A Longitudinal Investigation of Activity Participation at Travel Destination: A Cohort Analytical Approach

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ABSTRACT

The purpose of this study was to examine the relationship between activity participation at a travel destination and the effects of biological age, time of travel, and generational cohort over time. Household data from Illinois, Indiana, Michigan, Ohio, Wisconsin, and the Canadian province of Ontario were utilized because the data yielded longitudinal information about travel behavior across the study region. Significant relationships were found between "Shopping," "Outdoor Recreation," and "Entertainment" factors and the effects of biological age, time of travel, and generational cohort.

INTRODUCTION

One of the many challenges facing the American tourism industry in the 21st century is rapid changes in the demographic characteristics of the U.S. population. As the American population continues to age, people in the tourism industry are questioning whether the future older cohort will behave more like the current population of the same age cohort or more like when they were younger (Sakai, Brown, & Mak, 2000; You & O'Leary, 2000). Another challenge facing the U.S tourism industry is accounting for unique events/incidents or environmental changes that occur while people are planning or taking a trip, which influence their travel behavior. The purpose of this study was on the casual relationship between activity participation at a destination and the effects of biological age, time of travel, and generational cohort over time. In this study the biological age effect refers to changes in travel activity participation due to physical or life cycle changes which occur along with aging. The time of travel effects pertains to changes in travel activity participation due to unique events/incidents or environmental changes that occur at the time a trip is taken or is being planned. Generational cohort refers to changes in travel activity participation caused by differences that arise from the unique life experience, values, and socialization of cohorts. Knowledge of changing age structure and its effect on the patterns of travel behavior over time would help tourism marketers and promoters identify growth areas, target age–related segments, or forecast future behavior for, and use of, their products and services, as well plan marking strategies at a macro level.

Many studies indicate that there is a strong correlation between biological age and preferred activity. Pennington–Gray and Kerstetter (2001) found that adults aged 65 or older were less interested in participating in "beaches for sunbathing or swimming," "shopping," "nightlife and entertainment," and "theme parks and amusement parks" than adults aged 55 to 64. However, these findings contradict the findings of Romsa and Belnman (1989), who investigated the vacation patterns of senior and non–senior German tourists. Seniors did not show significant differences in activity participation. Shoemaker (2000) provided more insights into the relationships between biological age and activity participation on trips. Seniors over 55 or older were more likely to visit local attractions, historic sites, go shopping, driving, and go to casinos. His results are supported by the study of Zimmer, Brayley, and Searle (1995) who claimed that it would be difficult for seniors to change their travel attitude and behavior which had been formed early in life. Baloglu and Shoemaker (2001), in a study of senior travelers (over 55) using motorcoaches, found that seniors preferred historic sites, scenery, shopping, and special events and festivals. Similar findings are reported by Horneman, Carter, Wei, and Ruys (2002), who studied Australian travelers over 65. The holiday attractions that interested them the most were varied according to the market segments of seniors. Seniors segmented in conservatives' market were attracted to guided tours, special events and festivals, big cities, and shopping; seniors segmented in pioneers' market were most likely to participate in water–related attractions, quiet countryside, natural wilderness, historic sites, and arts and other cultural attractions; seniors segmented in big spenders' market were attracted to shopping and big cities, and nightlife. The important finding of this study is that the senior market is not homogeneous (Bone, 1991; Horneman et al., 2002; Shoemaker, 1989, 2000). Moreover, biological age seems to be a significant indicator of casino participants. Morrison, Braunlich, Cai, and O'Leary (1996) investigated the patterns of travel behavior of casino resort vacationers. They found that 25% of participants in casino resorts were 65 or older. Twenty–two percent were 55 to 64 years–old and 18% were age 45 to 54. Similar findings are reported by Park, Yang, Lee, Jang and Stokowski (2002). They found that 70% of casino gamblers were over 50. Activity participation at the travel destination is one of the most important components in travel behavior and is highly correlated with a destination's attractiveness for visitation (Goeldner & Ritchie, 2006).

