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SELF-PERCEIVED AGE: A CROSS-CULTURAL EMPIRICAL INVESTIGATION

ABSTRACT

Despite the growing importance of the 50+ population, older consumers are still routinely neglected by many marketing and advertising practitioners. This is particularly true of research conducted outside the USA, where there is a marked lack of a coherent body of knowledge pertaining to senior consumers. This paper therefore aims to make a contribution to knowledge by analysing and comparing the self-perceived ages of older consumers across four different nations (Japan, Germany, UK, and Hungary). The study comprised part of a major piece of international research into older consumers across several culturally disparate nations, and utilised questionnaires. The lower age parameter of 50 was selected on the basis that this is the starting point for many age-related services offered to older consumers. The two self-perceived age instruments, both age identity and cognitive age, were used and a total of 1338 usable questionnaires were received. We found the ‘young at heart’ philosophy to be true for older consumers in all four nations under study. The vast majority of seniors feel middle-aged, and are not yet ready to admit they feel old. Moreover, many of the patterns to emerge have similarities to American research in that there is little agreement between cognitive and chronological age, with a strong youth bias. Likewise, the expectation that the look age dimension would be closest to actual age than any of the other self-perceived age dimensions emerged in all the samples with the exception of Hungary.

Key Words: Cognitive age, self-perceived age, seniors

INTRODUCTION AND OBJECTIVES

Despite the growing importance of the 50+ population, older consumers are still routinely neglected by many marketing and advertising practitioners (Niemelä-Nyrhinen, 2007; Simcock & Sudbury, 2006) and what is known about their consumer behaviour still lags far behind what is known about other important segments (Williams et al. 2010). This is particularly true of research conducted outside the USA, where there is a marked lack of a coherent body of knowledge pertaining to senior consumers which can guide international

marketing decisions. This paper therefore aims to make a contribution to knowledge by analysing and comparing the self-perceived ages of older consumers across four different nations.

SENIOR CONSUMERS AND SELF-PERCEIVED AGE

The ageing of the world's population

The current ageing of the world's population is probably the most profound demographic change in the history of humankind. It is a pervasive and truly global phenomenon, without precedent or parallel, largely irreversible, and with the young populations of the past unlikely to occur again. Indeed, at the world level, the number of older persons will exceed the number of children by 2047, which has already occurred in many developed regions. The profundity of this demographic change will impact on economic growth, labour markets, pensions, health care, housing, migration, politics, and of course consumption (United Nations [UN], 2007). If the second half of the 20th century focused on the young, the 21st century will have to focus on the mature.

Self-Perceived Age

Chronological age is a constant in daily life, in age related research, and in marketing. The use of chronological age as an objective measure that shapes the lives of individuals can be illustrated by the age restrictions imposed by the government. For example, chronological age dictates the point at which an individual can drive, vote, drink alcohol, marry, and claim a state pension. In research, chronological age is the most commonly used yardstick when studying the ageing process (Cunningham and Brookbank, 1988). In marketing, chronological age is the most frequently used of all demographic variables to describe consumer behaviour research and to segment consumer markets (Barak and Schiffman, 1981).

Despite these numerous uses, the limitations of chronological age have long been acknowledged (Adams, 1971; Heron and Chown, 1967). Whilst chronological age may be a useful clue to performance during early life (Jarvik, 1975), ageing does not perfectly coincide with chronological age (Bell, 1972) so homogeneity in individual lifestyles and conditions among age groups cannot be assumed. Indeed, the number of years lived is a poor indicator of

a person's attitudes and consumer behaviour (Chua, Cote and Leong, 1990; Van Auken, Barry and Anderson, 1993).

Given the limitations of chronological age, the implications of the cliché that a person is as young, or as old, as they feel may be more useful in understanding the behaviour of older people. Research shows that the age a person perceives themselves to be, or identifies with, constrains them to recognise changes in themselves and to perceive that attitudes toward them have changed (Peters, 1971). Thus, the age a person identifies with gives an insight into the behaviours that the individual thinks society expects from them (Guptill, 1969). Likewise, an individual's self-perceived age gives a better understanding of their likely consumer behaviour than can chronological age alone (Barak and Schiffman, 1981; Cleaver and Muller, 2002; Schiffman and Sherman, 1991; Stephens, 1991). For this reason, self-perceived age has been used in research investigating older consumers and values (Sudbury and Simcock, 2009a; Kohlbacher and Chéron, 2010), attitudes toward senior sales promotions (Tepper, 1994; Moschis and Mathur 2006; Sudbury and Simcock 2010), innovative purchasing (Sherman, Schiffman and Dillon 1988; Stephens 1991), information seeking (Barak and Rahtz 1990), interest in fashion (Wilkes 1992), complaining behaviour (Dolinsky and Gould 1998), media usage (Barak and Gould 1985; Johnson 1993), internet use (Eastman and Iyer 2005; McMellon et al. 1997) and in segmentation studies (Sudbury and Simcock 2009b).

