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CHANGES IN PROPENSITY TO SEARCH FOR TRAVEL INFORMATION ONLINE OVER TIME: A COHORT ANALYTICAL APPROACH

Huh and Frye: CHANGES IN PROPENSITY TO SEARCH FOR TRAVEL INFORMATION ONLINE

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ABSTRACT

The purpose of this study was to investigate the causal relationship between changes in online travel information searching behavior and the effects of biological age, time of travel, and generational cohort over time. Household data of 1997 and 2002 were utilized for this study. Independent samples t-tests and One-way Analysis of Variance were carried out to test the relationship between online travel information searching and the effects of time-related variables, and then stepwise logistic regression was employed to identify key determinants that explain variations in online travel information searching behavior over time. The results of the study provided evidence of time of travel and generational cohort impacts on online travel information searching behavior over time. The odds of a respondent searching for travel information online were 237% higher for 2002 pleasure travelers than for 1997 pleasure travelers and 42% lower for those that were born in 1935–1939 than for those born in 1980–1984. The implications of the study were discussed.

Keywords: travel information searching, biological age, time of travel, generational cohort, cohort analysis

INTRODUCTION

One of the many challenges facing the American tourism and hospitality industry in the 21st Century is rapid changes in the demographic characteristics of the U.S. population. According to the latest Census report (2008), the American population is aging as Baby Boomers (those born in the post-World War II period between 1946–1964) advance into middle age. Low birth rate, increased life expectancy, and the aging of the baby boomers are believed to be causal factors in the aging of America (Godbey, 1997; Longino, 1994). 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 may influence their travel behavior. For instance, economic conditions of the nation, such as GDP and employment rate, and technology developments, such as high-speed Internet and Global Positioning Systems (GPS) are also believed to affect travel behavior. The population's changing age structure, unique events, and environmental changes have affected the U.S. travel behavior over time. However, little attention has been paid to the following questions to date: What effect will the aging of the U.S. population have on the U.S. tourism and hospitality industry over time? Have patterns of travel behavior, such as propensity to search for travel information online, been changing as successive young adult cohorts (e.g., 18 to 24 years-old age group) replace the previous cohort and the Baby Boomers reach middle age? And, do unique events, economic conditions, or technology developments (e.g., computer penetrations, Internet usage), have an influence on travel searching behavior while people are planning? What key factors can predict online travel information searching over time? These questions are of great importance to the tourism and hospitality industry because changes in age distribution will influence tourism and hospitality market demand as the U.S. population continues to age.

The main purpose of this study was to investigate the causal relationship between changes in propensity to search for travel information online and the effects of biological age, time of travel, and generational cohort. In this study, the biological age variable captures changes in travel behavior due to the physical or life cycle changes that accompany aging. The time of travel variable captures changes in travel behavior influenced by events or conditions at the time that a trip is taken or being planned (e.g., gasoline prices, 9/11, economic situation, technology development). The generational cohort variable captures changes in travel behavior produced by differences that arise from the life experience, history, values, attitudes, and socialization of cohorts. The secondary purpose of this study was to further identify salient factors that influence online travel searching behavior in relation to the effects of biological age, time of travel, and generational cohort, as well as sociodemographic factors and travel-related factors (e.g., travel party size, transportation used). In this study, it was hypothesized that a traveler's biological age, time of travel, and generational cohort have significant impact on online travel information searching.

