Age differences in gambling behavior

by

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Signatures have been redacted for privacy

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CHAPTER I: INTRODUCTION

Any connection between gambling and age in the United States has received scant attention in the social sciences. Perhaps, gambling behavior is not associated with the elderly, and is confined to younger ages, and thus age differences in gambling are not thought to be a productive research topic. However, recent trends to legalize a broader range of gambling could mean that more elderly do or will gamble. Moreover, the aging of the American population suggests that research on age differences in gambling behavior should become a research issue. If, for example, there are age-related declines in gambling behavior, then the impact of an increasingly aged population would mean a decline in the proportion of people who gamble. An understanding of age differences in gambling behavior provides a yardstick to predict and make future policies regarding gambling.

Objectives

The first objective of this study was to explore whether age differences in gambling behavior exist. Previous studies indicated that age appears to interact with other variables related to gambling, such as social class, marital status, employment status, gender, community size,

and religion. Thus, the second objective was to check for any moderating effects of these variables on the agegambling relationship. The third objective was to investigate the robustness of the age-gambling relationship in different forms of gambling. The last objective was to discuss the effects of aging and cohort on gambling. No attempt was made to discern which effect is more important, as both aging and cohort effects are intrinsically embedded in cross-sectional data utilized in this thesis (Glen, 1981).

This thesis is organized in five chapters. The first chapter states the objectives, and briefly reviews the history of gambling. A literature review of both gambling and aging research is presented in Chapter Two. Chapter Three presents methods used in this thesis, and the findings are presented in Chapter Four. Chapter Five summarizes and discusses the findings.

History of Gambling

Gambling has an ancient origin (Abt et al., 1985; Fact Research Inc., 1976; Rosecrance, 1988). The first records (Chinese) of gambling date back to circa 2300 B.C., and gambling was legal in India from 321 to 296 B.C. Although gambling was forbidden, ancient Greeks and Romans gambled

anyway. Early Christians were not allowed to gamble; however, by the thirteenth century, Constantinople, a stronghold of the Church, became the gambling capital of the world. The first public lottery was held in France in 1420 to raise funds for fortifications, and lotteries were also popular in Italy in the fifteenth century. Card games are believed to have their origin in the Far East, and were carried to the West, especially England and France, in the thirteenth century by gypsies. Horse racing began as a gentleman's sport to provide the pleasure of victory and assurance to the breeders of having a good stock. The first official horse track started operation in 1667 in Newmarket, England. Gambling flourished in Europe until the 1800s, when tighter restrictions on gambling were instituted due to widespread abuse of gambling.

The French, English and Spanish colonists brought gambling with them to the New World. Those who settled in the South were much less strict about gambling than the Puritan New Englanders. Horse racing enjoyed its popularity in the South, whereas anti-gambling laws were passed in the North within ten years of the arrival of the Mayflower.

Lotteries played an important role in financing early colonial economic development. The shortage of hard currencies made it difficult for the colonial governments to

fund costly capital investment projects. Lotteries, viewed as a form of voluntary taxation, proved to be an ideal method to raise funds from the colonists who strongly objected to further taxation. Some of the oldest universities, such as Harvard, Columbia, Yale, Dartmouth, Williams, Brown, Princeton, North Carolina, and Pennsylvania, were either founded or endowed by lottery proceeds. However, lotteries came under attack by merchants, complaining about unfair business practices, and the general public, who viewed lotteries preying on the poor. Lotteries were banned in the 1760s, after England decided that lotteries promoted idleness and were thus dysfunctional for the colonial economy. Lotteries were in decline until the Revolution, but made a quick comeback as soon as independence was won. Once again, governments relied on lotteries to raise funds to meet new obligations, such as education, transportation, hospitals, and other humanitarian needs.

Other games, such as faro, poker, and craps, first started in the South, particularly in New Orleans. These games diffused along the Mississippi and Ohio River Valleys, spread to New York and Washington in 1830s and 1840s, and migrated to the West Coast during the Gold Rush in the late 1840s. While gambling was gaining popularity in the North,

it suffered setbacks in the South when southerners decided the crimes associated with gambling had gotten out of control. Despite the antagonism toward gambling in the South, gambling made an impressive comeback in New Orleans during the Mexican-American War in the mid-1840s. Gambling continued to prosper in most big northern cities, such as St. Louis, Minneapolis, Indianapolis, Chicago, Washington, and New York, despite strong moral opposition against it during this era.

Between the Civil War and World War I America experienced a phenomenal economic growth. Individualism and risk taking were believed to be the keys to success. Gambling flourished, particularly in cities, as it provided opportunities of being successful which could then be attributed to one's risk-taking character. The end of mining camps and the completion of the transcontinental railroads led to the decline of gambling on the western frontier, for example, and the rise of gambling in western cities. When the mining camps closed and the rail replaced the cowboys, gambling in the frontier boomtowns lost its customers. Consequently, gambling activities gravitated toward cities in the West like San Francisco, Kansas City, and Denver.

Around the turn of the century, anti-gambling reforms led by evangelical reformers and pragmatic politicians had successfully driven gambling underground and prohibited general middle-class participation in it. Lotteries were banned in 1894, and by 1911 horse racing was outlawed in all but six states. However, in the 1920s, the anti-gambling efforts from the turn of the century had become disarrayed, and gambling made an impressive comeback. For example, horse racing was revived and conducted in the new parimutuel system, only sanctioned and regulated by the states. By 1935, Illinois, Louisiana, Florida, New Hampshire, West Virginia, Ohio, Michigan, Massachusetts, Rhode Island, Maine, and Delaware all had legalized pari-mutuel horse racing.

In the depths of the Great Depression, states sought financial relief through legalizing gambling, again giving gambling legitimacy. For instance, the Nevada legislature quickly legalized all types of gambling, except lotteries, in 1931. By 1940, there were already six casinos operating in Las Vegas. In 1935, slot machines were legalized in Florida, to increase state revenues, until they were banned in 1937 due to opposition from religious groups. A 1938 Reader's Digest article maintained that gambling in the hands of "vicious forces" was destructive, but argued that,

if "intelligently handled by a responsible government," gambling could be contributing constructively to the welfare of the society (Bahmueller, 1976). Gambling also took a structural change. It was no longer only an individual game for recreation, but also a lucrative business run by both governments and large syndicates.

Gambling continued to gain momentum in the 1940s and 1950s, and slowly became a major social problem (particularly organized crime) that was largely ignored by the general public and government as well. In 1950, the Kefauver investigation, the first direct federal effort to combat criminal gambling, brought the control of gambling by organized crime to public attention. Televised in fourteen cities and the District of Columbia, testimonies during this inquiry revealed how gambling supported loan sharking and other syndicate activities.

In the 1960s, underworld gambling peaked and a gradual reform began. This reform included enhanced law enforcement against organized crime, a better understanding of the psychology and social impact of gambling, and possible decriminalization of certain types of gambling. In 1961, Congress passed laws that made it easier for local governments to prosecute criminal gamblers. Also, state sponsorship of gambling was reinstated in an effort to raise state revenues as well as to deal with the problem of

gambling and organized crime. Legal gambling, which had been confined to only horse racing and casinos before the / 1960s, was expanded to other types of gambling. For instance, New Hampshire and New York were among the first to reinstate lotteries, in 1964 and 1967, respectively, after a seventy-year ban. In 1970, the state of New York even instituted an off-track betting agency to manage its bookmaking business. By 1978, the first casino on the East Coast opened its doors in Atlantic City.

Today, almost every state has legalized gambling, including state-sponsored lotteries, pari-mutuel horse racing, dog racing, casinos, bingo, and riverboat casinos. Gambling seems gradually to be gaining social acceptance. To illustrate, an American Institute of Public Opinion poll found that, in 1939, 54 percent of a sample of the American population had gambled at least once; in 1950, a Gallup poll estimated that 57 percent of the American population gambled; in 1975, 61 percent of a sample of 2,000 American adults reported that they gambled in 1974; and by April of 1989 a Gallup poll found that 72 percent of the adults surveyed had gambled in the past twelve months (Rosecrance, 1988; Fact Research Inc., 1976; Kallick et al., 1979; Hugick, 1989). In addition, 80 percent of those surveyed for a 1982 Gallup poll said they preferred having at least

some legal gambling as opposed to having all gambling illegal (Abt et al., 1985).

In summary, gambling has been encouraged in the individualistic, competitive, risk-taking and materialistic American culture; yet American attitudes toward gambling have been historically ambivalent. On one side, gambling has been condemned on moral and legal grounds by moral and religious groups, psychiatrists concerned about compulsive gambling, and government officials concerned about organized crime and gambling. On the other side, government and church endorsements of gambling are justified as long as gambling revenues are used for the well-being of society. Today, with the exception of federal violations, antigambling laws are almost non-existent. Gambling is firmly established as a legitimate recreational activity. Lottery tickets can be conveniently bought at convenience and grocery stores, and going to horse tracks is depicted on television as having a good time. Also, government dependence on revenues from legalized gambling have become institutionalized. Lottery proceeds help finance New York's and California's school systems, economic development in Iowa, and benefits for senior citizens in Pennsylvania, to name a few instances. Moral opposition is unlikely to restrict gambling in the near future due to widespread

acceptance of gambling by the middle class. In short, it is unlikely that the recent trend of increased acceptance of gambling since the 1930s will lose its momentum in the foreseeable future.