There are many different ways of measuring self-perceived age, and these methods fall into two major groups. The first, and oldest, is age identity (Cavan *et al.*, 1949), concerning the age category (young, middle-aged, old) in which people perceive themselves to be, and is used extensively in gerontology studies. A second type of measure grew in response to the recognition that ageing is multidimensional (Birren, 1968), comprising biological, psychological, and sociological dimensions, none of which can be understood without reference to the others (Riley, 1985). The cognitive age scale (Barak and Schiffman, 1981) is one such multidimensional scale, which incorporates the different dimensions of aging by asking people how old they think they look (biological), how old they feel (psychological and biological), and how old they rate their behavior and interests (social). This typology has its roots in the consensus reached by philosophers concerning the existential stances with regard to the human condition, which are knowing, feeling, and acting (Bengston, Reedy & Gordon, 1985). The cognitive age scale has become the most popular measure of self-perceived age in marketing research pertaining to seniors. The superiority of the cognitive age scale over other

available instruments is due to its ease of administration and understanding by respondents (Stephens, 1991), its validity (Van Auken & Barry, 1995), and its multidimensionality.

The overwhelming finding from studies of age identity is that the vast majority of older adults do not identify with the age categories 'elderly' or 'old', preferring instead to consider themselves 'middle aged'. This finding holds true even for people past retirement age (when, arguably, they are deemed old by society), and it is not until people are well into their seventies that more and more begin to admit to an old age status (Blau, 1956). Those studies that have utilised the multidimensional scales to measure the self-perceived age of older people (for example, Barak, 1998; Barak and Gould, 1985; Clark, Long and Schiffman, 1999; Goldsmith and Heins, 1992; Johnson, 1995, 1996; Kastenbaum et al, 1972; Mathur, Sherman and Schiffman, 1998; Sudbury 2004) have found a strong degree of consistency, in that:

- There is little agreement between self-perceived age and chronological age, although the two correlate.
- There is a strong bias towards a more youthful self-perceived age in comparison to chronological age.
- The look age dimension is closest to actual age than any of the other self-perceived age dimensions.

Whilst the majority of studies into self-perceived age, at least from a marketing perspective, have been conducted in the US, the relatively sparse and recent research conducted outside America tentatively suggests that self-perceived age is a universal concept that can be measured globally, in different languages, and in a reliable and valid manner (Barak, 2009). Indeed, the cross-cultural research by Barak and associates suggests that the cognitive age scale is reliable and can be used in diverse cultures and that there is a universal nature of the way human beings - irrespective of culture - perceive and feel about cognitive age (Barak et al. 2001; Mathur et al. 2001; Barak et al. 2003). As a result, researchers have suggested that cognitive age is "culture free" (Van Auken et al. 2006; Van Auken and Barry 2009; cf. also Barak 2009).

Nevertheless, validity is a dynamic process that results from the accumulation of evidence over time (Wells, 1975) and the aggregation of results (Peter, 1981), with Epstein (1980) arguing that "there is no more fundamental requirement in science than that the replicability

of findings be established” (p. 796). This is particularly important when researching consumers by age group as period and cohort effects play a crucial role in addition to age effects (Palmore, 1978; Rentz et al., 1983); this means that e.g. findings about older consumers 10 or 20 years ago may no longer hold true today. Given that the few cross-national studies on cognitive age have been conducted at least 10 years ago, our paper makes an important contribution to the literature by checking whether the culture-free assumption of cognitive age also holds true for the current cohorts of older consumers.

In time, it may be possible to acknowledge the phenomenon as a useful marketing tool that is truly global. On this basis, the present study contributes to the small but growing body of knowledge pertaining to self-perceived age outside the USA, and for these reasons four countries which have little or no previous research in this field have been selected.

