor hour. Here, multifactor productivity is compared with labor productivity. Multifactor productivity is calculated based on two inputs: weekly total labor hours for labor factor and store selling area for capital factor. Store selling area is a good – though not perfect – measure of the capital used in a retail operation, since store energy costs and other major capital inputs such as refrigeration, shelving cases, and front-end checkout equipment are highly correlated with store selling area.

In the first question, the status of ownership changes. A multinomial- variable is set to one if the store has experienced ownership change, two if the store has closed, and zero if ownership was unchanged between 2002 and 2007, and is regressed on independent variables from the 2002 Panel. The result is then grouped into the four categories of potential ownership change drivers:

1. **Market Characteristics** include population density, 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.

2. **Store Characteristics** include store selling area, store age as the number of years since the store 1st operated under its current name, ownership group size, a binary variable that is set to one if the store is part of a self-distributing group and zero otherwise, a binary variable that is set to one if the store has a union workforce and zero otherwise, a binary variable that is set to one if the store is part of a store format of warehouse, super warehouse or supercenter/hypermarket and zero otherwise, and a binary variable that is set to one if the store has remodeled in recent years and zero otherwise.

3. **Management Practices** are summarized by the store's six management scores: supply chain (business practices for the 2007 Panel), human resources, food handling, environmental practices, quality assurance, and service offerings.

4. **Performance Measures** are represented by labor productivity and multifactor productivity as explained above.

The second question regresses the difference of productivity between 2002 and 2007 on several independent variables from the market and store characteristics, initial productivity in 2002, and the status of ownership changes between 2002 and 2007.

Various regression models including alternative independent variables from each of the four categories were estimated for the two questions. Some independent variables were correlated with other variables in the same category. Some variables had many invalid or missing responses, reducing the number of observations. Most independent variables in the management practices category did not explain the ownership changes significantly.

Table 11.4 presents the qualitative regression results finding the significant independent variables in the 2002 Panel for ownership changes between 2002 and 2007. Only the best model with selected independent variables is reported, due to the correlation among variables and reasonable number of stores with no missing values. Each regression equation has two columns for the two different ownership changes, *ownership changed* and *closed*, with *no ownership change* as base outcome. Each explanatory or independent variable is associated with a table row. The same model was regressed for all stores, stores in the larger selling area group, and stores in the smaller selling area group and was based on the median selling area of 23,000 square feet in the 2002 Panel in order to better assess the impact of explanatory variables on ownership changes. The three regression results are associated with first two columns, next two columns, and final two columns respectively. 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 variable to indicate the sign of the coefficient. One plus (+) or minus (-) indicates statistical significance at the 90% confidence level. For example, the relationship between total labor hours and ownership change for all stores is negative and statistically significant at the 95% level, indicated by two minuses in the cell at the intersection for the row and column for these variables.

The first regression results for all stores show there is a statistically significant, negative relationship between store closure and its labor productivity, implying stores with low initial productivity are more likely to be closed. This result is consistent with findings in Table 11.2 showing median sales per labor hour is significantly lower for closed stores compared to unchanged stores. On the other hand, labor productivity does not have any significant relationship with ownership change, a result that is inconsistent with the test result in Table 11.2. Total labor hours, which is included to control for the effect of store size on ownership change, has a significantly negative relationship with both ownership change and close. This result implies larger stores with more total labor hours are less likely to be ownership-changed or closed. The ownership group size shows a significantly positive relationship with both ownership change and close. The positive relationship between ownership change and group size was also found in Table 11.2, reflecting that many stores in larger groups in the 2002 Panel were involved in merging and acquisition since 2002. Store age has a significantly negative relationship with ownership change, but not with closed stores. There is a statistically significant, positive relationship between ownership change and the category of a store format of warehouse, super warehouse or supercenter/hypermarket. Store location in a metropolitan area is not significantly

related with ownership change or close. Multifactor productivity as an alternative measure to labor productivity was not significantly different in explaining ownership changes.

Table 11.4 Qualitative results for Regression of Ownership Change for All Stores and Stores in Two Different Groups of Selling Area[1]

	All Stores		Stores with Larger Selling Area		Stores with Smaller Selling Area	
Explanatory Variable	**Changed**	**Closed**	**Changed**	**Closed**	**Changed**	**Closed**
、Labor Productivity		--				--
、Total Labor Hours	--	--				--
、Ownership Group Size	++	++	+	++		++
、Store Age	--		--			
、Binary Variable for Format[2]		++		++		
、SMSA					++	

[1] 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 significant at the 90% confidence level.

[2] A binary variable that is set to one if the store is part of a store format of warehouse, super warehouse or supercenter/hypermarket and zero otherwise.