Biological Age

Biological age refers to physical or life cycle changes that occur in the aging process. The importance of biological age has been recognized in the tourism and hospitality literature. Biological age has been linked to changes in behavior, attitudes, and demands (Schiffman & Kanuk, 1997) and is a key predictor of changes in individuals' behavior and attitudes (Hansman & Schutjens, 1993). Biological age has been found to influence information search behavior. Gitelson and Crompton (1983) observed that adults aged 50 or older were prone to use a travel agent while planning a trip. Horneman, Carter, Wei, and Ruys (2002) found that seniors 65 or older preferred to collect travel information from printed travel guides, pamphlets, or brochures, from word-of-mouth recommendations, and travel agents. They were least likely to use the Internet, clubs and associations, and reward programs to obtain travel information. Since the 1990s the Internet has been a gold mine of travel information (Connolly, Olsen, & Moore, 1998). Prior studies provide ample evidence that biological age plays an important role in using the Internet for travel information. Bonn, Furr, and Susskind (1999) found that age, income, educational level, lodging, and spending are statistically significant variables that explain differences between Internet users and nonusers. The majority (72%) of Internet users who sought travel information were younger than 45 years of age. Similar findings are reported by Weber and Roehl (1999) and Hsu, Kang, and Wolfe (2002). Weber and Roehl (1999) found that age, income, occupation, and experience with the Internet are statistically significant variables that distinguish on-line from off-line travel information searchers. Those who used the Internet for travel information and purchased travel products/services were likely to be 26 to 36 years of age, whereas those who neither used the Internet nor purchased travel products/services were likely either to be younger than 25 or older than 55. Hsu et al. also found that 24% of adults aged 65 or older had accessed the Internet for travel information, whereas the majority (77%) of adults aged 18 to 24 used the Internet for travel information. This may be because older people are generally uncomfortable with and reluctant to use new technology (Lewis, 1996; Vuori & Holmlund-Ryttonen, 2005). Biological age influences propensity to search for information online. Although prior studies provide some evidence of the impact of biological age, few studies have examined online travel searching behavior and biological age over time. Most studies have been designed as cross sectional studies collecting data at one period of time.

Time of Travel

Time of travel refers to unique events/incidents or environmental changes that could affect travel behavior. The time of travel is critical because economic circumstances, gasoline prices, and technology developments are influential on travelers at the macro level. Travel is an information-based activity (Connolly et al., 1998). People use the Internet to gather information for trip planning and to purchase travel products and services (Huh, Li, Kim, & Holecek, 2003). For this reason, the penetration of computer and Internet use are believed to be good indicators of travel information searching behavior. According to the National Telecommunications and Information Administration (McConaughy, 1997), the computer penetration rate significantly increased between 1994 and 1997; there was a 52% increase in personal computer ownership, a 139% increase in modem ownership, and a 397% increase in E-mail access. Surprisingly, Internet use for travel information increased by 122% from 51 million users in 1997 to 113 million users in 2002 according to the Travel Industry Association of America (2003). This Travel Industry Association of America report indicated that 29% of those who traveled in 1997 used the Internet for travel purposes (e.g., reservations, ticketing, information searching). Two-thirds (67%) of those who traveled in 2002 used the Internet; an increase of 38% age points from 1997 to 2002. The Internet has become an indispensable tool for travelers. For this reason, the penetration of Internet use is believed to play a central role in propensity to search for travel information over time. The years 1997 and 2002 were economically strong. Gasoline prices were also stable. However, the penetration of computer and Internet use was remarkable during this five-year period.

Generational Cohort

The generational cohort variable used in this study is designed to capture changes in behavior produced by differences that arise from the life experience, history, values, attitudes, and socialization of people over time. The importance of generation cohort in marketing is that it facilitates understanding of different cohort group patterns of behavior/attitudes and distinguishes one generational cohort from others (Glenn, 1977). Additionally, marketers have used generational cohort as a marketing tool (Kotler & Armstrong, 1996). Although the terms "generation," "cohort," or "generational cohort" have been interchangeably used in the literature, distinct studies of the generational cohort by Strauss and Howe (1991) and Meredith, Schewe, and Karlovich (2002) give useful insights into these terms and concepts, and practical implications for research. Strauss and Howe defined "generation" as a cohort group (everyone born in a limited span of consecutive years) whose length approximates the span of a phase

