Life-changing events and marketing opportunities

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Abstract The study reported in this paper shows that specific life-changing events may represent marketing opportunities for advertisers and marketers to woo customers. A life events–based segmentation model is developed, tested and compared with competing cohort- and age-based models in predicting consumer behaviour. The results suggest that the inclusion of life events in segmentation models may be a significant improvement over age- or cohort-based segmentation models.

INTRODUCTION

Market segmentation is one of the most important strategic marketing decisions.[1] Numerous ways for segmenting the market have been suggested in the marketing literature, ranging from simple demographics to behavioural, attitudinal, and lifestyle variables such as benefits and Values and Life Styles (VALS).[2–4] Generally speaking, objective bases for segmentation such as geo-demographics enable marketers to measure and locate their segmented customers precisely but offer little explanation for market behaviour. On the other hand, subjective segmentation bases such as values and benefits seek to help us better understand market behaviour but present problems in measuring and locating segments.

While subjective segmentation bases are very popular among consumer researchers, many practitioners still use basic demographic variables such as age and income. For example, the recent trend towards generational marketing involves segmentation by birth groups.[5–7] In a similar vein, others have advocated a cohort segmentation.[8,9] The basic premise on which these approaches are based is that people in different generations and cohorts have collectively experienced different external events and circumstances (eg war, economic changes) that have shaped their behaviours as consumers, making them different from others who have experienced different types of such events over their life course.[10] Others have

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advocated a combination of demographic variables such as family life cycle that are not context- and time-dependent.[11]

One objective approach that has been suggested and even cited in marketing textbooks[12] is based on life events or life status changes that are unique to the person experiencing them (and not necessarily relevant to all people in the same cohort). For example, divorce or relocation can cause alteration in consumption habits.[13,14] In his landmark study of life status changes and changes in consumer behaviour, Andreasen[15] calls for placing greater emphasis on life status variables and suggests that 'measures of status change should be seriously considered as predictor variables in future consumer studies in marketing, particularly those concerned with developing market segments' (p. 794). Similarly, Kotler suggests that,

> 'A company can consider occasions of critical life events or transitions — marriage, childbirth, illness, relocation, divorce, career change — as giving rise to new needs. These should alert service providers — banks, lawyers, and marriage, employment, and bereavement counselors — to ways they can help'.[16]

Recent research on household expenditures[17] also points to the desirability of studying consumption patterns in the context of life events that define life stages and transitions.

These suggestions beg the question: Is life event-based segmentation a viable approach? How does it compare with other popular objective segmentation models such as those based on demographics and cohorts? While cohort-based segmentation has recently received support as a segmentation model,[18] there is virtually no empirical work that reveals the efficacy of cohort- and event-based segmentation models in predicting consumer behaviour.

The present paper advocates the use of life events as an approach to market segmentation. Recent developments in the information technologies and marketing intelligence make it possible for researchers to gather information on various types of events that people experience over their life course (eg marriage, graduation, retirement and even the onset of health problems).[19] Although some previous researchers report attempts to use life events as segmentation variables,[20,21] systematic approaches to the use of life events based on theory and practical considerations (eg comparison of life events-based segments vs age-based segments) are largely sparse. Specifically, the paper presents theoretical bases for the proposed approach and the results of a survey designed to test the efficacy of the life-events-based segmentation model. Finally, the derived model is compared with other popular demographics-based models (age and cohort) using the same approach as the one used by previous researchers.[22,23]

THEORETICAL PERSPECTIVES

The proposed segmentation model is based upon life-course research which postulates that behaviour at a given point in time is the product of responses to changing life conditions (such as events, changes or transitions) and the way the individuals adapt to social and environmental circumstances.[24] Research on life course has been guided by three major theoretical orientations: human capital, stress and normative perspectives.[25] The *human capital* perspective contends that a person's behaviours are determined by their 'personal resources', which include abilities, skills and knowledge. As people are exposed to different types of events and circumstances over their life course, they are likely to differ with respect to

personal resources and, consequently, the types of behaviours they enact. Explanations for consumer behaviour over the life course from a human capital perspective focus on observed differences in consumer behaviour (primarily patterns of information processing) among age groups.[26–28]