The second regression results for stores in the larger selling area group, show that labor productivity no longer has a significant relationship with store closure and ownership change. One possible explanation is stores with large selling areas are difficult to sell or close due to capital accumulation, even when they show low labor productivity. Total labor hours, a variable representing store size, does not show any significant impact on ownership change and closure. The only significant variable for both ownership change and closure is ownership group size, implying that larger stores are more likely to change ownership or be closed by whole company-level activities, rather than store-level productivity or characteristics. In the third regression for smaller stores, labor productivity, total labor hours, and group size are significantly related with store closure with the same sign as the first regression, while neither is significantly related with ownership change. This finding suggests that smaller stores with lower productivity in the smaller group are more likely to be closed. Ownership changes for small stores, however, are not related to store-level productivity or characteristics. It is interesting that small stores located in SMSA are more likely change ownership.

Table 11.5 shows the regression results for stores in the larger ownership group and stores in the

smaller ownership group The regression results for stores in the larger ownership group reported in the first and second column, show group size has a significantly positive relationship with both ownership change and closure, reflecting that many stores were involved in bigger company-level merging and acquisition activities since 2002. Total labor hours have a significantly negative relationship with ownership change and closure, suggesting that larger stores are less likely to change ownership or close in the larger ownership group. It is also interesting that large group stores located in SMSA are less likely to be closed. The regression results for independent stores reported in the third and fourth column show that ownership group size is not a significant factor for ownership change or closure, suggesting that ownership changes of stores in smaller ownership groups are not significantly related to company-level ownership activities. Furthermore, we can reasonably assume that independent stores with lower labor productivity and small labor hours are more likely to be closed. Only store age has a significant relationship with ownership change for independent stores, implying the longer a store is under the same ownership, the less likely there is an ownership change. The regression results for ownership changes for independent stores suggests there could be various reasons for ownership change such as owner's family issues or other external variables not captured at the store level.

Table 11.5 Qualitative Results for Regression of Ownership Change for Stores in Two Different Ownership Group Sizes

	Stores in Larger Ownership Group Sizes		Stores in Smaller Ownership Group Sizes	
Explanatory Variable	**Changed**	**Closed**	**Changed**	**Closed**
、Labor Productivity				--
、Total Labor Hours	--	-		--
、Ownership Group Size	+	++		
、Store Age			-	
、Binary Variable for Format[1]		++		
、SMSA		--		

[1] A binary variable that is set to one if the store is part of a store format of warehouse, super warehouse or supercenter/hypermarket and zero otherwise.

Table 11.6 shows regression results finding the significant independent variables for productivity improvement based on the 145 stores that participated in both the 2002 and 2007 Panel. The first column reports the regression result of labor productivity change on some selected independent variables. There is a significantly negative relationship between initial labor productivity and productivity change, implying that stores with lower levels of labor productivity in 2002 are more

likely to experience labor productivity improvement in 2007. It is noteworthy that a change in distribution system from wholesaler to self-distribution between 2002 and 2007, has a significantly positive relationship on labor productivity. Meaning self-distribution systems with their own distribution centers have improved labor productivity between 2002 and 2007. Ownership change between 2002 and 2007, however, has no significant relationship with labor productivity change during the period. This finding is contrary to the finding in Table 11.3 showing mean sales per labor hour has been significantly increased for the stores that experienced ownership change. The second regression model showing the change in multifactor productivity listed in the second column, shows the same result as in the first regression of labor productivity change. There is no significant relationship found between ownership change and productivity growth. As mentioned above, however, the number of continuing Panel stores is not yet large enough for a meaningful analysis of the second question regarding relationship between store ownership change and its productivity improvement.

Table 11.6 Qualitative Results for Regression of Productivity Change for Stores that Participated in Both the 2002 and 2007 Panel

Explanatory Variable	Labor Productivity Change	Multifactor Productivity Change
、Ownership Change between 2002 and 2007		
、Initial Productivity in 2002	--	--
、Distribution system change between 2002 and 2007 (from wholesaler to self-distribution)	+	+
、Store age in 2002	-	-
、Remodeling between 2002 and 2007		
、SMSA		

Summary

Closed stores are generally inferior to surviving stores regardless of ownership changes across most store characteristics and performance measures, as observed in Table 11.2. The differences between ownership-changed stores and unchanged stores are small, implying ownership changes depend on various reasons. It is notable that ownership-changed stores are part of larger store groups and less likely to be wholesaler supplied compared to unchanged stores in the 2002 Panel. This finding reflects that many stores in larger groups in the Panel were part of companies involved in company-level merging and acquisitions since 2002. Some selected regression results show store level productivity has a significantly negative relationship with store closure, not with ownership change. Total labor hours and ownership group size are significantly related to both ownership change and closure. In the

same regression for stores in two different groups of selling area and two different groups of ownership group sizes, ownership changes of larger stores or larger ownership group stores depend on company-level ownership change activities rather than store level performance or characteristics. For smaller stores and independent stores, there is a significant relationship between store close and store-level characteristics such as labor productivity and total labor hours. However, ownership change for smaller and independent stores does not have a significant relationship with store-level productivity, total labor hours, and ownership group size, implying that various implicit factors affect their ownership changes. Finally, the relationship between ownership change and productivity change is mixed based on the stores that participated in both the 2002 and 2007 Panel. Ownership-changed stores show significantly improved labor productivity as observed in sales per labor hour in Table 11.3, while the regression analysis did not.