

A WAL-MART ANCHOR AS A REPOSITIONING STRATEGY FOR SUBURBAN MALLS: *Cross-Shopping and Impact on Image, Consideration and Choice*

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Overview

Over recent years commentators have begun to question the long term future of the suburban shopping mall, in particular challenging the prospects for survival of the less successful "B" and "C" malls in a market. Mindful of such predictions, there is clearly considerable interest in strategies that might revive the fortunes of such malls in mature markets. At the same time, mergers and bankruptcies amongst department store chains have forced mall managers to consider new types of anchors for their centers. The 1994 entry of Wal-Mart into the Canadian market through the acquisition of the Canadian Woolco stores provided a unique opportunity to examine the effects of relocating Wal-Mart's highly successful free standing discount concept in a suburban shopping mall. Because center image and patronage data had been collected in Edmonton prior to the Wal-Mart entry (Finn and Louviere, 1996), a unique opportunity existed to estimate the impact of introducing Wal-Marts on the image and patronage levels of suburban shopping centers.

To maximize comparability with the earlier data, a similar data collection procedure and similar questions were used in a 1996 mail survey of a stratified sample of City of Edmonton households, which obtained 578 reasonably complete responses. The results of the study confirmed (i) that Wal-Mart was perceived more favorably than other discounters; (ii) found more of the shoppers attracted to a Wal-Mart exhibited high lev-

els of cross-shopping within the center, and had above average spending; but (iii) found the presence of a Wal-Mart did not significantly improve the overall attractiveness of a center when consumers were shopping for apparel for themselves or members of their household.



■ Introduction

Over recent years commentators have begun to question the long term future of the suburban shopping mall, in particular challenging the prospects for survival of the less successful "B" and "C" malls in a market. In view of such predictions, there is clearly considerable interest in finding strategies that might revive the fortunes of such malls, and for determining the success of strategies used to try to reposition such malls in mature markets. At the same time, the spate of department store takeovers of the late 1980s and bankruptcies of the early 1990s have forced mall managers to consider new types of anchor stores for their centers. Thus, there has been renewed interest in the impact of alternative types of anchor stores on the image and patronage levels attracted to shopping centers.

The 1994 entry of Wal-Mart into the Canadian market through the acquisition of the Canadian Woolco stores provided a unique opportunity to examine the effects of relocating Wal-Mart's highly successful free standing discount concept in a suburban shopping mall. Many of the Canadian Woolco stores were located in suburban malls which were known to be weaker competitors in their market. Thus, in cities like Edmonton, where center image and patronage data were collected prior to the Wal-Mart entry (Finn and Louviere, 1996), there was a unique opportunity to collect similar post entry data, and estimate the impact of Wal-Mart on the image and patronage levels attracted to suburban shopping centers. Such a study could also examine the impact on cross-shopping patterns, within and between centers. In the Edmonton market, Wal-Mart acquired four large Woolco anchor stores (approximately 140,000 square feet) located in suburban shopping centers, and all were refitted and restocked as Wal-Marts by fall 1994.

■ Research Problem

The research objective was to determine the impact of the introduction of Wal-Mart stores as anchors on cross-shopping patterns within and between centers, and on aggregate level consumer perceptions of struggling suburban shopping centers; and through the impact of those perceptions, the contribution to aggregate measures of patronage, such as the aggregate consideration and share of choice. Wal-Mart provided an interesting case because (i) it has a reputation for providing far higher levels of service than are normally expected of discount stores, and (ii) while it has long been a very successful retailer, generally it has entered new markets using free standing stores rather than by locating in existing suburban shopping centers.

The data collected to help understand the Wal-Mart impact were: (i) evaluations of Wal-Mart and other major anchor stores now operating in the market, to confirm whether Wal-Mart was in fact perceived differently from the other discount department stores; (ii) behavioral data on respondents' most recent trip including shopping at a discount department store and most recent trip including shopping at a major department store, to estimate differences in cross-shopping within a center and elsewhere within the city; and (iii) updated data on shopping center image, consideration and choice when shopping for apparel.

■ Brief Review of Pertinent Literature

Since Martineau (1958) defined store image as "the way in which the store is defined in the shopper's mind," considerable research has been devoted to shopping center image and its role in center patronage. Most published research has (i) collected data for a limited number of centers, (ii) taken the consumer as the unit of analysis, and (iii) investigated whether consumers who patronize a center have different perceptions from those who do not (e.g., Hauser and Koppleman, 1979; Nevin and Houston, 1980; Gautschi, 1981; and McGoldrick and Thompson, 1992).

However, from a shopping center manager's perspective, it would seem to be more useful to identify which center characteristics determine the differences in center image, and consequent differences in the levels of patronage of competitive shopping centers. Ghosh (1990) suggested that anchor stores impart some of their own image to the malls they anchor. However, there is surprisingly little research published on

the impact of particular anchor stores on overall shopping center image, patronage or related concepts.

Anderson (1985), who provides one notable exception, found the presence of a JC Penney or a Sears anchor store in a shopping center negatively influenced the sales per square foot and the profit per square foot for outlets of a specialty apparel store located in the center.