The second perspective is based on *stress* theory and research. Major life events, changes and transitions (both desirable and undesirable) are often treated as 'stressors' that create a generalised demand for readjustment by the individual. People attempt to restore balance and relieve frustrations and tensions accompanying disequilibrium by initiating or modifying behaviours, which are viewed as coping strategies.[29,30] Support for the stress perspective is found in previous consumer studies showing that initiation, intensification or changes in consumption habits reflect efforts to handle stressful life events.[31,32]

Finally, the *normative* perspective holds that different behaviours are the outcome of various roles people acquire and enact at different stages in life. As people acquire (or anticipate transitions into) new roles and relinquish old ones, they change their behaviours accordingly, as they redefine their self-concepts and attempt to enact socially prescribed roles.[33] Certain events serve as markers of transitions into roles that are normatively governed and predictable in both occurrence and timing. An individual is gradually socialised into a role either before the occurrence of a normative event (eg birth of first child into 'parenthood') or upon the occurrence of an unexpected life event (eg death of spouse into 'widowhood'). According to this perspective, changes in consumer behaviour reflect redefinition of one's self-concept as a result of the assumption of a new role and the relinquishment of old ones, as people attempt to acquire new products that help them define the new role and dispose of products relevant to the enactment of a previous role.[324,25]

Because the three life-course perspectives suggest that the *experience* and *anticipation* of certain life events, as well as their *timing*, may affect people in a similar way, it is expected that these experiences will manifest in different consumption patterns. These life-event experiences are hypothesised to be better predictors of market behaviour at a given point in time than competing segmentation models based on age and cohorts.

THE STUDY

Sample

Data for the study were collected through mail questionnaire as a part of a large national study. The sample was randomly drawn from the database of a major mailing list vendor, which contains approximately 87 million household names and addresses. Questionnaires were mailed to ten thousand adults chosen in proportion to the population of each of the 50 US states and specific age groups. A total of 1,534 adults responded, reflecting a response rate of 15.34 per cent. Although the response rate is relatively low, it is consistent with the response rates for other national studies of general populations. The survey questionnaire contained many questions relating to various issues; however, the present study utilises questions relating to life events and consumption-relating lifestyles. As many respondents had not experienced any event included in the study or had experienced very few events, and because it is a common procedure in psychological research to survey or include only individuals or samples of people who have experienced

certain events and compare them with those who have not experienced them,[36] a judgment sample was drawn from the returned questionnaires. First, all individuals who had experienced two or more events in the previous six months were included in the study sample ($n = 340$). Next, a random sample of those who had experienced only one event in the previous six months ($n = 203$) and that of those who had not experienced any event included in the study ($n = 322$) was also included in the study sample. The final sample used consisted of 866 questionnaires. Although the initial mailing list was randomly selected, the final sample used in this study was a judgment sample and can not be considered to be a representative of the total US population. The main purpose of the study, however, was to show the advantage of segmenting markets based on variables not included or studied previously, and not to estimate segment sizes or population parameters. The age range of this sample was 21–84 years, with a mean of 49.95 years and a standard deviation of 13.92 years — figures that compare favourably with Census data for the adult population.

Variables

Consumption-related behaviours

Respondents were asked to indicate whether they most recently initiated or changed 24 consumption-related behaviours 'in the previous 6 months', '6–12 months ago', 'more than 12 months ago', or 'never had experienced or done the activity'. Affirmative responses to the any of the first three categories were coded as one (1) for each type of consumption-related response. A negative response was coded as zero (0) for these consumption-related behaviours.