Country Profiles

The four nations selected are Japan, Germany, UK, and Hungary. Japan is ranked number one in every international league table that considers population ageing, with 28% of its population already age 60 or over and a median age of 43 years (UN, 2007). Despite the fact that it is the country most severely affected by the megatrend that is population ageing only two previous studies have considered self-perceived age from a marketing perspective, and both found Japan’s older population to feel about 8 years younger than their actual age (Kohlbacher and Chéron 2010; Van Auken et al. 2006). Germany is ranked 3rd in the league tables produced by the UN (2007) with 25.3% of its population already 60 or above. Despite this, there has never been a study into the self-perceived ages of German’s senior consumers, although a previous gerontological study suggests that Germany’s older population feel about 12 years younger than their chronological age (Smith and Baltes, 1999). The UK is ranked 17th from a total of 192 countries with 22% of its population already 60 or over. The three previous studies conducted in Britain (Sudbury 2004; Sudbury and Simcock 2009; Szmigin and Carrigan 2000) suggest older British consumers feel about 10 years younger than their actual age. Finally, Hungary is ranked 19th in the league tables and has more than 21% of its population already aged 60 or above. Despite this, and the fact that Hungary is an important market that has made a major transition from communism to a market that has attracted much inward investment, no previous study has been conducted into the self-perceived ages of its older consumers.

METHOD

The study comprised part of a major piece of international research into older consumers across several culturally disparate nations, and utilised questionnaires. The lower age parameter of 50 was selected on the basis that this is the starting point for many age-related services offered to older consumers (for example, SAGA, Age UK, Seniorsurfers.net). The two self-perceived age instruments, both age identity and cognitive age, were used. Additionally, respondents completed a battery of socio-demographic questions.

The questionnaire was translated and back translated by teams in Japan, Germany, and Hungary before being piloted across all four countries. Several changes were made on the basis of the pilot study. Three lists were purchased, one German (n = 6000), one British (n = 5000), and one Japanese (n = 1044) that contained randomly selected names and addresses of people aged 50+, and a questionnaire and pre-paid envelope was posted to them all. Piloting in Hungary demonstrated the difficulties of self-completion among many older Hungarian adults, thus the distribution strategy was adapted in that country, where a team of trained researchers administered the questionnaire face-to-face to 200 adults aged 50+.

FINDINGS

A total of 1338 usable questionnaires were received, and table 1 details the final sample by age and country.

Table 1: Total Sample by Chronological Age and Country

Country	n	Mean Age	Std. Deviation
UK	502	66.68	8.683
Germany	227	63.30	8.421
Japan	409	64.47	8.572
Hungary	200	58.66	5.635
Total	1338	64.23	8.628

The reliability of the cognitive age scale was found to be acceptable (Cronbach's alphas ranged from .86 for the German sample to .907 for the Hungarian sample). Table 2 details the age identities of the sample by country, where it can be seen that the vast majority of older adults, regardless of their nationality, consider themselves to be middle aged. Conversely, few people still feel young, although these differ slightly between nationalities, with only 2.3% of Germans feeling young, compared to almost 8% of older UK adults. This is despite the fact that the UK sample is older than the German sample by more than 3 years. Nevertheless, particularly noteworthy are the differences in those who admit to an old identity. In the UK and Germany less than 15% of older adults admit to feeling old, in comparison to one quarter of Hungarians and more than 30% of Japanese respondents. Indeed, a Chi-square test for independence indicated that there is a significant association between nationality and age identity ($X^2=56.029$, $df = 6$, $p < .001$), with fewer than expected British and Germans, and greater than expected numbers of Japanese and Hungarians, admitting to an old age identity.

Table 2: Age Identity by Country

Country	Age Identity		
	Young (%)	Middle-Aged (%)	Old/Elderly (%)
UK	7.8	77.5	14.6
Germany	2.3	85.1	12.7
Japan	7.1	62.6	30.3
Hungary	5.5	69.0	25.5

$X^2=56.029$, $df = 6$, $p < .001$

Consistent with previous research, our multi-national sample found little agreement between cognitive and chronological age, although a strong and positive correlation was found between the two ($r = 0.621$, $n = 1338$, $p < .001$). Indeed, across the sample as a whole only 158 (11.8%) respondents had cognitive ages that were greater than their actual age. In contrast, the vast majority (85%) perceived themselves to be younger than their actual age. There were, however, comparisons between the nations. Table 3 classifies the differences in actual and cognitive age by country, where it can be seen that greater numbers of Hungarians (28.5%) felt older than their age, while only 7.5% of Germans felt older. Indeed, at least 85% of seniors from the UK, Japan and Germany felt younger than their actual age, while this figure drops to 66.5% for older Hungarians.

Table 3: Cognitive Age Compared to Actual Age, by Country

Country	Cognitive age older than actual age (%)	Cognitive age same as actual age (%)	Cognitive age younger than actual age (%)
UK	11.8	3.2	85.0
Germany	7.5	2.5	90.0
Japan	9.0	4	8.7
Hungary	28.5	5	66.5

Table 4 details the mean chronological and cognitive ages by country, as well as the *youth bias* (defined as the difference between chronological and cognitive age) where it is clear that there is a bias towards a more youthful self-perceived age. In all four samples paired-samples t-tests demonstrated that chronological and cognitive age are significantly different.