In a recent mall image study, Finn and Louviere (1996) used 1988, 1992 and 1993 waves of data on the image, consideration and choice measures of patronage for Edmonton shopping centers to obtain estimates of the impact of particular anchor stores (major and discount department stores) and other physical center characteristics on the overall image and patronage levels achieved by the centers. In particular, they found strong negative effects of Zellers, K-Mart, and Woolco, the discount department stores operating in the market, on favorable image dimensions such as "high quality", "good service" and "wide selection" when consumers were choosing a center to shop for apparel. Moreover, Woolco exhibited the strongest negative effects. The only compensating favorable effect for the discount department stores was on an image of "low prices." Eaton's, The Bay, Woodward's and Sears, the major department stores in the market, did not exhibit the same negative effects; rather, they exhibited inconsistent effects across chains and image dimensions. Thus, it is important to determine whether Wal-Mart has a differential effect from the other discount anchors or even—similar to the major department stores—contributes a positive effect on some image dimensions.

Moreover, to evaluate the value of the impact of a new anchor store on a center, it is necessary to estimate what proportion of the traffic attracted to the anchor store cross-shops within the same center, providing additional traffic flow within the center (Borgers and Timmermans, 1986), relative to the proportion that cross-shops at other centers during the same trip (ICSC Research Quarterly, 1994a, 1994b).

■ Method

The research took advantage of access to the Edmonton shopping center data collected in surveys conducted in 1988, in summer 1992, and fall 1993 (see Finn and Louviere, 1996), by collecting similar data for the perceptions, consideration and choice of shopping centers when consumers are shopping for an item of apparel for a member of their household. The takeover of the four Woolco stores and their conversion into Wal-Mart stores was one of the major changes in the market between 1993 and 1996. No new shopping centers were opened after the 1993

survey. However, a downtown department store that had been redeveloped into an enclosed shopping center closed, and several centers underwent renovations or changed other anchor stores as space created by the Woodwards bankruptcy was reoccupied.

To maximize comparability with the earlier surveys, similar questions and data collection procedures were used. The data were collected by mail survey, using a 12-page survey booklet sent to a systematic sample of 1,990 households drawn from the electronic *City Telephone Directory* (Sudman, 1976). However, to help ensure that the sample included sufficient respondents who would report on visits to a Wal-Mart store, the sample was stratified to include a disproportionately high number of households selected from neighborhoods surrounding each of the four Wal-Mart stores in the Edmonton area. Over-sampling was restricted to those postcodes directly adjacent to each of the centers including a Wal-Mart. Personalized cover letters and envelopes and a hand signed follow-up postcard were used to try to achieve a substantial response rate. The survey generated a total of 578 reasonably complete responses, for a response rate of 29% after taking into account a small number of nondeliverable surveys. To obtain estimates for the City of Edmonton population, individual responses were weighted to compensate for the stratification and for the differential response rates obtained from different areas of the city using postcode information.

As in the prior studies, center perceptions were measured by asking respondents to associate (yes, no) as many of nine attributes as they felt applied to each mall when shopping for clothing: (1) high quality, (2) wide selection, (3) good service, (4) low prices, (5) high prices, (6) latest fashions, (7) convenient location, (8) nice atmosphere and (9) good sales/bargains. Consideration was obtained by asking respondents to indicate which subset of the centers they would "seriously consider" when choosing places to shop for clothing for themselves or members of their household. Choice was obtained by asking respondents to indicate where they most recently shopped for clothing for themselves or a member of their household.

The survey also collected behavioral data on the respondent's most recent shopping trip which included a visit to a discount department store. Wal-Mart was one of three specific discount department stores operating in the market which was identified in the question. To provide a broader base of comparison when examining the cross-shopping patterns for Wal-Mart, a second question collected similar data on the most recent trip that included a visit to a major department store. Once again three specific department stores, namely The Bay, Eaton's and Sears, were identified. Both discount and major department store questions asked respondents to identify at which of the multiple locations they

shopped. Thus, respondents were asked to identify which one of the four Wal-Marts, four K-Marts or seven Zellers' stores they had visited most recently. They were also asked to provide details of all the other stores visited during the same shopping trip, whether at the same location or elsewhere in the city during the same trip. Stores where purchases were made were identified and the amount spent reported. Finally, evaluative perception data were collected for each of the major and discount department store chains in the city. The attributes used were the same ones used for the shopping centers; however, the questions were asked at a general level rather than specifically about clothes shopping.

■ Analysis

First, the comparative perception data for the anchor stores were examined to validate the assumption that Wal-Marts were evaluated more favorably than K-Marts and Zellers, the other discounters in the market, and by inference, the Woolco stores they replaced. Secondly, the data on the most recent shopping trips to a discount department store and to a major department store were used to assess the extent of cross-shopping both within the center and elsewhere in the city for the same shopping trip. Both the proportion of visitors reporting engaging in spending and cross-shopping and the average amounts spent were available. Because the latter data are quite skewed, the results for spending need to be treated cautiously; therefore, spending means are only reported for major breakdowns and are sometimes accompanied by medians, which tend to be more stable indicators of relative spending.