Life events

Respondents were also asked to indicate whether or not they most recently experienced any of 25 life events (see Appendix) 'in the past 6 months', 'in the past 6–12 months', and 'more than 12 months ago'. These life events were selected based on previous research.[37–41] Several of the life events included in the study are markers of role transitions (eg marriage, birth of a child) and can be measured relatively easily using objective measures. Some other events included in the study are merely stressors (eg serious injury); nevertheless, they have the potential to trigger important lifestyle and consumption behaviour changes of importance to marketers. Each life event experienced by the individual was coded as one (1); otherwise it was coded as zero (0). The timing of each life event experienced was also included as a separate variable, measured on a three-point scale, reflecting the length of time since the experience. In addition, subjects responded to a list of 14 life events (see Appendix) they anticipated 'in the next 6 months' and 'in the next few years'. Each event anticipated was coded as one (1); otherwise it was coded as zero (0). The timing of each anticipated event was also included as a separate variable, measured on a two-point scale, reflecting the time before the individual expects to experience each event.

ANALYSIS AND RESULTS

Hierarchical cluster analysis (using SPSS) was used to group respondents based on their past and anticipated experiences of life events, as well as the timing of these events. A total of 78 variables were included in the cluster analysis, comprising 25 life events experienced, 25 variables representing the timing of such experiences, 14 anticipated events and 14

variables representing anticipated timing of such events. Theory and research suggested that the actual experience of an event may have a different effect on the person's behaviour than the anticipated experience of the same event.[42] Similarly, the timing of an event might have a different effect on the person's behaviour.[43]

In the first stage of cluster analysis, clusters were allowed to form freely and the resulting agglomeration schedule (containing the coefficient at each stage) was examined to determine the appropriate number of clusters for this population. It has been well recognised that in any segmentation study, the decision on the number of segments is as much an art as it is a science. One recent study of 2,000 adults conducted by Roper Starch Worldwide Inc. for *Modern Maturity* segmented the adult market based on life events.[44,45] This study, which identified seven segments, was initially used as a guideline in deciding on the number of clusters to retain. Based on improvement in the coefficient (squared Euclidean distance), it was decided to retain four clusters. A second round of cluster analysis was done, with the number of clusters specified as four. Resulting cluster membership was saved and subsequently used to compare this segmentation approach with other segmentation methods (age-based and cohort-based) across 24 consumption-related variables.

SEGMENTS BASED ON LIFE EVENTS

Demographic and other characteristics of the derived segments based on life events are given in Table 1. Due to the over-representation of male heads of household in the mailing list, the proportion of male respondents is greater than that of females across all four segments. In order to name the derived segments, each cluster was cross-classified by the events experienced and anticipated that were used to create them. The first cluster, which is the largest, containing 42 per cent of the total sample, consists of people who had experienced or expected to experience the smallest number of life events. Because of the small number of life-changing events experienced by people in this segment, the largest cluster was named 'The Unruffled'. The second segment consists of primarily older adults, with more than three-quarters of those in the second segment born before 1940. Many individuals in this segment had recently experienced retirement and empty nest; they moved to a different place and became grandparents. This segment, which comprises 16 per cent of the total sample, was called 'Free Birds'. The third segment was the smallest (9 per cent) and the one that had experienced the largest number of life events. The respondents in this segment were more likely to have experienced (or expected to experience) almost all the events (except those experienced by Free Birds) than people in other segments. This segment was called the 'Chronic Strugglers'. Finally, the last segment consists of 33 per cent of the sample, with three-quarters of them being baby boomers. Most people in this group had experienced relatively fewer events than the preceding two segments, with most of the experienced events related to family, such as marriage and birth of a child. Because this group had a disproportionately high number of people living with their spouse and child(ren), this group was called 'Full Nesters'.