Table 4: Mean Chronological and Cognitive Age by Country

Country	Mean Chronological Age	Mean Cognitive Age	Youth Bias
UK	66.68	57.59	9.09
Germany	63.30	55.56	7.74
Japan	64.47	58.17	6.30
Hungary	58.66	54.99	3.67
Total	64.23	57.03	7.20

Noticeably, however, the youth bias ranges from less than 4 years for Hungarians to over 9 years for UK seniors. One-way ANOVA showed these differences to be significant (Welch (3, 1334) = 26.905, $p < .001$). Post-hoc comparisons revealed Hungary to have a significantly lower youth bias than any other country, while the UK has a significantly greater youth bias than Japan. Conversely, no significant differences emerged between Germany and Japan, or between Germany and the UK.

Finally, table 5 shows the percentages of seniors by nation who feel younger than their actual age by cognitive age dimension, whilst table 6 provides the mean cognitive age dimensions by country.

Table 5: Youthful Self-perceived Age by Dimensions of Cognitive Age (per cent)

Country	Feel age	Look age	Do age	Interests age
UK	83.9	59.3	87.6	84.7
Germany	82.4	78.9	83.3	82.4
Japan	76.0	78.5	80.7	81.4
Hungary	56.0	59.5	65.5	71.5

Consistent with previous research, for the sample as a whole look age is the dimension closest to chronological age. Once again, however, there are contrasts between the nations, as the difference between look age and the other dimensions are greater in the UK and Germany in

comparison to Japan and Hungary. In these latter countries, there is little difference between look age and other dimensions, and indeed in Hungary the mean look age is actually marginally higher than feel age.

Table 6: Mean Actual and Cognitive Age Dimensions

Country	Actual age	Feel age	Look age	Do age	Interests age
UK	66.68	56.59	61.38	55.38	56.99
Germany	63.30	55.71	58.00	54.16	54.35
Japan	64.47	58.75	59.85	58.23	55.86
Hungary	58.66	56.25	56.15	54.55	53.00
Total	64.23	57.05	59.56	55.92	55.60

DISCUSSION

This research has found the ‘young at heart’ philosophy to be true for older consumers in all four nations under study. The vast majority of seniors feel middle-aged, and are not yet ready to admit they feel old. Moreover, many of the patterns to emerge have similarities to American research in that there is little agreement between cognitive and chronological age, with a strong youth bias. Likewise, the expectation that the look age dimension would be closest to actual age than any of the other self-perceived age dimensions emerged in all the samples with the exception of Hungary.

The significant differences found between the nations are perhaps this study’s most important contribution to knowledge. Clearly, Japanese and Hungarian seniors are more likely to admit to being old than are their British and German counterparts, and this pattern was repeated in the cognitive age results. Wahl and Kruse (2003) argue that research into older adults should be designed and interpreted with a consideration of the social and cultural contexts in which these adults live. The tendency for older people to report younger self-perceived ages has been viewed as a form of denial in the United States, where it has long been noted that youth is valued over old age (Guy, Rittenburg and Hawes, 1994). Such an ideology is not limited to American culture: British writing provides overwhelming support for the contention that in

the UK old age is associated with negative characteristics; indeed in contrast to some other European countries Britain still has age discrimination built into the fabric of its society, and ageing is often portrayed in negative ways in the media (Joseph Rowntree Foundation, 2004).

While the UK sample demonstrate similarities to American studies which typically report an age bias of between 8 and 12 years (Barak, 1998; Sherman, Schiffman and Mathur, 2001), a number of studies conducted outside the US show the bias to be less pronounced. Chua, Cote and Leong (1990) conducted their cognitive age study in Singapore and found that English-speaking respondents were more likely to feel younger than their actual age in comparison to Chinese-speaking respondents. This difference was interpreted as a result of differing cultures, as age is more respected in Eastern as opposed to Western cultures. However, it is not just Eastern cultures that have been found to have a less pronounced youth bias, as older Finnish adults have also been found to have a greater acceptance of their actual age in comparison to older Americans (Uotinen, 1998). Thus, particularly in view of the significance of the European Union, it would seem that more research is needed across European nations before seniors markets are targeted with a pan-European marketing strategy. A recent meta-analysis, using data from 598 studies conducted over 30 years, into cultural value dimensions found that cultural values were more strongly related to older adults in comparison to younger people (Taras et al., 2010). Clearly, then, the life-experiences of individual nations needs to be considered.