Finally, the impact of a Wal-Mart was obtained by combining the 1996 data for all the centers with the similar data from 1993, 1992 and 1988 to determine the effect of Wal-Mart as an anchor store, while controlling for changes in other center characteristics that had been shown to be related to center image or performance. This technique is preferred to a simple comparison of means over time because it adjusts for changes in other center variables. For example, there was a general drop in the number of specialty apparel stores located in shopping centres in Edmonton between 1993 and 1996, which previous research had shown influenced center image and patronage.

Aggregate level data were available for the percent association for nine attributes (six for 1988) and for percent consideration and percent most recent choice for each of the shopping center alternatives available on the four occasions. Also available were the anchor stores, square feet of leasable space (in millions), and number of specialty apparel retailers

in each center at the time of each survey. The major department stores with multiple anchors in the Edmonton market during the 1988-1996 period were Eaton's, The Bay, and Sears for all four surveys and Woodwards (only until 1992). The discount department stores with multiple anchors were Zellers and K-Mart for all four surveys, Woolco (until 1993) and Wal-Mart (after 1994).

To obtain a statistical estimate of the impact of a Wal-Mart anchor store on a center image dimension, multiple regressions were carried out using observations from the four sets of data. Prior work suggested between 70 and 90% of image item variance would be accounted for by such center characteristics as the identity of anchor stores. A consistent Wal-Mart effect would be identified by a significant regression coefficient. A differential Wal-Mart effect would be identified by a significant effect over and above the effect of the presence of a discounter. Image variables were also considered as explanations for consideration and choice measures of patronage across the four sets of data. Hierarchical regressions were used to determine whether any center tenant or physical characteristic, such as the presence of a Wal-Mart store, had additional effects on patronage over and above their effects through the image dimensions.

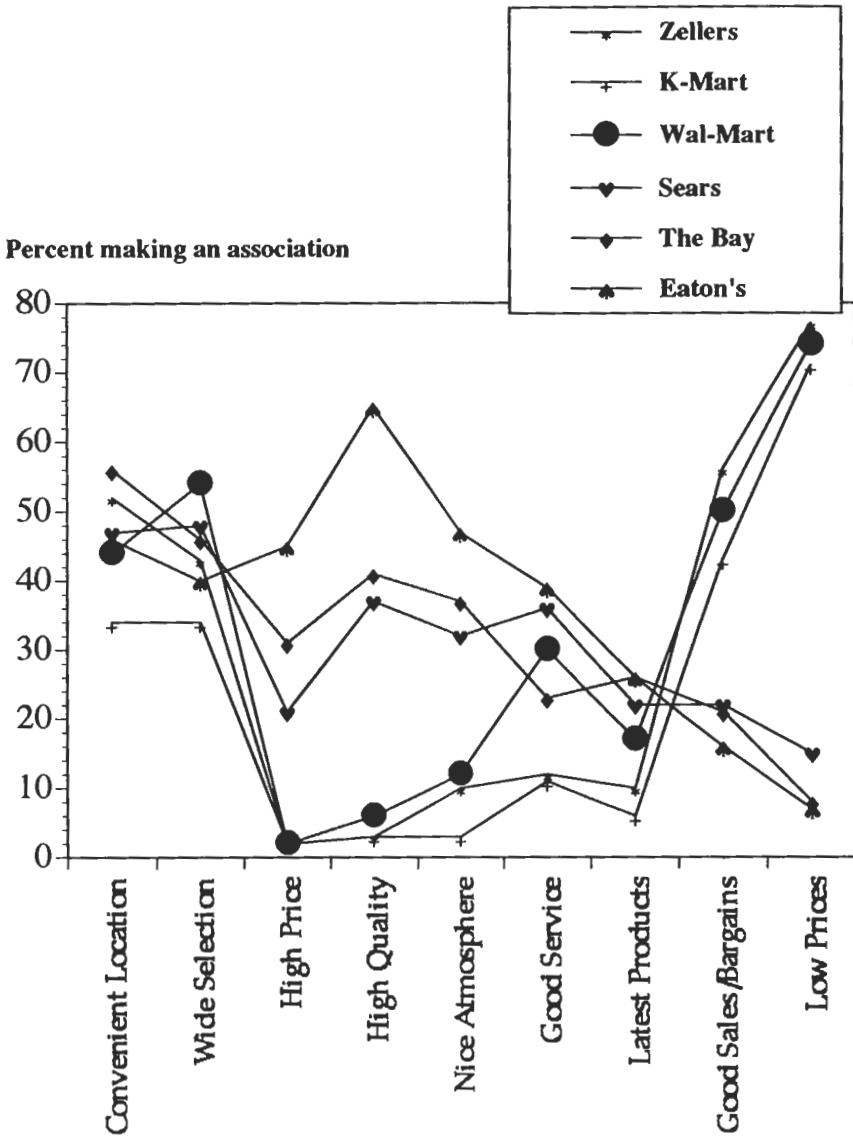
■ Results

Relative Perceptions of Wal-Mart

Figure 1 compares the proportion of respondents associating each of the six anchor stores with the nine attributes. As can be seen, the results for Wal-Mart (shown with bolder dots) are generally more consistent with those for the other discounters, Zellers and K-Mart, than with the pattern of results exhibited by the three major department stores. However, Wal-Mart is noticeably closer to the major department stores for good service and, to a lesser extent, for latest products. In addition, Wal-Mart is the anchor most strongly associated with a wide selection.