As shown in Table 1, the mean age of Free Birds is the highest (mean = 63.1) and that of Full Nesters is the lowest (mean = 42.0). The Unruffled and Chronic Strugglers are

Table 1: Demographic profiles of segments based on life events

	The Unruffled (42%)	Free Birds (16%)	Chronic Strugglers (9%)	Full Nesters (33%)	Sig. level
Age (mean)	51.6	63.1	48.4	42.0	0.000
Sex					0.049
Male (%)	56.4	68.7	57.3	54.5	
Female (%)	43.6	31.3	42.7	45.5	
Income					0.000
Less than $20,000 (%)	12.4	15.0	8.0	2.8	
$20,000–$34,999 (%)	26.7	22.6	25.3	17.7	
$35,000–$49,999 (%)	23.0	24.1	25.3	24.0	
$50,000–$74,999 (%)	22.5	17.3	21.3	32.5	
$75,000 and above (%)	15.4	21.1	20.0	23.0	
Living status					0.000
Live alone (%)	31.5	22.1	16.0	9.1	
Live with spouse (%)	26.0	54.4	29.6	12.9	
Live with spouse and child(ren) (%)	19.3	14.7	27.2	56.4	
Live with child(ren) only (%)	23.2	8.8	27.2	21.6	
Employment status					0.000
Retired or not employed (%)	28.8	59.6	17.3	11.0	
Retired and employed (%)	6.1	10.3	7.4	2.5	
Employed (%)	65.1	30.1	75.3	86.5	
Education					0.241
High school or less (%)	20.2	25.2	13.6	16.4	
Some college (%)	33.2	34.8	32.1	35.0	
College graduate or more (%)	46.5	40.4	54.3	48.6	
Health status					0.000
No. of medical problems (mean)	1.42	2.39	1.60	0.92	
No. of prescription drugs (mean)	1.32	1.83	1.30	0.72	
Life events (mean #)					0.000
Events experienced	5.34	11.87	14.55	8.36	
Events expected	1.57	1.68	2.78	1.79	
n = 866	362	136	81	287	

Sig. = significance

approximately of the same age. The four segments are mostly similar in terms of their gender make-up. Only Free Birds comprise a relatively higher proportion of females. While Full Nesters have the highest income level, with more than half (55.5 per cent) of them reporting an income of $50,000 or more, the Free Birds and the Unruffled have the lowest incomes. More than half of the Full Nesters belong to the full-nest stage of their life cycle, with 56.4 per cent of them living with spouse and child(ren). On the other hand, more than half of Free Birds live in an empty nest, with 54.4 per cent reporting living with spouse only. A vast majority of Chronic Strugglers (75.3 per cent) are employed, compared with almost half (59.6 per cent) of Free Birds who are retired or not working. Table 2 shows the mean values of input variables for the four life-event-based segments.

The study aimed to find out how these event-based clusters differ in terms of various consumer behaviours. Table 3 shows the differences in consumer behaviours across the four life event-based clusters. As shown in the Table, out of 24 consumer behaviours examined in the study, there were significant differences for 18 behaviours. For two of the investigated behaviours (moved into retirement home and received healthcare at home), the percentage of respondents in the overall sample giving a positive response was very low.