The nations selected here are very different with regards to the life-experiences of older adults. Older Germans have experienced re-unification (and before that the separation), migration of younger adults from Eastern to Western Germany which has affected older people's social networks and integration, war guilt and a lack of focus on war veterans that is in stark contrast to the UK and US, and different social welfare arrangements which produce continuity of income in old age (Wahl and Kruse, 2003). Language is an important part of culture, and interestingly the Hungarian language belongs to the Finno-Ugric family and is one of the few languages spoken within the European Union that are not of Indo-European origin. Moreover, older Hungarians have lived through the collapse of communism and the transition to a market economy, and a large study into the formulation of a consumer society and on the development of local identities in Central Europe found that a special type of consumer society came into being into these countries, with Hungary being one of them (Wessely, 2000). From a consumer values perspective, the socialist system in Hungary which

emphasised altruism and concern for the community has been replaced with more materialistic values, but there are still major generational differences (Hofmeister Toth and Neulinger, 2009). Finally, older Japanese seniors have – just like their German counterparts – experienced the post-war efforts to rebuild their country and finding a new national identity. American occupation during the post-war years and the subsequent globalisation have led to an acculturation process that has had a strong impact on Japanese values, thinking and consumer behaviour (cf. also Francks, 2009).

Our findings seem to challenge the assumption of cognitive age as culture free. This is partly in line with previous studies finding that the cognitive age scale exhibits some partial measure invariance across the three countries, which implies that culture may play at least some role in the perception of age (Mathur et al. 2001). This is also supported by Uotinen's (1998) cross-national study and by Catterall and Maclaran (2001) who argue that the underpinning assumptions inherent in the concept of cognitive age reflect a Western preoccupation with youthfulness. In fact, given that the status of older people in the society is dependent on cultural norms, Mathur et al. (2001) suggested that self-perceived age would also be influenced by culture.

In sum, this research has answered a recent call for replication studies to be undertaken in the field of cross-cultural global age research, which is still in an early pioneering stage (Barak, 2009). The study also adds to the small but growing amount of empirical evidence pertaining to seniors outside the US. Results lend support for the claim that the concept of cognitive age is reliable and can be used in diverse cultures, and that there is a universal way that human beings perceive and feel about self-perceived age (Barak et al. 2001; Barak 2009). That some differences emerged in terms of the extent of youth bias between the nations is to be expected given the disparate cultures and life-experiences that these seniors have experienced.

LIMITATIONS

We cannot know for sure if culture is the (sole) explanation for the differences we have found across the four countries surveyed. Other factors on the individual or sample level may be confounding our results. Indeed, previous research has identified various antecedents and correlates of cognitive age (Barak and Stern 1986; Mathur and Moschis 2005; Ong et al.

2009) and further research will necessary to disentangle cultural effects from those of other correlates. Besides, subjective age might also be a social phenomenon and in that case the usefulness and applicability of the cognitive age concept could change along with changing social attitudes such as the one towards aging for example (cf. e.g. Catterall and Maclaran 2001). It is hoped that the different sampling methods which were needed due to cultural differences did not impact the results, but we note that Hungary, where the administration of the questionnaires was different, has emerged as significantly different to the other nations from a self-perceived age perspective.

FURTHER RESEARCH

Further research needs to delve into the antecedents of the concept of self-perceived age, and consider different life experiences and cultures as potential antecedents.

MANAGERIAL IMPLICATIONS

In advertising, the use of “cognitive-age congruent” models or spokespersons should prove fertile as a consumer’s self-perceived age interacts with the perceived age of the model or spokesperson seen in an ad, and can subsequently influence the response to the advertising message (Chang 2008; Van Auken and Barry 2009). This may also explain why older people are often underrepresented in advertising, a fact that also holds true for TV commercials in the UK (Simcock and Sudbury 2006), Germany (Kessler et al. 2010), and Japan (Prieler et al. 2009).

From a marketing perspective, the study lends support to the usefulness of self-perceived age as a way of segmenting and targeting senior consumers across the globe. In the same way as a youth segment represents an example of a universal global common segment (Kjeldgaard and Askegaard, 2006), there is growing evidence that a ‘young at heart’ senior global market exists (Barak 2009) and this study lends further support to that. That is not to suggest that older adults can be treated as an undifferentiated monolith. Indeed, the differences between the nations suggest that local differences still need to be considered in advertising and

positioning strategies. Nevertheless, it provides a starting point for marketers wishing to target this growing and important global phenomenon that is the senior market.