RESEARCH METHODS

Data collected from 1997 and 2002 in the Michigan Travel Market Survey (MTMS) were utilized for this study. The MTMS study population consisted of households in the states of Illinois, Indiana, Michigan, Ohio, Wisconsin, and the Canadian province of Ontario. Survey respondents had to be 18 years old or older when interviewed. Random digit–dial samples of household telephone numbers in the study region were purchased from Survey Sampling, Inc. for the study. In this study, 5,735 (2,516 from 1997 plus 3,219 from 2002) cases were used for the analysis. Over a five-year interval, respondents to the MTMS survey were asked about their participation in thirteen types of activities at the travel destination. The following activities were included on the questionnaire: visit a museum or hall of fame, visit a historic site, visit a state or national park, shopping, dine at a unique restaurant, explore a small city or town, visit some other type of attraction, outdoor recreation, general touring, casino gaming, nightlife, festival or event, fall color

tour. An exploratory factor analysis were carried out and Kaiser–Meyer–Olkin (KMO) statistics (i.e., sampling adequacy) were used to predict if the data would be likely to factor well, based on correlation and partial correlation. If a KMO is .60 or over, then it is acceptable to proceed with a factor analysis. In this study, factors with eigenvalues of 1.0 or higher only were extracted and considered for further procedures. To extract the factors from activity variables, principal component analysis was also applied, because it can identify a linear combination of variables such that the maximum variance is extracted from the activity variables and then removes the first variance, and seeks a second linear combination which explains the maximum proportion of the remaining variance, and so on (Cramer, 1994). Finally, the inter–item reliability test (i.e., Cronbach's alpha) was employed to determine the internal consistency of the items in each factor. One–way analysis of variance (ANOVA) was employed to test the relationship between the effects of biological age and generational cohort and five trip activity factors. Independent samples t–tests were conducted to test the relationship between the effect of time of travel and five activity factors. Data were analyzed using SPSS version 12.0 for Windows.

FINDINGS

Biological Age Effect

Statistically significant relationships were found between the biological ages of the study's respondents and the activities they engaged in at their travel destinations, which are shown in Table 1. Biological age effect was found to be a statistically significant factor in the "heritage" activity segment at the .05 level, $F = 4.072$, $p = .000$. Positive and negative factor scores indicate that young and middle–aged adults, aged 18–47, were more likely to participate in a "heritage" activity than older–middle–aged and senior adults (i.e., aged 48–68 or older). Specifically, respondents aged 18–22 had the highest average factor score, whereas respondents aged 68 or older had the lowest average factor score in the "heritage" activity segment. This finding is similar to the relationship between biological age and the "fall color tour" activity. Biological age effect was found to be a significant factor in the "fall color tour" activity segment as well at the .05 level, $F = 6.424$, $p = .000$. In terms of positive and negative factor scores, young and middle–aged adults, aged 18–42, were more likely to participate in a "fall color tour" activity than older–middle–aged and senior adults aged 43–68 or older.

A significant relationship between biological age and "Shopping" activity was found at the .05, $F = 4.581$, $p = .000$. Middle-aged adults aged 28–42 were more likely to participate in this activity than their younger and older counterparts, with the exception of the "68 or older" age segment, which had the highest average factor score among all the biological age segments, followed by the 38–42, 28–32, and 33 to 37 age segments. Adults aged 18–27 and 43–67 had negative scores in this category. There was a significant relationship between age and "outdoor recreation" activity as well at the .05 level, $F = 7.198$, $p = .000$. Comparing the average factor scores, middle-aged and senior adults aged 48–68 or older were more likely to participate in an "outdoor recreation" activity than young and middle–aged adults aged 18 to 47. The 63–67 age group had the highest average factor score, followed by the "68 or older" segment. The lowest average

factor score among age segments was found in the 33–37 age segment, followed by the 18–22 and 23–27 segments.