A comparison of the mean service quality ratings for the stores provided further evidence that Wal-Mart was seen as providing a quality of service more typical of a major department store than a discount department store. The service quality ratings on an 11 point scale from very poor to excellent were significantly better for Wal-Mart (5.67) than for The Bay (4.80), K-Mart (4.43) and Zellers (4.72), no different from Sears (5.82) and only significantly worse than for Eaton's (5.90). Thus there was some justification for moving on to see whether Wal-Mart was more similar to the major department stores than the discount department

Figure 1
Department Store Associations



stores in terms of the degree of cross-shopping and its effects on center image and use.

Extent of Cross-Shopping By Anchor Store Visited

Table 1 summarizes the results obtained from respondents' reports on their most recent trips to a major department store and to a discount department store. Whereas 63% of respondents reported making a purchase at the major department store they visited, 80% reported making a purchase at the discount store they visited. However, the average amount spent by those making a purchase at the major store (\$89, median \$50) was more than twice as much as the amount spent at the discount store (\$34, median \$25). Visits to Wal-Mart were the least like visits to the majors, as they had the highest proportion of reported purchases (84%), the smallest amount spent (\$30) at the anchor store.

Reported cross-shopping within the same shopping center was slightly higher for visits to the discounters (53%) than for visits to the majors (45%), with Wal-Mart visits (50%) falling in the middle of the range for the discounters. The only major with a higher cross-shopping rate than Wal-Mart was Eaton's (61%). The Wal-Mart cross-shoppers also reported spending significantly more (\$54) than did cross-shoppers from K-Mart (\$26) and Zellers (\$33). Once again, the only major whose cross-shoppers spent more within the center was Eaton's (\$63).

Reported levels of cross-shopping elsewhere in Edmonton on the same shopping occasion (multi-stop shopping), while not significantly different, were slightly higher for visits to the discounters (27%) than for visits to the majors (22%). The rate for Wal-Mart visits (28%) was the highest of any of the anchors in the study. The average amount spent elsewhere by the Wal-Mart multi-stop shoppers (\$109) was about the same as for the other anchor stores. The most notable spending difference was amongst the majors, where multi-stop shoppers from Eaton's reported spending far less (\$40) and those from Sears reported spending far more (\$230) elsewhere in the city.

Taking into account the proportion of visits to an anchor where spending occurred and the average amount spent, and the proportion and amount spent when cross-shopping, shopping trips that included a visit to Sears were associated with the greatest total amount of spending (\$145), followed by Eaton's (\$99) and then Wal-Mart (\$83). However, the proportion of the spending at other stores within the center was highest for Eaton's (38%) and then Wal-Mart (33%).

TABLE 1. COMPARATIVE DATA ON CROSS-SHOPPING BEHAVIOR

Most recent visit to a: Store visited:	Major Department Stores			Discount Department Stores			Sign.	Sign.
	All	The Bay	Eaton's	Sears	All	Wal-Mart		
At the department store								
Spent money (total)	63	63	63	64	80	84	78	75
At Super regional	% 60	% 60	% 57	% 61	% 77	% 83	—	71
At Regional	% 70	% 68	% 69	% 76	% 79	—	74	79
At Community	% —	% —	% —	% —	% 84	% 86	100	76
At Power center	% —	% —	% —	% —	% 81	% 81	—	81
Amount spent: Mean	\$ 89	\$ 74	\$ 83	\$ 111	\$ 34	\$ 30	\$ 53	\$ 32
Median	\$ 50				\$ 25			
Cross-shopped at stores within the Center								
Shopped at (total):	% 45	% 46	% 61	% 35	% 53	% 50	% 43	% 57
At Super regional	% 45	% 49	% 55	% 35	% 67	% 63	—	% 73
At Regional	% 49	% 40	% 67	% 34	% 39	—	39	47
At Community	% —	% —	% —	% —	% 52	% 47	72	54
At Power center	% —	% —	% —	% —	% 23	% 26	—	16
Amount spent: Mean	\$ 46	\$ 31	\$ 63	\$ 31	\$ 45	\$ 54	\$ 26	\$ 33
Median	\$ 17				\$ 30			
Cross-shopped at stores elsewhere in the city								
Shopped at: (total):	% 22	% 23	% 20	% 27	% 27	% 28	% 20	% 26
At Super regional	% 25	% 24	% 24	% 27	% 22	% 23	—	% 22
At Regional	% 20	% 21	% 15	% 27	% 25	% 0	15	32
At Community	% —	% —	% —	% —	% 28	% 28	51	21
At Power center	% —	% —	% —	% —	% 45	% 54	—	29
Amount spent: Mean	\$ 119	\$ 94	\$ 40	\$ 230	\$ 123	\$ 109	\$ 76	\$ 107
Median	\$ 39				\$ 40			
Total reported spending	\$ 103	\$ 82	\$ 99	\$ 145	\$ 85	\$ 83	\$ 79	\$ 71
Breakdown of spending								
Department store	% 54	% 57	% 54	% 49	% 32	% 30	% 52	% 34
Within the center	% 20	% 17	% 38	% 7	% 28	% 33	13	27
Elsewhere in the city	% 26	% 26	% 8	% 43	% 40	% 37	35	39

Significance *p < .05, **p < .01, ***p < .001

Cross-shopping by Type of Center

To help determine whether the spending and cross-shopping results reported above were dependent on the type of center in which an anchor store was located, the cross-shopping data were re-examined, grouping visits by the type of center. The center categories used were super-regional (centers with three or more major or discount department store anchors), regional (two major or discount department store anchors), community (enclosed with one department store anchor), and power center. The results for the proportions of visits involving spending and cross-shopping are also shown in Table 1.