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of life and whose boundaries are fixed by peer personality (a generational persona recognized and determined by age location, beliefs and behavior, and perceived membership in a common generation). They divided people into several generational groupings (approximately 20 to 25 birth-years span) based on the length of a generation, as well as into four types of generational personalities (i.e., civic, adaptive, idealist, and reactive). According to their study, five out of the eighteen generations with a cycle of four personalities had been recognized in the literature. The generation classification of Strauss and Howe have been adopted to empirical studies in tourism literature. These studies have dealt with: (1) changes in activity preferences for pleasure travel over time (Pennington-Gray & Kerstetter, 2001; Pennington-Gray & Lane, 2001; Pennington-Gray & Spreng, 2001; Warnick, 1993); (2) cohort segmentation (Pennington-Gray, Fridgen, & Stynes, 2003).

The term “generational cohort” appeared in a book by Meredith, Schewe, and Karlovich (2002). They defined the generational cohort as “the people we are born with, travel through our lives with, and experience similar events with, especially those events that are happening when we are coming of age that imprints core values” (p. 6). The distinct difference between the concepts of generation (Strauss & Howe, 1991) and generational cohort (Meredith et al., 2002) is that the generational cohort is classified into shortened generations (approximately 7 to 10 birth-years span) and emphasizes “defining moments” that can embrace “wars, political dislocations, assassinations, economic upheavals, or technological changes (e.g., invention of the atom bomb, automobile, radio, the rise of television, computer, or the Internet)” (pp. 6–7). This generational cohort classification was applied to a study by Beldona (2005), who examined changes in travel information search behavior online between 1995 and 2000, using Baby Boomer and Generation X as generational cohorts. Generational cohort can be a good indicator of changes in individuals’ behavior or attitudes over time because it gives us a macro-level understanding of peoples’ behaviors, attitudes, and values, and broaden marketers’ abilities to profile their target market. This study utilizes the concept of generational cohort defined and identified by Meredith et al. (2002) to interpret the results of the study.

METHOD

Data and Study Instrument

To accomplish the purpose of the study, data were needed for at least two time intervals. Data collected 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. On average, 400 telephone interviews were completed each month during the study, which would provide approximately a $\pm 3\%$ sampling error (Lohr, 1999). From January 1996 onward, the MTMS yielded longitudinal information about travel behavior across the study region. To identify changes in patterns of travel behavior, the data to be compared should have the widest interval between survey years. The data from 1997 and 2002 met the decision criteria of the widest available interval between survey years and identical question sets. The questionnaire used in the study was developed for and administered via a Computer-Assisted Telephone Interviewing (CATI) laboratory maintained by the Michigan Travel, Tourism, and Recreation Resource Center at Michigan State University. A core set of questions in the questionnaire remained unchanged during the eight-year period of the study; other questions relating to the research project were periodically rotated in and out.

Data Analytical Methods

One-way analysis of variance (ANOVA) was carried out to test the relationship between the effects of biological age, generational cohort, and the online travel information searching variables. The reason for utilizing one-way ANOVA was that it would determine if the means of propensity to search for travel information online variable differed statistically with respect to 11 age groups and 12 generational cohort groups. If significant relationships between the biological age group variables and the online travel searching variable were found based upon calculated F statistics, then follow-up analysis of Post hoc tests such as Tukey Honestly Significant Difference (HSD) were applied to examine all possible combinations to identify significant mean differences among the independent groups. Finally, if any effects (i.e., biological age and generational cohort) were found to be statistically related to the online travel searching variable, they were explored using stepwise logistic regression analysis. Independent samples *t*-tests were used to determine if each mean of the online travel information searching variable differs significantly between 1997 and 2002 travelers at the .05 level of probability. If the *t* statistic showed significance between the effect of time of travel and online travel information searching variable, it would indicate

that a statistically significant relationship existed over time. Significant effects that resulted from the independent samples *t*-test were used for further analysis.