References

- Adams, David L. (1971), "Correlates of satisfaction among the elderly," *The Gerontologist*, 11 (Winter), 64-8.
- Barak, Benny (2009), "Age-Identity: A cross-cultural global approach," *International Journal of Behavioral Development*, 33 (1), 2-11.
- ___ (1998), "Inner-Ages of Middle-Aged Prime-Lifers," *International Journal of Aging and Human Development*, 46 (3), 189-228.
- ___ and Stephen Gould (1985), "Alternative Age Measures: A Research Agenda," *Advances in Consumer Research*, (12), 53-58.
- ___, Anil Mathur, Keun Lee and Yong Zhang (2001), "Perceptions of Age-Identity: A Cross-Cultural Inner-Age Exploration," *Psychology and Marketing*, 18 (10), 1003-1029.
- ___, Anil Mathur, Yong Zhang, Keun Lee, and Emmanuel Erondu (2003), "Inner-age satisfaction in Africa and Asia: A cross-cultural exploration," *Asia Pacific Journal of Marketing and Logistics*, 15 (1/2), 3-26.
- ___ and D. R. Rahtz (1990), "Cognitive Age: Demographic and Psychographic Dimensions," *Journal of Ambulatory Care Marketing*, 3 (2), 51-65.
- ___ and Schiffman, Leon G. (1981), "Cognitive Age: A Nonchronological Age Variable," *Advances in Consumer Research*, 8, 602-606.
- ___ and Barbara Stern (1986), "Subjective age correlates: A research note," *The Gerontologist*, 26 (5), 571-78.
- Bell, B. (1972), "Significance of Functional Age for Interdisciplinary and Longitudinal Research," *Aging and Human Development*, 3 (2), 145-147.
- Bengston, Vern L., Margaret N. Reedy, and Chad Gordon (1985), "Aging and Self-Perceptions: Personality Processes and Social Contexts," in *Handbook of the Psychology of Aging*, Vol. 2, James E. Birren and K. Warner Schaie, eds. NY: Van Nostran Reinhold Company, 544-593.
- Birren, J. E. (1968), "Principles of Research on Aging," In *Middle Age and Aging: A Reader in Social Psychology*, Bernice L. Neugarten ed. Chicago: University of Chicago Press, 545-551.
- Blau, Zena Smith (1956), "Changes in Status and Age Identification," *American Sociological Review*, 21, 198-203.
- Catterall, Miriam and Pauline Maclaran (2001), "Body talk: Questioning the assumptions in cognitive age," *Psychology & Marketing*, 18 (10), 1117-33.

- Cavan, Ruth S., Ernest W. Burgess, Robert J. Havinghurst and Herbert Goldhamer (1949), *Personal Adjustment in Old Age*. Chicago: Science Research Associates.
- Chang, Chingching (2008), "Chronological age versus cognitive age for younger consumers," *Journal of Advertising*, 37 (3), 19-32.
- Chua, Carolin, Joseph A. Cote, and Siew Meng Leong (1990), "The Antecedents of Cognitive Age," *Advances in Consumer Research*, 17, 880-85.
- Clark, Sylvia D., Mary M. Long and Leong G. Schiffman (1999), "The mind-body connection: The relationship among physical activity level, life satisfaction, and cognitive age among mature females," *Journal of Social Behavior and Personality*, 14 (2), 221-40.
- Cleaver, Megan and Thomas E. Muller (2002), "I Want to Pretend I'm Eleven Years Younger: Subjective Age And Senior's Motives For Vacation Travel," *Social Indicators Research*, 60, 227-241.
- Cunningham, W. R., & Brookbank J. W. (1988), *Gerontology: The psychology, Biology and Sociology of ageing*. NY: Harper and Row.
- Dolinsky, Arthur L. and Stephen J. Gould (1998), "The Role of Psychographic Characteristics as Determinants of Complaint Behaviour by Elderly Consumers of Physician Health Care Services," *Journal of Hospital Marketing*, 12 (2), 27-51.
- Eastman, Jacqueline K. and Rajesh Iyer (2005), "The impact of Cognitive Age on Internet use of the Elderly: An introduction to the public policy implications," *International Journal of Consumer Studies*, 29 (2), 125-136.
- Francks, Penelope (2009), *The Japanese Consumer: An Alternative Economic History of Modern Japan*, Cambridge: Cambridge University Press.
- Guptill, Carleton S. (1969), "A Measure of Age Identification," *The Gerontologist*, 9, 96-102.
- Goldsmith, Ronald E. and Richard A. Heiens (1992) Subjective Age: A Test of Five Hypotheses. *The Gerontologist*, 32 (3), 312-317.
- Guy, Bonnie S, Terri L. Rittenburg and Douglas K. Hawes (1994), "Dimensions and Characteristics of Time Perceptions and Perspectives among Older Consumers," *Psychology and Marketing*, 11 (1), 35-56.
- Hofmeister Toth, Agnes and Agnes Neulinger (2009), "Changing Consumption Patterns in Hungary", *8th International Congress Marketing Trends*. January 15-17 2009, Paris.
- Jarvik, Lissy F. (1975), "Thoughts on the Psychobiology of Aging," *American Psychologist*, 30 (May), 576-583.
- Johnson, Edna B. (1995), "Cognitive Age: A Key to Understanding Consumer Alienation in the Mature Market," *The Mid-Atlantic Journal of Business*, 31 (3), 259-270.