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CHAPTER II: LITERATURE REVIEW

This chapter is organized in four sections. The first section focuses on the effects of chronological age on gambling behavior. Effects of other correlates of gambling behavior are discussed in the second section. The third section reviews findings regarding the demographic traits of the participants in different types of gambling, and the types of gambling that people of different ages do. The last section is devoted to a summary of the literature reviewed.

Age and Gambling Behavior

Age differences have been found in many behaviors: driving ability and perception of risk of an accident (Matthews and Moran, 1986; Finn and Bragg, 1986), changes in preferred sexual activity over the adult years (Turner and Adams, 1988), social interaction (Boyd and Dowd, 1988), evaluation and experience of emotions (Sommers and Kosmitzki, 1988), crime (Smith, 1986; Sheley and Smith, 1988; Khullar and Wyatt, 1989; Steffensmeier et al., 1989; Shavit and Rettner, 1988), political attitudes and participation (Kiecolt, 1987; Cutler and Kaufman, 1975; Campbell, 1971), work involvement (Lorence, 1987; Loscocco and Kalleberg, 1988; Lorence and Mortimer, 1985),

environmental concerns (Mohai and Twight, 1987), and perception of health status (Clarke, 1987). Age differences have also been observed in the relationship between subjective and objective economic well-being (Fletcher and Lorenz, 1985), locus of control (Penk, 1969; Schneider, 1988), and subjective well-being (Shehan et al., 1986; Felton, 1987; Herzog et al., 1982; Gove et al., 1989). Yet, age has received little attention in research on gambling. The only two studies that researched age and gambling were done in the 1970s. Using data from a 1971 national Gallup survey, Li and Smith (1976) found chronological age to be negatively related to gambling propensity. In 1975, Kallick et al. (1979) conducted a national study on the extent of gambling activity, and found a general decline in gambling participation with chronological age. These age differences in gambling behavior can be attributed to two effects aging and cohort effects (McPherson, 1983).

Aging Effects

Aging effects refer to changes with age within an individual as she or he develops (McPherson, 1983). Thus, age differences in gambling behavior could result from individual changes with age in gambling involvement. Several perspectives and theories in the literature on aging effects that have implications on the age and gambling relationship are reviewed.

<u>Erikson's Eight Stages of Development</u> Within the framework of the life-span developmental perspective, Erikson (1963, 1968, 1982) maintains there are eight stages of human development. Each stage is associated with certain developmental tasks. During the fifth stage, adolescence, individuals seek self-identity through experimentation. Confused by different possible roles they can play, adolescents test and experiment as much as possible to define their identities. Hence, it is possible that adolescents would be more likely to engage in a wide array of gambling types, particularly the immediately available ones such as lotteries, sports, and card games. The next stage is "intimacy versus isolation." Experimentation is slowly replaced by concerns over mate selection, family formation, and career launching. This is a time when an individual begins to focus on certain types of gambling, which are most likely to be games that bear more financial rewards and risks. The seventh stage, "generativity", occurs around mid-adulthood. This stage is characterized by high productivity, creativity, a concern with self, achievement, and power. As a result of having more financial resources and interests in becoming financially successful, the middle-aged would be expected to focus on games like casinos and stock speculation. The final stage is called "ego integrity." This is a time of accepting

one's fate as being inevitable and meaningful. Therefore, older people are less concerned with ego, but more reflective and accepting of self, and thus have more stable self-concepts. This leads us to reason that the elderly should be less likely to gamble, for they are less likely to be influenced by outside forces, such as the needs to experiment for self-identity and financial success.

Hence, one could expect a general decline in gambling behavior with age due to a decline in experimentation. Also, different age categories with different needs may be attracted to different types of gambling. The middle-aged, who are more well-off and concerned about financial achievement, may be more interested in gambling types that have greater financial rewards and risks like investment speculations and casinos. We can also expect the elderly to be more likely to participate in games that are less competitive, such as bingo. They gamble not so much for financial rewards or excitement but for maintaining social relationships.

<u>Self-Presentation</u> Another perspective that has implication on the age-gambling relationship is selfpresentation. Goffman (1967) maintained that all social behavior can be understood in the context of selfpresentation. The purpose of individuals engaging in social

activities is to make a favorable impression about oneself on others to enhance self-esteem. But, routinization of everyday life systematically eliminates opportunities to participate in action, or risk-taking (Goffman, 1967), which is highly valued in Western and American culture (Abt et al., 1985; Frey, 1984). Gambling, as a form of action in which fateful decisions are made, provides a socially acceptable means of breaking the everyday routines and an opportunity to present one's confidence and competence for self-esteem enhancement (Holtgraves, 1988).

The concept of self-presentation has been tested in settings like racetracks and offtrack betting parlors. In his study of a racetrack in Hollywood Park, California, Herman (1967) found that gambling provided decision-making opportunities, and thus served to enhance one's self-esteem in the process of showing that one was in control of making decisions for oneself. Zola (1963) made similar observations in his study of an illegal off-track betting parlor in a New England town. He also found that bettors gambled to take control over making decisions for themselves to enhance their self-esteem.

Thus, a linear decline in gambling behavior with chronological age could be expected. Older people, having more life experiences and more stable and positive self-

concepts (McPherson, 1983; Gove et al., 1989), are less likely than the young to turn to gambling for self-presentation.

Activity, Disengagement, and Continuity Theories Social gerontological theories that prescribe successful aging in later years also have implications on gambling behavior in later years of life. These are activity, disengagement, and continuity theories. Assuming resistance to giving up roles, successful aging in later years involves replacing lost roles, activity theory argues. In order to maintain life satisfaction, as an individual enters her or his later years, she or he should replace the lost roles with new ones or reengage in the old ones to remain active (Havighurst and Albrecht, 1953; Burgess, 1960). Activity theory has been criticized for ignoring the individual's past activities, and the quality and meaning of the substituting activity. Consequently, the use of activity theory is limited to specific "high-activity encouraging" environments such as age-homogeneous nursing homes (McPherson, 1983).

According to activity theory, gambling involvement should go up in later years of life. Losses associated with age, such as losses of friends and spouses, could reduce the number of roles that can be played by the elderly. The elderly, therefore, would turn to gambling to replace lost roles. However, it is hard to conceptualize elderly gamble feverishly to replace their lost roles. When faced with stresses, such as those related to role losses, the elderly have been found to be more likely to use more passive, emotion-focused coping strategies rather than active, problem-focused ones (Osgood and Sontz, 1989). That is, older people would be more likely to deal emotionally but passively with their stresses rather than actively to seek consolations from gambling. This is in line with the twocomponent model of primary and secondary control (Schulz, 1986). Primary control involves individuals seeking to modify external realities to fit the self, whereas secondary control refers to changing the self to fit the external realities. The elderly may be forced to give up primary control as a result of physical incapabilities (which often cause role losses), but would lower their standards or aspirations to achieve self-efficacy. That is, the elderly would not be likely to turn to gambling to compensate for losses in control, but simply to readjust their standards to maintain their level of personal efficacy. Yet, it is possible that the elderly gamble in certain games which provide opportunities to maintain their ever-shrinking social networks.

This leads to a modification of the activity theory by specifying the nature of substituting activity. It is in this sense that one can conceptualize the elderly becoming more involved in those games that are more social-oriented. For example, playing bingo with friends in bingo halls or churches provides the elderly with a social network of support in which stress can be dealt with emotionally.

Assuming the elderly are less competent, disengagement theory, in contrast to activity theory, argues that it is necessary for the elderly to disengage to make way for the younger ones. Disengagement is supposed to bring satisfaction to the elderly, as it releases one from normative constraints or pressures such as demands from work (Cumming and Henry, 1961). Disengagement theory has come under attack for its claims that disengagement is a universal process and that it produces life satisfaction (McPherson, 1983). A cross-cultural comparison of preindustrialized societies (in which the elderly do not retire and enjoy high status) and industrialized societies (in which the elderly are mandated to retire and enjoy less respect) suggests that disengagement is not universal (McPherson, 1983).

Again, it is hard to conceptualize that the elderly stop gambling because of the need to make room for the

young, or to relieve themselves from pressures related to gambling. Disengagement from gambling could result from a perceived lower intellectual functioning by the elderly (Lachman, 1989; Osgood and Sontz, 1989). With the exception of the lotteries, gambling requires a fair amount of skill, lowering older people's involvement because they see themselves as less capable of meeting the skill requirements. Moreover, disengagement from gambling may not be universal across all types of gambling. For example, the elderly may decide they cannot meet certain requirements of certain types of gambling and thus will disengage, such as from betting on sports or casino gambling which are physically or financially demanding. Yet, as discussed previously, the elderly can also engage in games like bingo in order to maintain social relationships.

Departing from both activity and disengagement theories, the continuity theory maintains that as one ages, she or he strives to maintain her or his previously established lifestyle as long as personal resources can sustain the lifestyle (Williams and Wirths, 1965). This is based on the assumption that personality and lifestyle are shaped by early life socialization. Thus, instead from an aging-effect perspective, the continuity theory would look at gambling behavior from a cohort-effect perspective (which

is discussed in the next section on cohort effects). In light of the increase in social acceptance of gambling since the 1930s, and if continuity theory has substance, we can expect a general decline in involvement in gambling with chronological age.