To test the research hypothesis that specified dominant effect(s) can be combined with other causal variables to more effectively explain variations in propensity to search for travel information online, logistic regression was performed, because this statistical technique is used when the response variable has only two possible outcomes—yes or no (Moore & McCabe, 1996). In the questionnaire, respondents were asked whether or not they would search for travel information online (yes or no).

A logistic regression model was proposed:

$$\log \left(\frac{p}{1-p} \right) = f(x_s) \quad (\text{Model 1})$$

where,

$\log(p / 1 - p)$ = propensity to search for travel information online
 x_s = predictors

Model 1 describes the log odds as a function of various predictors (i.e., biological age effect, time of travel effect, generational cohort effect, pre-school child, school-age child, senior, handicapper, residence, overnight trip, and lodging expenses). The odds are the ratio of the proportions for the two possible outcomes; when “*p*” is the proportion of those who use the Internet to seek travel information, then “ $1 - p$ ” is the proportion of those who do not use the Internet to seek travel information. Logistic regression coefficients were used to estimate odds ratios for each of the independent variables in the model. The stepwise selection method was employed to select underlying predictors, with entry testing based on the significance of the score statistic and removal testing based on the probability of a likelihood-ratio statistic based on conditional parameter estimates. Cox & Snell R squares and Nagelkerke R squares were computed to assess the goodness-of-fit of the model. Data were analyzed using the Statistical Package for Social Science (SPSS).

RESULTS

In this study, it was hypothesized that a traveler’s biological age, time of travel, and generational cohort has a significant impact on online travel information searching. The hypothesis was tested by using the one-way analysis of variance (ANOVA) and the independent samples *t*-test.

The Effect of Time-related Variables on Online Travel Information Searching

As shown in Table 1, biological age was found to be a significant factor in searching for travel information online at the .05 level of probability, $F = 3.867$, $p = .000$. Scanning across age categories, the tendency for younger travelers to use the Internet to search for travel information is fairly apparent. Further analysis using the Tukey HSD Post hoc test indicated significant mean differences in searching for travel information online between the 18–22 and the 68 or older age groups, between the 23–27 and the 68 or older age groups, between the 28–32 and the 68 or older age groups, between the 33–37 and the 68 or older age groups, between the 38–42 and the 68 or older age groups, between the 43–47 and the 68 or older age groups, and between the 48–52 and the 68 or older age groups. Younger travelers search for travel information online more than older travelers. Specifically, the 33–37 age group used the Internet the most, followed by the 28–32 and 23–27 age groups; the “68 or older” age group used the Internet the least, followed by the 63–67, 58–62, and 53–57 age groups.

As presented in Table 2, significant statistical relationships were found between generational cohorts and the propensity to search for travel information online at the .05 level, $F = 6.979$, $p = .000$. Scanning across generational cohorts, the tendency for seeking travel information online appears to increase among younger generational cohorts.

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Table 1
Relationship between Biological Age and Search for Travel Information Online

Variable	Biological Age Variable											F Statistic (<i>p</i>)
	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)	
Search for travel information online ^a	.713 (11) ^b	.743 (11) ^b	.761 (11) ^b	.766 (11) ^b	.737 (11) ^b	.741 (11) ^b	.726 (11) ^b	.692	.661	.636	.544 (1, 2, 3, 4, 5, 6, 7) ^b	3.867 (.000*)

Note. Each number is a mean.

a. Use of the Internet to obtain travel information.

b. Number(s) in parentheses identifies age groups that are statistically significant with the age group of that column determined by the Tukey HSD Post hoc test.