For major department store visits, the proportion of visits including spending at the department store itself was slightly higher at the super-regionals (70%) than at the regional centers (60%). However, there were no significant differences in cross-shopping within the center or for cross-shopping elsewhere in the city for visits to majors in the two types of centers. For the discount department store visits, the proportion spending at the discounter itself was no different across types of centers. However, the proportion of visits involving cross-shopping within the center was highest for visits to discounters in super-regionals (67%), followed by community centers (51%), then regionals (39%), and finally power centers (23%) trailing far behind. In contrast, the proportion of visits which included cross-shopping elsewhere in the city was significantly higher for visits to a power center (45%) than for visits to all the other types of centers (24%).

As shown in Table 1, the proportion of cross-shopping was also broken out for each of the combinations of anchor chains and types of centers which occur in the Edmonton market. Two of the four Edmonton Wal-Marts were located in super-regionals in opposite corners of the city, with the others in a community and a power center. The pattern of cross-shopping at other stores within the center for Wal-Marts was fairly consistent with the results for discounters as a whole. For Wal-Mart, the highest level of cross-shopping within the center occurred for visits to super-regionals (63%), followed by visits to the community center (47%) and power center (26%), whereas cross-shopping elsewhere in the city was greatest for visits to the power center (54%).

Anchor Store Impact on Image

To determine the relationship between the center tenant variables and the center image, a separate multiple regression was carried out for each of the image items. For the six image variables which were included in the three wave analysis by Finn and Louviere (1996), the fourth data set

TABLE 2. IMPACT OF ANCHOR STORES ON CENTER PERCEPTIONS.

Center Characteristics	Center Perceptions									
	High Quality	Wide Selection	Good Service	Low Prices	High Prices	Latest Fashions	Nice Atmosphere	Good Sales Bargains	Convenient Location	
Department:										
Eaton's	4.25	2.67	0.86	-4.25	2.57	3.50	3.68	-1.56	1.29	
	1.73	1.17	0.47	-3.10	1.53	1.67	1.29	-0.87	0.54	
The Bay	0.76	4.40	1.45	3.13	-3.13	-0.76	-0.74	4.14	4.88	
	0.31	1.94	0.78	2.29	-1.86	-0.36	-0.26	2.30	2.05	
Woodwards	-2.66	-0.55	2.49	1.27	-4.43	-4.14	-1.01	3.66	3.39	
	-0.99	-0.22	1.22	0.84	-2.40	-1.80	-0.31	1.77	1.24	
Sears	-0.92	5.93	6.32	6.22	-5.61	-1.75	5.41	7.25	9.01	
	-0.36	2.52	3.29	4.37	-3.22	-0.81	1.80	3.82	3.60	
Discount:										
Zellers	-9.21	-5.63	-6.21	2.71	-5.98	-7.54	-10.94	1.13	-3.54	
	-4.86	-3.20	-4.33	2.55	-4.59	-4.65	-4.76	0.78	-1.85	
K-Mart	-10.56	-7.19	-5.84	4.83	-7.35	-9.12	-10.14	1.99	-2.76	
	-5.09	-3.74	-3.73	4.16	-5.16	-5.14	-4.22	1.32	-1.39	
Woolco	-13.20	-9.66	-5.94	5.30	-10.12	-12.15	-10.58	2.53	-3.06	
	-5.44	-4.29	-3.24	3.91	-6.08	-5.86	-3.49	1.33	-1.21	
Wal-Mart	-12.49	-4.78	-5.51	5.42	-9.54	-9.97	-11.21	2.49	-2.79	
	-3.50	-1.44	-2.04	2.72	-3.89	-3.27	-2.94	1.04	-0.88	
Other										
Anchor's	-2.86	-14.37	-5.79	-6.37	8.62	-2.44	-11.47	-6.24	-11.03	
	-0.87	-4.69	-3.18	-3.44	3.80	-0.86	-2.90	-2.51	-3.36	
Apparel Stores	0.271	0.392	0.134	0.058	0.225	0.356	0.255	0.117	0.093	
	4.56	7.13	2.98	1.74	5.53	7.04	3.68	2.69	1.62	
Intercept	13.79	10.47	11.86	5.67	8.76	11.44	17.66	6.01	15.23	
	9.36	7.67	10.67	6.88	8.67	9.08	10.04	5.43	10.42	
R. Square	.781	.885	.711	.660	.823	.854	.752	.755	.689	
Adj. R. Sq.	.748	.867	.667	.608	.796	.833	.702	.705	.626	
F test (10,66)	23.52	50.65	16.27	12.80	30.71	38.90	14.90	15.08	10.87	

—(Regression parameters with corresponding t-values below)—

increased the number of observations to 77. However, only 60 observations from the three most recent data sets were available for the final three image variables, which were not included in the prior analysis. The regression parameter estimates and *t* values and overall measures of fit are shown in Table 2. While there was some variation in fit, all nine of the regression models were highly significant, with between 66 and 88% of image item variance accounted for by the store tenant variables.