One way to assess the value of life

Table 2: Mean values of input variables by segments based on life events

	Experienced events				Anticipated events			
	The Unruffled (42%)	Free Birds (16%)	Chronic Strugglers (9%)	Full Nesters (33%)	The Unruffled (42%)	Free Birds (16%)	Chronic Strugglers (9%)	Full Nesters (33%)
Moved to a different place*	0.414	0.963	0.926	0.965	0.332	0.279	0.494	0.307
	(1.124)	(2.846)	(2.741)	(2.822)	(0.561)	(0.515)	(0.926)	(0.540)
Marriage*	0.149	0.985	0.951	0.962	0.061	0.015	0.074	0.031
	(0.412)	(2.934)	(2.852)	(2.878)	(0.111)	(0.022)	(0.136)	(0.059)
Birth or adoption of a child*	0.055	0.890	0.704	0.836	0.028	0.007	0.025	0.070
	(0.144)	(2.632)	(2.074)	(2.429)	(0.053)	(0.015)	(0.037)	(0.115)
Divorce or separation*	0.130	0.206	0.605	0.268	0.030	0.022	0.037	0.031
	(0.312)	(0.603)	(1.753)	(0.781)	(0.047)	(0.029)	(0.074)	(0.056)
Last child moved out of household*	0.163	0.868	0.309	0.125	0.083	0.088	0.259	0.202
	(0.417)	(2.522)	(0.827)	(0.289)	(0.155)	(0.162)	(0.482)	(0.376)
Death of spouse	0.086	0.125	0.124	0.017				
	(0.238)	(0.324)	(0.346)	(0.045)				
Death of a parent or close family member*	0.456	0.934	0.840	0.585	0.260	0.331	0.333	0.279
	(1.135)	(2.581)	(2.296)	(1.627)	(0.492)	(0.654)	(0.642)	(0.509)
Birth of first grandchild*	0.127	0.882	0.247	0.108	0.033	0.037	0.099	0.105
	(0.365)	(2.559)	(0.741)	(0.289)	(0.061)	(0.052)	(0.198)	(0.185)
Major conflict with family member	0.356	0.478	0.691	0.509				
	(0.616)	(1.154)	(1.482)	(0.979)				
Retirement (at own will)*	0.177	0.581	0.198	0.056	0.083	0.154	0.148	0.063
	(0.489)	(1.654)	(0.593)	(0.153)	(0.149)	(0.279)	(0.296)	(0.125)
Lost job/business or forced to retire*	0.196	0.250	0.741	0.160	0.055	0.066	0.185	0.042
	(0.489)	(0.713)	(2.124)	(0.394)	(0.091)	(0.132)	(0.309)	(0.073)
Started work for the first time or after not working for a long time*	0.122	0.213	0.778	0.230	0.050	0.029	0.049	0.056
	(0.287)	(0.618)	(2.309)	(0.627)	(0.066)	(0.037)	(0.074)	(0.073)
Reduction in hours of employment or giving up employment (at own will)*	0.102	0.132	0.457	0.119	0.022	0.096	0.148	0.038
	(0.218)	(0.353)	(1.235)	(0.272)	(0.033)	(0.169)	(0.247)	(0.056)
Significant success at work or personal life	0.301	0.485	0.790	0.537				
	(0.483)	(1.096)	(1.765)	(1.070)				
Change jobs, same or different type*	0.249	0.397	0.926	0.460	0.160	0.081	0.284	0.185
	(0.492)	(1.140)	(2.617)	(1.143)	(0.251)	(0.125)	(0.457)	(0.303)
Major improvement in financial status	0.185	0.309	0.654	0.362				
	(0.387)	(0.860)	(1.728)	(0.861)				
Financial status a lot worse than usual*	0.304	0.309	0.716	0.324	0.160	0.191	0.185	0.129
	(0.550)	(0.640)	(1.877)	(0.606)	(0.229)	(0.324)	(0.259)	(0.157)
Family member's health a lot worse	0.279	0.471	0.593	0.265				
	(0.497)	(1.140)	(1.272)	(0.443)				
More responsibility for aged relative*	0.271	0.427	0.494	0.174	0.227	0.265	0.333	0.251
	(0.500)	(1.037)	(1.124)	(0.331)	(0.384)	(0.427)	(0.568)	(0.443)

Table 2: Continued

	Experienced events				Anticipated events			
	The Unruffled (42%)	Free Birds (16%)	Chronic Strugglers (9%)	Full Nesters (33%)	The Unruffled (42%)	Free Birds (16%)	Chronic Strugglers (9%)	Full Nesters (33%)
Gained a lot of weight	0.271 (0.586)	0.162 (0.419)	0.543 (1.444)	0.338 (0.829)				
Chronic illness or condition diagnosed	0.155 (0.356)	0.338 (0.919)	0.407 (1.012)	0.174 (0.394)				
Serious injury, illness or major surgery	0.232 (0.506)	0.463 (1.191)	0.580 (1.482)	0.181 (0.387)				
Community crisis or disaster (hurricane crime, fire, flood, earthquake, etc)	0.122 (0.287)	0.110 (0.265)	0.296 (0.803)	0.160 (0.408)				
Death or loss of a pet (dog or cat)	0.235 (0.575)	0.331 (0.949)	0.630 (1.704)	0.279 (0.634)				
Stopped smoking	0.163 (0.434)	0.441 (1.302)	0.420 (1.222)	0.178 (0.502)				

Table entries are mean values. Numbers in parentheses represent mean values for corresponding timing variable. Asterisks identify events included in the list of anticipated events.