- Johnson, Rose L. (1993), "Age and Social Activity as Correlates of Television Orientation: A Replication and Extension," *Advances in Consumer Research*, 20, 257-261.
- Kastenbaum, Robert; Valerie Derbin; Paul Sabatini and Steven Artt (1972), "The Ages of Me": Toward Personal and Interpersonal Definitions of Functional Aging," *Aging and Human Development*, 3 (2), 197-211.
- Kessler, Eva-Marie, Clemens Schwender, and Catherine E. Bowen (2010), "The portrayal of older people's social participation on German prime-time TV advertisements," *Journal of Gerontology: Social Sciences*, 65B (1), 97-106.
- Kohlbacher, Florian and Emmanuel Chéron (2010). Segmenting the Silver Market Using Cognitive Age and the List of Values: Empirical Evidence from Japan. *European Advances in Consumer Research (EACR) Conference 2010*, June 30 - July 3, 2010. London.
- Joseph Rowntree Foundation. (2004). *From welfare to well-being – planning for an ageing society*. York: Joseph Rowntree Foundation. Available at <http://www.jrf.org.uk/publications/welfare-well-being-planning-ageing-society-summary-conclusions-joseph-rowntree-foundati>
- Kjeldgaard, Dannie and Soren Askegaard (2006), "The Glocalization of Youth Culture: The global youth segment as structures of common difference," *Journal of Consumer Research*, 33, 231-247.
- Mathur, Anil, Elaine Sherman and Leon G. Schiffman (1998), "Opportunities for Marketing Travel Services to New-Age Elderly," *The Journal of Services Marketing*, 12 (4), 265-277.
- _____, Benny Barak, Yong Zhang, and Keun S. Lee (2001), "A cross-cultural procedure to assess reliability and measurement invariance," *Journal of Applied Measurement*, 2 (3), 241-55.
- McMellon, Charles A., Leon G. Schiffman and Elaine Sherman (1997), "Consuming Cyberseniors: Some Personal and Situational Characteristics That Influence Their On-Line Behavior," *Advances in Consumer Research*, 24, 517-521.
- Moschis, George P. and Anil Mathur (2006), "Older consumer responses to marketing stimuli: The power of subjective age," *Journal of Advertising Research*, 46 (Sept.), 339-46.
- Niemelä-Nyrhinen, Jennie (2007), "Baby Boom Consumers and Technology: Shooting down stereotypes," *Journal of Consumer Marketing*, 24, 305-312.
- Ong, Fon Sim, Yap-Ying Lu, and Masoud Abessi (2009), "The correlates of cognitive ageing and adoption of defensive-ageing strategies among older adults," *Asia Pacific Journal of Marketing and Logistics*, 21 (2), 294-305.