* $p < .05$

Table 2
Relationship between Generational Cohort and Search for Travel Information Online

Variable	Generational Cohort Variable												F Statistic (<i>p</i>)
	≤1929 (1)	1930 (2)	1935 (3)	1940 (4)	1945 (5)	1950 (6)	1955 (7)	1960 (8)	1965 (9)	1970 (10)	1975 (11)	1980 (12)	
Search for travel information online ^a	.409 (2, 4~12) ^b	.676 (1) ^b	.615 (9, 11, 12) ^b	.625 (1, 8, 9, 11, 12) ^b	.687 (1) ^b	.733 (1) ^b	.725 (1) ^b	.752 (1, 4) ^b	.781 (1, 3, 4) ^b	.735 (1) ^b	.775 (1, 3, 4) ^b	.794 (1, 3, 4) ^b	6.979 (.000*)

Note. Each number is a mean.

a. Use of the Internet to obtain travel information.

b. Number(s) in parentheses identifies cohorts that are statistically significant with the generational cohort of that column determined by the Tukey HSD Post hoc test.

* $p < .05$.

The number of people who obtain travel information online has increased over time. A relationship between time of travel and the propensity to search for travel information online was found to be statistically significant at the .05 level, $t = -4.207$, $p = .000$, two-tailed. Pleasure travelers in 2002 were more likely to use the Internet to obtain travel information than were those in 1997. Specifically, the vast majority (80%) of 2002 travelers obtained travel information online, whereas only a little more than half (56%) of 1997 travelers did so. The test results are summarized in Table 3.

Table 3
Relationship Between Time of Travel and Search for Travel Information Online

Travel Behavior Variable	Time of Travel Variable		t value	P value
	1997	2002		
Search for travel information online ^a	.563	.798	-14.207	.000*

Note. Each number is a mean.

a. Use of the Internet to obtain travel information.

* $p < .05$.

Propensity to Search for Travel Information Online Model

The results of stepwise logistic regression from fitting selected independent variables (biological age, time of travel, generational cohort, and selected sociodemographic variables) to the dependent variable (propensity to search for travel information online) are summarized in Table 4. The dependent variable here is whether respondents search for travel information online (1=Yes, 0=No). Biological age, time of travel, and generational cohort were included in this model because they were found to be strongly associated with the dependent variable in previous test results. The research hypothesis that biological age, time of travel, and generational cohort can be combined with other independent variables to more effectively explain the variation in “propensity to search for travel information online,” was tested via this model. The result supported the research hypothesis.

The predictors in the model explained 7% to 11% of the variation in propensity to search for travel information online (pseudo $R^2 = .069$, Cox & Snell $R^2 = .078$, and Nagelkerke $R^2 = .113$). The model correctly predicted 74% of the cases. Six predictors were identified in this analysis, with statistical significance at the .05 level. In terms of time of travel effect, the odds of a respondent searching for travel information online are a multiple of 3.367, or 237% higher for the 2002 pleasure travelers than the 1997 pleasure travelers. In relation to the generational cohort effect, the odds for using the Internet to seek travel information are a multiple of 1.405 or 41% higher for those who were born in 1975–1979 than for those born in 1980–1984. Likewise, the odds are a multiple of .577 or 42% lower for those who were born in 1935–1939 than for those born in 1980–1984. Similar results were found for two other generational cohorts.

With respect to income, the odds of the propensity to search for travel information online are a multiple of 1.674 or 67% higher for those who earned above-median income than those who earned below-median income. In other words, the odds ratio of those who earned above-median income compared to those who did not equals 1.674. That is to say, about 167 respondents who had above-median income searched for travel information online for every 100 of those who had below-median income.

The “propensity to search for travel information online” model indicates that in 2002 over 121% more people sought travel information online than in 1997; those born between 1975–1979 were estimated to seek travel information online 34% more often than those born between 1980–1984; those who were born between 1935–1939 are estimated to have the propensity to search for travel information online 63% less often than those born between 1979–1983; those born in 1929 or earlier are estimated to search for travel information online 138% less often than those born between 1980–1984; and those who earn above-median income are estimated to search for travel information online 52% more often than those who earn below-median income. In summary, the effects of time of travel and generational cohort overruled biological age effect. Time of travel and generational cohort were found to be the most significant factors associated with the propensity to search for travel information online.