Table 3: Consumption-related differences across event-based segments

	The Unruffled (42%) %	Free Birds (16%) %	Chronic Strugglers (9%) %	Full Nesters (33%) %	Prob.
Financial services					
Set new investment goals (retirement, home, etc)	61.3	66.2	74.1	72.5	0.012
Made more changes than usual in key investments (CDs, mutual funds, stocks and bonds)	55.0	61.8	55.6	60.6	0.367
Received professional legal or financial advice for the first time or after not receiving for a long time	50.6	52.9	76.5	55.7	0.000
Housing					
Home purchase or sale	64.4	86.8	82.7	86.1	0.000
Moved into a retirement or nursing home	0.6	1.5	2.5	0.3	0.205
Home remodelling or refurnishing	72.7	88.2	90.1	85.0	0.000
Recreational/cultural activities					
Went on a vacation abroad for the first time or after not going for a long time	47.8	49.3	55.6	44.3	0.320
Took on a new hobby or recreational activity	69.9	76.5	86.4	81.2	0.001
Change in attendance of cultural events	52.2	51.5	59.3	50.5	0.579
Change in the amount or type of television viewing	68.2	66.2	86.4	72.5	0.006
Social activities					
Change in attendance of religious activities	53.0	60.3	75.3	63.8	0.001
Change in social relations	67.4	71.3	88.9	74.2	0.001
Food, beverages, smoking					
Increased consumption of alcoholic beverages	22.4	18.4	39.5	24.4	0.004
Ate out a lot more times than usual	67.1	61.0	77.8	71.4	0.042
Started smoking for the first time or after not smoking for a long time	14.9	28.7	27.2	27.2	0.000
Shopping					
Bought more gifts than usual	53.6	47.8	69.1	55.7	0.021
Spent more than usual on clothes	55.2	47.1	70.4	58.2	0.008
Made more buying decisions than usual together with spouse	39.0	57.4	64.2	62.7	0.000
Health-related					
Received professional counselling for the first time or after not receiving for a long time	26.2	19.1	50.6	32.1	0.000
Used more anti-depressants or tranquilisers than usual	11.3	10.3	23.5	12.2	0.019
Started diet/weight control or exercise programme	66.0	61.0	82.7	71.8	0.004
Received healthcare or personal-care services					
At home for the first time	7.2	8.1	7.4	9.4	0.772
Altruism					
Gave more money or time than usual to charities	59.9	61.8	72.8	59.6	0.158
Insurance					
Change in amount or type of insurance coverage	62.4	68.4	81.5	76.7	0.000

Table entries are percentage of individuals in each cluster that have experienced or engaged in that behaviour.
Prob = probability

events in marketing strategy is to assess the consumption activity of the two extreme life event-based segments — the Unruffled and the Chronic Strugglers. If new consumer needs stem from personal transitions because people buy products and services that ease transition and accommodate change, then life-event changes provide an important opportunity for advertisers and marketers to woo customers. Table 2 shows the percentage of respondents in the four clusters who engaged in various types of consumption-related activities during the previous 12 months.

As it can be seen in Table 3, a larger percentage of Chronic Strugglers than the Unruffled engaged in all 24 consumer activities during the 12 months preceding the survey. The differences were particularly noticeable for products and services that people use to cope with

Table 4: Cross-tabulation of event-based segments by age groups and cohort membership

	The Unruffled (41%) %	Free Birds (16%) %	Chronic Strugglers (9%) %	Full Nesters (33%) %	Sig. level
Age (years)					0.000
21–34	11.1	0.0	3.9	21.5	
35–44	26.5	2.3	37.7	43.0	
45–54	23.9	20.5	35.1	26.8	
55–64	16.5	30.3	10.4	7.0	
65 and above	21.9	47.0	13.0	1.8	
Cohorts					0.000
Generation X	4.6	0.0	0.0	6.0	
Baby Boomers	43.6	9.1	57.1	75.4	
War Babies	13.4	13.6	19.5	9.9	
Depression Generation	16.5	30.3	10.4	7.0	
GI Generation	21.9	47.0	13.0	1.8	
n = 866	362	136	81	287	