In summary, it is not inevitable for an individual generally to engage in new roles or disengage from present roles as one ages. Some roles are continued, some are discontinued, some are intensified, and some are reduced depending on one's history of activity involvement, availability of personal resources, and needs. Hence, as different gambling types involve different financial and social requirements and rewards as well as the social ones, one might speculate that as people age they will engage in or disengage from certain types of gambling depending on the age-related needs and availability of personal resources. For example, the middle-aged, who tend to be more financially well-off and ambitious than other age categories, will gamble in games that are more financially rewarding, though risky, such as casinos, stocks, and commodities. As they enter their retirement years, people's needs for financial rewards and achievement are slowly replaced by the need to compensate for the age-related losses, like retiring from work, and loss of spouses and

friends. This can lead to a shift from casinos and financial speculation to gambling games which are less competitive, but which provide a social network to fulfill the need to socialize with others in later years of life.

Cohort Effects

As mentioned earlier, age differences could also result from cohort effects. Cohort effects refer to the differences in the impact of specific historical events on different age cohorts (Riley, 1988). Cohorts are made up of all persons born during a particular five- or ten-year period. Age differences in gambling behavior could result from the differential impact of historical events on different cohorts. The historical increase in social acceptance of gambling since the turn of the century would lead us to reason a general decline in gambling with age, because each consecutive cohort has been socialized into a less conservative environment toward gambling than the previous one. In particular, the Depression cohorts, aged 65 or over, should gamble less than the younger cohorts, aged under 65, as the harsh economic situations of the 1930s has socialized them to be more frugal than the later cohorts who did not experience the Depression.

Other Correlates of Gambling

As discussed in the previous section, literature from both aging and cohort effects predict a decline in gambling behavior with chronological age. However, one might ask if this age-gambling relationship is moderated by other variables that have been found to be correlates of age or gambling behavior. This section reviews gambling literature on how social class, marital status, employment status, gender, community size, religion, and the social worlds of gambling are related to age or gambling behavior.

Social Class

The theories of anomie, alienation, and decision-making emphasize that participation in illegal gambling provides opportunity for lower-class persons to relieve frustrations in their efforts to become successful and independent, as well as to gain power and control (Frey, 1984). Anomie theory maintains that people are culturally told to be successful without being provided the means. This culturalstructural inconsistency has induced adaptations, such as gambling, to alleviate the frustrations resulting from failures. Alienation and decision-making theories suggest that those frustrated on the job because of lack of power and autonomy are more likely to gamble, for gambling

provides a mode of self-expression and control. Since the lower class is more likely to be less powerful and lacking means, these three theories all predict that gambling is negatively related to social class. That is, people from the lower class are likely to gamble more than are those from the upper class. However, Veblen (1899) took the opposite direction by arguing that gambling serves as a status symbol for the upper class, to conform with other members of the same class, and that gambling thus is positively related to class.

Research on these theories of gambling has brought mixed results. In their studies of horse gamblers, both Herman (1967) and Zola (1963) found that gambling offered gamblers, otherwise unavailable opportunities to take control and make decisions in order to enhance their selfesteem. Downes et al. (1976) hypothesized the lowest involvement in gambling to be among the Protestant middle class, and that gambling should increase as one moved away from this sector of the population. The results were inconclusive. A negative relationship between gambling and middle-class values was found, but the study failed to support the theory of alienation. No relationship existed between gambling and indicators of alienation (such as lack of job autonomy). Li and Smith (1976) reported that social

class and gambling behavior were positively related. Kallick et al. (1979) also found that people with higher income and educational attainment were more likely to gamble. Tec (1964) observed that, while the size of a bet increased with income, gamblers took their financial situation into consideration regardless of social class. Нe also found that unemployment did not necessarily lead to more gambling. The relationship between gambling and social class was found to be moderated by mobility aspirations (Tec, 1964; Li and Smith, 1976). That is, people from the lower class with contacts with the upper class would be more likely to gamble. Their aspirations, resulting from their comparison with the upper class, which were frustrated by the lack of opportunity, make them turn to gambling. In short, findings of social class and gambling research have been mixed. While some studies found a positive, others found a negative relationship between social class and gambling.

The class-conflict perspective also implies that social class should be related to gambling. Hogan (1986) maintained that the middle and upper classes control working-class gambling to prevent the working class from diverting their energy from productive labor and squandering the subsistence to absorb the production surplus.

Controlling efforts heighten when costs of labor replacement are high or/and when production surplus is abundant. Maguire (1987) offered a working-class culture maintenance perspective. In reviewing the history of working-class gambling in England since 1800, he concluded that, despite the antagonism toward gambling felt by the middle class, working-class people manage to maintain their interests in gambling as a way to express the working-class culture. This reinforces the argument that gambling is a classrelated phenomenon, although this working class-culture maintenance perspective needs to be empirically tested.

Age has also been theorized as a form of social class. Persons under 25 and over 65 years old are found to be more likely to fall below the poverty line than are other age categories (Foner, 1988). Foner (1988) maintains that age is used to assign roles that are differentially rewarded, and thus forms a basis of social stratification system. An integration of the anomie and age stratification perspectives would predict that persons under 25 or over 65 years old are more likely to gamble because they are denied access to opportunities. On the other hand, a merger of the age-stratification and the Veblenian perspectives would predict that middle-aged people, who are more likely to be upper-middle and upper class, would gamble more than the young and the old.

In summary, previous findings show that social class is related to gambling behavior. The age stratification perspective points to the potential of social class being a moderating variable between age and gambling behavior.

Marital and Employment Statuses

In the gambling literature, neither marital status nor employment status have received much attention despite their potential to explain gambling behavior. Kallick et al. (1979) reported that singles and those divorced or separated were more likely to gamble than were the married. Widows were the least likely to gamble. A possible explanation could be that singles and the divorced/separated, usually having fewer family responsibilities, would have more time for leisure activities and thus could gamble more than could the married. One could also reason that widows would gamble less, even with diminished family responsibility, as they usually have fewer financial resources. The fact that most of the widowed are women, who were socialized not to gamble, means that they should gamble less.

It was found that the propensity to gamble among those unemployed and looking for work did not differ much from those employed (Kallick et al., 1979). However, Tec (1964) found that bettors were more likely to be employed than were nonbettors. Hence, these results do not support anomie

theory, which predicts that unemployment should lead to an increase in gambling, but provide some support to the Veblenian approach. In summary, the fact that both marital and employment statuses are often age-related points to the potential of their moderating effects on the age-gambling relationship.

Gender

Psychological differences between females and males are widely acknowledged (Gove et al., 1989). Men are more likely than women to ascribe to themselves competitive attributes, but the personalities of females and males tend to converge with age (Gove et al., 1989). Gender differences in competitive attributes have been found to be smaller for older age categories (Gove et al., 1989). Since most types of gambling are of a competitive nature, one can speculate that women would have a weaker propensity to gamble than men. Kallick et al. (1979) reported that more males said they bet in 1974 than did females (68 versus 55 percent).

Also, women are less likely than men to gamble in games such as blackjack and lotteries, but are more likely than men to engage in games like bingo and raffles (Kallick et al., 1979). This has been attributed to gender-role socialization (Lindgren et al., 1987). Females are

socialized to play the cooperative and caring roles, whereas males are socialized to play the risk-taking and competitive roles (Smith and Abt, 1984; Lindgren et al., 1987). In general, one would expect more women than men participating in legal and less competitive games, but more men than women would be expected in illegal and more competitive games. Hence, the age-gambling relationship could be moderated by gender, as the proportion of females increases with age categories (Weeks, 1989).

Community size

Community size may also be an important determinant of gambling behavior (Li and Smith, 1976). Li and Smith (1976) found that community size was positively related to gambling propensity. Kallick et al. (1979) also reported that 72 percent of the suburbanites, and 66 percent of city dwellers, but only 53 percent of people living in small cities or rural areas, bet in 1974. A possible explanation could be that metropolitan communities offer greater availability of gambling opportunities than do rural communities. The fact that most metropolitan areas tend to have a younger population (McPherson, 1983) implies that community size might moderate the age-gambling relationship.

<u>Religion</u>

Lieberman (1988) argues that the church endorsement of gambling has given gambling respectability. Catholics were found to be less likely to disapprove of gambling than were Protestants (Stark and Bainbridge, 1985), and more likely to gamble than were Protestants and other religious groups (Lieberman, 1988; Kallick et al., 1979). Kallick et al. (1979) reported 80 percent of Catholics, 77 percent of Jews, and 54 percent of Protestants bet in 1974. An interesting finding is that only 40 percent of those who were brought up with no religious preferences said they bet in 1974 (Kallick et al., 1979). In general, religious affiliation does not change as one ages, but religiosity does vary with age (McPherson, 1983). McPherson (1983) maintains that religion provides a sense of security, social group, and a means to cope with grief and death, and therefore becomes more salient to the elderly. Thus, one could speculate that older people are more religious and, therefore, tend to gamble less as a result of the "moral restraints" of religion.

Social Worlds of Gambling

Social worlds are defined to be groupings of individuals who are bound together by networks of communication and sharing perspectives on reality

(Lindesmith et al., 1975). Strauss maintained that these social worlds are organized with respect to a specific activity (Strauss, 1978). The social world of gambling is obviously organized around gambling activities. The social worlds of horse and sports betting, and casino gambling were found to be the major factor sustaining continued gambling (Rosecrance, 1988). Within these worlds, social relationships were developed and reinforced among gamblers through interactions. These relationships included sharing information, loan sources, and having someone who understood and shared gambling activities and who provided discussions and empathetic responses. Often, these relationships could be maintained only through continued involvement in gambling.