Confirming the results from the prior study (Finn and Louviere, 1996), there was evidence of the same consistent pattern of significance for the discount stores. Specifically, the presence of a Zellers, a K-Mart or a Woolco in a center was once again associated with significantly weaker perceptions of high quality, wide selection, good service, high prices, and latest fashions, and was also found for nice atmosphere. The reverse association with stronger perceptions was once again found for low prices. The parameter estimates for Wal-Mart were remarkably similar to those obtained for Woolco, K-Mart and Zellers for all of the image attributes except wide selection, where the negative effect for Wal-Mart was only about half the size for the other discounters and failed to reach statistical significance. Thus, apart from this minor effect for wide selection, the conversion of a Woolco to a Wal-Mart appeared to have no impact on the image of the shopping centers when respondents were considering a center to shop for apparel for themselves or a member of their household.

The other relatively consistently significant effects were for the number of specialty apparel stores and for Sears. The number of specialty apparel stores was associated with significantly stronger perceptions for all the image items except low prices and convenient location. Sears was associated with significantly stronger perceptions of wide selection, good service, low prices, good sales/bargains and with weaker perceptions of high prices. In contrast, the other major department stores exhibited inconsistent relations. There were no significant major department store relationships with high quality, latest fashions or nice atmosphere. The Bay was associated with wide selection, low prices, and good sales/bargains, Eaton's was negatively related to low prices, and Woodwards was only negatively related to high prices. The presence of one of the other anchor stores was associated with higher prices, and negatively associated with wide selection, good service, and low prices.

Given the apparent consistency of the discount department store effects, the effect of a Wal-Mart store was tested using a hierarchical procedure in which it was entered into the regression first. Next the number of discount stores was force entered and then, if significant, the number of major department stores at a center was entered, to determine if Wal-Mart was ever significantly different from the other discounters in its ef-

fect. While this procedure showed Wal-Mart was sometimes positively associated with favorable image dimensions relative to the other discounters, in no case was the effect of Wal-Mart significantly different from the effect of the other discount department stores. Note that when using this procedure, the number of major department stores was always significant and the number of discount department stores was significant for all image items except convenient location.

To eliminate the possibility that controlling for the other physical characteristics available for each center could change the above results, we also considered all the available center tenant and physical characteristics simultaneously in forward stepwise regression analyses, using a .05 significance criterion for entry. The physical characteristics considered were the center size in millions of square feet of gross leasable area, the city block distance from the center to the center of the city, and the number of levels in a center. To allow for potential non-linear effects of center size, both linear and quadratic size effects were included. Parameter estimates for the variables entering these stepwise regressions are shown in Table 3.

Comparing the variance accounted for by the models in Table 3 with those in Table 2, the stepwise models accounted for a significantly higher proportion of variance for all the center image items except good sales/bargains. At least one of the center physical characteristic variables was incorporated into the regression for each of the remaining eight image items. The negative quadratic effects of center size indicated that intermediate size centers offered the highest values on most image items. Center size had significant positive linear and negative quadratic effects on wide selection, good service and convenient location, indicating more favorable images with size, but that the largest center(s) (i.e., West Edmonton Mall) failed to maintain the pattern. Most attributes were negatively related to distance, indicating that centers located closer to the center of the city were perceived more strongly on most image items. Several items were also negatively related to the number of levels in a center.

By simultaneously considering both the number of each type and the identity of each anchor store, these stepwise analyses identified instances where any one of the anchor stores had a significant impact, over and above the generic effect of the type of anchor store and the effect of the center characteristics. These analyses demonstrated that, excluding convenient location, there was a consistent significant effect for the number of discount stores, but only isolated cases of differential effect for a particular anchor store. Specifically, Woolco was less widely associated with wide selection and latest fashions, while K-Mart was more widely associated with convenient location. As shown in Table 3, Wal-

TABLE 3. STEPWISE REGRESSION OF TENANTS AND PHYSICAL CHARACTERISTICS ON IMAGE ITEMS.