Sig. = significant

stress and anxiety such as alcohol, cigarettes, mood-altering drugs and professional counselling. Collectively, these findings suggest that changes in customers' lives create new consumption needs and corresponding opportunities for marketers and advertisers to appeal to these needs.

COMPARISON TO AGE- AND COHORT-BASED SEGMENTS

Age-based segments were created by dividing the sample into five traditionally used adult age groups (21–34, 35–44, 45–54, 55–64, 65 years or older). Similarly, cohort-based groups were created by dividing the sample into five traditionally recognised cohorts based on the year of birth: Generation X (those born in or after 1965), Baby Boomers (those born between 1946 and 1964), War Babies (those born between 1940 and 1945), Depression Generation (those born between 1930 and 1939) and GI Generation (those born before 1930).[46,47] Cross-tabulations of event-based segments by age groups and cohorts are given in Table 4. While Full Nesters contain the vast majority of Baby Boomers, other segments have a less skewed distribution in terms of age and cohort membership.

Following the approach used by previous researchers to compare segmentation models,[48,49] regression analysis was used to compare the three types of segmentation schemes. Three separate regression models were tested for each consumer behaviour-related activity using the three segmentation variables as independent variables. Regression models for event-based segmentation had four parameters, corresponding to an intercept term plus three dummy variables for four mutually exclusive event-based segments. Regression models for cohort-based segments had five parameters (corresponding to an intercept term plus four dummy variables) for the five mutually exclusive cohort-based segments. Finally, regression models for age-based segments had five parameters (corresponding to an intercept term plus four dummy variables) for the five mutually exclusive age groups. As these regression models are not nested they could not be directly compared. Therefore, two additional regression models combining event-based segments with age and cohort, respectively, were

developed. One model had eight parameters, corresponding to an interaction term, three dummy variables for the four mutually exclusive event-based segments, and four dummy variables for the five mutually exclusive age groups. Similarly, the other model had eight parameters, corresponding to an interaction term, three dummy variables corresponding to the four mutually exclusive event-based segments, and four dummy variables for the five mutually exclusive cohorts.

R^2 values for the three alternative segmentation methods for each consumption-related item, as well as those for the two models combining event-based segments with age and cohort membership, respectively, were examined. Generally, the sizes of R^2 values were very close to those obtained using other segmentation models.[50,51] The mean R^2 for event-based segmentation across the 25 consumer behaviours was 0.018, while the values for cohort-based segmentation and for age-based segmentation were 0.02 and 0.02, respectively. As these models are not nested, a statistical comparison could not be done. However, regression models combining event-based segments with age and cohort membership provided support for the value of event-based segmentation. When event-based segmentation variables were included in the regression models with age-group variables, R^2 values increased for all equations (mean R^2 increased to 0.036). Incremental R^2 for event-based segmentation variables ($R^2_{\text{events}|\text{age groups}}$) was significant ($p < 0.05$) for 18 out of 24 lifestyle variables studied. This shows that event-based segments add additional explanatory power to the segmentation models based on age. Similarly, incremental R^2 for event-based segments ($R^2_{\text{events}|\text{cohort}}$) for 17 out of 24 lifestyle variables examined was significant ($p < 0.05$) when event-based segmentation variables were added to regression models with cohort variables (mean R^2 increased to 0.036).