For instance, casinos provide a hospitable environment to attract people, particularly those under a lot of pressure outside the gambling world. Regulars in casinos view their social world as a familiar place, free of problems of the real world, where they can feel comfortable, secure, and still be successful (Rosecrance, 1988). One could speculate that the middle-aged, who are usually more concerned about career and financial successes and thus face more pressures, would gamble in games that involve more financial rewards or risks such as casinos.

Instead of being attracted to the game itself, workingclass women in England were found to play bingo to fulfill the need to socialize with other women (Dixey, 1987). They preferred bingo, for most other forms of gambling were dominated by males. Many elderly women reported that their bingo clubs were the only places where they had contacts with others. In his study of betting shops in England, Newman (1968) also found that such gambling provided an affective setting that stressed sociability and groupcenteredness.

In short, a lot of people gamble not because they are attracted by the excitement or financial rewards and risks of gambling, but because of the social relationships they develop through gambling. Again, one should note that the nature of different games varies, and that the environment in which the game takes place may attract or push away different types of people. For example, younger people, who generally are more interested in sports and activities, would gamble more than the older ones in games like sports betting, whereas the elderly would gravitate more toward socially-oriented games like bingo for the social networks that many elderly often lack due to the loss of spouse or friends. The next obvious questions are: "Do different types of gambling attract people of different demographic
backgrounds?," and, in particular, "Are people of different ages attracted to different types of gambling?"

Participation in Different Forms of Gambling

In a 1975 national survey, Kallick et al. (1979) found that males, the young, suburbanites, Jews and Catholics, the educated, and singles or those who were divorced/separated were more likely to bet on horses. Those who were educated, middle-aged, affluent, suburbanite, divorced/separated or single, and Jews were more likely to be casino gamblers. Females, the young, singles or those who were divorced/separated, and high school graduates or those having some college were likely to play bingo. Those who were males, suburban, Jewish or Catholic, and middle-aged were more likely to play the lotteries. Males, young, singles or those who were divorced/separated, suburbanites, and the higher-educated were more likely to bet on sports. Lotteries and bingo were found to be the most popular games in all age categories. In addition to lotteries and bingo, horse racing was also popular among those between 25 and 44 years old, and casinos had the lowest popularity (in comparison with bingo, lotteries, and horse racing) in all age categories.

Summary

In summary, both the aging and the cohort effects literature predict a decline in gambling behavior with chronological age. This is supported by the Kallick et al. (1979) study. Research findings on social class, marital status, employment status, gender, community size, and religion, imply potential moderating effects of these variables on the age-gambling relationship. The notion that different games attract different people of different demographic backgrounds is supported by the Kallick et al. (1979) study. However, their study does not provide evidence of the notion that people of different ages are attracted to different types of gambling as predicted by the social worlds perspective, and by the modified versions of the activity and disengagement theories, discussed earlier.

CHAPTER III: METHODS

Population and Sampling

The population of the study includes all persons who resided in the state of Iowa between April and June of 1989. The sampling unit was the household. To obtain the sample, proportional stratified simple random sampling of working residential telephone numbers in Iowa (by county population of the most recent census) was used to assure a statewide distribution of respondents.

Random-digit dialing was employed to obtain a sampling pool of 3200 working residential telephone numbers. Sampling telephone numbers with random-digit dialing technique is considered an efficient method to get a representative sample of households in Iowa, as around 95% of Iowa households have access to telephones, and as randomdigit dialing includes both listed and unlisted numbers (Lavrakas, 1987). The following is an illustration of how the telephone numbers were generated for a county.

Firstly, the number of telephone numbers needed for a county was determined according to the population size of the county relative to that of the state of Iowa. Using a random number table, four-digit suffixes were assigned to all possible combinations of area code and prefix

consecutively until enough telephone numbers were generated to meet the sample size requirement of the county determined previously. In this process of suffix assignment, the randomly generated four-digit figure was assigned only if it fell within the operating range of the suffix of that particular combination of area code and prefix, and did not repeat any previously generated numbers. Otherwise, another random number would be drawn.

A target sample of 1,000 households was set. To ensure the representativeness of the final sample, telephone numbers from the sampling pool were arranged in blocks of 200 to be distributed to the interviewers. Each of these blocks contained telephone numbers from all 99 counties in Iowa weighed by the county population.

The survey was conducted through telephone between April and June, 1989 at the microcomputer laboratory of the Department of Sociology at Iowa State University. Calls were made between 6 p.m. and 10 p.m. from Sunday through Thursday. The Troldahl-Carter-Bryant (T-C-B) method was used to select a respondent from within the household (Lavrakas, 1987). When first contacted by telephone, the person who answered the phone was asked two questions. "How many people 18 years old or older live in your household, counting yourself?," and "How many of them are men?" The

answers to these questions were then used in conjunction with a selection matrix to determine the designated respondent for that household. Four versions of selection matrixes (A,B,C, and D), shown in Figure 1, were used systematically (in the sequence 'ABCDABCDA...') throughout the survey to assure age and gender representativeness of the final sample of individuals. The problem with females being oversampled by versions A and B was resolved by versions C and D, which oversampled males. Call-backs were arranged if the selected respondent was not available. A maximum of seven potential call-backs was set.

Instrument and Data Collection

There are several advantages of using computer-assisted telephone interviewing. Since the telephone numbers were generated randomly by computer and the respondent's name was not asked, the respondent's anonymity was assured. Telephone interviewing has also been shown to be cost and time efficient (Lavrakas, 1987). Once the suitable respondent from the household had been determined, every effort was made to interview the designated person. Callbacks were arranged in cases where the respondent was not home, busy with something else, or did not want to talk about personal involvement in gambling at the time. The



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	- N	1	Number	of Persons	18+ in Ho	lsehold
Number 18+ in	or me House	n hold	4	N	£	4+
Matrix	A	o	Woman	Oldest Woman	Youngest Woman	Youngest Woman
		г	Man	Man	Man	Oldest Woman
		7		Oldest Man	Youngest Man	Youngest Man
		m			Youngest Man	oldest Man
		4 +				oldest Man
Matrix	ф	o	Woman	Youngest Woman	Youngest Woman	Oldest Woman
		Ч	Man	Man	01dest Woman	Man
		2		oldest Man	Woman	0ldest Woman
		m			Youngest Man	Oldest Woman
		4+				Oldest Man

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Oldest Woman	Youngest Man	Oldest Man	Youngest Man	Youngest Man	Youngest Woman	Man	Youngest Woman	Youngest Woman	Youngest Man	
Oldest Woman	Man	Oldest Man	Oldest Man		Oldest Woman	Youngest Woman	Woman	Oldest Man		
Youngest Woman	Woman	Youngest Man			Oldest Woman	Woman	Youngest Man			
Woman	Man				Woman	Man				
0	H	8	т	4	0	г	7	m	4+	
Matrix C					Matrix D					

FIGURE 1. T-C-B Selection Chart

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interview quide was developed by Dr. Joseph Hraba, Iowa State University, to measure the respondent's involvement in gambling in the past year. Other gambling-related demographic and socio-economic variables were also included (Appendix). The prospective interviewers were recruited from the student body of Iowa State University and residents of Ames, Iowa. They were informed about the intent of all the questions, trained, and evaluated in terms of their interviewing skills and familiarity with the computerassisted telephone interviewing procedures during the week before actual interviewing took place. Only those judged by the research team as competent at the end of the training sessions were hired. All interviewers signed an agreement promising not to violate the confidentiality of the interviews. Two interviewers were assigned to handle daytime call-backs and convert initial refusals into completed interviews.

Each interview began with a brief introduction explaining the objective of the survey. The respondent was then informed that her or his telephone number was randomly selected, and that her or his name would not be asked, to assure anonymity. Computer-assisted telephone interviewing was used to display the questionnaire on the computer screen item by item following the prescribed skipping pattern.

Questions were read to the respondent by the interviewer directly from the screen, and responses were entered directly into machine-readable data files. All interviewing sessions were supervised by a supervisor, who distributed telephone numbers to interviewers, scheduled call-backs, helped with interviewing techniques, and answered questions related to the project. Each interview took about 20 to 30 minutes.

Out of 1275 eligible respondents contacted, 215 refused to participate in the survey, and 49 could not be reached within the time frame of the study. 1011 respondents completed the interview, representing an overall response rate of 79.3%.

Characteristics of Respondents

Among the respondents, 588 (58.2%) were females, and 422 (41.8%) were males; 55 (5.5%) were between 18 and 24 years old, 206 (20.6%) were 25-34, 204 (20.4%) were 35-44, 142 (14.2%) were 45-54, 153 (15.3%) were 55-64, 133 (13.2%) were 65-74, 83 (8.2%) were 75-84, and 26 (2.6%) were 85 or more. The 1980 census reported, among Iowa's population, 53 percent were females, and 47 percent were males; 18.5 percent were between 18 and 24 years old, 21.2 percent were 25-34, 14.3 percent were 35-44, 13.3 percent were 45-54, 13.2 percent were 55-64, 10.2 percent were 65-74, 6.0 percent were 75-84, and 2.1 percent were 85 or more.