Biological age effect was also found to be an influential factor in whether travelers participated in an "entertainment" activity at their travel destinations. The relationship between age and "entertainment" activity was statistically significant at the .05 level, F = 5.123, p = .000. Middle-aged and senior adults, ages 33–52 and 63 or older, were found to be more likely to participate in this activity. The highest average factor score among age segments in the "entertainment" activity was in the 38–42 age segment, followed by the 43–47, 63–67, 33–37, and 48–52 and "68 or older" age segments. All other age categories were in negative numbers; the lowest average factor score was in the 23–27 age group, followed by the 18–22 age segment.

Time of Travel Effect

A significant statistical relationship was found between time of travel and the "Shopping" activity at the .05 level, t = 6.376, p = .000, two-tailed. Pleasure travelers of the 2002 were less likely to participate in "Shopping" activities than the 1997 travelers. The relationship between the effect of time of travel and "outdoor recreation" activity was also statistically significant at the .05 level, t = –2.409, p = .016, two-tailed. More 2002 pleasure travelers participated in "outdoor Recreation" activities than did 1997 travelers. This activity pattern is similar to the "entertainment" activity pattern at the .05 level, t = –2.551, p = .011, two-tailed; more 2002 pleasure travelers participated in "entertainment" activities than did 1997 travelers.

There were no significant statistical relationships between the effect of time of travel and "heritage" and "fall color tour" activities over time at the .05 level with two-tailed test, t = –1.444, p = .149 and t = .003, p = .998, respectively. The test results are summarized in Table 2.

Table 2. The Relationship Between Time of Travel and Activity Participation

	Time of Travel Effect Variable			
Activity Participation[a]	1997	2002	t value	P value
Heritage	-.022	.018	–1.444	.149
Shopping	.095	-.080	6.376	.000**
Outdoor recreation	-.036	.030	–2.409	.016*
Entertainment	-.038	.032	–2.551	.011*
Fall color tour	.000	.000	.003	.998

Note: Each cell indicates average factor scores.

a. Factors

* $p < .05$, ** $p < .01$

Table 1. Relationship between Biological Age Effect and Activity Participation

	Biological Age Effect Variable											
Activity Participation[a]	18 – 22 (1)	23 – 27 (2)	28 – 32 (3)	33 – 37 (4)	38 – 42 (5)	43 – 47 (6)	48 – 52 (7)	53 – 57 (8)	58 – 62 (9)	63 – 67 (10)	68 or order (11)	F Statistic (*p*)
Heritage	.184 (7, 8, 10, 11)	.084 (11)	.045 (11)	.079 (11)	.004	.040 (11)	–.043 (1)	–.060 (1)	–.056	–.136 (1)	–.182 (1–4, 6)	4.072 (.000**)
Shopping	–.108 (5, 11)	–.052	.047	.012	.140 (1, 6, 8, 9)	–.044 (5)	–.010	–.162 (5, 11)	–.103 (5, 11)	–.077	.144 (1, 8, 9)	4.581 (.000**)
Outdoor Recreation	–.108 (9– 11)	–.073 (10, 11)	–.048 (10, 11)	–.123 (8– 11)	–.044 (10, 11)	–.066 (10, 11)	.013 (10, 11)	.107 (4)	.142 (1, 4)	.292 (1–7)	.229 (1–7)	7.198 (.000**)
Entertainment	–.133 (5, 6)	–.170 (5, 6)	–.039 (5)	.032	.152 (1–3, 8, 9)	.091 (1, 2)	.017	–.075 (5)	–.123 (5)	.070	.017	5.123 (.000**)
Fall Color Tour	.151 (8, 9, 11)	.140 (8, 9, 11)	.105 (8, 9, 11)	.048 (9, 11)	.036 (9, 11)	–.005	–.019	–.143 (1–3)	–.214 (1–5)	–.103	–.193 (1–5)	6.424 (.000**)

Note: Each cell indicates average factor scores. Tukey HSD Post hoc test indicates that a cell number in parentheses is a significant difference in the cell age group.