DISCUSSION AND IMPLICATIONS

One could argue that all these segmentation methods produce low R^2 values. However, this does not reduce the value of segmentation models. As has been pointed out in previous research,[52] segmentation approaches using general consumer characteristics generally produce similarly low R^2 values. Moreover, as discussed by Novak and MacEvoy,[53] even low R^2 could reflect significant differences across segments, which could have major impact on marketing strategies. In addition, segments based on age and cohorts were not profiled in terms of their specific consumption-related behaviours because the purpose of the study was to demonstrate the benefit of using life events as a segmentation base rather than to estimate sizes of segments based on such characteristics. Moreover, the data used in the study were based on a judgment sample and, therefore, the derived segment profiles might not be of much value to marketing practitioners.

A couple of other caveats are in order. First, the present study did not address all possible aspects of the person's consumer behaviour in the marketplace. Therefore, the results may not be generalisable to situations (behaviours) other than those studied. Secondly, while age- and cohort-based segments can be formed on an *a priori* basis (and can be fixed across studies and time), the derived segments based on life events may differ in number and size across studies and time, depending on the sample and life-event lists used.

It is understood that the timing of occurrence of life events might have an effect, and, as such, was included in the analysis. The present research utilised an ordinal measure of the length of time since experience of an event, however, although it is possible that full impact of the timing of events was not captured in this ordinal measure. Future researchers might consider more precise measure of event timing for including in segmentation models based on life events.

These limitations notwithstanding, the present study demonstrated the value of events when they are added to cohort-based and age-based models. Although marketers and advertisers realise the importance of the aging consumer market, many of them continue to use age-based segmentation approaches. However, recent research has shown that age does not directly affect one's behaviour. Schiffman and Sherman[54] assert that age is no longer an indicator of one's physical state but merely a state of mind. Consequently, age may not be adequate in explaining the consumption behaviour of individuals. There may be other factors that have greater impact on one's behaviour. Indeed, as stated by Neugarten and Neugarten,[55] 'age has become a poor predictor of the timing of life events, as well as a poor predictor of a person's health, work status, and therefore, also, of a person's interests, preoccupations, and needs' (p. 36). Therefore, it seems more desirable to use life events along with age to predict behaviour.

Segmentation methods based on life events provide an opportunity for one not only to understand the basis for observed differences, but also to use objectively measured variables (events). Although collecting information on life events is still difficult, the proliferation of information technologies have made data gathering on life events experienced by a person easier than ever before. For example, information regarding events such as marriage and birth of a child is obtainable from public records. Moreover, these events represent marketing opportunities, as people buy products and services to accommodate change and ease transitions. As people experience major life-changing events, they re-evaluate their priorities, product needs, brand and store preferences, and the criteria by which they select products. Segments based on such life-changing events reflect such differences in consumer behaviour, making certain segments more receptive to marketing offerings than other segments. Thus, there is an opportunity for targeting different segments with different products.

In sum, the results of the present research demonstrate the viability of the life-events segmentation basis along with demographic variables such as age and cohort. Future research could examine a larger number and types of life events as bases for segmentation. Measures of life events experienced could also be further refined by examining more detailed measures of timing of events and perhaps sequence of life events, especially events on which information can easily be obtained by marketers. There is also a need for studying a wider range of consumption-related behaviours, especially consumer responses to marketing-mix variables.

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APPENDIX: LIFE EVENTS EXPERIENCED AND ANTICIPATED USED FOR CLUSTERING

Life events
Moved to a different place★
Marriage★
Birth or adoption of a child★
Divorce or separation★
Last child moved out of household★
Death of spouse
Death of a parent or close family member★
Birth of first grandchild★
Major conflict with family member
Retirement (at own will)★
Lost job/business or forced to retire★
Started work for the first time or after not working for a long time★
Reduction in hours of employment or giving up employment (at own will)★
Significant success at work or personal life
Change jobs, same or different type★
Major improvement in financial status
Financial status a lot worse than usual★
Family member's health a lot worse
More responsibility for aged relative★
Gained a lot of weight
Chronic illness or condition diagnosed
Serious injury, illness or major surgery
Community crisis or disaster (hurricane, crime, fire, flood, earthquake, etc)
Death or loss of a pet (dog or cat)
Stopped smoking

Asterisk (★) indicates item also used as anticipated life event.