There were 70 (7.1%) who attended or graduated grammar school, 85 (8.7%) who attended but did not graduate from high school, 364 (37.1%) who graduated high school, 199 (20.3%) who attended but did not graduate from college or trade school, 184 (18.8%) who graduated college or trade school, 42 (4.3%) who attended graduate or professional school, and 38 (3.9%) who graduated from professional or graduate school programs; 616 (61.6%) were married, 77 (7.6%) were divorced, 155 (15.4%) were widowed, and 153 (15.3%) were never married; 653 (65.5%) were Protestants, 247 (24.7%) were Catholics, 4 (0.4%) were Jews, and 40 (4.0%) indicated having no religion; 652 (65.2%) were employed, 158 (15.8%) were unemployed, 186 (18.5%) were retired, and 4 (0.4%) were on welfare; 83 (8.6%) lived in cities of more than 100,000 population, 23 (2.4%) lived in suburbs of more than 100,000 population, 244 (25.2%) resided in cities between 25,000 and 100,000 population, 86 (8.9%) resided in cities between 10,000 and 25,000 population, 373 (38.4%) resided in a city between 500 and 10,000 population, 57 (5.7%) lived in towns with less than 500 residents, and 105 (10.8%) lived in rural areas; 121 (12.8%) reported yearly incomes of less than \$5,000, 136 (14.4%) had incomes of \$5,001-10,000, 216 (22.8%) had \$10,001-20,000, 244

(25.8%) had \$20,001-30,000, 167 (17.7%) had \$30,001-50,000, 49 (5.2%) had \$50,001-100,000, and 13 (1.4%) had more than \$100,000.

Operationalization of Concepts

Dependent Variable

For this study, gambling behavior is defined in terms of the scope, the frequency, the amount of money wagered, and the amount of leisure time spent on gambling. The scope refers to how many types of gambling in which an individual engages. The scope of gambling behavior was measured by asking the question, "What kinds of gambling have you done in the past year?" with respect to the following forms of gambling: betting money on games played at home, on games the respondent played with others in public places, on sports in which the respondent participated, on spectator sporting events, on bingo in public places, on horse or dog races, on lotteries, on dog or cock fights, on games in casinos, and whether they had speculated on investments in stocks and commodities. For these questions, response categories included (1) never, (2) sometimes, and (3) frequently. A gambling type score was constructed by adding across these questions, with the answers "frequently" and

"sometimes" coded as one and the "never" response coded as zero. This gambling type score was then divided by two to standardize it against other gambling behavior measures discussed below. The frequency of each respondent's gambling was measured by the question, "Since the New Year (January 1), how frequently have you gambled?". Response categories included (1) less than monthly, (2) monthly, (3) weekly, (4) at least twice a week, and (5) daily.

To measure wagering amount, the respondent was asked, "Since the New Year, how much money do you usually bet at one time on games, sports, races, and other kinds of gambling?" The following response categories were provided: (0) none, (1) \$1 to \$4, (2) \$5 to \$10, (3) \$11 to \$20, (4) \$21 to \$50, (5) \$51 to \$100, and (6) more than \$100.

A question "How much of your leisure time do you spend on gambling activities?" was asked to measure how much of the respondent's leisure time was spent on gambling. Responses included (1) almost none, (2) a little, (3) some, (4) most, and (5) nearly all.

These variables -- scope, frequency, wagering amount, and amount of time spent on gambling -- ranged from 0 to 5 (n=992, mean=1.319, SD=1.172), 0 to 5 (n=991, mean=1.327, SD=1.404), 0 to 6 (n=990, mean=0.774, SD=0.966), and 0 to 5 (n=1003, mean=0.903, SD=0.737), respectively.

The above four components were then used to form an unweighted additive gambling behavior scale. Since some respondents had been determined to be nongamblers in the beginning section of the interview (those who indicated never betting on the lotteries and who had not gambled in other ways in the past year were considered nongamblers, and were not asked the other gambling behavior questions), the last three components of gambling behavior were not asked and their scores on the gambling behavior scale were automatically coded zero. Scores on this gambling behavior scale ranged from 0 to 21 (n=974, mean=4.302, SD=3.579).

Independent and Control Variables

The independent variable was age category. The age categories were 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, and 85 or older. Control variables included social class (measured by personal yearly income and educational attainment), marital status, employment status, size of the community in which the respondent resided, gender, religion (measured by religious preferences and frequency of attendance at religious services). Because of the absence of other religiosity measures included in the questionnaire, attendance at religious services was used to measure religiosity. One should note that church attendance is not necessarily a valid measure of religiosity. However, it may provide some information about religiosity.

Validity and Reliability of the Gambling Scale

Validity

Validity refers to the degree to which an instrument measures that which it purports to measure (Sproull, 1988). A related issue that may reduce the validity of this study is social desirability and lying about gambling. It was unlikely that respondents were lying about their gambling behavior because their anonymity was assured. They were informed how their telephone numbers had been randomly selected, and their names were not asked in the survey. Social desirability did not seem to be a major problem, for gambling has become so widespread and socially acceptable that it is no longer a taboo in our society (Rosecrance, Therefore, questions used in this study to measure 1988). gambling involvement were judged to have high general validity.

Questions on the scope of the respondent's gambling covered almost all major forms of gambling (Rosecrance, 1988). These questions included bingo, horse racing, dog racing, lotteries, sports betting, casinos, and investments. Questions on frequency and wagering in gambling are straightforward. The time limit "Since the New Year" was used in both questions to reduce problems with recall and to ensure that respondents were referring to recent gambling behavior. Unfortunately, no time limit was built into the question on the amount of leisure time spent on gambling. Recalling information about this question could have been a problem. In short, the four questions used to measure the scope, the intensity, and the importance of an individual's involvement in gambling were judged to have high face and content validity.

Reliability

Reliability is defined as the degree to which an instrument measures the same way (i.e., giving the same results) each time it is used under the same conditions, and with the same subjects (Sproull, 1988). Since the study was a cross-sectional study, and each respondent was interviewed only once while their involvement could change over time, the author cannot make inferences on reliability in the traditional sense. However, internal consistency, which measures the degree to which the individual items of a scale measure the same variable, can be estimated by the reliability coefficient, Cronbach's Alpha (Sproull, 1988; Cronbach, 1951). The procedures of calculating the reliability coefficient were performed by the Statistical Package for the Social Sciences (SPSS-X Inc., 1988). The Cronbach's Alpha for the gambling scale in this study was found to be 0.82 for the whole sample, and 0.65 for the

subsample which contains only gamblers. Therefore, the total sample was used.

The gambling behavior scale was subject to further reliability check using another statistical procedure, canonical correlation analysis (Tabachnick and Fidell, 1983). This analysis was performed by the MANOVA program of the Statistical Package for the Social Sciences (SPSS-X Inc., 1988). The objective of this analysis was to find out how well age was related to a weighted scale of gambling behavior. The results of this analysis were then compared to that of Multiple Classification Analysis, in which the gambling behavior scale was not weighted. Canonical analysis first generated pairs of linear combinations of variables. One linear combination consisted of the four components of the gambling behavior scale, and on the other only age was included. The task of canonical analysis was to weigh the four components on the scale in order to maximize the correlation between age and the linear combination of the four gambling components. Squaring the canonical correlations produced by the analysis indicates how much of the variance between the weighted gambling behavior scale and age overlap. Results of this analysis are discussed in Chapter IV: Findings and Results.

Data Analysis

Since all our control variables are of a categorical nature, Multiple Classification Analysis (MCA), a dummy variable regression analysis, was employed in the study (Andrews et al., 1967). It presents mean scores on gambling behavior for each category of the independent variable (age category) both before and after adjusting for the main effects of control variables. Multiple Classification Analysis is particularly useful for this study, because it does not assume linear relationships. For example, the relationship between age and gambling behavior can be parabolic, as discussed previously (e.g., a merger of the age stratification and anomie theory, or a merger of age stratification and the Veblenian perspective). Multiple Classification Analysis presents five indicators of the degree and significance of association between the dependent (the Gambling Behavior Scale) and independent variables (ten-year age categories). The first is Eta-squared, ETA², indicating the proportion of variance in the dependent variable that is explained by the independent variable without controlling for other variables. The second indicator is called Beta-squared, BETA², and can be interpreted just like ETA², except that it has been adjusted for the effects of the control variables. More

specifically, BETA itself is a standardized regression coefficient in multiple regression. The third indicator, Rsquared, R², is interpreted just like regular regression analysis, that is, proportion of variance in gambling behavior scale explained by all variables included in the model. The fourth indicator, p-value(age), indicates the probability that there is no relationship between age and gambling behavior. The fifth indicator, p-value(model) or *, indicates the probability that age and other control variables are not related to gambling behavior.

The first step was to analyze the zero-order relationship between age and gambling behavior. In the second step, possible effects of each control variable (social class, marital status, employment status, gender, community size, and religion) on the relationship between age and gambling behavior were separately analyzed. For the third step, all the above control variables were included in a full model. This step was also repeated for each of the four components of the gambling behavior scale. In the fifth step, the age-gambling relationship was investigated when controlling for different forms of gambling. One should note that the number of respondents varied in each analysis. This is due to the fact that some respondents declined to answer some questions, and thus were omitted

from the analysis. That is, only those respondents who answered all the questions needed in each analysis were included. In the last step, participation rates of different age categories in different forms of gambling were studied.

CHAPTER IV: FINDINGS AND RESULTS

72.8% of the sample (n=736) reported gambling in the past year (between April-June 1988 and April-June 1989), and 27.2% (n=275) reported that they had not gambled at all within the last year. The first objective of the thesis was to check if and how any zero-order relationship exists between age and gambling behavior.