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Table 4
Stepwise Logistic Regression Results from Fitting Independent Variables (Biological Age, Time of Travel, Generational Cohort, and Selected Sociodemographic Variables) to the Dependent Variable (Propensity to search for Travel Information Online)

Independent Variable/Predictor	Unstandardized Coefficient (b)	Standard Error	Wald Chi-Square	df	P value	Odds Ratio
Constant	-.110	.118	.866	1	.352	.896
Time of travel ^a	1.214	.087	194.015	1	.000	3.367
Above-median (\$40,001) income ^b	.515	.107	23.344	1	.000	1.674
Generational cohort ^c	.340	.163	4.373	1	.037	1.405
Generational cohort ^d	-.551	.212	6.776	1	.009	.577
Generational cohort ^e	-.634	.160	15.793	1	.000	.531
Generational cohort ^f	-1.378	.285	23.450	1	.000	.252
-2 Log likelihood	3393.752					
Pseudo R ²	.069					
Cox & Snell R ²	.078					
Nagelkerke R ²	.113					
Overall percentage	.737					

Note. “Propensity to search for Travel Information Online” was used as a dependent variable for the multiple logistic regression analysis with stepwise method. The estimates are in log.

a. 1=Year 2002, 0=Year 1997.

b. 1=Above-median (\$42,001) income, 0=Below-median income.

c. 1=1975–1979, 0=1980–1984.

d. 1=1935–1939, 0=1980–1984.

e. 1=1940–1944, 0=1980–1984.

f. 1= ≤1929, 0=1980–1984.

CONCLUSION AND IMPLICATIONS

The central question addressed in this research was: what effect will the aging of the U.S. population have on the tourism industry? Time of travel and generational cohort were significant factors in the propensity to search for travel information online over time. The variables of generational cohort, time of travel, and discretionary income effectively explain variation in propensity to seek travel information online over time. Generational cohort is the most important factor in propensity to seek travel information online, followed by time of travel and discretionary income.

The study provided strong evidence of generational cohort and time of travel impacts on propensity to search for travel information online. Generational cohort can be one of the key factors in online information searching behavior. For instance, generation X cohort (1966–1976) and N generation cohort (1977–?) came of age with personal computers and the Internet. People in these generational cohorts cannot imagine living without the Internet, GPS, and mobile phones. Destination marketers and practitioners should use these intermediaries as distributional channels and communication and promotion tools to differentiate, customize, and personalize their products and services. Specifically, Generation X cohort and N generation cohort must be reached through the Internet and other high-tech devices for marketing purposes. The generational cohort can likewise be used in generational cohort marketing and Internet market segmentation strategies. Time of travel can explain travel information search online behavior over time. Consistent monitoring of usage rates, penetration of the Internet, and technological trends is recommended, because Generation X cohort and N generation cohort, for instance, readily adopt and use them, and change their preferences of technology innovations. If tourism destination marketers and practitioners keep track of Internet and technology use, they will be in a better position to reach their targets in the future.