a. Factors

** $p < .01$.

Generational Cohort Effect

As shown in Table 3, a significant relationship was found between generational cohort effect and the "heritage" activity factor at the .05 level, F = 4.763, *p* = .000. Younger generational cohorts were more likely to participate in this activity than older cohorts. Comparing average factor scores, the generational cohort of 1980–1984 had the highest participation in this activity, followed by the generational cohorts of 1975–1979, 1965–1969, and 1960–1964. In contrast, the least participation in "heritage" activities was found in the generational cohort of 1930–1934, followed by the generational cohorts of 1929 or earlier, 1935–1939, and 1945–1949. A significant relationship was found between "shopping" activity factor and generational cohort at the .05 level, F = 2.799, *p* = .000. Older and middle generational cohorts were more likely to participate in "shopping" activity than younger cohorts. Comparing average factor scores, respondents in the 1929 or earlier cohort were the highest participants in this activity, followed by the 1930–1934, 1960–1964, 1955–1959, and 1950–1954 cohorts. A significant relationship between the effect of generational cohort and "outdoor Recreation" activity factor at travel destination was found at the .05 level of probability, F = 7.289, p = .000. Comparing factor mean scores, the generational cohort of 1930–1934 was most likely to participate in this activity at travel destination, followed by the generational cohorts of 1940–1944, 1929 or earlier, and 1935–1939. The 1975–1979 generational cohort was least likely to participate in this activity. There is a significant relationship between generational cohort and "entertainment" activity factor at the .05 level, F = 3.038, *p* = .000. "Entertainment" activity at the travel destination is more likely to be engaged in by the middle generational cohorts—that is (in descending order), the 1955–1959, 1960–1964, and 1950–1954 cohorts.

There was also a significant relationship between generational cohort and "fall color tour" activity factor at the .05 level, F = 6.198, *p* = .000. Younger and middle generational cohorts were more likely to participate in "fall color tour" activity than older cohorts. The 1980–1984 generational cohort had the highest percentage of participants in this activity, followed by the 1970–1974, 1965–1969, and 1975–1979 cohorts. The lowest participation was seen in the 1940–1944 generational cohort, followed by the 1930–1934 and "1929 or earlier" cohorts.

APPLICATION OF RESULTS

The effects of biological age and generational cohort were apparent in heritage and fall color tour participations at trip destination over time. Young and middle-aged travelers are likely to participate in these activities at the trip destination. Similarly, young and middle generational cohorts (i.e., Generation X and Trailing-edge Baby Boomer cohort) appear to participate in these activities. These findings are inconsistent with the findings of Baloglu and Shoemaker (2001) and Horneman et al. (2002).

Significant relationships were also found in shopping activity at travel destination with the effects of biological age, time of travel, and generational cohort. Middle-aged travelers, people who made pleasure trips in 1997, and middle and older generational cohorts are likely to participate in this activity at the trip destination. Furthermore, the result found that middle-aged travelers and those who made pleasure trips in 1997 participated in shopping activity at the destination. This might be because middle-aged travelers are likely to have stable jobs and discretionary incomes, and therefore have

greater purchasing power. The year 1997 was a better economic environment than 2002, possibly because the terrorist attack of 9/11 raised people's awareness about their safety and future. They also wanted to save money because of the economy in 2002. Strong significant relationships were found in the activity patterns of outdoor recreation and entertainment at trip destinations with respect to the effects of biological age, time of travel, and generational cohort over time.

Specifically, middle-aged and senior travelers, pleasure travelers in 2002, and middle and senior generational cohorts (i.e., Depression cohort, World War II cohort, Post War cohort, and Leading-edge Baby Boomer cohort) were more likely to participate in outdoor recreation activity at the travel destination. The effects of biological age and generational cohort co-existed in the activity pattern of outdoor recreation.

This is similar to the activity pattern of entertainment at the travel destination. Middle-aged and senior travelers were more likely to participate in this activity. Similar findings were reported by previous studies (Morrison et al., 1996; Park et al., 2002; Reece, 2001). This may be because entertainment, such as casino gaming, favors middle and older adults, who typically have more time and disposable income than younger adults. Accordingly, during a five-year period the MGM Grand Detroit (1999), Detroit Entertainment (1999), and Greektown Casino (2000) were newly opened in the study region. These new casinos may have encouraged more pleasure travelers to participate in entertainment activity in 2002. Middle generational cohorts, Leading-edge Baby Boomer generation cohort and Trailing-edge baby boomer generation cohort, were more likely to enjoy entertainment activity than other generational cohorts. This may be part because they have more disposable income and time than older and younger generational cohorts. The effects of biological age and generational cohort seemed to co-exist in the pattern of entertainment activity.