Zero-Order Relationship

As indicated in Table 1, gambling-behavior scores decrease with age category. The oldest (85 years old or older) and the youngest age category (18-24 years old) have the lowest and the highest score, respectively. Gambling behavior decreases gradually from the youngest category to the 55-64 age category, and then begins to decline more rapidly with the older age categories. Age itself accounts for 0.122 of the variance in gambling behavior. The p-value of age is less than 0.001, indicating that the probability of gambling behavior being unrelated to age is less than 0.1 The canonical correlation between gambling percent. behavior and age was found to be 0.36533, and the squared canonical correlation was 0.133. This means that there was little difference between the unweighted (Multiple Classification Analysis) and the weighted (Canonical

Correlation Analysis) gambling behavior scale. Therefore, the unweighted gambling behavior scale used in this thesis was judged to be reliable.

TABLE 1. Mean Scores of Different Age Categories on Gambling Behavior at Zero-order Level (N=966, Mean=4.31, R-squared=0.122, p(age)<0.001)

Age Categories (n)	Mean	Squared-ETA
18-24 (55) 25-34 (201) 35-44 (196) 45-54 (134) 55-64 (150) 65-74 (130) 75-84 (78) =>85 (23)	5.89 5.63 4.83 4.39 4.16 3.01 1.78 0.95	
		0.123

In short, results from this analysis have clearly answered the question posed by the first objective of this study by showing the existence of a negative zero-order relationship between age and gambling behavior. The next step was to check for any moderating effects of control variables (the correlates of gambling).

Effects of Control Variables

Control variables included in this thesis are social class (measured by income and educational attainment), marital status, employment status, gender, community size, and religion (measured by religious preference and church attendance). Analyses on the effects of control variables were performed at three different levels; the first-order level, in which each control variable was controlled separately in each age-gambling analysis, a full agegambling model controlling all control variables, and full models for each component of the gambling behavior scale.

First-Order Relationships

Table 2 presents results of the analysis of the effect of each control variable on the age and gambling behavior relationship. Under Social Class, the first column (Unadj) is the group means of the gambling-behavior score at the zero-order level. The same pattern of decline in gambling scores with age as shown in Table 1 is seen. The second column (Adj) presents the group means when controlling for social class. The gambling behavior scores are slightly lower for respondents between 25 and 64 years of age, but are higher for the youngest age category and the 65-or-older age categories when controlling for social class. However, the pattern of decreasing gambling behavior across age

categories is evident. The gambling-behavior score decreases slowly from the 18-24 through the 55-64 age categories, and then begins to decline more rapidly after age 64. The variance explained in gambling behavior by age category decreases slightly from 0.11 (ETA²) to 0.10 (BETA²) when controlling for social class.

Looking at the mean scores under the Marital Status column, we see that adjusting for marital status has almost no effect on the decline in gambling behavior across age categories. There is a slight increase in the mean score of gambling behavior for the 18-24 age category. The explanatory power of age categories increases slightly from 0.12 to 0.13 when controlling for marital status.

When controlling for employment status, the gambling behavior scores for the four youngest age categories (those aged between 18 and 54) become slightly lower. For those age categories beyond 64 years old, there is a rather significant increase in gambling. However, the decline in gambling behavior with age category is still evident, although the power of age category in explaining the variance in gambling behavior declines from 0.12 (ETA²) to 0.08 (BETA²). This indicates that employment may moderate the relationship between age and gambling. Mean Scores of Different Age Categories on Gambling Behavior at First-order Level (controlling separately for the main effects of Social Class, Marital Status, Employment Status, Gender, Community Size, and Religion) TABLE 2.

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			Control	Variables		
	Social Class	Marital Status	Employment Status	Gender	Community Size	Religious Affiliation
N Mean p(age)	900 4.42 0.000	964 4.30 0.000	961 4.32 0.000	966 4.31 0.000	937 4.34 0.000	950 4.31 0.000
Age	Mean Unadj Adj	Mean Unadj Adj	Mean Unadj Adj	Mean Unadj Adj	Mean Unadj Adj	Mean Unadj Adj
18-25 25-24 255-24 45-54 655-54 75-64 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-74 75-75-75 75-75	5.96 6.75 5.66 5.55 4.91 4.79 4.39 4.29 4.27 4.09 3.04 3.06 1.97 2.47 1.00 1.64 .12 .10	5.89 6.15 5.62 5.66 4.83 4.78 4.39 4.34 4.12 4.09 3.01 2.99 1.78 1.78 0.95 0.98 .12 .13	5.90 5.89 5.62 5.45 4.83 4.67 4.43 4.24 4.16 4.18 3.03 3.36 1.78 2.25 0.98 1.46 .12 .12 .08	5.89 5.87 5.63 5.56 4.83 4.81 4.39 4.35 4.16 4.16 3.01 3.09 1.78 1.89 0.95 1.10 .12 .12	5.90 5.77 5.63 5.64 4.91 4.89 4.34 4.38 4.17 4.38 4.17 4.30 3.07 3.08 1.85 1.80 1.00 1.08 .12 .12 .12	5.89 4.96 5.58 5.42 4.83 4.76 4.18 4.46 4.18 4.34 3.04 3.34 1.81 2.04 1.81 2.04 1.00 1.32 .12
R ⁴	0.16	0.13	0.13	0.13	0.14	0.20

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Controlling for gender has little effect on the decline of gambling behavior across age categories. Scores for the younger age categories drop slightly, whereas those for the older ones increase. However, the amount of variance explained by age category becomes slightly smaller (from $ETA^2=0.12$ to $BETA^2=0.11$).

Community size also has little effect on the age and gambling behavior relationship. Except for the small decline for the 18-24 age category, there is no change in the pattern of declining gambling behavior with age category after controlling for community size. Furthermore, the explanatory power of age categories on gambling behavior remains the same after controlling for community size.

When controlling for religion (religious preference and church attendance), the gambling scores for the age categories between 18 and 44 years old become lower, while the scores of those in the 65 or over age categories become significantly higher. The scores for the 18-24 age category drop to below that of the 25-34 age category. With this one exception, the decline in gambling behavior with older age categories still exists, although the overall explanatory power of age categories in gambling behavior is reduced from $0.12 (ETA^2)$ to $0.08 (BETA^2)$, indicating a moderating effect of religion on the age and gambling behavior relationship.

Results from these first-order level analyses reveal all six but two control variables, employment status and religion, have little moderating effect on age and gambling behavior. The next step was to include all the control variables mentioned above into a full model to check if the age and gambling relationship still exists when controlling collectively for the main effects of all of these control variables.

Full-Model (Gambling Behavior Scale)

Results from a full model including all the above control variables are presented in Table 3. After collectively adjusting for all control variables, the pattern of decline in gambling behavior across age categories still exists, although differences in group means are less distinct (see Figure 2). The gambling behavior scores of younger people (18-44 years old) become smaller when controlling for other variables, whereas scores of those 65 years old or over go up after controlling for other variables. Scores of those between 45 and 64 years old do not change much after adjustment, but those aged between 55 and 64 have a slightly higher score than those between 45 and 54 years of age. The explanatory power of age on gambling behavior significantly declines from 0.11 (ETA²) to 0.05 (BETA²) after adjustment. In short, the control

variables in this study seem to have little moderating effects on the negative age and gambling relationship. In the next step, the relationships between age and the four components (scope, frequency, wager, and amount of time spent on gambling) of the Gambling Behavior Scale were investigated. Presented in the next section are the results of the relationship between age and the four components of the Gambling Behavior Scale both before and after adjusting for the effects of the above control variables.

TABLE 3. Mean Scores of Different Age Categories on Gambling Behavior when controlling for Social Class, Marital Status, Employment Status, Gender, Community Size, and Religion (N=860, Mean=4.43, Rsquared=0.248*, p(age)<0.005)</p>

Age	Unadjusted	Squared-	Adjusted	Squared-
	Mean	ETA	Mean	BETA
18-24 25-34 35-44 45-54 55-64 65-74 75-84 =>85	5.89 5.61 4.96 4.37 4.26 3.13 2.04 1.08	0.11	5.46 5.33 4.75 4.28 4.29 3.59 2.78 2.14	0.05

*Significant at 0.001 level





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FIGURE 2. Age and Gambling Behavior

Full-Model (Gambling Behavior Scale components)

Table 4 presents age category mean scores on the four components of the gambling behavior scale, namely scope, frequency, amount of wager, and amount of leisure time spent on gambling, both before and after adjusting for the main effects of the control variables. The means of the scope of gambling for the younger age categories (18-44) decrease, and those for the older age categories (45 years or older) increase when adjustments are made. Except for the 55-64 and 85 or older age categories, there is a decline in the scope of gambling with age, with the youngest age category engaging in the most types of gambling. Despite the decreased explanatory power of age from 0.11 to 0.05, the effect of age on the scope of gambling remains significant at 0.001 level.