REFERENCES

- International CHRIE Conference-Refereed Track, Event 7 [2009]*
- Beldona, S. (2005). Cohort analysis of online travel information search behavior: 1995-2000. *Journal of Travel Research, 44*(2), 135-142.
- Bonn, M. A., Furr, H. L., & Susskind, A. M. (1999). Predicting a behavioral profile for pleasure travelers on the basis of Internet use segmentation. *Journal of Travel Research, 37*(4), 333-340.
- Connolly, D. J., Olsen, M. D., & Moore, R. G. (1998). The Internet as a distribution channel. *Cornell Hotel and Restaurant Administration Quarterly, 39*(4), 42-54.
- Gitelson, R. J., & Crompton, J. L. (1983). The planning horizons and sources of information used by pleasure vacationers. *Journal of Travel Research, 21*(3), 2-7.
- Glenn, N. D. (1977). *Cohort analysis*. Beverly Hills, CA: Sage Publications.
- Godbey, G. (1997). *Leisure and leisure services in the 21st century*. Venture Pub., State College, PA.
- Hansman, H., & Schutjens, V. (1993). Dynamics in market segmentation: A demographic perspective on age-specific consumption. *Marketing & Research Today, 21*(3), 139-147.
- Horneman, L., Carter, R. W., Wei, S., & Ruys, H. (2002). Profiling the senior traveler: An Australian perspective. *Journal of Travel Research, 41*(1), 23-37.
- Hsu, C. H. C., Kang, S. K., & Wolfe, K. (2002). Psychographic and demographic profiles of niche market leisure travelers. *Journal of Hospitality and Tourism Research, 26*(1), 3-22.
- Huh, C., Li, H., Kim, S. H., & Holecek, D. F. (2003). What affects travelers' searching and buying behavior differently on the Internet? *Proceedings of the 8th Graduate Education & Graduate Student Research Conference in Hospitality and Tourism, 13*, 219-223.
- Kotler, P., & Armstrong, G. (1996). *Principles of marketing* (7th ed.). Englewood Cliffs, NJ: Prentice Hall.
- Lewis, H. G. (1996). *Silver linings: selling to the expanding mature market*. Chicago: Bonus Books.
- Lohr, S. L. (1999). *Sampling: Design and analysis*. Pacific Grove, CA: Duxbury Press.
- Longino, C. F. J. (1994). Myths of an aging America. *American Demographics, 16*(8), 36-43.
- McConnaughey, J. W. (1997). *The digital divide: A survey of information "Haves" and "Have Nots" in 1997*. National Telecommunications and Information Administration. Retrieved December 14, 2008, from the World Wide Web: <http://www.ntia.doc.gov/ntiahome/net2/falling.html>
- Meredith, G. E., Schewe, C. D., & Karlovich, J. (2002). *Defining markets, defining moments: America's 7 generational cohorts, their shared experiences, and why businesses should care*. New York: Hungry Minds.
- Moore, D. S., & McCabe, G. P. (1996). *Introduction to the practice of statistics* (2nd ed.). New York: Freeman.
- Pennington-Gray, L., Fridgen, J. D., & Stynes, D. (2003). Cohort segmentation: An application to tourism. *Leisure Sciences, 25*(4), 341-361.
- Pennington-Gray, L., & Kerstetter, D. L. (2001). Examining travel preferences of older Canadian adults over time. *Journal of Hospitality and Leisure Marketing, 8*(3), 131-145.
- Pennington-Gray, L., & Lane, C. W. (2001). Profiling the silent generation: Preferences for travel. *Journal of Hospitality and Leisure Marketing, 9*(1/2), 73-93.
- Pennington-Gray, L., & Spreng, R. A. (2001). Analyzing changing preferences for pleasure travel with cohort analysis. *Tourism Analysis, 6*(2), 109-121.
- Schiffman, L. G., & Kanuk, L. L. (1997). *Consumer behavior* (6th ed.). Upper Saddle River, N.J.: Prentice Hall.
- Strauss, W., & Howe, N. (1991). *Generations: The history of America's future, 1584 to 2069* (1st ed.). New York: William Morrow and Company, Inc.
- Travelers' use of the Internet, 2003 Edition*. (2003). Washington, DC: Travel Industry Association of America.
- U. S. Census Bureau. (2008). *Population Profile of the United States: 2000*. Retrieved December 14, 2008, from the World Wide Web: <http://www.census.gov/population/pop-profile/2000/chap01.pdf>
- Vuori, S., & Holmlund-Ryttonen, M. (2005). 55+ people as internet users. *Marketing Intelligence & Planning, 23*(1), 58-76.
- Warnick, R. B. (1993). U.S. domestic travel: Back to the future; the impact of an aging U.S. population on domestic travel trends, *The Annual Review of Travel* (pp. 75-89). New York: American Express Travel Related Services Company.
- Weber, K., & Roehl, W. S. (1999). Profiling people searching for and purchasing travel products on the World Wide Web. *Journal of Travel Research, 37*(3), 291-298.