- Palmore, Erdman (1978), "When can age, period, and cohort be separated?," *Social Forces*, 57 (1), 282-95.
- Peter, J. Paul (1981), "Construct Validity: A Review of Basic Issues and Marketing Practices," *Journal of Marketing Research*, 18 (May), 133-145.
- Peters, George R. (1971), "Self-Perceptions of the Aged, Age Identification, and Aging," *The Gerontologist*, 11 (Winter), 69-73.
- Prieler, Michael, Florian Kohlbacher, Shigeru Hagiwara, and Akie Arima (2009), "How Older People are Represented in Japanese TV Commercials: A Content Analysis," *Keio Communication Review*, 31, 5-21.
- Rentz, Joseph O., Fred D. Reynolds, and Roy G. Stout (1983), "Analyzing changing consumption patterns with cohort analysis," *Journal of Marketing Research*, 20 (1), 12-20.
- Riley, Matilda White (1985), "Age Strata in Social Systems' In *Handbook of Aging and the Social Sciences*, Robert H. Binstock and Ethel Shanas, eds. NY: Van Nostrand Reinhold Company, 369-411
- Schiffman, Leon G. and Elaine Sherman (1991), "Value Orientations of New-Age Elderly: The Coming of an Ageless Market," *Journal of Business Research*, 22, 187-194.
- Sherman, Elaine; Leon G. Schiffman and William R. Dillon (1988), "Age/Gender Segments and Quality of Life Differences," *Marketing: A Return to the Broader Dimensions*, 319-320.
- Simcock, Peter and Lynn Sudbury (2006), "The Invisible Majority? Older Models in UK Television Advertising," *International Journal of Advertising*, 25 (1), 87-106.
- Smith, Jacqui and Paul B. Baltes (1999), "Trends and Profiles of Psychological Functioning in Very Old Age. In *The Berlin Aging Study: Aging from 70 to 100*, P. G. Baltes and K. U. Mayer eds. NY: Cambridge University Press, 197-226.
- Stephens, Nancy (1991), "Cognitive Age: A Useful Concept for Advertising?," *Journal of Advertising*, 20 (4), 37-48.
- Sudbury, Lynn (2004), "Subjective Age Perceptions in The UK: An Empirical Study," *Quality in Ageing, Policy, Practice and Research*, 5 (1), 4-13.
- ___ and Peter Simcock (2009a,) " Understanding Older Consumers through Cognitive Age and the List of Values: A UK Perspective," *Psychology and Marketing*, 26 (1), 22-38.
- ___ and ___ (2009b), "A Multivariate Segmentation Model of Senior Consumers," *Journal of Consumer Marketing*, 26 (4) 251-262.
- ___ and ___ (2010), "To Use Or Not To Use? Age Based Sales Promotions and the Older Consumer," American Marketing Association Summer Educators Conference, Boston.

- Szmigin, Isabelle and Marylyn Carrigan (2000), "The Older Consumer as Innovator: Does Cognitive Age Hold the Key?" *Journal of Marketing Management*, 16, 505-527.
- Taras, Vas, Bradley L. Kirkman and Piers Steel (2010), "Examining the Impact of Culture's Consequences: A Three-Decade, Multilevel, Meta-Analytical Review of Hofstede's Cultural Value Dimensions" *Journal of Applied Psychology*, 95(3), 405-439.
- Tepper, Kelly (1994), "The Role of Labeling Processes in Elderly Consumers' Responses to Age Segmentation Cues," *Journal of Consumer Research*, 20 (4), 503-519.
- Sherman, Elaine, Leon G. Schiffman and Anil Mathur (2001) 'The Influence of Gender on the New-Age Elderly's Consumption Orientation' *Psychology and Marketing*, Vol. 18, No. 10, October, pp. 1073-1089
- United Nations (2007), "*World Population Ageing 2007*," NY: UN Department of Economic and Social Affairs, Population Division.
- Uotinen, Virpi (1998), "Age Identification: A Comparison between Finnish and North-American Cultures," *International Journal of Aging and Human Development*, 46 (2), 10-124.
- Van Auken, Stuart and Thomas E. Barry (1995), "An Assessment of the Trait Validity of Cognitive Age Measures," *Journal of Consumer Psychology*, 4 (2), 107-132.
- _____, Stuart and Thomas E. Barry (2009), "Assessing the nomological validity of a cognitive age segmentation of Japanese seniors," *Asia Pacific Journal of Marketing and Logistics*, 21 (3), 315-28.
- _____; _____ and Robert L. Anderson (1993), "Towards the Internal Validation of Cognitive Age Measures in Advertising Research", *Journal of Advertising Research*, 33 (3), 82-84.
- _____; _____ and Richard P. Bagozzi (2006), "A Cross-Country Construct Validation of Cognitive Age," *Journal of the Academy of Marketing Science*, 20 (10), 1-17.
- Wahl, Hans-Werner and Adreas Kruse (2003), "Psychological Gerontology in Germany: Recent findings and Social Implications," *Ageing and Society* 23, 131-163.
- Wells, William D. (1975), "Psychographics: A Critical Review," *Journal of Marketing Research*, 12 (May), 196-213.
- Wilkes, Robert E. (1992), "A Structural Modeling Approach to the Measurement and Meaning of Cognitive Age," *Journal of Consumer Research*, 19 (September), 292-301.
- Williams, Angie, Virpi Lyanne, Paul Mark Wadleith and Chin-Huie Chen (2010), "Portrayals of Older Adults in UK Magazine Advertisements: Relevance of target audience," *Communications*, 35, 1-27.