Table 3. Relationship between Generational Cohort Effect and Activity Participation

	Generational Cohort Effect Variable											
Activity Participation[a]	≤ 1929 (1)	1930 - 1934 (2)	1935 - 1939 (3)	1940 - 1944 (4)	1945 - 1949 (5)	1950 - 1954 (6)	1955 - 1959 (7)	1960 - 1964 (8)	1965 - 1969 (9)	1970 - 1974 (10)	1975 - 1979 (11)	1980 - 1984 (12)	F Statistic (*p*)
Heritage	-.160 (8, 9, 11, 12)	-.216 (8, 9, 11, 12)	-.155 (8, 9, 11, 12)	-.027	-.083 (12)	.034	-.010	.086 (1-3)	.098 (1-3)	-.009	.109 (1-3)	.234 (1-3, 5)	4.763 (.000**)
Shopping	.163 (12)	.085	-.113	-.094	-.080	.020	.033	.078	-.015	-.006	-.062	-.170 (1)	2.799 (.001*)
Outdoor Recreation	.200 (5, 7-9, 11)	.276 (5, 7-9, 11, 12)	.181 (7, 9, 11)	.220 (5, 7-9, 11, 12)	-.048 (1, 2, 4)	.042	-.096 (1-4)	-.045 (1, 2, 4)	-.117 (1-4)	.008	-.132 (1-4)	-.104 (2, 4)	7.289 (.000**)
Entertainment	0.054	-.081	-.012	-.066	-.042	.040	.111 (11)	.097 (11)	-.004	-.060	-.134 (7, 8)	-.143	3.038 (.000**)
Fall color tour	-.128 (10, 12)	-.223 (9-12)	-.122 (10, 12)	-.234 (7-12)	-.036	-.059 (10)	.028 (4)	.039 (4)	.089 (2, 4)	.146 (1-4, 6)	.087 (2, 4)	.208 (1-4)	6.198 (.000**)

Note: Each cell indicates average factor scores. Tukey HSD Post hoc test indicates that a cell number in parentheses is a significant difference in the column cohort.

a. Factors

** $p < .01$.

DISCUSSION

Biological age effect is a strongly influential factor on shopping and entertainment activities over time. Continuity theory may be used to explain this finding. Middle-aged and older adults develop stable patterns of activity (Atchley, 1993). Shopping and entertainment activities might require less physical strength. Biological age segmentation can be applied to shopping and entertainment-oriented tourist destination markets. Middle-aged and senior travelers appear to be useful target segments of those marketplaces. Salient evidence showed the effect of generational cohort on outdoor recreation activity at travel destination over time. Participation in outdoor recreation is affected by generational cohorts. Using generational cohorts to segment a market of outdoor recreation is recommended, because this study found that Depression cohort, World War II cohort, Post War cohort, and Leading-edge Baby Boomer cohort are likely to enjoy outdoor recreation activity at trip destination. However, Generations X and N are less interested in participating in outdoor recreation at the trip destination, in part because they might have less exposure to outdoor activity earlier in life. Segmenting an outdoor recreation market by generational cohort is suggested and then the marketing mix should be based on the generational cohort.

Very few studies in the tourism and hospitality literature have used longitudinal data sets. This study demonstrated how existing data can inform marketing strategies and promotions. Cohort analysis has the potential to change the simplistic manner in which age has been used as a causal variable in travel marketing research. Importantly, the cohort approach will add little cost and complexity to age related travel behavior research but will produce far more information that is relevant to travel product developers and marketers. The cohort analysis approach can extract rich marketing information from their pre-existing data sets, quickly and at minimal cost.

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