Center Characteristics	Center Perceptions									
	High Quality	Wide Selection	Good Service	Low Prices	High Prices	Latest Fashions	Nice Atmosphere	Good Sales Bargains	Convenient Location	
Department Stores:										
Eaton's	5.202**	—	1.718	—	-2.801*	—	1.452	7.807***	3.164***	
The Bay	—	—	—	3.407**	5.848**	5.972***	6.236**	-6.570***	—	
Woodwards	—	-4.925**	—	2.101	—	—	—	—	—	
Sears	—	—	—	4.462***	-3.227*	—	—	—	—	
Discount Stores:										
Zellers	-4.686***	-3.831**	-2.498**	4.727***	-2.801**	-3.004**	-3.607**	2.461*	-2.005*	
K-Mart	—	—	—	—	—	—	—	—	—	
Woolco	—	-4.508**	—	—	—	-3.356*	—	—	4.736***	
Wal-Mart	—	—	—	—	—	—	—	—	—	
Other Anchors	—	-7.094*	—	-6.399***	8.109***	—	-7.241**	—	—	
Apparel Stores	0.398**	0.423**	0.244**	0.135***	0.242***	0.413***	0.498***	—	0.118**	
Physical Characteristics										
M. Sq. Ft.	—	31.051***	16.937***	—	—	—	—	—	37.329***	
M. Sq. Ft. Sq.	-1.478***	-7.265***	-5.348***	-0.770**	—	-1.077**	-2.819***	—	-9.136***	
Mall Levels	—	—	-2.603***	-3.777***	—	—	-2.362*	—	-5.000***	
Distance from city	-0.119***	-0.051*	-0.076***	-0.058**	-0.112***	-0.120***	-0.126***	—	-0.127***	
Intercept	12.700	0.835	9.020	12.276	10.596	11.230	17.955	5.711	12.760	
R. Square	.857	.930	.875	.733	.876	.914	.907	.703	.930	
Adj. R. Sq.	.847	.922	.862	.698	.864	.907	.892	.687	.919	
D.F.	(5.71)	(8.68)	(7.69)	(9.67)	(7.69)	(6.69)	(8.51)	(3.56)	(8.51)	
F test	85.35	113.52	68.76	20.61	69.70	124.14	62.08	44.27	84.39	

Parameter significance levels: * p = .05, ** p = .01, *** p = .001. Variable not entered in stepwise regression analysis: —

Mart never exhibited an effect significantly different from the average effect for discount department stores.

Impact on Patronage

Two indicators of patronage were available to investigate whether differences in center image or center characteristics were associated with differences in patronage. These were the reported level of consideration of a center and the reported share of most recent shopping visits to a center.

As shown in Table 4, the nine image items account for fully 92% of the variance in consideration, with convenient location by far the most significant of the items. As shown in column two, which reports the result of a stepwise analysis using the same nine items, most of the variance in consideration is accounted for by convenient location and high prices.

To determine whether there were also any direct effects of tenant or physical characteristics on consideration beyond those acting through the image dimensions, they were considered as potential additional stepwise variables. As shown in column three of Table 4, the additional characteristics entering the regression were center size and number of levels, which were positively associated with consideration, and number of discounters, Woolco, and the number of apparel stores, which were negatively related to consideration. Entering these characteristics resulted in the "nice atmosphere" image item also becoming significant. Finally, as shown in the stepwise regression results in column four of Table 4, the tenant and physical characteristics alone could not account for as much variation in consideration as was accounted for by the image items. Without the image items, the most significant effects were positive linear and negative quadratic effects of center size and the negative effect of number of discount stores. Other characteristics with significant effects on consideration were the presence of K-Mart, number of levels and distance from the center of the city. Wal-Mart did not enter either regression where it was eligible. Thus there was no evidence to suggest Wal-Mart contributed a unique effect beyond that of any other discounter on consideration.

Table 5 reports similar results obtained for regressions using the share of choice data rather than consideration. In this case, the nine image items accounted for 89% of the variance in share of choice, with good sales/bargains the most significant of the nine image items. As shown in column two, a stepwise regression found that good sales /bargains and wide selection accounted for 87% of the variance in share of choice. To determine whether there were direct effects of any tenant or physical characteristics on consideration beyond those acting through

TABLE 4. FACTORS DETERMINING CENTER PATRONAGE: CONSIDERATION

Characteristics	Center Patronage			
	Consider	Consider	Consider	Consider
Image Items				
High Quality	0.507	—	—	
Wide Selection	0.734*	0.217	-0.177	
Good Service	0.675	0.429	0.027	
Low Prices	-0.356	—	—	
High Prices	0.863*	0.422**	—	
Latest Fashions	-1.345*	—	—	
Convenient Location	1.278***	1.131***	1.232***	
Nice Atmosphere	0.572	—	0.695**	
Good Sales/Bargains	0.198	—	—	
Department:				3.219
Eaton's				—
The Bay				—
Woodwards				—
Sears				—
Discount:			-3.798***	-8.704***
Zellers			—	—
K-Mart			—	6.646**
Woolco			-2.981*	—
Wal-Mart			—	—
Other Anchors			—	-7.599*
Apparel Stores			-0.231***	0.229*
Physical Characteristics				
M. Sq. Ft.			12.499***	62.249***
M. Sq. Ft. Q			—	13.859***
Mall Levels			4.348***	-3.658**
Distance from city			—	-0.223***
Intercept	6.512	5.463	0.909	11.596
R. Square	.948	.937	.973	.913
Adj. R. Sq.	.938	.933	.967	.902
D.F.	(9,50)	(4,55)	(9,50)	(9,67)
F test	100.45	204.67	196.28	78.60

Parameter significance levels: * p = .05, ** p = .01, *** p = .001.