Frequency of gambling was highest among respondents between 25 and 34 years of age both before and after adjustment for control variables. The mean scores decrease for the 18-24 and 25-34 age categories, but increase for those 65 years old or over. Mean frequency of gambling increases between the 18-24 years old and the 25-35 yearsold age categories. Otherwise, there is a decline in frequency of gambling. Age accounts for 0.06 and 0.04 of

TABLE 4. Mean Scores of Different Age Categories on the four components of Gambling Behavior when controlling collectively for Social Class, Marital Status, Employment Status, Gender, Community Size, and Religion

		Fou	r Gambli	ing Beh	avior co	omponen	ts		
	Sco	ope	Frequ	lency	Wage	ering	Amoun Time	t of e	
N Mean Minimum Maximum SD p(age) p(model	871 1.36 0 5 1.17 0.001) 0.000		87 1.3 0.02 0.00	877 1.36 0 5 1.40 0.026 0.000		869 0.79 0 6 0.97 0.052 0.000		878 0.92 0 5 0.74 0.010 0.000	
Age Categ.	ME. Unadj	AN Adj	ME Unadj	AN Adj	MEA) Unadj	N Adj	MEA) Unadj	N Adj	
18-24 25-34 35-44 45-54 55-64 65-74 75-84 85=>	1.73 1.76 1.61 1.30 1.29 0.92 0.50 0.51	1.72 1.63 1.51 1.24 1.31 1.09 0.81 0.90	1.59 1.73 1.53 1.34 1.37 0.93 0.66 0.32	1.42 1.64 1.51 1.39 1.36 1.02 0.81 0.48	1.23 1.01 0.86 0.81 0.73 0.54 0.36 0.10	1.10 0.99 0.79 0.76 0.73 0.64 0.54 0.37	1.34 1.12 0.96 0.87 0.89 0.74 0.51 0.51	1.21 1.07 0.91 0.88 0.92 0.82 0.64 0.64	
ETA ² BETA ²	0.11	0.05	0.06	0.04	0.06	0.03	0.07	0.03	
r ²	0.	23	0.	19	0.	14	0.	21	

the variance in frequency of gambling before and after adjustment, respectively. However, the effect of age on gambling frequency is not significant at 0.001 level.

Respondents between 18 and 24 years old have the highest amount of wagering both before and after adjusting for control variables. When adjusting for control variables, wagering decreases for the younger people and middle-aged respondents (18-54 years old) but increases for the older ones (65 years old or over). Most importantly, a decline in wagering with increasing age categories is evident both before and after adjustments of control variables. The proportion of the variance in wagering explained by age decreases from 0.06 to 0.03 with controls. Again, the effect of age is not significant at 0.001 level.

Among all age categories, those between 18 and 24 years old reported the largest proportion of leisure time spent on gambling both before and after adjustment for controls. The age category mean scores decrease for respondents between 18 and 44 years of age after adjusting for effects of control variables, whereas scores of those 65 or older increase. Except for a small deviation for the 55-64 age category, a decline in proportion of leisure time spent on gambling with age is observed. The explanatory power of age also declines from 0.07 to 0.03 when adjustments are made. The effect of age is also not significant at 0.001 level.

In summary, the above analyses confirm the existence of the negative relationship between age category and gambling behavior even when controlling for the control variables. This negative relationship is also evident among the components of the Gambling Behavior Scale. However, among the four components, the effect of age is significant only in the case of the scope component of the scale, although it appears to be significant for the entire Gambling Behavior Scale at the zero-order level. This shows the importance of looking at all four components in studying the relationship between age and gambling behavior.

Types of Gambling

The last objective of this thesis was to explore the robustness of the previously found age-gambling relationship in different types of gambling. Gambling forms being studied include betting on lotteries, on games played at home, on games played with others in public places, on sports in which the person participates, on spectator sporting events, on horse or dog races, on games in casinos, on speculation on stocks and commodities, on bingo in public places, and on dog or cock fights. The questions being asked were "Does gambling behavior decline with age when the above types of gambling are controlled for?, " and "What types of gambling do people of different age do?"

Age-Gambling Relationship

Table 5 presents mean scores of the gambling behavior of different age categories when controlling for different types of gambling. In general, younger people have higher scores on gambling behavior than do older people. The youngest age category has the highest gambling behavior score even when the effects of types of gambling are controlled. Mean gambling behavior scores decrease for those between 18 and 44 years old, but increase for those 55 years old or over after controlling for forms of gambling. An age decline in gambling behavior is also observed, although the differences between groups are much less noticeable, and those aged between 45 and 64 deviate slightly from this trend. After adjustments are made for gambling types, age does not account for any detectable variance in gambling behavior. This implies that, instead of a general decline in all forms of gambling studied, one may find different patterns of gambling behavior across age categories in different forms of gambling.

Participation in Different Forms of Gambling

Table 6 and Figure 3 present the percentages of respondents in different age categories by their different types of gambling in the year before April-June, 1989. In all age categories, lotteries had the highest percentage of

TABLE 5. Mean Scores of Different Age Categories on Gambling Behavior when controlling for Types of Gambling (N=966, Mean=4.31, R-squared=0.707*, p(age)=0.213)

Age	Unadjusted	Squared-	Adjusted	Squared-
	Mean	ETA	Mean	BETA
18-24 25-34 35-44 45-54 55-64 65-74 75-84 =>85	5.89 5.63 4.83 4.39 4.16 3.01 1.78 0.95	0.12	4.74 4.48 4.19 4.38 4.43 4.13 4.03 3.67	0.004

*Significant at 0.001 level

participation, whereas dog or cock fights had the lowest. Types of gambling that showed age decline are lotteries, betting money on games played at home, betting money on games the individual played with others, betting money on sports the individual played with others, and betting on spectator sporting events. Games that did not follow this pattern of decline with age were betting on horse or dog races, casinos, investment speculations, dog or cock fights, and bingo. Among the two younger age categories (18-34 years old), betting on lotteries, on games played at home, games in public places, spectator sports, horse and dog races, and bingo were the most popular games. The middleaged (35-64 years old) participated the most in betting on lotteries, horse or dog races, betting in casinos, and speculating on stocks and commodities. Elderly respondents were attracted to lotteries and bingo.

In summary, decline in gambling behavior across age categories did not exist in all types of gambling. Some forms of gambling decreased with age (games played at home, games played at public places, lotteries, and sports), some increased initially with age and then decreased with olderage categories (horse and dog races, casinos, and investment speculations), and some decreased initially with age and then increased with older-age categories (bingo). People of different age are drawn toward different forms of gambling. The younger people were drawn toward lotteries, games, and sports. The middle-aged were drawn toward lotteries, horse and dog races, casinos, and investments. Older people were attracted to lotteries and bingo. While different from those of the Kallick et al.'s (1979) study, the findings of this study show that people of different ages participate in different types of gambling. This finding supports the arguments of the social worlds of gambling perspective and the modified activity and disengagement theories. People
Percentages of Respondents in Different Age Categories participating in Different Types of Gambling TABLE 6.

Types of Gambling

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.

Dog or cock fight	∨ щ 4 щ 0 щ 0
Bin- go	336.4 224.8 222.1 19.6 14.2 14.1
Stocks or Commo- dities	9.1 23.2 23.2 23.2 24.8 15.8 15.8 10.3
Casi- no	16.4 18.0 24.0 23.0 18.9 7.4
Horse or dog race	29.1 35.6 31.7 24.5 7.4
Sport event	338.2 35.9 19.1 19.1 3.7
Sport they play	1180.0 1180.4 80.9 80.9 80.9 80.9 80.9 80.9 80.9 80.9
Games at home	32.7 18.1 10.6 9.8 4.7
Games in public places	41. 322. 19.4 8.3 8.3 8.3
Lott- ery	70.9 62.1 57.0 33.2 18.6
Age Categ.	18 25-24 45-24 45-54 55-64 65-74 875-75

-



FIGURE 3. Participation in Different Types of Gambling

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engage in as well as disengage from different types of gambling with age.

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CHAPTER V: DISCUSSION AND SUMMARY

This chapter is organized in three sections. A summary of findings and a discussion of the age decline in gambling behavior are presented in the first section. The second section discusses the findings that people of different age participate in different types of gambling. The last section contains the conclusions and implications of this thesis.

Age and Decline in Gambling Behavior

Summary of Findings

The results of this study clearly indicated an almost linear negative relationship between age categories and gambling behavior at both the zero-order level and when controlling for other correlates of gambling.

The data did not support the hypotheses of the age stratification and the anomie approaches, nor of the age stratification and the Veblenian approaches. Both approaches predicted a parabolic relationship between age and gambling behavior. The data revealed a clear linear decline in Gambling Behavior Scale with age category before and after controlling for social class. The effects of marital status, gender, and community size were also minimal. After separately adjusting for these three variables, both the finding that gambling behavior decreased with age and the explanatory power of age category remained unchanged. When controlling separately for employment status and religion (religious preference and church attendance), the linear negative age-gambling relationship still prevailed. But the explanatory power of age category dropped rather significantly. This implies that the agegambling relationship could be moderated by employment status and religion. For example, disengagement from work roles due to mandatory retirement after the age of 65 might make the person feel less capable in intellectual functioning, and thereby she or he may gamble less. Higher religiosity found among the elderly may also lower the elderly's propensity to gamble. In short, four out of six control variables studied did not show detectable moderating effects on the age-gambling relationship.

The results of the full model, which included social class, gender, marital status, employment status, community size, and religion, did not negate the previous findings of the almost linear negative age-gambling relationship. Collectively controlling for the main effects of these variables did not significantly change the pattern of declining gambling behavior with age category. However, the explanatory power of age weakened significantly, implying

the presence of interaction effects among these control variables, which have not been explored in this study. In addition to the general age-related decline, the 65 or older (the 1916-25 and previous cohorts) were found to have much less gambling behavior than those under 65 (the 1926-35 and younger cohorts). That is, while following the trend of the general age decline in gambling, age categories 65 or above seemed to have a much lower tendency to gamble than did the rest of the population.

Aging and Cohort Effects

The pattern of age decline in gambling behavior found in this study implies the presence of both aging and cohort effects on gambling behavior. The general decline can be conceptualized as the result of a decline in experimentation for self-identity with age, a decline in the need for selfpresentation with age, an historical increase in the social acceptance of gambling, and the need to maintain previous lifestyle. That is, in the process of aging, as one accumulates life experiences, and as her or his self-concept becomes more stable, she or he would become less likely to experiment in search of self-identity and to turn to gambling for self-presentation. Also, from the cohorteffect perspective and continuity theory that individuals tend to maintain previous lifestyles, the historical

increase in social acceptance of gambling since the turn of the century would lead us to reason that there should be a general decline in gambling with chronological age. This is due to each consecutive cohort being socialized into a less conservative attitude toward gambling than the previous one, and their desire to keep the same gambling lifestyle acquired earlier in their lives.

The sharp decline in gambling behavior for those 65 years of age or older implies both aging and cohort effects. When entering later years of life, one's propensity to gamble decreases as she or he starts to perceive a lower degree of control over the intellectual functions which are required in most forms of gambling. This perception of decrease in intellectual functioning may also be related to retirement due to the loss of work roles. Also, the harsh economic situations of the Great Depression in the 1930s had socialized the older cohorts to be more frugal, and to gamble less than the later-born cohorts (persons 64 years of age or younger).

Selective Engagement and Disengagement

However, the effect of age became less significant when controlling for participation in different types of gambling. This implies that people of different ages have

differential participation rates in different types of gambling.

Generally, those aged between 18 and 24 had the highest participation rate in five of the ten forms of gambling They also had the highest score on the scope studied. component of the Gambling Behavior Scale, indicating they engaged in the largest number of types of gambling (Table This may reflect the need to experiment with different 4). roles in search of self-identity during the adolescent years (18-24 years of age). Adolescents experiment on any types of gambling that are immediately available or related to their interests, like games played at home, sports they play, sporting events observed, lotteries, and bingo. The greater financial requirements, which most adolescents lack, keep games like casinos and horse racing out of reach for most adolescents. With more financial resources, the young adults and the middle-aged (25-64 years old) shift from sports, home games, and bingo to games which are more risky and financially more rewarding, like casinos, investment speculations, and horse racing, to fulfill the need of being financially successful. In addition to financial reasons, the young adults and the middle-aged go to casinos to escape reality of the real world where they are pressured but lacking means to succeed. Elderly (65 years or older)

participation was the lowest among all age categories in all types of gambling studied, with the exception of bingo. This low participation can be interpreted as reflecting a decreased need for experimenting with self-identity due to more stable self-concepts in later years, a perceived lowered intellectual functioning, and lesser financial resources. Bingo, however, was the second most popular game for the elderly. The elderly are attracted to certain types of gambling, like bingo, which provide a friendly setting for social relationships to compensate for loneliness due to losses of close relatives and friends.

Summary

In conclusion, gambling behavior declines with chronological age. Within this general trend of disengagement with age, individuals selectively withdraw from previous forms of gambling, as well as engage in new forms of gambling. This process is contingent upon whether the requirements and nature of certain games match the personal resources (financial and health) and the most salient interests of an individual at a certain stage of life.

The findings of this study have implications for future gambling policies, as changes in age composition could mean

changes in gambling patterns in society. For example, as the American population ages, gambling should decrease due to lower participation in gambling by the elderly. Also, the popularity of games that are more attractive to the elderly may increase in the future, whereas games that attract the young may lose out.

Future research on the relationship between age and gambling should incorporate the perspectives of experimentation for self-identity, self-presentation, and continuity theory, to test their relevance. The interacting effects of control variables also need further attention. Variables which have not been included in this study, like health status, previous exposure to gambling (particularly during the formative years), and ethnic backgrounds should also be investigated in the future. Cohort data on various forms of gambling are also needed to check whether the observed pattern of selective engagement and disengagement of different forms of gambling is indeed a result of aging effects, or rather a result of cohort effects.

- 1) What kinds of gambling have you done in the past year?
 - a) Bet money on games played at home. Would you say ...

.

never	1
sometimes	2
frequently	3
DK	4
NA	5
REF	6

 Bet money on games you play with others, such as cards, checkers, pool, and dice, in public places.
 Would you say ...

never	. 1
sometimes	. 2
frequently	. 3
DK	. 4
NA	. 5
REF	. 6

c) Bet money on sports you play with others, such as bowling and golf. Would you say ...

never	1
sometimes	2
frequently	3
DK	4
NA	5
REF	6

d) Bet money on sporting events, such as college or professional basketball and football. Would you say ...

never 1 sometimes 2 frequently 3 DK 4 NA 5 REF 6	
e) Played bingo in public places.	Would you say
never l sometimes 2	

frequently 3 DK 4 NA 5 REF 6 f) Bet on horse and dog races from home or at the track. Would you say ... never 1 sometimes 2 frequently 3 4 DK NA 5 REF 6 g) Would you say ... Played lotteries. never 1 sometimes 2 frequently 3 4 DK NA 5 REF 6 h) Bet on dog or cock fights. Would you say ... never 1 sometimes 2 frequently 3 DK 4 NA 5 REF 6 i) Took trips to casinos to play cards, dice, slot machines, etc. Would you say ... never 1 sometimes 2 frequently 3 DK 4 NA 5 REF 6 Speculated on investments in stocks and commodities. j) Would you say ... never 1 2 sometimes frequently 3 DK 4

NA 5 REF 6

- 2) Since the New Year (January 1), how frequently have you gambled? Would you say ...
 - daily 5
 at least twice per week ... 4
 weekly 3
 monthly 2
 less than monthly 1
 none 0
 DK 6
 NA 7
 REF 8
- 3) Since the New Year, how much do you usually bet at one time on games, sports, races, and other kinds of gambling?

none 0
\$1 to \$5 1
\$6 to \$10 2
\$11 to \$20 3
\$21 to \$50 4
\$51 to \$100 5
more than \$100 6
DK 7
NA 8
REF 9

4) How much of your leisure time do you spend on gambling activities? Would you say ...

> almost none 1 a little 2 some 3 most 4 nearly all 5 DK 6 NA 7 REF 8

5) What is the size of the town you live in? RURAL AREA OR FARM 1

2
3
4
5
6
7
8
9
10

6) What is your marital status?

NEVER	AM S	RR	[]]	ΞD)	• •		• •	•	• •	•	•	•	•	•	1
DIVOF	CED	С	R	S	E	PA	RA	١T	E	D	•		•	•	•	2
WIDOW	ΈD	• •	•	• •	•	••	• •		•	• •		•	•	•	•	3
MARRI	ED	• •	•		•	••	•		•	• •		•	•	•	•	4
	DK	• •	•	••	•	••	• •	• •	•	• •		•	•	•	•	5
	NA	• •	•	••	•	••	• •		•	• •		•	•	•	•	6
	REF	•	•	••	•	••	•	••	•	•	• •	•	•	•	•	7

7) What year were you born? _____

8) RESPONDENT'S GENDER. IF NOT SURE, ASK "What is your gender?"

MALE 1 FEMALE 2

9) Into which of the following categories does your personal yearly income fall? (salary and/or commissions, child support, welfare)

less than 5,000 1
5,001 to 10,000 2
10,001 to 20,000 3
20,001 to 30,000 4
30,001 to 50,000 5
50,001 to 100,000 6
more than 100,000 7
DK 8
NA 9
REF 10

10) What is your primary employment? Would you say ...

not employed and	
not looking for work	1
not employed but	
looking for work	2
employed	3
self-employed	4
currently on welfare!	5
retired	6
DK	7
NA {	8
REF	9

11) What is the last year in school you completed?

GRAMMAR SCHOOL (GRADE 1 TO 8)	. 1
ATTENDED HIGH SCHOOL BUT	
DID NOT GRADUATE	. 2
GRADUATED HIGH SCHOOL,	
NO COLLEGE OR TRADE SCHOOL	. 3
ATTENDED COLLEGE OR TRADE SCHOOL,	
BUT DID NOT GRADUATE	. 4
GRADUATED COLLEGE OR TRADE SCHOOL	. 5
ATTENDED GRADUATE/	
PROFESSIONAL SCHOOL	. 6
GRADUATED GRADUATE/	
PROFESSIONAL SCHOOL	. 7
OTHER (SPECIFY)	. 8
DK	. 9
NA	10
REF	11

12) What is your religion?

.

PROTI	ESTANT	1
CATH	OLIC	2
JEWIS	SH	3
OTHE	R (SPECIFY)	1
NONE		5
	DK	5
	NA	7
	REF 8	3

13) How often do you attend religious services?

AT LEAST	ONCE A	WEEK	•••••••	5	5
SIX TIME	ES PER Y	ER MON			ե 3
LESS THA	N SIX T	IMES P	ER YEAR	••••	2
HARDLY E	EVER	••••	• • • • • • •]	_
DK NA	•••••	••••	• • • • • • • •		2 7
REF	7	•••••	•••••		3

- Notes: a) Words in capital letters were said by the interviewer only in occasions when they were requested by the respondent.
 b) DK Did not know the answer.
 c) NA No answer was given.
 d) REF Refused to answer.

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