Variable not entered when available for stepwise regression analysis: —

the image items, they were once again considered as potential stepwise variables. As shown in column three of Table 5, several center characteristics were significant in the case of choice. Center size was again significant, with a positive linear effect. The number of department stores, the presence of any of the other anchor stores, and distance from the center of the city were positive. However, entering these physical characteristics generated changes in the significance of the image items. This step-

TABLE 5. FACTORS DETERMINING CENTER PATRONAGE CHOICE

Characteristics	Choice	Center Patronage		
		Choice	Choice	Choice
Image Items				
High Quality	-0.392*	—	—	
Wide Selection	0.046	0.144***	—	
Good Service	0.163	—	—	
Low Prices	-0.349*	—	—	
High Prices	-0.034	—	—	
Latest Fashions	0.394	—	—	
Convenient Location	0.207	—	0.361***	
Nice Atmosphere	-0.114	—	—	
Good Sales/Bargains	0.447**	0.323***	—	
Department:			1.043**	1.846***
Eaton's			—	-1.084
The Bay			—	—
Woodwards			—	—
Sears			—	1.451*
Discount:			—	—
Zellers			—	—
K-Mart			—	—
Woolco			—	—
Wal-Mart			—	—
Other Anchors			2.412**	—
Apparel Stores			—	0.096***
Physical Characteristics				
M. Sq. Ft.			0.939*	7.641***
M. Sq. Ft. Q			—	-2.136***
Levels			—	-1.162***
Distance from city			0.026***	—
Intercept	-1.138	-1.581	-4.583	0.062
R. Square	.893	.872	.942	.918
Adj. R Sq.	.874	.867	.937	.910
D.F.	(9,50)	(2,57)	(5,54)	(7,69)
F test	46.37	193.49	177.07	110.12

Parameter significance levels: * p = .05, ** p = .01, *** p = .001.

Variable not entered when available for stepwise regression analysis: —

wise procedure revealed that convenient location had a significant positive effect on share of choice.

Finally, as shown in the stepwise regression results in column four of Table 5, the tenant and physical characteristics alone could account for more variation in share of choice than the image items alone. Without the image items, the most significant effects were the positive linear and negative quadratic effects of center size, the positive effect of number of department stores, and the negative effect of number of levels and

distance from the city. Other characteristics with significant effects on choice were Sears and the number of specialty apparel stores in a center. Once again Wal-Mart failed to enter both equations when it was eligible. Thus, once again there was no evidence to suggest Wal-Mart contributed a unique effect on choice beyond that of any other discounter.

■ Discussion

The research produced quantitative estimates of the relative amount of cross-shopping at Wal-Marts and other anchor stores in the Edmonton market. It also estimated the impact of the conversion of anchor Woolco stores to new Wal-Mart stores on image dimensions and on patronage levels (consideration and choice) for Edmonton area shopping centers. The Edmonton market includes four instances of such conversions, making it possible to assess the effect on two super-regional malls (neither of which would be classified as a market-leading "A" mall) on a struggling enclosed community center, on a "C" mall, and on a former failing enclosed discount mall which had recently been converted into a power center. While the image results were specific to consumers choosing a center when shopping for apparel, this is the primary market for regional shopping centers.

The empirical work found some evidence confirming that Wal-Mart is perceived more favorably than K-Mart and Zellers, the other discount department stores in the Edmonton market. And, at least in the case of wide selection and good service, it approached the level achieved by the major department stores. The latter was confirmed through evidence that Wal-Mart was rated as having service quality that was significantly better than The Bay, K-Mart and Zellers, and equal to Sears. The only store it trailed behind was Eaton's.

The results of this study confirmed that the proportion of the shoppers attracted to a Wal-Mart who cross-shopped within the same center was about average for the shoppers at discount department stores, but above average for the shoppers at a major department store. The Wal-Mart cross-shoppers reported spending more than cross-shoppers at all but one of the major department stores, namely Eaton's, which is generally considered the most upscale of the three majors with multiple locations in Edmonton. Moreover, the respondents who visited the Wal-Marts located in super-regional shopping centers reported higher rates of cross-shopping within the center than did respondents who reported on visits to major department stores located in super-regional shopping centers. However, it should be noted that in some respects relatively similar favorable results were obtained for Zellers.

However, the replacement of Woolcos with Wal-Marts did not significantly improve the attractiveness of the four centers in Edmonton amongst people shopping for apparel for themselves or members of their household. While our analysis showed Wal-Mart was sometimes positively associated with favorable image dimensions relative to the other discounters, in no case was the effect of Wal-Mart significantly different from the effect of K-Mart, Woolco or Zellers, the other discount department stores which have operated in the market. Wal-Mart never exhibited an effect significantly different from the average effect for discount department stores regardless of the specific center characteristics which were considered in the analysis. Moreover, there was no evidence of an effect of a Wal-Mart on the levels of patronage attracted to the centers.

Of course, when considering image items which account for indicators of patronage, one must recognize the potential problems. In particular, the image items investigated here were quite highly correlated. Consequently, the model parameter estimates obtained for image items may in some cases be biased, and may even have the wrong sign. However, the substantive findings with respect to the effect of a Wal-Mart remained the same regardless of what other variables were included in the regression models for the image dimensions and for the measures of center patronage.

Overall, the results obtained in Edmonton would be expected to be indicative of the impact that anchor Wal-Marts have had on struggling shopping centers in English-speaking parts of Canada, and may be a useful indicator of what would happen in other North American suburban markets.

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